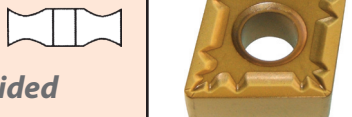
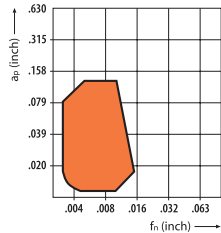


# Technical Information - Turning

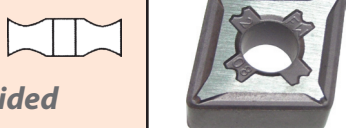
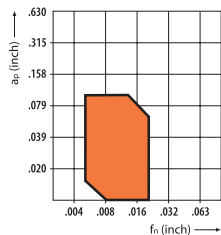
## Geometries for Turning

**-22**  
*Negative - Double Sided*

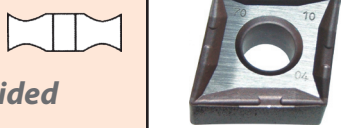
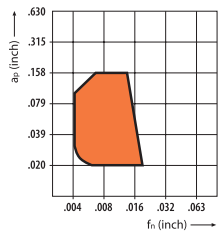
Geometry for finish turning, producing smooth, accurate surfaces. Very good chip control, especially at low depths of cut.

**-FW**  
*Negative - Double Sided*

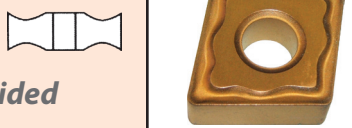
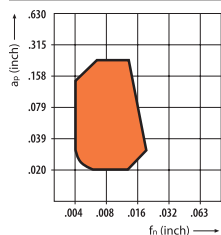
Wiper geometry for finishing when good surface finish needs to be achieved with high feed rates. First choice for high performance finishing.

**-4**  
*Negative - Double Sided*

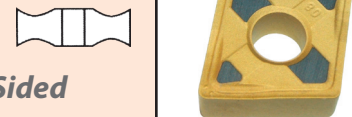
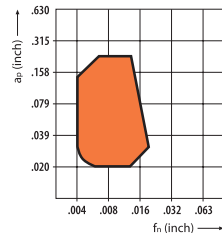
Semi-finishing geometry for light to medium-duty steel machining. Reduced back forces result from adjusted inclination angle, therefore particularly well-suited for positive, vibration-prone parts.

**-48**  
*Negative - Double Sided*

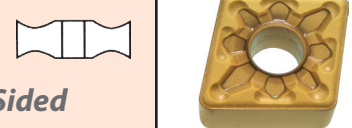
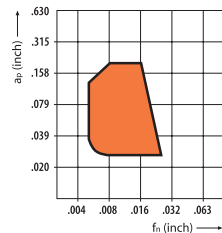
For medium-duty turning operations. Soft-cutting chipbreaker geometry. Used for an advantage in applications producing varying chip sections, e.g. profile turning (copy turning). Good dimensional accuracy. Ideally suitable for soft steel materials and stainless steels.

**-AP**  
*Negative - Double Sided*

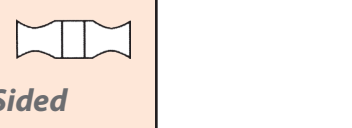
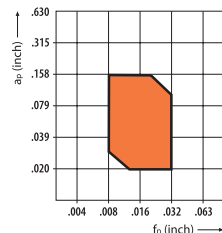
Geometry specially designed for near-net shape turning with low depths of cut and medium feeds in batch and mass production. Best proven on rolled or drawn components due to stabilized cutting edge. Also suitable for parts with casting or forging skin. Good chip control and chip evacuation ensured by optimized chip forming elements and corrugated cutting edges, with a focus on unalloyed or low alloyed steels with low or medium tensile strength.

