

CoroTurn® SL70 - the future of flexible machining



The modular CoroTurn SL70 blade and adaptor system is designed to fit most profiling and pocketing features in complex components, without the need for special or modified tools.

A high-strength oval coupling ensures stability and improves accessibility in confined spaces, offering the flexibility to build a versatile range of cutting units from a small tool inventory.

SL70 blades and adaptors include all of the required radial and axial clearances to give high performance levels in a standard solution.

The latest extensions to the SL70 range include:

- Deep face grooving heads with high pressure coolant – for up to 40 mm depth of cut
- New Coromant Capto adaptor sizes to widen the application of SL70 in all machine types
- New left hand cutting heads for round inserts



Application

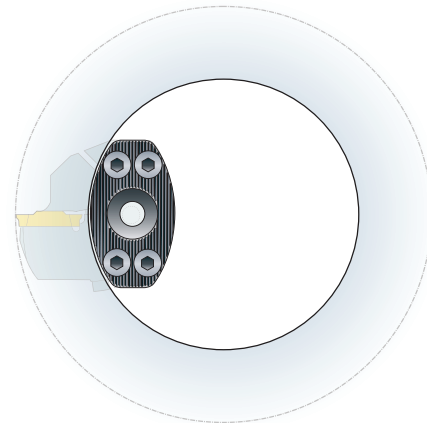
Rough to finish profiling and pocketing operations in heat resistant super alloys, titanium, steel.

Typical components

- Discs
- Shafts
- Casings

Assortment

Long and short blades
 Coromant Capto® C5, C6, C8 adaptors in 90°, 45°, 5°, 0° shank style - for multi-task and VTL
 Blades for round carbide, round ceramic and CoroCut inserts
 Adaptors with CoroTurn® HP high pressure coolant capability






Strength and accessibility

The oval CoroTurn SL70 coupling provides essential accessibility for productive machining in discs and other complex component shapes.

Inserts to be used in CoroTurn SL70 cutting blades

SL70 blades can be combined with optimized inserts, grades, geometries and programming techniques to enhance productivity.

CC6060	Sialon ceramic grade for higher feeds and metal removal rate. Good notch wear resistance allows a higher depth of cut than any other ceramic grade.	RCGX	
S05F	Best performing coated carbide grade, gives excellent finishing surface and dimensional tolerance	CoroCut, RCMT, RCMX	
H13A	The first choice grade for machining titanium alloys	CoroCut, RCMT, RCMX	

Productivity for titanium fan casings

Round inserts offer best performance due to reduced entry angle and chip thickness. Use carbide RCMT grade with CoroTurn HP coolant as the first choice for machining titanium.



Trochoidal turning

This is the first-choice programming method for profiling with CoroTurn SL70, it achieves a higher depth of cut with fewer passes and improves security due to reduced vibration in corners.

Optimized method for HRSA

In the example below, trochoidal turning with ceramic grade CC6060 improves productivity in a pocket roughing operation in inconel 718, compared to the ramping method.

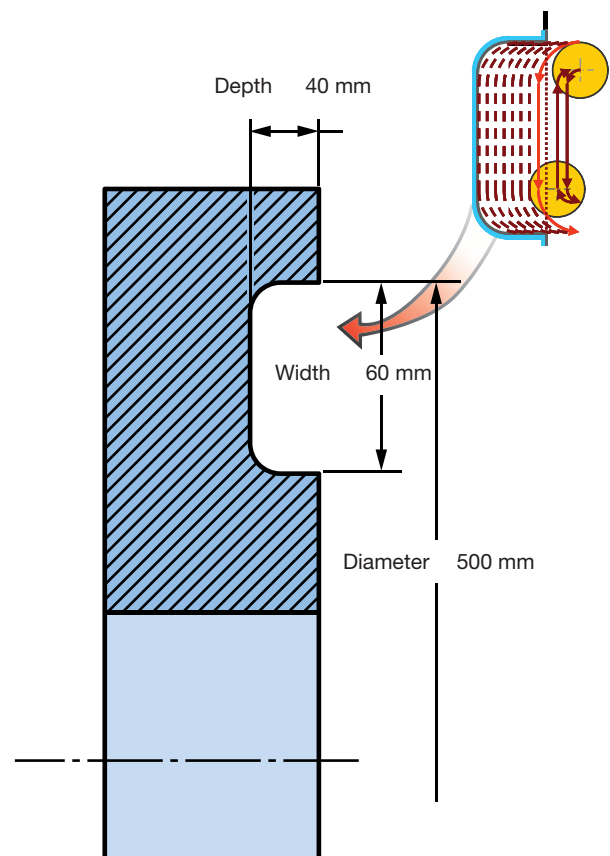
RCGX 120700-E 6060			Ramping	Trochoidal
Cutting speed	V_c	m/min	250	250
Depth of cut	a_p	mm	2	3
feed rate	f_n	mm/rev	0.15	0.2
feed rate	f_n	mm/rev		0.1
Metal removal rate	Q	cm ³ /min	75	150
Number of passes			40	14
Tool life		min	6	4
Number of insert changes			14	7
Time for pocket		min	70	29

