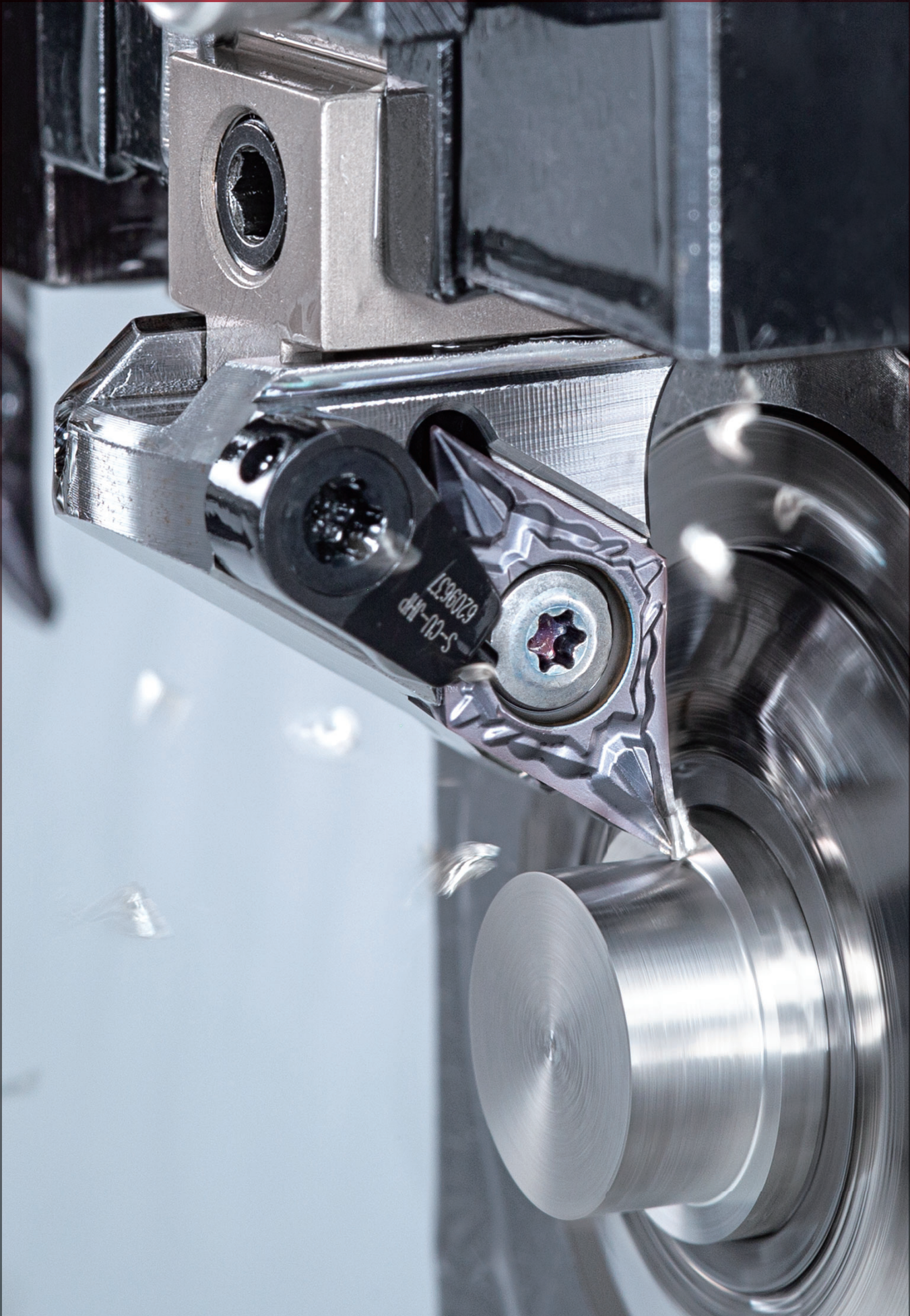


MODUM^{INI}TURN

Tungaloy Report No. 541-US

New modular head turning toolholder system for Swiss machines

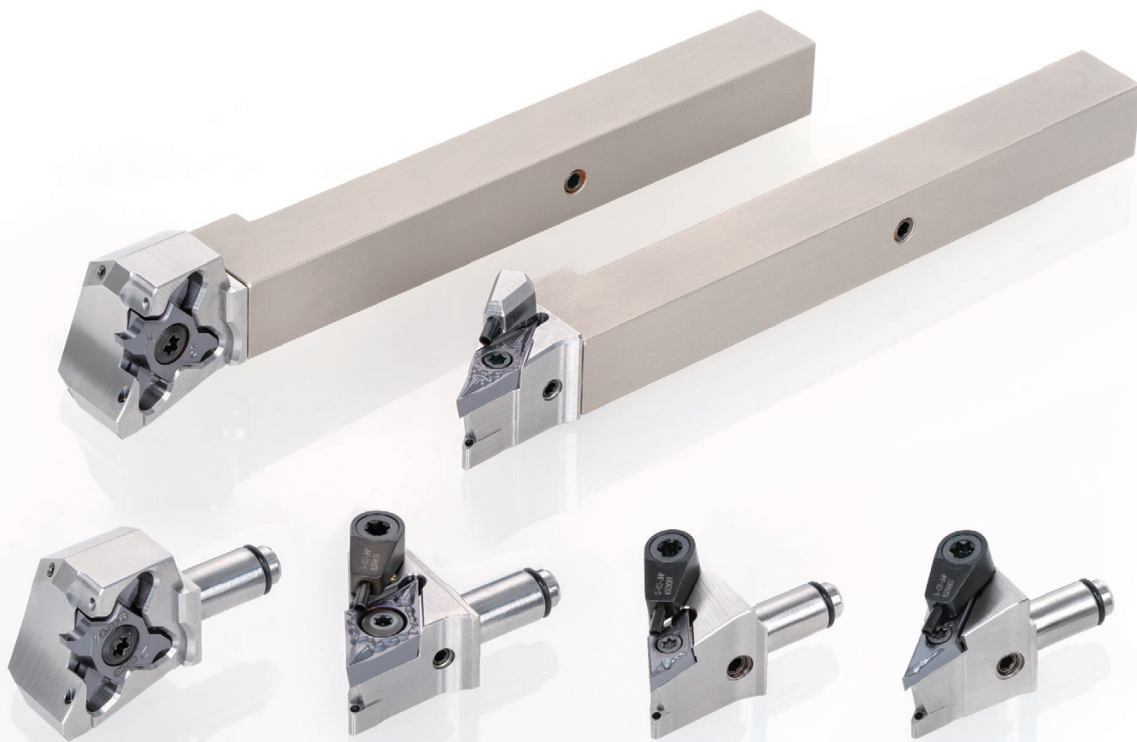




INDUSTRY 4.0
FEED the SPEED!



