



ISCAR'S MACHINING SOLUTIONS FOR **ALUMINUM WHEELS**





Aluminum Wheel Machining

Advanced technological solutions for machining aluminum wheels

The aluminum wheels industry is rapidly expanding and shows substantial growth rates due to the ongoing demand of new vehicles. The price of aluminum wheels is influenced by raw material and manufacturing technology. ISCAR provides cost effective solutions for increased productivity.



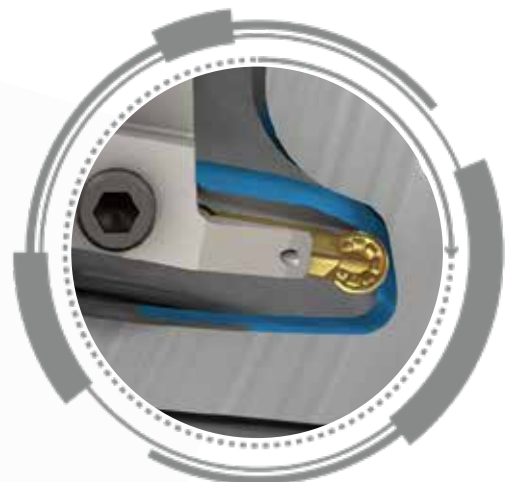


Aluminum Wheel Machining

To machine aluminum wheels effectively the following attributes should be accounted for:

- High cutting speeds**
- Hard cutting materials**
- High surface quality**
- High cutting forces**

ISCAR's advanced tools provide the optimal solution for OD, ID, boring, facing, undercutting, drilling valves, lugs and center holes.



DTF Quick Change Toolholders

Aluminum wheel manufacturers request to shorten production time with tools which have a longer life span. ISCAR provides the utmost solution for automatic machining stations where stable tool life is a prerequisite.

ISCAR's DTF tools sustain user friendly systems which enable the squeezing and tightening of the heads to the tool shank with a single screw.

DTF tools variants can be used with ISCAR GRIP and ISO insert families.



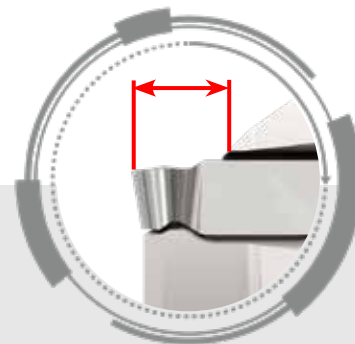
FSPA fix location system



Common inserts within the aluminum wheels industry can be problematic with reference to ID back turning as the inserts tend to slide out of the tool pocket during the machining process. To overcome this problem ISCAR has developed FSPA inserts with a front stopper which protects the insert in back turning operations. The front stopper eliminates extraction during the machining process.



In the case of insert edge breakage the back side of the insert can still be used.



The upper jaw of the tool is not eroded or damaged due to the distance between the cutting edge of the insert and the tool's upper jaw.



Aluminum Wheel Machining

PCD

PCD inserts are highly recommended to assure a stable machining process under higher cutting conditions for optimal results.

ISCAR offers a large variety of **PCD** inserts such as ISO 35°, full radius inserts with or without chipbreakers for both roughing and finishing applications.



VNGU – 4 cutting edges

The best cost saving solution for machining aluminum wheels.

The **VNGU** ISO 35° is a rhombic 4 cutting edged insert with 7° positive flank, very positive rake angle and sharp cutting edge, polished specifically for wheel machining.

All the tools feature high pressure coolant systems which enable increasing tool life, improving chip control and increasing productivity.

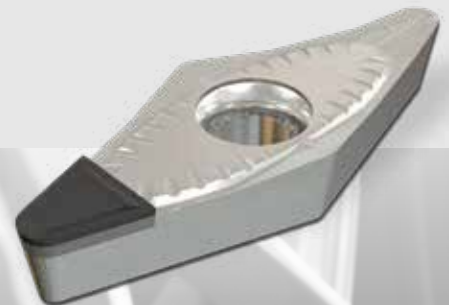


Bright facing

PCD inserts with special edge preparation, are designed specifically to avoid porosity and burr problems after painting.