High pressure coolant

CoroTurn SL70 uses non-adjustable nozzles to deliver coolant at high pressure and improve machining performance. A coolant jet is directed accurately to the insert edge for maximum benefit:

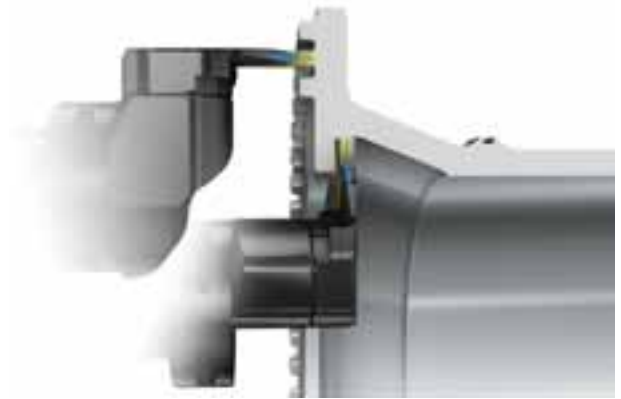
- Improved chip control for more continuous machining
- Increased cutting speed by up to 20%
- Increased tool life by up to 50%

HP coolant is a standard feature for RCMT and CoroCut blades



Trouble-free shaft machining

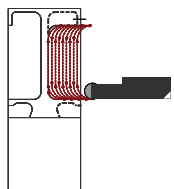
Gain easy access into the flanges around the shaft with SL70 and the rigid CoroCut system, often used with GF and GM insert geometries for high alloy steels.



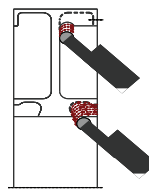
Performance test

In a typical gas turbine application, CoroTurn SL70 and sialon grade CC6060 combined to increase metal removal rate. Production time was reduced by 50% and a more secure process was achieved.

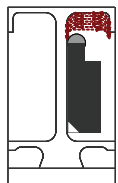
Component	Turbine disc (dia 304 mm – 60 mm)
Material	Inconel 718 (44 HRC) CMC 20.22