MODUM^{INI}TURN



TETRAM^{CUT}

J-SERIES

MINI^FTURN

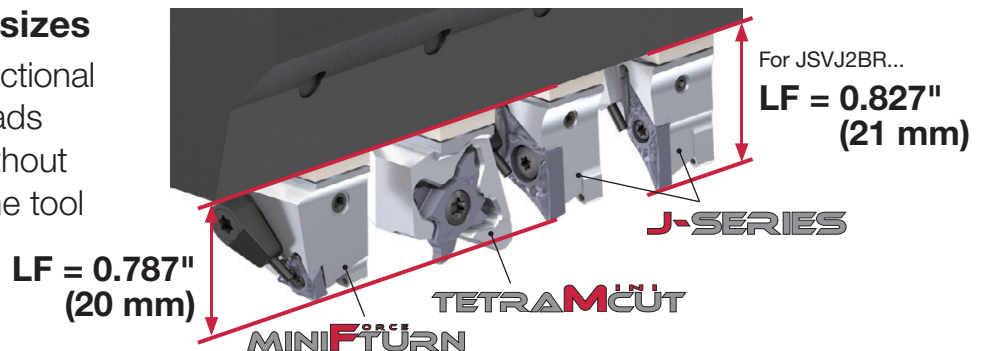
Significantly reduces machine downtime
for changing tools and setups

Modular style Swiss turning tool system facilitates tool changes with high repeatability

Features

■ Unified cutting head sizes

Designed with common functional lengths (LF), the cutting heads allow easy tool changes without removing the shank from the tool post.

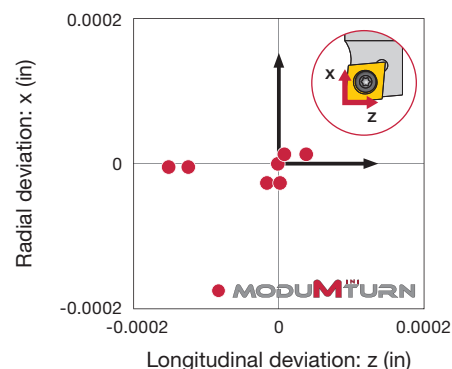


■ High repeatability*

ModuMini-Turn provides the cutting edge point position with high repeatability with an accuracy of $\pm 5 \mu\text{m}$ or less for the x and z axis.

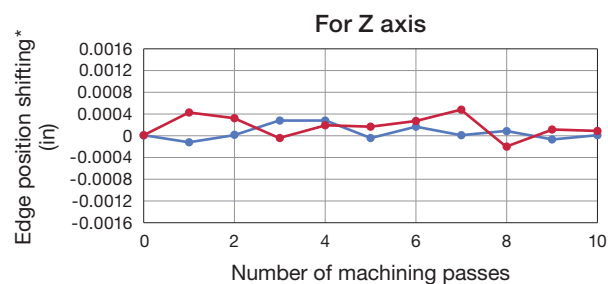
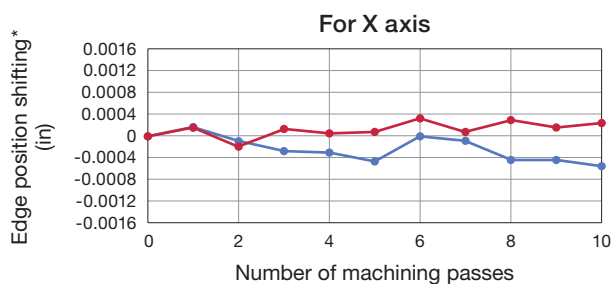
*Using the same type of head, shank, and insert shape

Deviations of cutting point positions after insert changes on the same head



■ Edge positions before and after machining

ModuMini-Turn ensures high rigidity coupling to the head and shank, providing extra stability equivalent of monoblock tools.

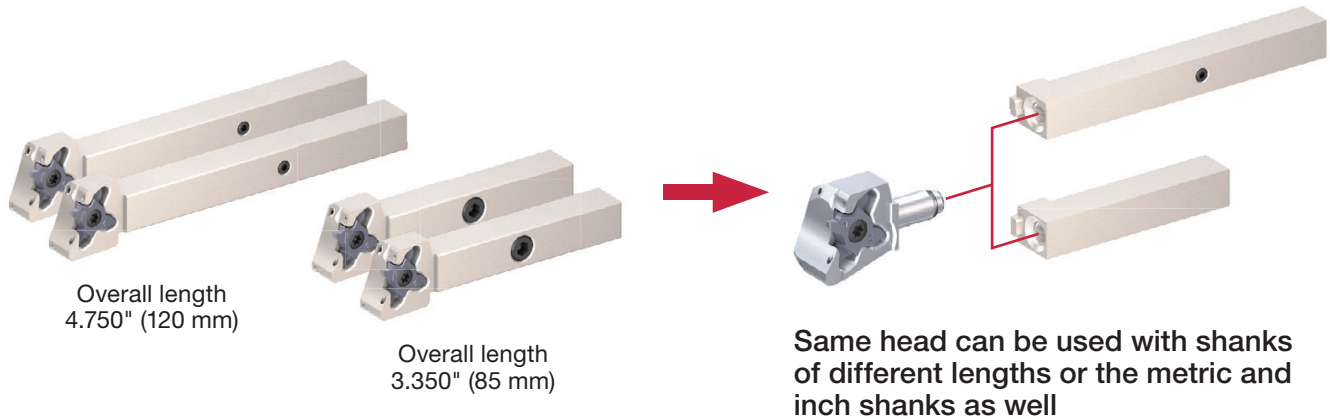


*Edge position shifting: shifting of cutting edge positions from the zero point (initially measured point) after machining.