Negative rake



Economical Turning **Aluminum Master**

**Double Sided Positive Turning
Inserts for Aluminum**



ALUPTURN
POSITIVE DOUBLE SIDED



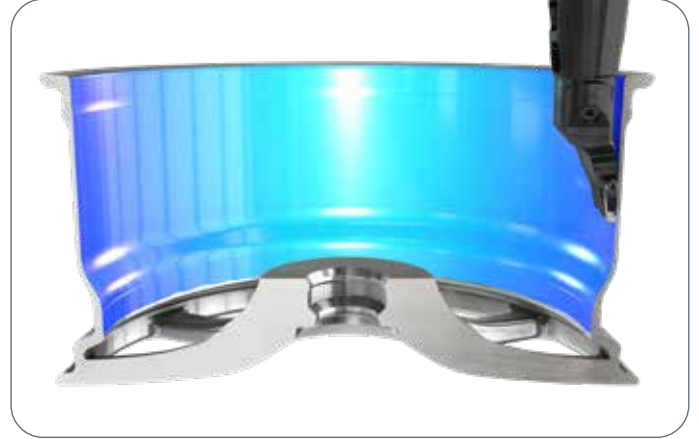
Machining Areas

Machining areas (Turn-Groove operations) OP10 & OP20

OD Groove-Turn



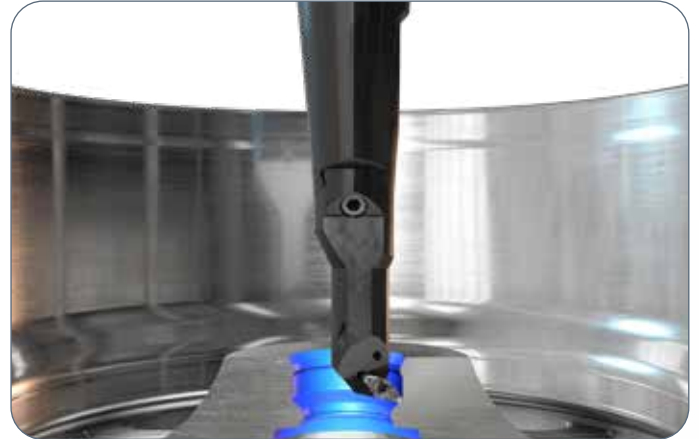
ID Groove-Turn



Undercutting Groove-Turn



Bore Turning

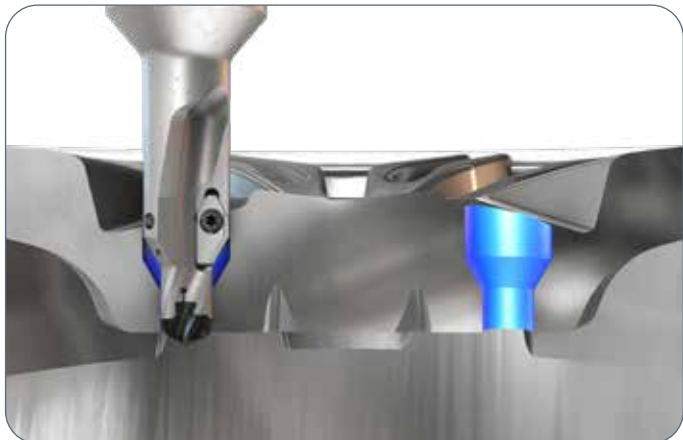


Bright Facing

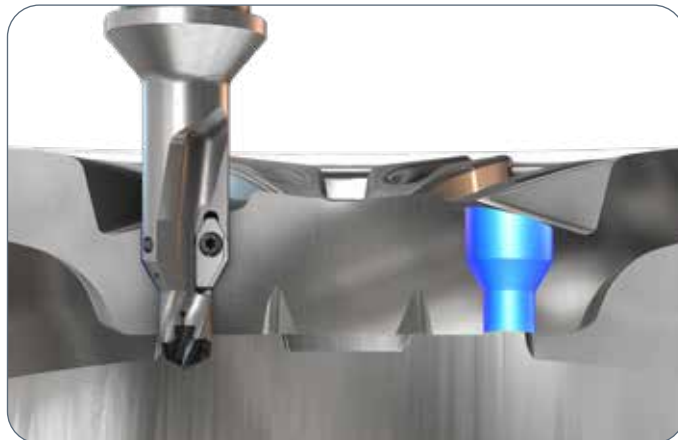


Machining areas (Drilling operations) OP30

Lug Hole Drilling



Lug Hole Chamfering



Valve Hole Drilling



Valve Hole Chamfering



Valve Hole Back Chamfering





ISCAR Tools Options

DTF system

The **DTF** system is an interchangeable tool system which provides quick replaceability of heads on the same shank assuring very high accuracy. Designed with a dovetail face contact area for maximum stability and rigidity.