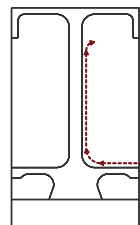
1. Rough: main pocket



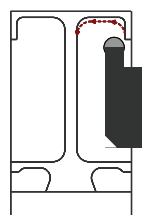
4. Finish: pocket



2. Rough: small undercut



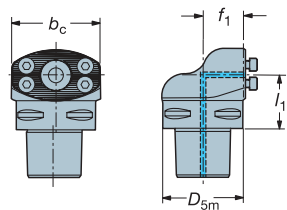
5. Finish: recess



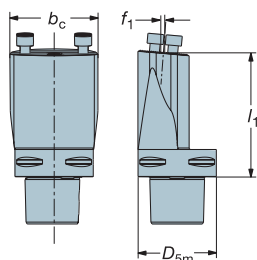
3. Rough: recess

Coromant Capto® adaptor

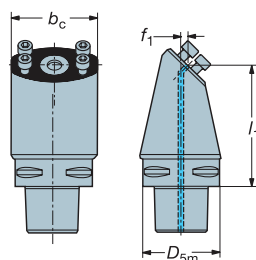
Shank style 0°



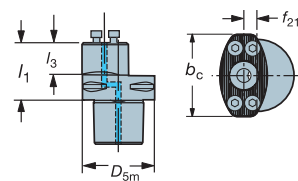
Shank style 5°



Shank style 45°



Shank style 90°



Left hand style shown

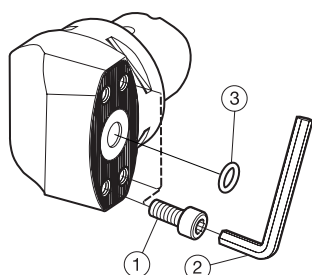
With internal coolant supply

Right hand style shown when nothing else is stated

Type	Ordering code	Shank style	Coupling size	Dimensions, mm						
				b_c	D_{5m}	f_1	f_{21}	l_1	l_3	$\frac{kg}{kg}$
	C5-SL70-LF-043	0°	70	50	33			43		1.27
	C6-SL70-LF-043	0°	70	63	33			43		1.68
	C8-SL70-LF-051	0°	70	80	41.5			51		3.08
	C6-SL70-RX-005-100	5°	70	63	11			100		1.99
	C6-SL70-RX-045-100	45°	70	63	5			100		2.68
	C5-SL70-RG-050	90°	70	50		11.5		50	30.5	0.89
	C6-SL70-RG-050	90°	70	63		11.5		50	28.5	1.28
	C8-SL70-RG-090	90°	70	80		35		90	61	2.89

= New item

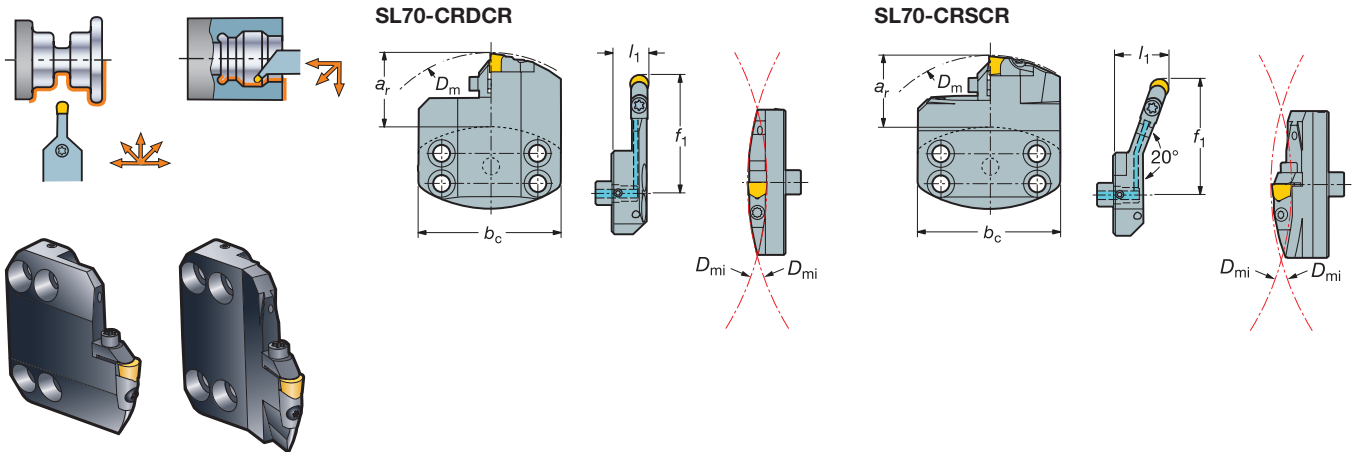
Spare parts



Ordering code	Screw	Key (mm)	O-ring
C5-SL70-LF-043	3212 010-409	3021 010-060 (6.0)	3671 010-119
C5-SL70-RG-050	3212 010-409	3021 010-060 (6.0)	3671 010-119
C6-SL70-LF-043	3212 010-409	3021 010-060 (6.0)	3671 010-119
C6-SL70-RX-005-100	3212 010-409	3021 010-060 (6.0)	3671 010-119
C6-SL70-RX-045-100	3212 010-409	3021 010-060 (6.0)	3671 010-119
C6-SL70-RG-050	3212 010-409	3021 010-060 (6.0)	3671 010-119
C8-SL70-LF-051	3212 010-409	3021 010-060 (6.0)	3671 010-119
C8-SL70-RG-090	3212 010-409	3021 010-060 (6.0)	3671 010-119