P Insert	: DCGT 32.50.5 FN-JS SH725
Workpiece material	: 1045
Cutting speed	: $V_c = 330 \text{ sfm}$
Feed	: $f = 0.003 \text{ ipr}$
Depth of cut	: $a_p = 0.039"$
Machining	: External turning
Coolant	: Wet

■ Shank size flexibility

Applicable for many types of machines, due to the large variety of shank lengths. The same coupling shape allows shared heads to all types of shanks.

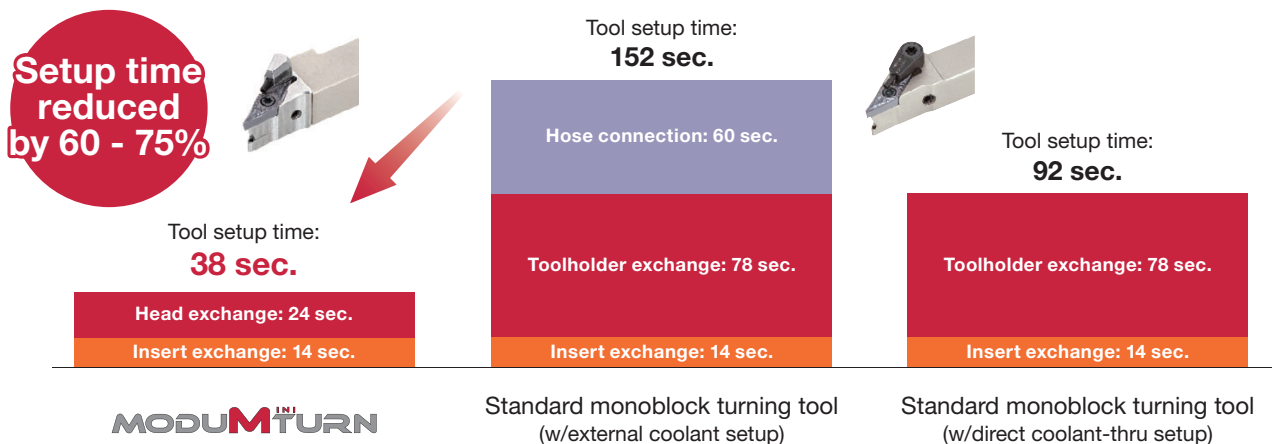


■ Unique coupling design

Simply loosen the clamping screw for easy tool exchanges. Unique coupling design allows extremely high repeatability.



■ Modular design simplifies tool change and set up, significantly reducing machine downtime



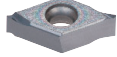
Lineup

Shanks sizes: 08 (1/2" square shank) and Q1212 (12mm square shank)

Overall length*	Without coolant hole	With coolant hole	Page
3.350" (85 mm)	✓	✓	15
4.750" (120 mm)	✓	✓	15

*With the head attached

Modular heads

Tool series	Insert shape inch / metric	Without coolant hole	With coolant hole	Page
J-SERIES	CC**32.5... / CC**09T3... 	✓	✓	7
	DC**21.5... / DC**0702... 	✓	✓	8
	DC**32.5... / DC**11T3... 	✓	✓	8
	VB**22... / VB**1103... 	✓	✓	9
	J10ER... 	✓	-	9
MINIF^{INI}TURN	WXGU22**L... / WXGU0403**L... 	✓	✓	10
	DXGU22**L... / DXGU0703**L... 	✓	✓	11
	VXGU73.5**L... / VXGU09T2**L... 	✓	✓	12
TETRAM^{INI}CUT	TC*18R/L... 	✓	✓	13, 14

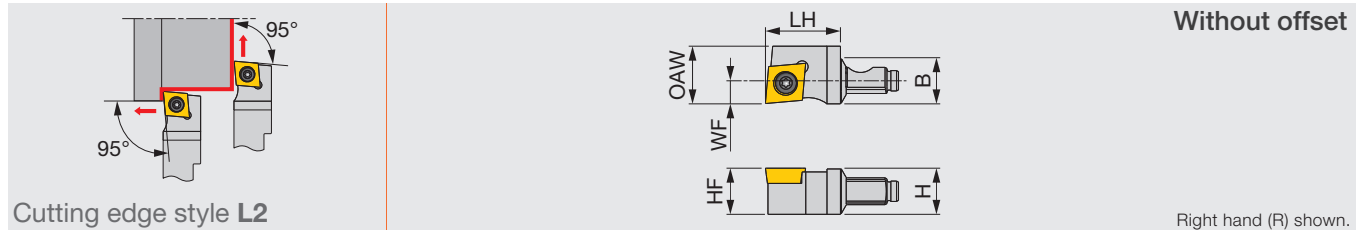
Q12 heads fit both the metric QC-1212 and the inch QC08 shanks

MODULAR HEADS

QC12-JSCL2CR

J-SERIES

Screw-on modular head with 95° approach angle, for positive 80° rhombic inserts



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSCL2CR09	0.472	0.472	0.768	0.472	0.236	0.591	0.008	CC**32.5...	0.89

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSCL2CR09	12	12	19.5	12	6	15	0.2	CC**09T3...	1.2

Torque: Recommended clamping torque: lbs-ft (*N-m)

**RE: Standard corner radius

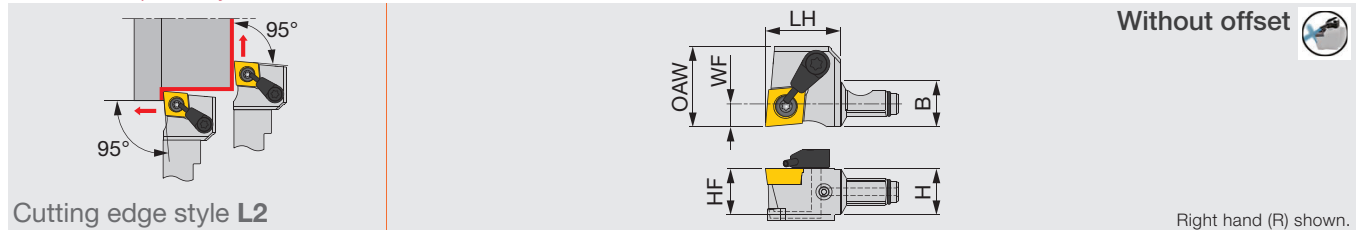
SPARE PARTS

Designation	Clamping screw	Wrench
QC12-JSCL2CR09	CSTB-4SD	T-8F

QC12-JSCL2CR-CHP

J-SERIES

Screw-on modular head with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSCL2CR09-CHP	0.472	0.472	0.768	0.472	0.236	0.827	0.008	CC**32.5...	0.89