**-49**  
*Negative - Double Sided*

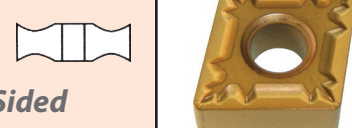
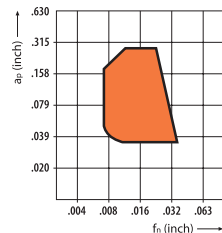
Geometry for medium to rough turning. Outstanding chip control due to specially configured chipbreaker element in corner area. Good chip forming even with low depths of cut.

**-MW**  
*Negative - Double Sided*

Wiper geometry for light to medium turning with high feed rates. Proven experience: Select feed twice as high as with edges with full corner radii to produce same surface finish.

**-5**  
*Negative - Double Sided*

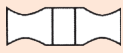

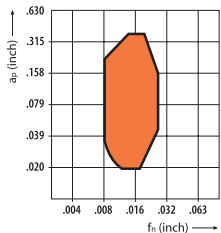



Geometry with wide range of applications from medium-duty to roughing operations. Outstanding chip control. High edge strength, hence suitable for interrupted cuts, forging skin or scale, as well as steel. Preferred geometry for all cast iron materials such as gray, malleable, and nodular cast iron.

# Technical Information - Turning



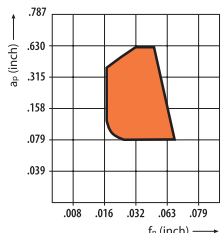
## Geometries for Turning

**-SL**  
*Negative - Double Sided*

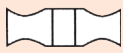

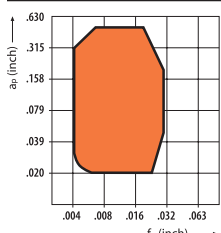
For medium to light roughing of steels and difficult-to-machine high alloy titanium and aluminum materials. High strength to deal with heavy chip deformation.

**-8**  
*Negative - Single Sided*

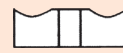
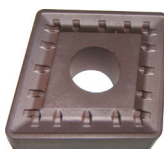
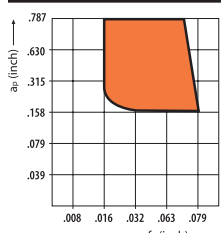
Very stable cutting edge geometry for heaviest chip sections and highest metal removal rates. Wide chip control range. Also used for interrupted cut operations and applications involving high cutting edge loading. Depths of cut up to .630 inch, feeds up to .063 inch.

**-SM**  
*Negative - Double Sided*

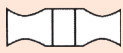

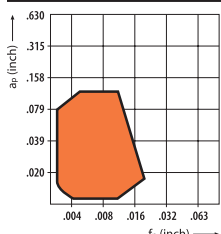
For medium duty machining of tough work materials, above all chrome- and nickel-base alloys. Minimizes tendency for these materials to adhere to the insert.

**-SR**  
*Negative - Single Sided*

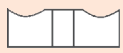

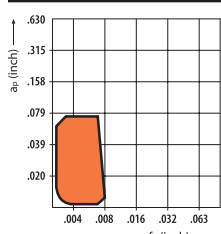
Extremely strong cutting edge geometry for highest loads in roughing with depths of cut up to .866 inch and feeds up to .079 inch per revolution, depending on inscribed circle and cutting edge radius.

**-CT**  
*Negative - Double Sided*



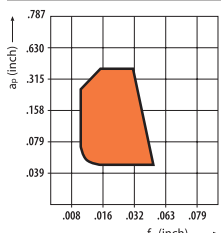
Geometry -CT is specially designed for outward copy turning. Where existing geometries produce long chips, the unique distribution of the cut with this geometry results in good chip control.

**-2**  
*Positive - Single Sided*

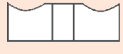

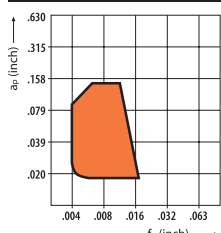
Sharp-edged geometry for finish machining. Good chip control with very small chip sections. Turning with high dimensional accuracy and smooth surface finishes. Inserts with .008 inch corner radius precision-ground on all sides.