Cutting heads with CoroTurn® SL70 coupling

For round inserts



With internal coolant supply

Right hand style shown when nothing else is stated

First cut diameter		Coupling size	Dimensions, mm							Gauge inserts	Nm ²⁾
D _{mi}	Ordering code		b _c	a _r	D _m min	f ₁	l ₁	λ _s ¹⁾			
270	09 SL70-CRDCR/L-18-09	70	18.75	125.0	39.0	18.0	0°	RCGX 09 07 00	7.5		
270	SL70-CRDCR/L-35-09	70	35.75	125.0	56.0	18.0	0°	RCGX 09 07 00	7.5		
270	12 SL70-CRDCR/L-35-12	70	35.75	180.0	56.0	18.0	0°	RCGX 12 07 00	7.5		
270	SL70-CRDCR/L-50-12	70	50.75	180.0	71.0	18.0	0°	RCGX 12 07 00	7.5		
270	09 SL70-CRSCR/L-35-09	70	35	130.0	55.0	26.7	0°	RCGX 09 07 00	7.5		

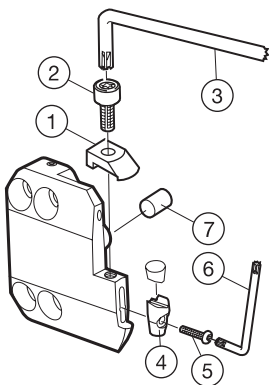
1) λ_s = Angle of inclination.

2) Insert tightening torque Nm. Use torque wrench, see page B37.

R = Right hand, L = Left hand

= Left hand tools are new items

Main spare parts

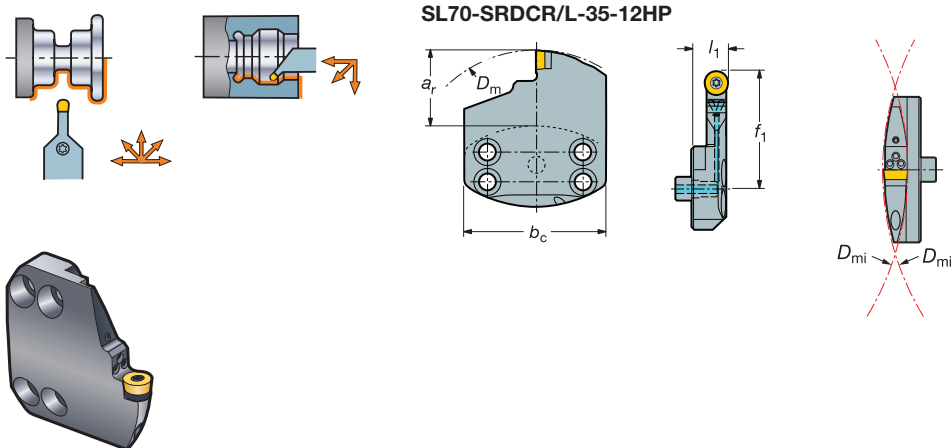


Insert size	1.	2.	3.	4.	5.	6.	7.
	Clamp	Clamp screw	Key	Seat	Seat screw	Key	Pin
09	5412 100-01	3212 035-452	5680 043-16 (27IP)	5321 067-01	3212 106-352	5680 043-12 (10IP)	5552 058-04
12	5412 100-02	3212 106-504	5680 043-17 (30IP)	5321 067-02	3212 105-453	5680 043-15 (25IP)	5552 058-04

Cutting heads with CoroTurn® SL70 coupling

CoroTurn® 107 screw clamp

With high pressure coolant



With internal coolant supply

Right hand style shown when nothing else is stated

First cut diameter		Ordering code	Coupling size		Dimensions, mm					Gauge inserts	Nm ²⁾
D_{mi}	$\frac{H}{k6}$		b_c		a_r	D_m min	f_1	l_1	$\lambda_s^{1)}$	RCMT 12 04 M0	3.0
300	12	SL70-SRDCR/L-35-12HP	70		35.75	120.0	56.0	18.0	0°		

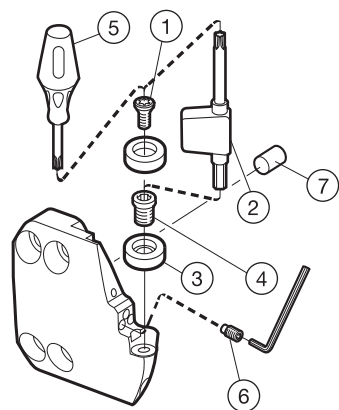
1) λ_s = Angle of inclination.