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSCL2CR09-CHP	12	12	19.5	12	6	21	0.2	CC**09T3...	1.2

Through-coolant head

Torque: Recommended clamping torque: lbs-ft (*N-m)

**RE: Standard corner radius

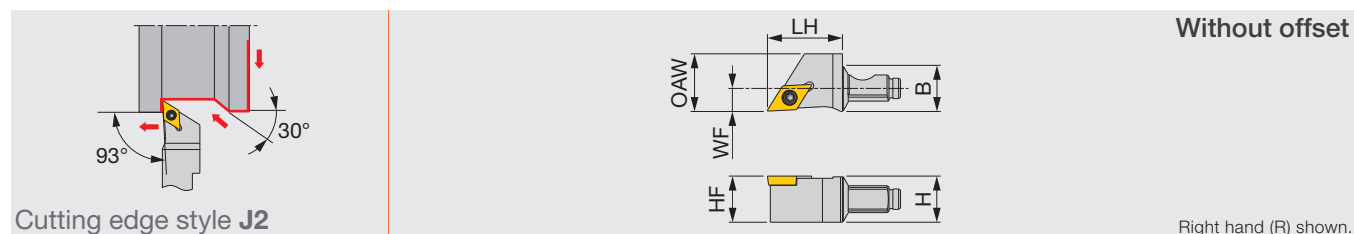
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC12-JSCL2CR09-CHP	CSTB-4SD	S-CU-CHP	T-8F	ORSS-0454.5X1.0NBR70

QC12-JSDJ2CR

J-SERIES

Screw-on modular head with 93° approach angle, for positive 55° rhombic inserts



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSDJ2CR07	0.472	0.472	0.768	0.472	0.236	0.591	0.008	DC**21.5...	0.89
QC12-JSDJ2CR11	0.472	0.472	0.768	0.472	0.236	0.591	0.008	DC**32.5...	0.89
Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSDJ2CR07	12	12	19.5	12	6	15	0.2	DC**0702...	1.2
QC12-JSDJ2CR11	12	12	19.5	12	6	15	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: lbs-ft (*N-m)

**RE: Standard corner radius

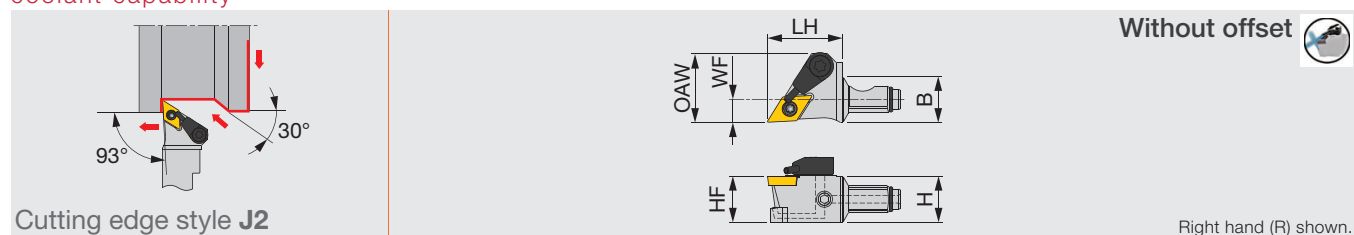
SPARE PARTS

Designation	Clamping screw	Wrench
QC12-JSDJ2CR07	CSTB-2.5	T-8F
QC12-JSDJ2CR11	CSTB-4SD	T-8F

QC12-JSDJ2CR-CHP

J-SERIES

Screw-on modular head with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSDJ2CR07-CHP	0.472	0.472	0.768	0.472	0.236	0.709	0.008	DC**21.5...	0.89
QC12-JSDJ2CR11-CHP	0.472	0.472	0.768	0.472	0.236	0.827	0.008	DC**32.5...	0.89
Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSDJ2CR07-CHP	12	12	19.5	12	6	18	0.2	DC**0702...	1.2
QC12-JSDJ2CR11-CHP	12	12	19.5	12	6	21	0.2	DC**11T3...	1.2

Through-coolant head

Torque: Recommended clamping torque: lbs-ft (*N-m)

**RE: Standard corner radius

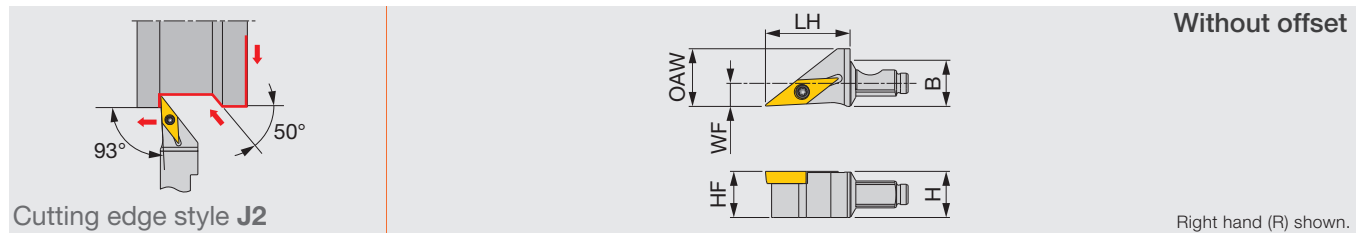
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC12-JSDJ2CR07-CHP	CSTB-2.5	S-CU-CHP	T-8F	ORSS-0454.5X1.0NBR70
QC12-JSDJ2CR11-CHP	CSTB-4SD	S-CU-CHP	T-8F	ORSS-0454.5X1.0NBR70

