

### Insert Geometries and Toolholders

ISCAR offers 3 advanced ceramic grades for turning hardened steel, cast iron and other difficult-to-machine materials.

### Advantages :

All three grades can be used under dry conditions to save coolant cost and improve tool life. The ceramic inserts have a high degree of hardness, low thermal conductivity and relatively low fracture toughness, in comparison to carbide grades. The hardness and lower thermal conductivity enable higher cutting speeds while maintaining excellent tool life.

### Ceramic Grades :

**NEW IN11** White ceramics, mainly composed of Al<sub>2</sub>O<sub>3</sub> and ZrO<sub>2</sub> oxides.

**NEW IN22** Black ceramics, composed of Al<sub>2</sub>O<sub>3</sub> and TiCN with a small percentage of other additives.

**NEW IN23** Black ceramics, composed of Al<sub>2</sub>O<sub>3</sub> and TiC with a small percentage of other additives.

### NEW IN11

- For high speed finishing of cast iron and steel

The ZrO<sub>2</sub> has improved toughness and wear resistance when used with the following recommended cutting conditions:

Workpiece	Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)	Coolant
Cast Iron	200-600	0.1-0.3	1-4	Dry
Steel	200-400	0.1-0.3	1-4	Dry



# ISO TURN

## Ceramic Grades IN22 and IN23

### NEW IN22

- For turning hardened steel and difficult-to-cut material
- Machining steel, tool steel, hardened steel, chilled cast iron or high chromium steel at relatively high speed.
- Light roughing to finishing of chilled cast iron.

Workpiece	Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)	Coolant
Hardened Steel HRC>50	50-150	0.05-0.12	0.2-1.5	Dry
High Speed Steel	30-200	0.05-0.20	0.2-1.5	Dry
Chilled Cast Iron	30-200	0.05-0.20	0.2-1.5	Dry
Tool Steel	100-300	0.05-0.30	1.0-3.0	Dry

### NEW IN23

- For Semi-finishing and finishing of cast iron.
- Light interrupted turning of gray cast iron and nodular cast iron.
- For finishing gray cast iron.

Workpiece	Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)	Coolant
Gray Cast Iron	200-600	0.1-0.4	1-4	Dry
Nodular Cast Iron	100-400	0.05-0.2	1-3	Dry



# ISO TURN

## Ceramic Inserts

### Insert Geometries

Ceramic inserts are available with various geometries as shown in the ISCAR Ceramic Cutting Tool catalog. Most of the inserts are flat, double sided, and with or without a clamping hole. Cutting edge configurations are modified with a small negative land to improve strength and fracture resistance.

### Toolholders

ISCAR offers a wide range of toolholders for double-side flat ceramic inserts without holes. The inserts with holes can be clamped on our regular toolholders. All holders have a shim to protect the holder body in case of insert damage. The upper clamp insures strong and secure clamping. The holders are available in various shapes and sizes.