Integral tools

Available in square and round shanks for a wide range of machine types.





ISCAR Tools Options

DTF system

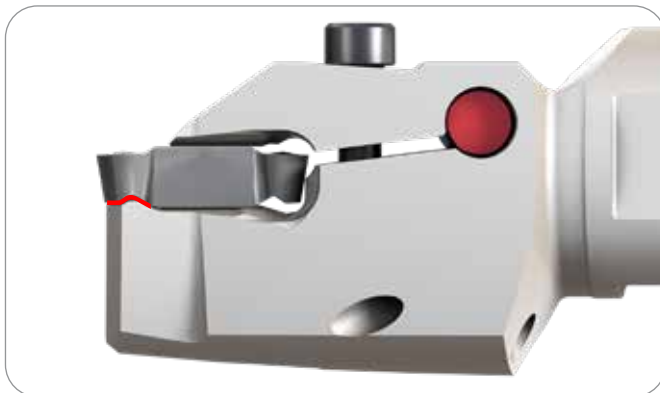
The **DTF** system is comprised of interchangeable heads which fit on the same shank for achieving accurate machining results. Designed with a dovetail face contact area for maximum stability and rigidity. **DTF** tools are suitable for machining wheels inclusively with emphasis on ID, OD, facing and boring operations. Tightening the tool head is performed by using a single clamping screw which also assures easy head replacement. Ideal for axial and radial forces with ultimate face contact. The tools are suitable for emulsion and MQL systems.



Advantages

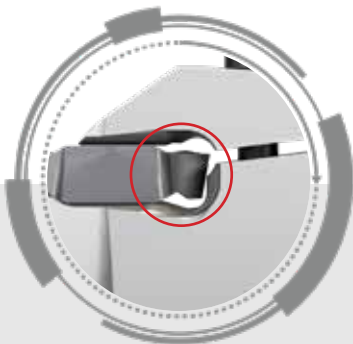
FSPA System

Reinforced insert able to work under high cutting conditions. Front prism protects the insert from extraction even in back turning.

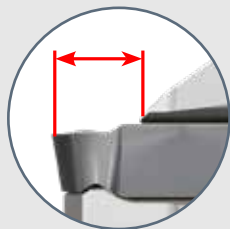
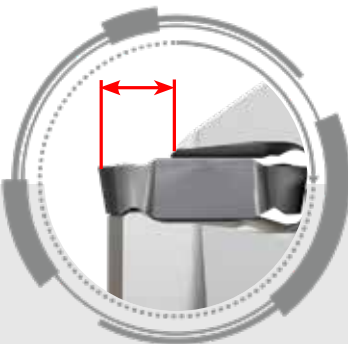


Front Prismatic Stopper

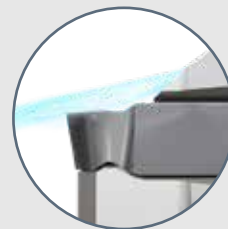
FSPA Clamping System



In the case of edge breakage, the back end of the insert can be used as there is no rear stopper.



The distance from the cutting edge to the upper jaw is increased to prevent the upper jaw from being eroded from the chips.



Coolant outlet from the upper jaw for better chip evacuation and tool life.



ISCAR Tool Options

DTF Tool Assembly

A user friendly system enables changing the heads quickly with minimal setup time.

1. Clamp the head into the shank



2. Insert the screw in the head



3. Tighten the screw with a key provided with the tool or with a torque key (optimal torque 40 Nm)



4. Put the insert in the pocket



5. Tighten the screw with the key provided or with torque key (optimal torque 10-11Nm)



DTF Coolant Supply

Machining aluminum demands lowering the temperature during the machining stages to assure good surface quality. **DTF** tools deploy pinpointed coolant to the cutting edge for optimal machining performance and productivity.

