

SCLCR 10-3 or 103 is a 5/8" square shank and takes a fairly-common CCMT or CCGT 32.5x insert that has a good strong 80° included angle to allow turning and facing with the same holder. CCMT/CCGT inserts are often used in boring bars, the 32.5 insert size boring bars are usually available 0.5", 0.625" and 0.75" diameters.

SCLC 80 Degree rhombic neutral rake uses CC..32.5 inserts such as CCMT or CCGT 32.51 or 32.52

Kennametal - SCLCRF 103B, Right Hand, -5 Degree Lead Angle, 5/8 Inch Shank Height

Kennametal - 1094483 - Indexable Turning Toolholders | Hand of Holder: Right Hand | Rake: Neutral

Kennametal - SCLCLF 103B, Left Hand, -5 Degree Lead Angle, 5/8 Inch Shank Height

Kennametal - 1094484 - Indexable Turning Toolholders | Hand of Holder: Left Hand | Rake: Neutral

Kennametal - SCMCN 103 Neutral, -5 Degree Lead Angle, 5/8 Inch Shank Height

Kennametal - 1094501 - Indexable Turning Toolholders | Hand of Holder: Neutral | Rake: Neutral



SDJC 55 Degree diamond neutral rake uses DC..32.5 Inserts such as DCMT or DCGT 32.51 or 32.52. This is a narrow profile insert, good for getting into tight (narrow) cutting areas, neutral works well for chamfering.

Kennametal - SDJCRF 103B, Right Hand, -3 Degree Lead Angle, 5/8 Inch Shank Height

Kennametal - 1094527 - Indexable Turning Toolholders | Hand of Holder: Right Hand | Rake: Neutral

Kennametal - SDJCLF 103B, Left Hand, -3 Degree Lead Angle, 5/8 Inch Shank Height

Kennametal - 1094528 - Indexable Turning Toolholders | Hand of Holder: Left Hand | Rake: Neutral

Kennametal - SDPCN103B, Neutral, 5/8 Inch Shank Height, 5/8 Inch Shank

Kennametal - 1772115 - Indexable Turning Toolholders | Hand of Holder: Neutral | Rake: Neutral



WNMG33x size trigon shape insert. It also has the 80° included angle, so it can face and turn like a CNMG but it's smaller and has 6 cutting edges vs. four. The holder for it in a 5/8" shank would be a MWLNR 10-3 or 103. The WNMG (trigon) insert gives you pretty much the same flexibility as the CNMG for general turning and facing, but has six cutting edges instead of four and easier to get in closer to the work piece. WNMG is also often used for boring bars. I have my WNMG holder setup for aluminum with 331 inserts.

MWLN Trigon negative rake

Iscar or Seco - MWLNL 10-3W, MWLNL 10-3A, Left Hand, -5 Degree Lead Angle, 5/8 Inch Shank Height

Iscar 3601336, Seco - 56399 - Indexable Turning Toolholders | Hand of Holder: Right Hand | Rake: Negative

Iscar or Seco - MWLNR 10-3W, MWLNR 10-3A, Right Hand, -5 Degree Lead Angle, 5/8 Inch Shank Height, 5/8 Inch

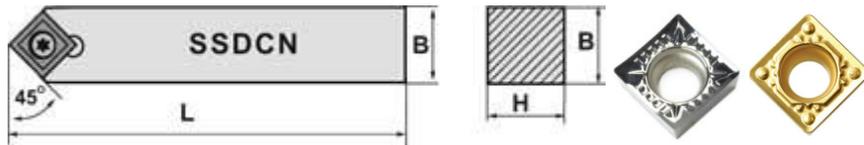
Iscar 3601332, Seco 56400 - Indexable Turning Toolholders | Hand of Holder: Left Hand | Rake: Negative



SSDCN Tool Holder SCMT SCGT square use with SCMT, SCGT SCGX 32..5. inserts, this is used primarily to cut 45 degree bevels. The Toolmex in inexpensive and works well.