QC12-JSVJ2BR

J-SERIES

Screw-on modular head with 93° approach angle, for positive 35° rhombic inserts



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSVJ2BR11	0.472	0.472	0.866	0.472	0.236	0.591	0.008	VB**22...	0.89
Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVJ2BR11	12	12	22	12	6	15	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: lbs-ft (*N-m) **RE: Standard corner radius

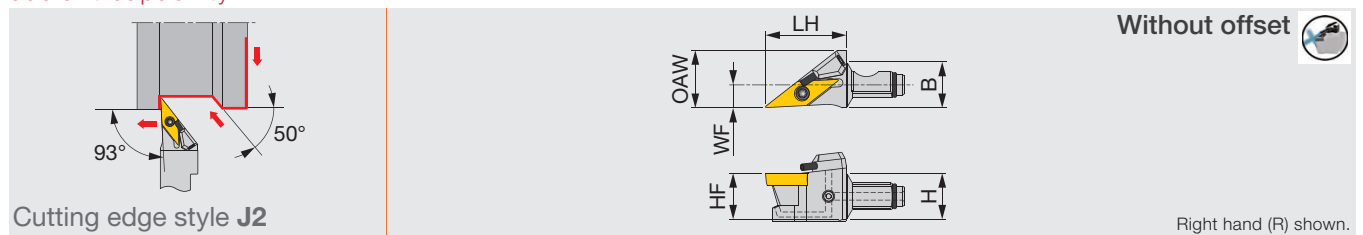
SPARE PARTS

Designation	Clamping screw	Wrench
QC12-JSVJ2BR11	CSTB-2.5	T-8F

QC12-JSVJ2BR-CHP

J-SERIES

Screw-on modular head with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSVJ2BR11-CHP	0.472	0.472	0.827	0.472	0.236	0.591	0.008	VB**22...	0.89
Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVJ2BR11-CHP	12	12	21	12	6	15	0.2	VB**1103...	1.2

Through-coolant head. Torque: Recommended clamping torque: lbs-ft (*N-m) **RE: Standard corner radius

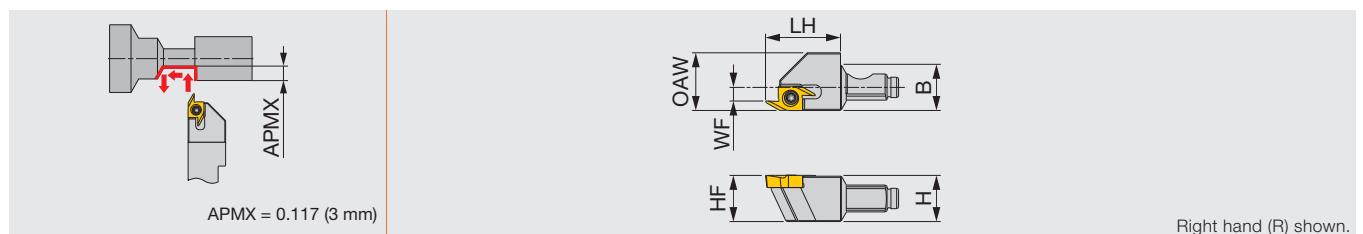
SPARE PARTS

Designation	Clamping screw	Wrench 1	O-ring	Coolant nozzle	Screw	Wrench 2
QC12-JSVJ2BR11-CHP	CSTB-2.5	T-8F	ORSS-0454.5X1.0NBR70	NZ-1.10-7-CHP	SSHM4-4-TB	P-2

QC12-JSEGR

J-SERIES

Screw-on modular head for back turning



Inch	H	B	LH	HF	WF	OAW	Insert	Torque
QC12-JSEGR10	0.472	0.472	0.768	0.472	0.138	0.591	J10ER...	0.89
Metric	H	B	LH	HF	WF	OAW	Insert	Torque*
QC12-JSEGR10	12	12	19.5	12	3.5	15	J10ER...	1.2

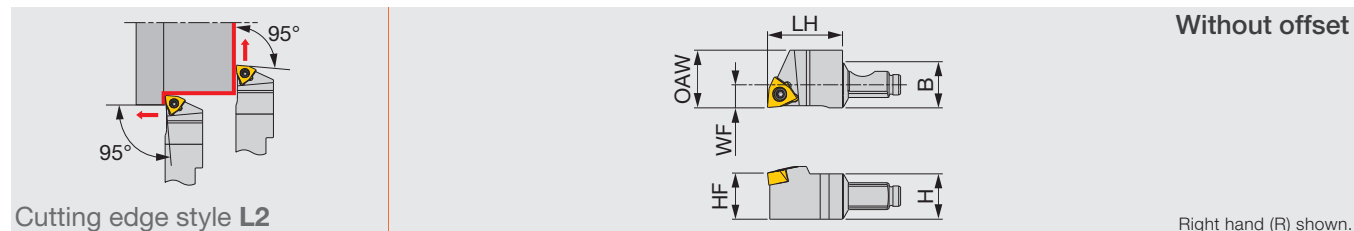
Torque: Recommended clamping torque: lbs-ft (*N-m)

SPARE PARTS

Designation	Clamping screw	Wrench
QC12-JSEGR10	CSTB-2.5	T-8F

QC12-JSWL2XR

Screw-on modular head with 95° approach angle, for WXGU inserts



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSWL2XR04	0.472	0.472	0.768	0.472	0.236	0.591	0.008	WXGU22**L...	0.66
Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSWL2XR04	12	12	19.5	12	6	15	0.2	WXGU0403**L...	0.9

Use right-hand toolholders (R) with left-hand inserts (L).