Advantages:

- Coolant holes designed for MQL and emulsion coolant
- Coolant outlet on the upper jaw close to the cutting edge of the insert





ISCAR Tool Range

PCD range

ISCAR offers **PCD** inserts for roughing, semi-finishing and finishing, suitable for interrupted cutting. ISCAR's **PCD** inserts are offered with a full radius, 35° ISO with or without chipbreakers for complete wheel machining.



Advantages:

- Increase productivity
- Suitable for automatic machine lines assuring stable processing
- Longer tool life and more consistent results
- Better surface finish (for high surface finish, natural diamond should be used)
- Interrupted-cut machining
- Better ratio of surface finish to cutting forces and metal removal rates
- Lower cutting forces
- Higher cutting speeds, feed rates and cutting depths
- Roughing and finishing cycles in one operation
- Closer dimensional tolerances



Drill Range

ISCAR Offers 3 Drill Types:

1. Solid carbide
2. Indexable inserts
3. PCD drills

ISCAR offers drills for center, lug, valve holes and back chamfering.

Advantages:

Solid carbide

- Optional with DLC coating
- Regrinding option

Indexable inserts

- Lower price compared to solid carbide tools
- Regrinding possibility
- Optional with DLC coating
- All insert with sharp cutting edges are peripherally ground with a polished rake assuring an accurate cut while preventing chip adhesion

PCD drill

- Very high tool life compared to solid carbide and indexable inserts
- High machining conditions
- Excellent surface finish
- Regrinding option





ISCAR Grades

IC20 - An uncoated carbide grade. For machining Aluminum and other nonferrous materials at medium to high cutting speeds. Suitable for high temperature and titanium alloys machining at low cutting speeds.

IC04 - A very hard uncoated submicron carbide grade. For machining titanium and high temperature alloys at medium to relatively high cutting speeds. Suitable for aluminum and other nonferrous materials.

IC07 - A hard uncoated submicron carbide grade. For machining titanium, high temperature alloys and aluminum alloys at medium to high cutting speeds.

ID5 - A PCD brazed tip, suitable for machining aluminum and other nonferrous materials at very high cutting speeds.

IC1520 - A DLC coated grade. For machining Aluminum at medium to high cutting speeds for increased tool life.





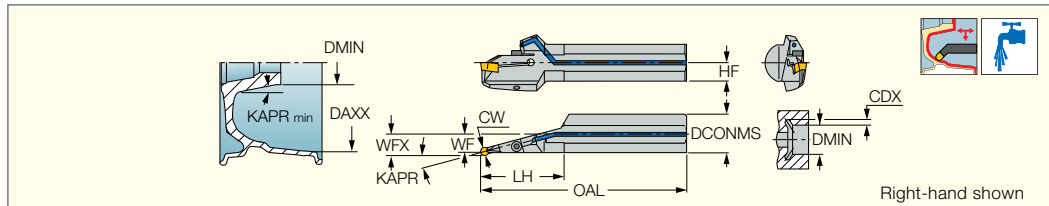
Tools for Aluminum Wheels

CUTGRIP

GHIUR/L-C-A (15° & 27.5°)

Bars

Internal Grooving and Turning Bars for Machining Aluminum Wheels



M E T R I C											
Designation	CW	DCONMS	DMIN	CDX ⁽¹⁾	OAL	LH	WFX	WF	HF	KAPR ⁽²⁾	
GHIUR/L 40C-15A-6	6.00	40.00	160.00	-	320.00	83.0	21.20	19.0	18.0	15.0	
GHIUR/L 40C-15A-8	8.00	40.00	160.00	0.00 ⁽³⁾	320.00	83.0	21.00	18.0	18.0	15.0	
GHIUR 50C-15A-8	8.00	50.00	100.00	0.00 ⁽⁴⁾	350.00	83.0	26.00	23.0	23.0	15.0	
GHIUR/L 40C-27.5A-6	6.00	40.00	90.00	0.60 ⁽⁵⁾	320.00	80.0	25.10	23.5	18.0	27.5	
GHIUR/L 50C-27.5A-8	8.00	50.00	120.00	1.80 ⁽⁵⁾	350.00	82.0	30.20	28.0	23.0	27.5	