SSDCN 10-3B Tool holder Toolmex Item #: 6-810-110

SSDCN Style, Neutral hand, 5/8 Inch Square Shank Toolholder, 4.50 OAL, with 45° Lead for SCxx 32.5X Inserts



**Kennametal – SCLCRF 103B Tool Holder uses CCMT or CCGT 32.51 or 32.52**



**Seco - MWLNR 10-3A Tool Holder uses WNMG 33.. inserts**



**Kennametal - SDJCRF 103B Tool Holder uses DCMT or DCGT 32.51 or 32.52**



Examples of inserts, in general for steel and tough alloys you want a coated insert (usually gold, grey or black) and the insert is usually Molded and less sharp, so CCMT 32.52 or 32.51. On softer materials you usually want a sharper positive Ground edge and usually uncoated (shiny polished surface), so CCGT 32.51. The last numeral is the nose of the insert, the lower the number the sharper the nose. Look on eBay for the inserts below in the picture. Also to make things even more confusing there is two separate naming terminologies called ISO and ANSI: see <http://www.carbidedepot.com/formulas-insert-d.htm>



## Grooving and cutoff

The standard blade type that use GTN inserts that slide in do poorly in my opinion, the blades flex too much and the insert pocket will loosen with time. I recommend an integrated blade holder like below that uses a clamp system to hold the insert. I prefer to use a 3/4" shank with an oversized holder which will be more rigid and typically allow deeper cuts. Typical RPM for cutoff is around 400-600 RPM for 1" diameter, and depends on the material. Height/alignment of the insert tip to the centerline is critical to good performance. Alternate is HSS blades, although I haven't used them. I use the Kennametal holder, I always manual feed with lubricant. Be careful as a chip can get caught under the insert and prevent cutting.



Reasonably priced and allows cutting to a radius of 0.669"

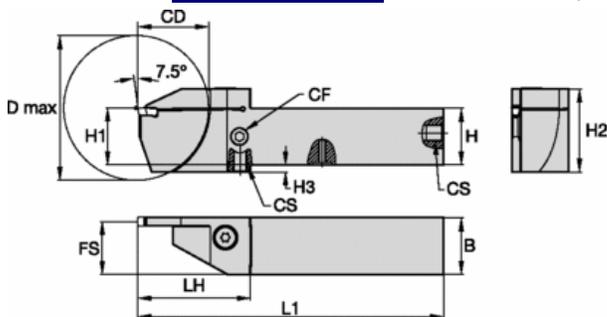
<https://www.latheinserts.com/5-8-PARTING-GROOVING-TURNING-TOOL-4310000755.htm>

<https://www.latheinserts.com/3-4-PARTING-GROOVING-TURNING-TOOL-4310000738.htm>

Expensive, but works well. Allows cutting to a depth of 0.750"

<https://www.kennametal.com/en/products/20478624/47535256/63745079/63841248/100054914/100054924/100046526.html>

Kennametal [EVSCTR120326C](#) note this is a 3/4" shank and requires an oversized holder.



## Inserts

KEN 5941073 EC030M03N00CF02 KCU25 precision molded square end CF

KEN 5941102 EG0300M03P04GUP KCU25 precision ground square end GUP

KEN 5988780 ER0300M03P00GUP KCU25 precision ground full nose radius GUP

Threading, I recommend lay down insert holders. I have been using the Iscar/Carmex type and they give very clean cuts and the inserts have been very durable. Only recommended for more rigid machine 12" swing or larger. These are only available with 3/4" shanks. MSC and Zoro are expensive but they have sales and discounts, typically 20-35%.

Carmex/Iskar External Thread, Right Hand Cut, 3/4" Shank Width x 3/4" Shank Height Indexable Threading Toolholder 5" OAL, 16ER Insert Compatibility, SE Toolholder, Series SER

<https://www.mscdirect.com/product/details/08700007>



Carmex/Iskar Internal Thread, Right Hand Cut, 5/8" Shank Width x 3/4" Shank Height Indexable Threading Toolholder 7" OAL, 16IR Insert Compatibility, SI Toolholder, Series SIR

<https://www.mscdirect.com/product/details/73244451>

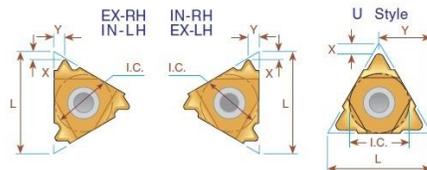


Inserts these take 16 ER AG60 for external and 16IR AG60 for internal, shop around for vendors/pricing:

<https://www.zoro.com/carmex-threading-insert-16-er-ag60-bma-16-er-ag60-bma/i/G1256507/>

<https://www.zoro.com/carmex-threading-insert-16-ir-ag60-bma-16-ir-ag60-bma/i/G1216101/>

## Partial Profile 60°

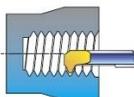


L	I.C. in	Pitch Range mm TPI	EXTERNAL Ordering Code		INTERNAL Ordering Code		X	Y
			Right Hand	Left Hand	Right Hand	Left Hand		
6	5/32	0.5 -1.25 48-20	ULTRA MINIATURE		*06 IR A60	*06 IL A60	0.6	0.6
8	3/16	0.5 -1.5 48-16	MINIATURE		*08 IR A60	*08 IL A60	0.6	0.7
8U	3/16U	1.75-2.0 14-11	"U" MINIATURE		*08 IR/L U60		0.8	4.0
11	1/4	0.5 -1.5 48-16	11 ER A60	11 EL A60	11 IR A60	11 IL A60	0.8	0.9
16	3/8	0.5 -1.5 48-16	16 ER A60	16 EL A60	16 IR A60	16 IL A60	0.8	0.9
16	3/8	1.75-3.0 14- 8	16 ER G60	16 EL G60	16 IR G60	16 IL G60	1.2	1.7
16	3/8	0.5 -3.0 48- 8	16 ER AG60	16 EL AG60	16 IR AG60	16 IL AG60	1.2	1.7
22	1/2	3.5 -5.0 7- 5	22 ER N60	22 EL N60	22 IR N60	22 IL N60	1.7	2.5
22U	1/2U	5.5 -8.0 4.5- 3.25	22U E/R/L U60				0.6	11.0
27	5/8	5.5 -6.0 4.5- 4	27 ER Q60	27 EL Q60	27 IR Q60	27 IL Q60	2.1	3.1
27U	5/8U	6.5 -9.0 4- 2.75	27U E/R/L U60				1.0	13.7

Order example: 16 ER G60 MXC

For small bore threading see page 146

\* Available only in BXC grade



[https://www.mscdirect.com/browse/tn/Indexable-Cutting-Tools/Laydown-Threading-](https://www.mscdirect.com/browse/tn/Indexable-Cutting-Tools/Laydown-Threading-Inserts?searchterm=carmex+16ER&navid=4287924162#navid=4287924162+4288243620&searchterm=carmex+16ER)

[Inserts?searchterm=carmex+16ER&navid=4287924162#navid=4287924162+4288243620&searchterm=carmex+16ER](https://www.mscdirect.com/browse/tn/Indexable-Cutting-Tools/Laydown-Threading-Inserts?searchterm=carmex+16ER&navid=4287924162#navid=4287924162+4288243620&searchterm=carmex+16ER)

[https://www.mscdirect.com/browse/tn/Indexable-Cutting-Tools/Laydown-Threading-](https://www.mscdirect.com/browse/tn/Indexable-Cutting-Tools/Laydown-Threading-Inserts?searchterm=carmex+16IR&navid=4287924162#navid=4287924162+4288243620&searchterm=carmex+16IR)

[Inserts?searchterm=carmex+16IR&navid=4287924162#navid=4287924162+4288243620&searchterm=carmex+16IR](https://www.mscdirect.com/browse/tn/Indexable-Cutting-Tools/Laydown-Threading-Inserts?searchterm=carmex+16IR&navid=4287924162#navid=4287924162+4288243620&searchterm=carmex+16IR)

Vendors:

<http://www.carbidedepot.com/Default.aspx>

<http://www.toolcribdepottoo.com/webshop/asp/home.asp>

[http://www.toolcribdepottoo.com/webshop/asp/toolholders\\_index.asp](http://www.toolcribdepottoo.com/webshop/asp/toolholders_index.asp)

<http://www.jtsmach.com/store-1/>

<https://www.kbctools.com/>

<https://www.arwarnerco.com/Default.asp>

[https://www.latheinserts.com/TURNING\\_c137.htm](https://www.latheinserts.com/TURNING_c137.htm)