Torque: Recommended clamping torque: lbs-ft (*N·m)

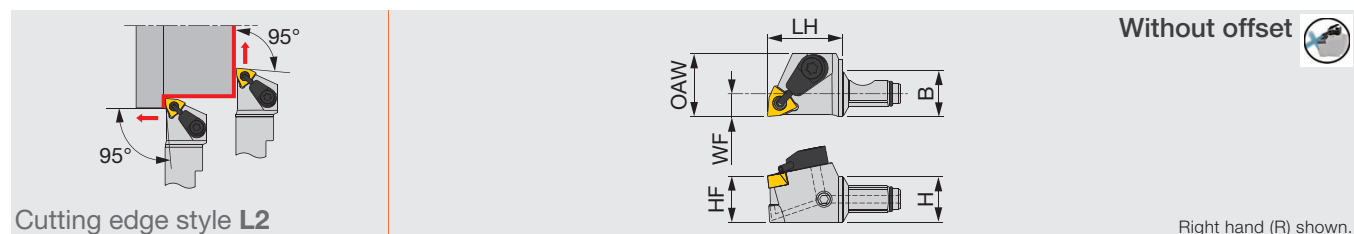
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
QC12-JSWL2XR04	SR34-514	T-7F

QC12-JSWL2XR-CHP

Screw-on modular head with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSWL2XR04-CHP	0.472	0.472	0.768	0.472	0.236	0.650	0.008	WXGU22**L...	0.66
Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSWL2XR04-CHP	12	12	19.5	12	6	16.5	0.2	WXGU0403**L...	0.9

Use right-hand toolholders (R) with left-hand inserts (L).

Through-coolant head

Torque: Recommended clamping torque: lbs-ft (*N·m)

**RE: Standard corner radius

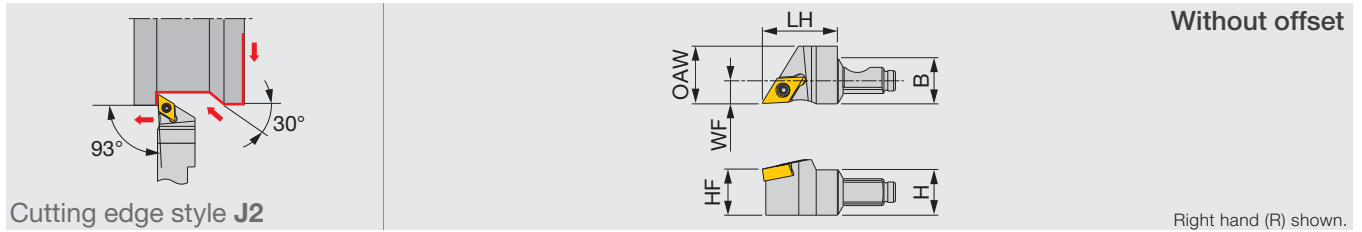
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC12-JSWL2XR04-CHP	SR34-514	S-CU-CHP	T-7F	ORSS-0454.5X1.0NBR70

QC12-JSDJ2XR

MINIFORCE TURN

Screw-on modular head with 93° approach angle, for DXGU inserts



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSDJ2XR07	0.472	0.472	0.768	0.472	0.236	0.591	0.008	DXGU22**L...	0.66

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSDJ2XR07	12	12	19.5	12	6	15	0.2	DXGU0703**L...	0.9

Use right-hand toolholders (R) with left-hand inserts (L).

Torque: Recommended clamping torque: lbs-ft (*N·m)

**RE: Standard corner radius

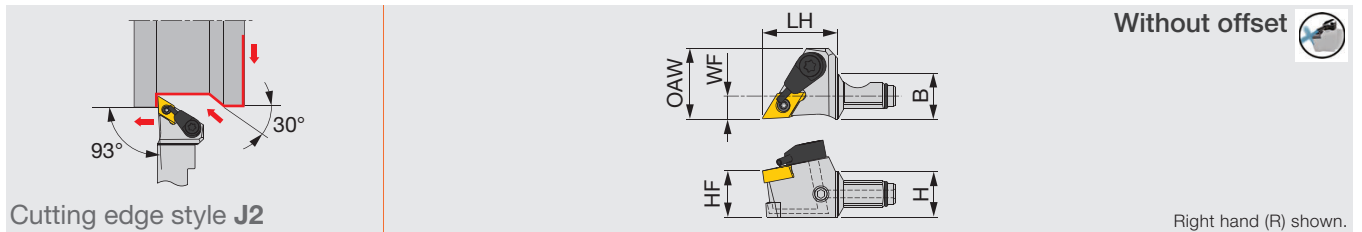
SPARE PARTS

Designation	Clamping screw	Wrench
QC12-JSDJ2XR07	SR34-514	T-7F

QC12-JSDJ2XR-CHP

MINIFORCE TURN

Screw-on modular head with 93° approach angle, for DXGU inserts, with high pressure coolant capability



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSDJ2XR07-CHP	0.472	0.472	0.768	0.472	0.236	0.724	0.008	DXGU22**L...	0.66

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSDJ2XR07-CHP	12	12	19.5	12	6	18.4	0.2	DXGU0703**L...	0.9

Use right-hand toolholders (R) with left-hand inserts (L).

Through-coolant head

Torque: Recommended clamping torque: lbs-ft (*N·m)

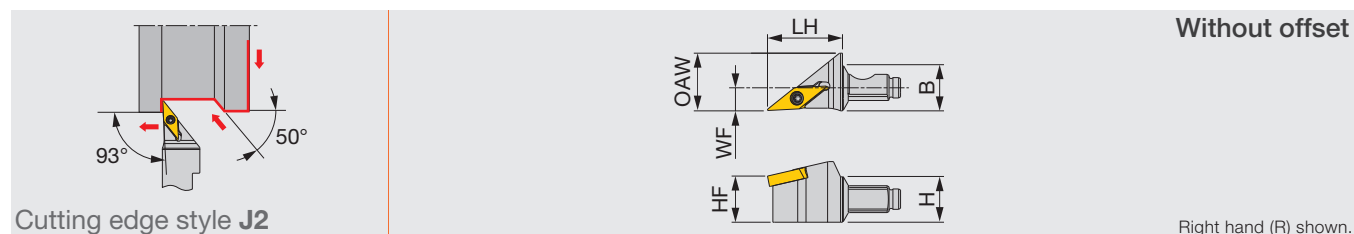
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC12-JSDJ2XR07-CHP	SR34-514	S-CU-CHP	T-7F	ORSS-0454.5X1.0NBR70

QC12-JSVJ2XR

Screw-on modular head with 93° approach angle, for VXGU inserts



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSVJ2XR09	0.472	0.472	0.768	0.472	0.236	0.591	0.008	VXGU73.5**L...	0.66
Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVJ2XR09	12	12	19.5	12	6	15	0.2	VXGU09T2**L...	0.9

Use right-hand toolholders (R) with left-hand inserts (L).