- Upper jaw with hard coating to sustain chip deflection

⁽¹⁾ Dimension for minimum bore diameter




⁽²⁾ Tool cutting edge angle

⁽³⁾ For bore diameter D>200, CDX is 0.5 mm

⁽⁴⁾ For bore diameter D>200, CDX is 1.4 mm

⁽⁵⁾ For bore diameter D>200, CDX is 4.0 mm

Spare Parts

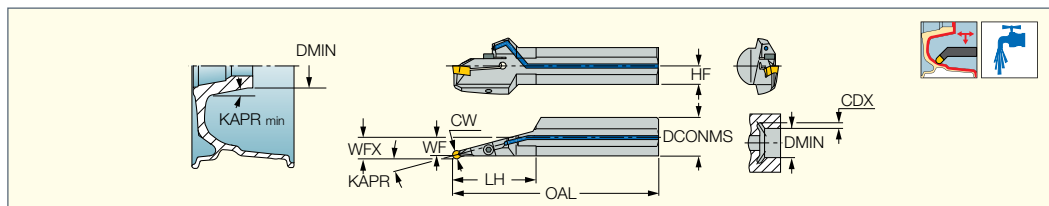
Designation			
GHIUR/L 40C-15A-6	SR M5X20 DIN912	HW 4.0	PL 40
GHIUR/L 40C-15A-8	SR M6X20 DIN912	HW 5.0	PL 40
GHIUR 50C-15A-8	SR M6X25 DIN912	HW 5.0	PL 40
GHIUR/L 40C-27.5A-6	SR M6X25 DIN912	HW 5.0	PL 40
GHIUR 40C-27.5A-6	SR M6X20 DIN912	HW 5.0	PL 40
GHIUR/L 50C-27.5A-8	SR M6X25 DIN912	HW 5.0	PL 40




CUTGRIP

GHIUR/L-C-A (15° & 27.5°)

Bars

Internal Grooving and Turning Bars for Machining Aluminum Wheels



I N C H													
Designation	CW	DCONMS	DMIN	CDX ⁽¹⁾	OAL	LH	WFX	WF	HF	KAPR ⁽²⁾			
GHIUR/L 50.8C-15A-8	.315	2.000	3.930	.000 ⁽³⁾	14.000	3.150	1.020	.91	.906	15.0	SR M6X25 DIN912	HW 5.0	PL 150
GHIUR 50.8C-27.5A-8	.315	2.000	4.720	.070 ⁽⁴⁾	14.000	3.150	1.190	1.10	.906	27.5	SR M6X25 DIN912	HW 5.0	PL 150

- Upper jaw with hard coating to sustain chip deflection

⁽¹⁾ Dimension for minimum bore diameter

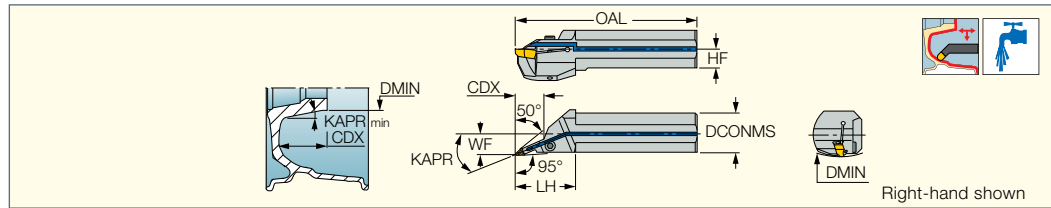
⁽²⁾ Tool cutting edge angle

⁽³⁾ For bore diameter D>7.87, CDX is .055"

⁽⁴⁾ For bore diameter D>7.87, CDX is .157"

CUTGRIP

GHIUR/L-C-22.5A-8V
22.5° Approach Angle Bars for Facing and Internal Machining



M E T R I C										
Designation	CW	DCONMS	DMIN	CDX	OAL	LH	HF	WF	KAPR ⁽¹⁾	
GHIUR/L 40C-22.5A-8V	8.00	40.00	300.00	28.50	250.00	60.0	18.0	21.00	22.5	