2) Insert tightening torque Nm. Use torque wrench, see page B37.

R = Right hand, L = Left hand

= Left hand tools are new items

Main spare parts



Insert size	1.	2.	3.	4.	5.	6.	7.
$\frac{H}{k6}$	Insert screw	Key (Torx plus/mm)	Shim	Shim screw	Torque wrench	Nozzle (hole diameter, mm)	Pin
12	5513 020-01	5680 049-01 (15IP/3.5)	5322 110-02	5512 090-01	5680 100-06 (15IP)	5691 026-03 (1.0)	5552 058-04

Optional nozzles (to be ordered separately)

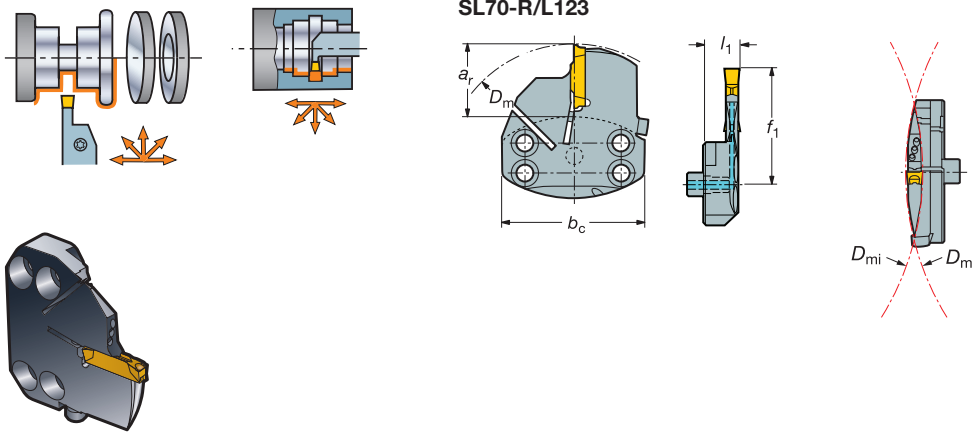
Ordering code	Hole diameter, mm
5691 026-01	0.6
5691 026-02	0.8
5691 026-04	1.2
5691 026-05	1.4

CoroCut® SL70

Blade for grooving, parting off, profiling and turning

Screw clamp

With high pressure coolant



With internal coolant supply

Right hand style shown

First cut diameter			Seat size ¹⁾	Ordering code	Coupling size	Dimensions, mm		Gauge inserts	Nm ²⁾
D_{mi}	D_m min	a_r max				b_c	l_1		
320	120	15.75	K	SL70-R/L123K15A-HP	70	18	36	N123K2-0600-GM	6.5
320	120	30.75		SL70-R/L123K30A-HP	70	18	51	N123K2-0600-GM	6.0
270	120	35.75	L	SL70-R/L123L35A-HP	70	18	56	N123L2-0800-GM	2.0

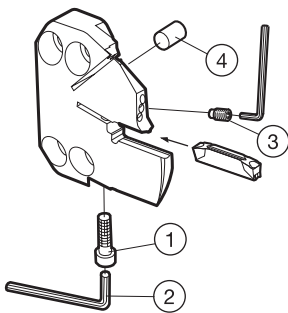
1) To correspond with seat size on insert.

R = Right hand, L = Left

2) Insert tightening torque Nm. Use torque wrench, see page B37.