Torque: Recommended clamping torque: lbs-ft (*N·m)

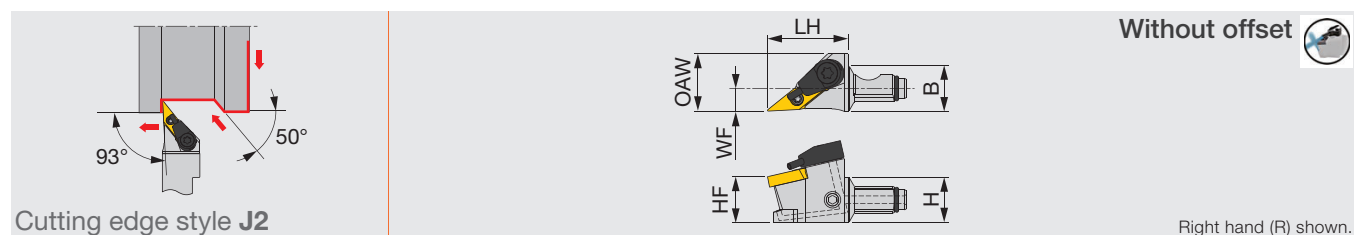
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
QC12-JSVJ2XR09	SR34-508	T-7F

QC12-JSVJ2XR-CHP

Screw-on modular head with 93° approach angle, for VXGU inserts, with high pressure coolant capability



Inch	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSVJ2XR09-CHP	0.472	0.472	0.827	0.472	0.236	0.591	0.008	VXGU73.5**L...	0.66
Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVJ2XR09-CHP	12	12	21	12	6	15	0.2	VXGU09T2**L...	0.9

Use right-hand toolholders (R) with left-hand inserts (L).

Through-coolant head

Torque: Recommended clamping torque: lbs-ft (*N·m)

**RE: Standard corner radius

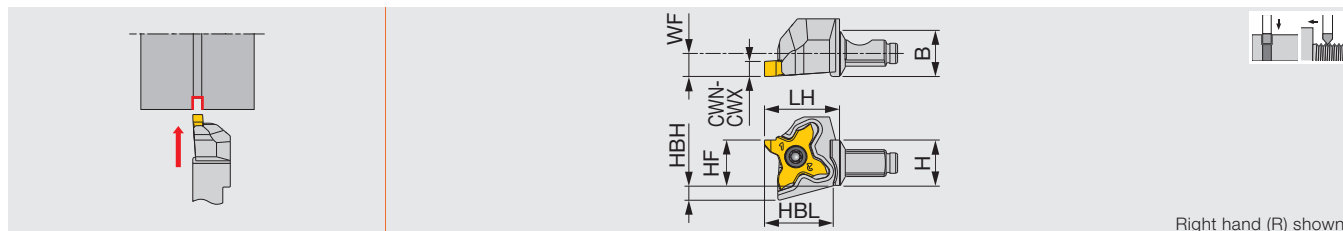
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC12-JSVJ2XR09-CHP	SR34-508	S-CU-CHP	T-7F	ORSS-0454.5X1.0NBR70

QC12-STCR

TETRAMCUT

Modular head for external grooving and threading



Inch	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque
QC12-STCR18	0.013	0.118	0.472	0.472	0.768	0.472	0.154	0.705	0.236	TC*18R...	0.89

Metric	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCR18	0.33	3	12	12	19.5	12	3.9	17.9	6	TC*18R...	1.2

The right hand insert (R) is used for the right hand toolholder (R).
Torque: Recommended clamping torque: lbs-ft (*N-m)

SPARE PARTS

Designation	Clamping screw	Wrench
QC12-STCR18	CSTC-4L100DL	T-1008/5

Right-hand insert

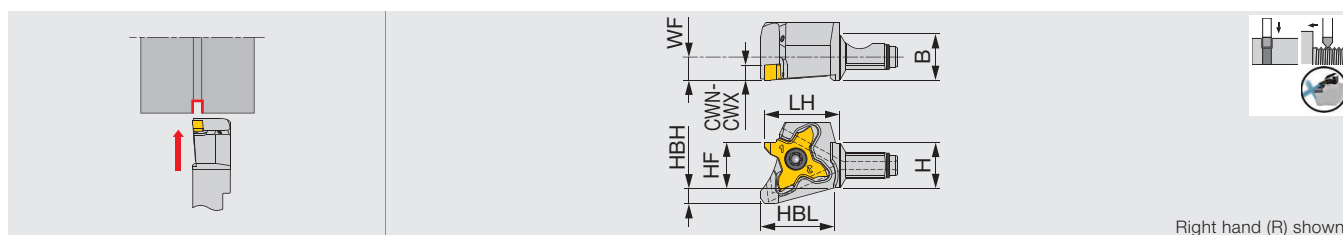


TC*18R...

QC12-STCR-CHP

TETRAMCUT

Modular head for external grooving and threading, with high pressure coolant capability



Inch	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque
QC12-STCR18-CHP	0.013	0.118	0.472	0.472	0.768	0.472	0.165	0.760	0.236	TC*18R...	0.89

Metric	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCR18-CHP	0.33	3	12	12	19.5	12	4.2	19.3	6	TC*18R...	1.2

The right hand insert (R) is used for the right hand toolholder (R).
Through-coolant head
Torque: Recommended clamping torque: lbs-ft (*N-m)

SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QC12-STCR18-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70

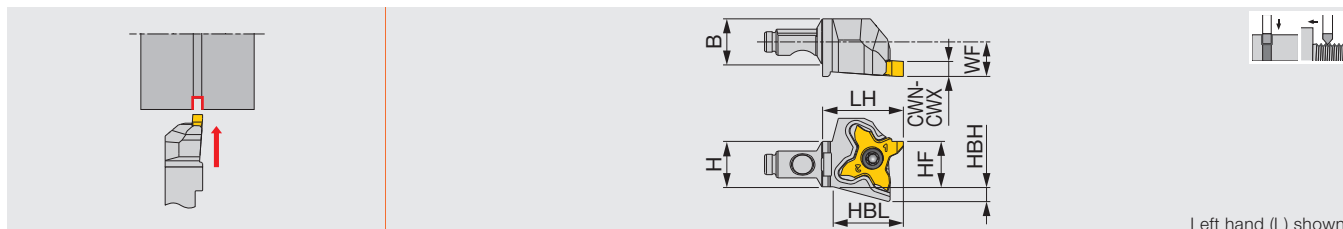
Right-hand insert



TC*18R...