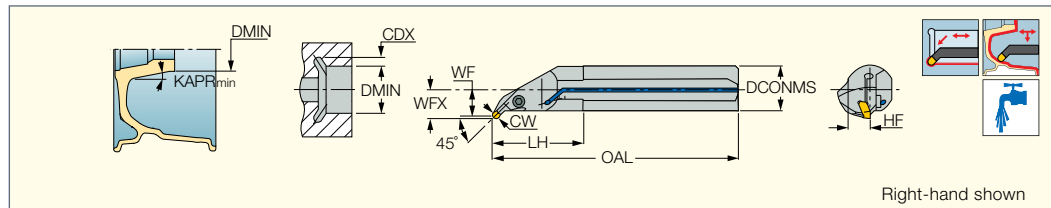
- Upper jaw with hard coating to sustain chip deflection
- ⁽¹⁾ Tool cutting edge angle

Spare Parts

Designation			
GHIUR/L-C-22.5A-8V	SR M6X20 DIN912	HW 5.0	PL 40

CUTGRIP

GHIUR/L-UC
45° Undercutting Bars for Internal Turning Aluminum Wheels

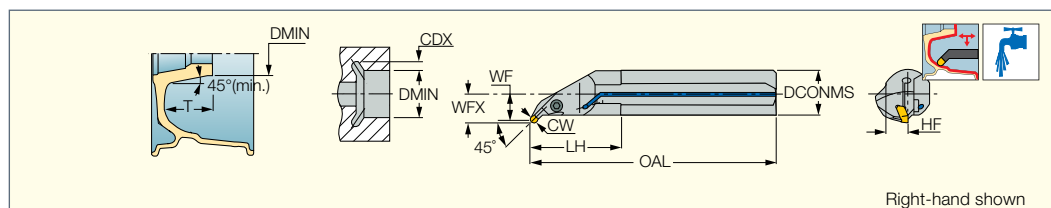


M E T R I C													
Designation	CW	DCONMS	DMIN	CDX ⁽¹⁾	OAL	LH	WFX	WF	HF				
GHIUR/L 40UC-6	6.00	40.00	70.00	0.00 ⁽²⁾	350.00	75.0	23.80	24.7	18.0	SR M6X20 DIN912	HW 5.0	PL 40	
GHIUR/L 50UC-6	6.00	50.00	78.00	0.00 ⁽³⁾	350.00	75.0	28.80	29.7	23.0	SR M6X20 DIN912	HW 5.0	PL 40	
GHIUR/L 40UC-8	8.00	40.00	68.00	0.00 ⁽⁴⁾	350.00	79.0	28.80	26.0	18.0	SR M6X20 DIN912	HW 5.0	PL 40	
GHIUR/L 50UC-8	8.00	50.00	58.00	0.00 ⁽⁵⁾	350.00	80.0	30.20	31.4	23.0	SR M6X20 DIN912	HW 5.0	PL 40	

- ⁽¹⁾ Cutting depth maximum
- ⁽²⁾ For bore diameter more than 200, CDX is 1.3 mm
- ⁽³⁾ For bore diameter more than 200, CDX is 2.0 mm
- ⁽⁴⁾ For bore diameter more than 200, CDX is 2.8 mm
- ⁽⁵⁾ For bore diameter more than 200, CDX is 6.0 mm

CUTGRIP

GHIUR/L-UC
45° Undercutting Bars for Internal Turning of Aluminum Wheels



I N C H													
Designation	CW	DCONMS	DMIN	CDX ⁽²⁾	OAL	LH	WFX	WF	HF				
GHIUR/L 50.8UC-6	.236	2.000	2.360	.000 ⁽³⁾	14.000	2.95	1.250	.00	.906	SR M6X16 DIN912	SR M6X8 DIN916	HW 5.0	PL 40
GHIUR/L 38.1UC-8A ⁽¹⁾	.315	1.500	2.680	.000 ⁽⁴⁾	14.000	2.50	1.020	.98	.669	SR M6X20 DIN912	SR M6X8 DIN916	HW 5.0	PL 150

- ⁽¹⁾ Upper jaw with hard coating to sustain chip deflection
- ⁽²⁾ Dimension for minimum bore diameter
- ⁽³⁾ For bore diameter more than 7.87, Tmax is .051"
- ⁽⁴⁾ For bore diameter more than 7.87, Tmax is .13"

