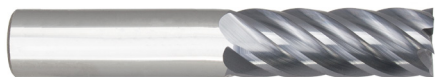


NIAGARA CUTTER™ PRODUCT SUMMARY

SMOOTHER, FASTER, STRONGER MULTI FLUTE

HIGH SPEED OPTIMIZED ROUGHING

The Niagara Cutter™ Multi Flute range of products is now expanding to include sizes down to 1/8" diameter, necked versions, 6-flute ball nose configurations and even a **new chip splitter design**. With these additions, the product family's versatility has reached new heights in high speed side milling, contour milling and optimized roughing applications.



SQUARE END (S)



RADIUS (SNR)



BALL NOSE (SB)



NECKED BALL NOSE (SBN)



NEW! CHIP SPLITTER (SCS)

RANGE ADDITION OVERVIEW

S638/S638R - Square & Radius

- 2 and 2.5 x D flute length (.1250" – .3125")
- Cylindrical shank, dead sharp and radius (.010", .015" & .030")

SN638/SN638R - Necked Series

- 2 x D flute length and 4 x D reach length (.375" – 1.000")
- Cylindrical shank, standard aerospace radii (.015", .030", .060", .120", & .250")

SB638/SBN638 - Ball Nose Series

- 1 x D flute length and approx. 2.5 x D flute length
- Necked version, 1 x D flute length, 3 x D reach length
- Cylindrical shank (.250" – 1.000")

SCS638/SCS638R, SCS738R, SCS938R: Chip Splitter

- Approx. 3.2 x D flute length
- Cylindrical shank (.250" – 1.000")

S638 (6-flute)

- S638/S638R
- SB638/SBN638
- SN638/SN638R
- SCS638/SCS638R

S738 (7-flute)

- S738/S738R
- SCS738

S938 (9-flute)

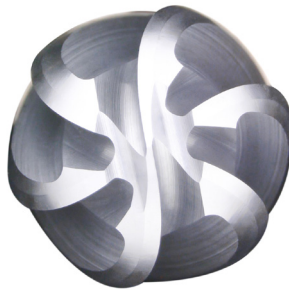
- S938/S938R
- SCS938R



INDUSTRY APPLICATION

- Aerospace:** Many aerospace components with deep pockets, including wing spars and side a body parts, are made from large castings that require an extensive amount of material to be removed and optimized roughing with multi flute tools is the preferred method for removing this material. The SCS638/SCS638R, SCS738 and SCS938 are well suited for these types of applications by offering flutes lengths of approx. 3.2 x D as well as incorporating an advanced chip splitter design. This chip splitter adds chip removal in long-reach/deep pocking applications by breaking up chips into smaller more manageable pieces, increasing process reliability.
- Medical:** Complex 3D medical implants can now be machined more efficiently by utilizing the new SB638/SBN638 ball nose geometry. With its unique tip geometry and advanced gashing features, all 6 teeth can now be utilized at shallower depths of cut, thus increasing productivity and surface finish quality.
- General Engineering:** Optimized roughing is being utilized across a wide range of applications and materials. This family of products offers a complete range of end mills to help customers increase productivity throughout all industrial segments.

MATERIAL GROUPS	
steel < 450 N/mm ²	●
450 < 700 N/mm ²	●
700 < 1200 N/mm ²	●
Hardened steel	○
Stainless steel	●
Stainless steel	●
Cast Iron	●
Cast Iron	●
Aluminium	○
Copper Alloys	○
Fe based super alloys	●
CO-based super alloys	●
Ni-based super alloys	●
Titanium alloys	●
Plastic	○
Graphite	○



SBN638 - END



NIAGARA CUTTER™ MULTI FLUTE

PRODUCT SUMMARY

Focus on **ISO M, P, S** and **K** materials including **stainless steel, Inconel** and **titanium** (the black circles indicate that this is the preferred application area).

FEATURES	ADVANTAGES	BENEFITS	IMPACT
Chip Splitters	<ul style="list-style-type: none"> Reduced chip size decreases the possibility of re-cutting chips, causing premature tool failure 	<ul style="list-style-type: none"> Increase in chip evacuation in deep pockets Aids in chip disposal through the milling machine 	<ul style="list-style-type: none"> How important is it to increase process reliability in deep pocketing applications?
Eccentric O.D. relief	<ul style="list-style-type: none"> Stronger cutting edge 	<ul style="list-style-type: none"> Longer tool life 	<ul style="list-style-type: none"> What benefit do you see in maximizing the life of a tool?
Variable indexing	<ul style="list-style-type: none"> Reduce Harmonics 	<ul style="list-style-type: none"> Provides smoother cutting Improved surface finish 	<ul style="list-style-type: none"> Is maintaining consistent surface finishes important to your operation?
AlTiN coating	<ul style="list-style-type: none"> High heat and abrasion resistant 	<ul style="list-style-type: none"> Long and predictable tool life 	<ul style="list-style-type: none"> During production, how important is it to have repeatable tool life?