**-65**  
*Negative - Single Sided*

Rough-turning geometry with chip control capability extending down into the medium-duty range. Positive rake angle enables lower cutting forces, thus reducing power requirements. Also used on low-tensile and stainless steels.

**-41**  
*Positive - Single Sided*

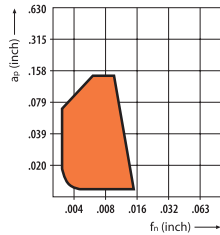
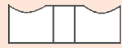
Preferred cutting edge geometry for light to medium-duty machining operations. Low cutting forces and reduced power requirements due to positive rake angle. Good chip control over a wide range. Also used on short-chipping cast iron materials.

# Technical Information - Turning

## Geometries for Turning

### -MU

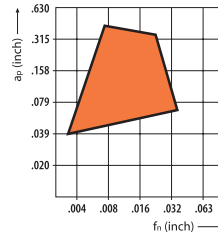
*Positive - Single Sided*



The designation -MU stands for medium, universal turning, and includes both rough machining with medium chip loads and finish machining with low chip loads.

### -AL 1

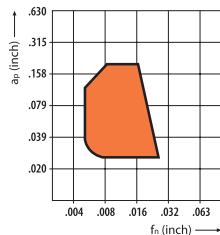
*Positive - Single Sided*



Geometry WIDIA AL 1 can be used for turning cast aluminum, light alloys, non-ferrous metals, high-melting metals, plastics, glass fiber reinforced plastics, laminated board, carbon, and fine ceramics.

### ...MT..

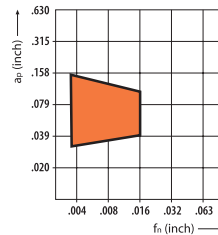
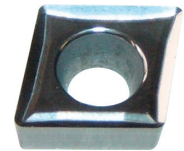
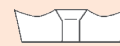
*Positive - Single Sided*



Supplementary geometry with stabilized cutting edge for medium chip sections. Particularly effective in operations that make high demands on toughness or involve interrupted cuts.

### -AL 2

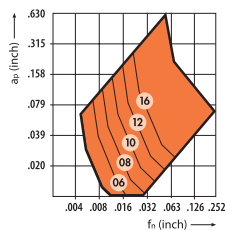
*Positive - Single Sided*



The strength of geometry WIDIA AL 2 is in the machining of generally difficult-to-machine aluminum alloys with low Si contents, wrought alloys, and extrusions. WIDIA AL2 achieves optimum results even on difficult-to-machine materials.

### RCMT../RCMX..

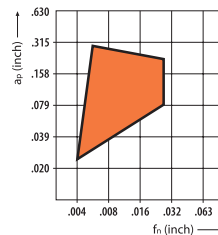
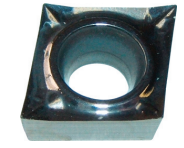
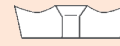
*Positive - Round Inserts*



Round RCMT/RCMX inserts in diameters from .236 - 1.260 inch for straight turning, facing, and profile turning. Mainly used at small depths of cut and high feeds up to about 0.1 x D. See diagram for range of good chip control for each insert size.

### -AL 3

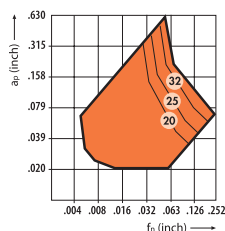
*Positive - Single Sided*



New, even more positive geometry for cost-effective machining of aluminum, non-ferrous metals, and plastics. The very positive chipbreaker and extremely sharp cutting edges result in optimum part finishes together with low cutting forces and short chips. Even finishing of steel, stainless steel, and gray iron is possible in conjunction with the coated grade HCK10.

### RCMT..-43

*Positive - Round Inserts*



The new -43 geometry is designed for use in turning, facing, and contouring, including both roughing and finishing. It is ideal for machining alloy, carbon, and stainless steels. Applications of this free-cutting geometry are in the following ranges: feeds  $f \leq 0.1 \times D$ , depths of cut  $a_p \leq 0.4 \times D$ .