= Left hand tools are new items

Spare parts



	1.	2.	3.	4.
Ordering code	Screw	Key	Nozzle (hole diameter, mm)	Pin
SL70-R/L123K15A-HP	3212 010-314	3021 010-040 (4.0)	5691 026-13 (1.0)	5552 058-04
SL70-R/L123K30A-HP	3212 010-357	3021 010-050 (5.0)	5691 026-13 (1.0)	5552 058-04
SL70-R/L123L35A-HP	3212 010-314	3021 010-040 (4.0)	5691 026-13 (1.0)	5552 058-04

Optional nozzles (to be ordered separately)

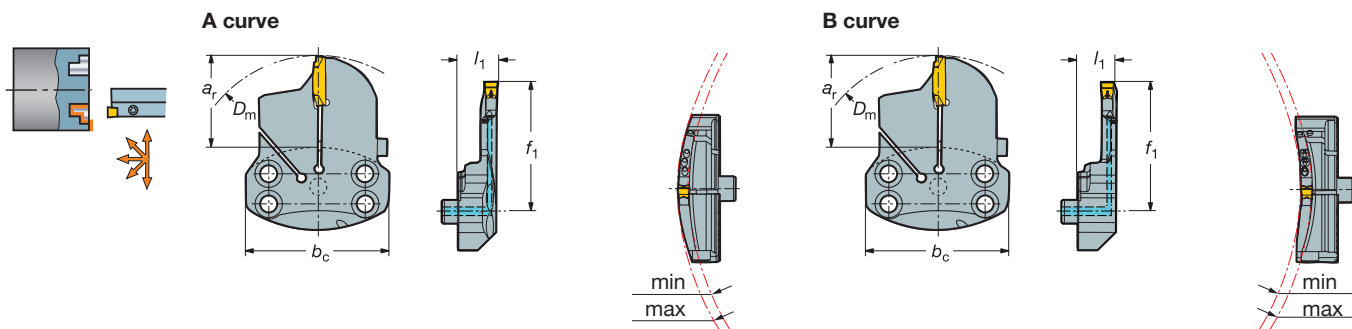
Ordering code	Hole diameter, mm
5691 026-11	0.6
5691 026-12	0.8
5691 026-14	1.2
5691 026-15	1.4

CoroCut® SL70

Blade for face grooving

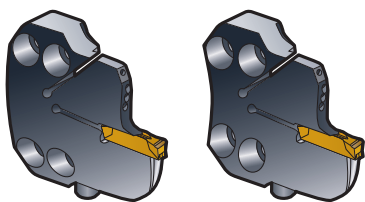
Screw clamp

With high pressure coolant

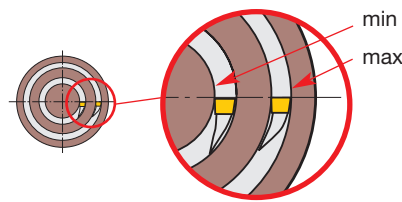


A curve B curve

First cut diameter



With internal coolant supply



Right hand style shown

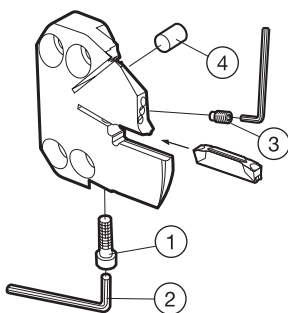
First cut diameter		A curve	B curve	Coupling size	Dimensions, mm		Gauge inserts	Nm ²⁾			
min	max	D_m min	a_r max	Seat size ¹⁾	Ordering code	Ordering code	b_c	f_1	h_1		
290	500	132	40	H	SL70-R/L123H40B290A-HP	SL70-R/L123H40B290B-HP	70	66	17	N123H2-0400-TF	5.6
290	500	132	40	J	SL70-R/L123J40B290A-HP	SL70-R/L123J40B290B-HP	70	66	17.5	N123J2-0500-TF	5.6
168	300	132	40	K	SL70-R/L123K40B168A-HP	SL70-R/L123K40B168B-HP	70	66	20	N123K2-0600-TF	5.6
288	500	132	40		SL70-R/L123K40B288A-HP	SL70-R/L123K40B288B-HP	70	66	18	N123K2-0600-TF	5.5

1) To correspond with seat size on insert.

2) Insert tightening torque Nm. Use torque wrench, see page B37.

= New item

Spare parts



	1.	2.	3.	4.
Seat size		Screw	Key	Nozzle (hole diameter, mm)
H, J, K		3212 010-313	3021 010-040(4.0)	5691 026-13 (1.0)
				Pin
				5552 058-04

Optional nozzles (to be ordered separately)

Ordering code	Hole diameter, mm
5691 026-11	0.6
5691 026-12	0.8
5691 026-14	1.2
5691 026-15	1.4