QC12-STCL

Modular head for external grooving and threading



Left hand (L) shown.

Inch	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque
QC12-STCL18	0.013	0.118	0.472	0.472	0.827	0.472	0.154	0.720	0.354	TC*18L...	0.89
Metric	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCL18	0.33	3	12	12	21	12	3.9	18.3	9	TC*18L...	1.2

The left hand insert (L) is used for the left hand toolholder (L).
Torque: Recommended clamping torque: lbs-ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
QC12-STCL18	CSTC-4L100DR	T-1008/5

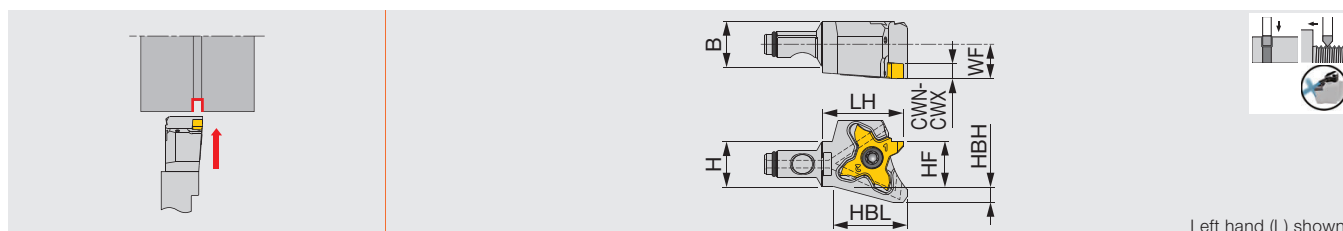
Left-hand insert



TC*18L...

QC12-STCL-CHP

Modular head for external grooving and threading, with high pressure coolant capability



Left hand (L) shown.

Inch	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque
QC12-STCL18-CHP	0.013	0.118	0.472	0.472	0.827	0.472	0.165	0.760	0.354	TC*18L...	0.89
Metric	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCL18-CHP	0.33	3	12	12	21	12	4.2	19.3	9	TC*18L...	1.2

The left hand insert (L) is used for the left hand toolholder (L).
Through-coolant head
Torque: Recommended clamping torque: lbs-ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QC12-STCL18-CHP	CSTC-4L100DR	T-1008/5	ORSS-0454.5X1.0NBR70

Left-hand insert

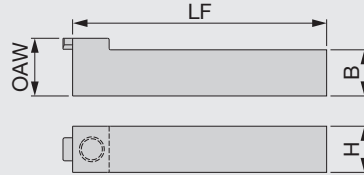


TC*18L...

SHANKS

QC-08 and QC-1212

Shank for Interchangeable Heads (All metric heads are compatible with the inch shanks)



Inch	H	B	LF	OAW	Torque
QC-08F	0.500	0.500	2.560	0.590	2.21
QC-08X	0.500	0.500	3.940	0.590	2.21
Metric	H	B	LF	OAW	Torque*
QC-1212F	12	12	65	15	3
QC-1212X	12	12	100	15	3

Torque: Recommended clamping torque: lbs-ft (*N-m)

SPARE PARTS

Designation	Clamping screw	Wrench
QC-08*, QC-1212*	SRM6X0.5-26977	P-3

QC-08-CHP and QC-1212-CHP

Shank for modular heads, with high pressure coolant capability

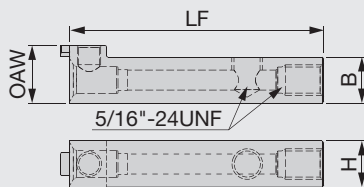


Fig.1

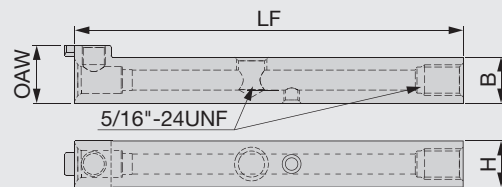


Fig.2

Inch	H	B	LF	OAW	Torque	Fig.
QC-08F-CHP	0.500	0.500	2.560	0.590	2.21	1
QC-08X-CHP ⁽¹⁾	0.500	0.500	3.940	0.590	2.21	2
Metric	H	B	LF	OAW	Torque*	Fig.
QC-1212F-CHP	12	12	65	15	3	1
QC-1212X-CHP ⁽¹⁾	12	12	100	15	3	2

(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.

Through-coolant shank

Torque: Recommended clamping torque: lbs-ft (*N-m)

SPARE PARTS

Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
QC-08F-CHP, QC-1212F-CHP	SRM6X0.5-26977	P-3	SR5/16UNFTL360	P-4	-	-
QC-08X-CHP, QC-1212X-CHP	SRM6X0.5-26977	P-3	SR5/16UNFTL360	P-4	SSH4-6-TB	P-2

Q12 heads fit both the metric QC-1212 and the inch QC08 shanks

Tungaloy America, Inc.

3726 N Ventura Drive, Arlington Heights, IL 60004, U.S.A.

Inside Sales: +1-888-554-8394

Technical Support: +1-888-554-8391

Fax: +1-888-554-8392

www.tungaloy.com/us

Tungaloy Canada

432 Elgin St. Unit 3, Brantford, Ontario N3S 7P7, Canada

Phone: +1-519-758-5779 Fax: +1-519-758-5791

www.tungaloy.com/ca

Tungaloy de Mexico S.A.

C Los Arellano 113, Parque Industrial Siglo XXI

Aguascalientes, AGS, Mexico 20290

Phone: +52-449-929-5410 Fax: +52-449-929-5411

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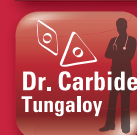


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