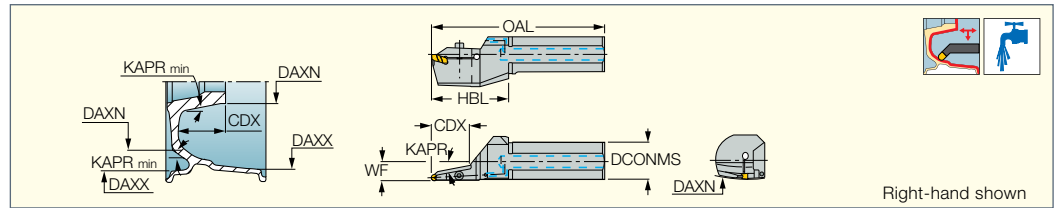


Tools for Aluminum Wheels

CUTGRIP

GHIFR/L-A

8° / 10° Approach Angle Bars for Facing and Internal Machining



Right-hand shown

M E T R I C

Designation	CW	DAXN ⁽¹⁾	DAXX ⁽²⁾	OAL	HBL	CDX	WF	KAPR ⁽³⁾	DCONMS			
GHIFR/L 40C-10A-6	6.00	300.00	360.0	300.00	80.0	40.00	19.30	10.0	40.00	SR M5X20 DIN912	HW 4.0	PL 40
GHIFR/L 40C-8A-8	8.00	300.00	360.0	320.00	100.0	70.00	19.50	8.0	40.00	SR M6X25 DIN912	HW 5.0	PL 40

• Upper jaw with hard coating to sustain chip deflection

⁽¹⁾ Minimum axial grooving diameter

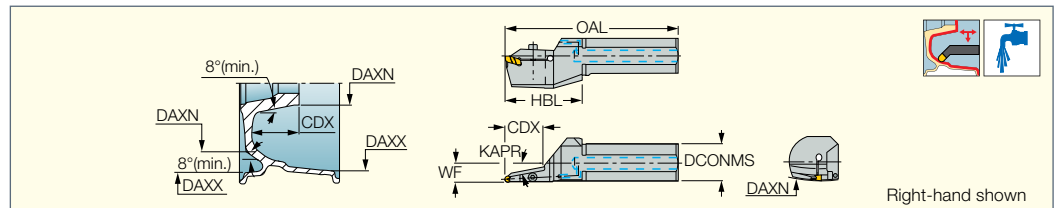
⁽²⁾ Maximum axial grooving diameter

⁽³⁾ Tool cutting edge angle

CUTGRIP

GHIFR-A

8° / 10° Approach Angle Bars for Facing and Internal Machining



Right-hand shown

I N C H

Designation	CW	DAXN ⁽¹⁾	DAXX ⁽²⁾	OAL	HBL	CDX	WF	KAPR ⁽³⁾	DCONMS				
GHIFR 38.1C-8A-8	.315	11.800	14.200	13.000	3.940	2.756	.730	8.0	1.500	SR M6X25 DIN912	SR M6X6 DIN916	HW 5.0	PL 150

• Upper jaw with hard coating to sustain chip deflection

⁽¹⁾ Minimum axial grooving diameter

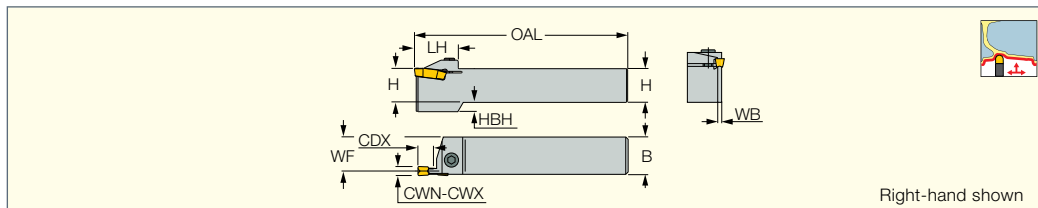
⁽²⁾ Maximum axial grooving diameter

⁽³⁾ Tool cutting edge angle

CUTGRIP

GHDR/L-8A

External Tools for Turning, Grooving and Parting; Upper Jaw with Hard Coating to Sustain Chip Deflection



Right-hand shown

M E T R I C

Designation	H	CWN ⁽¹⁾	CWX ⁽²⁾	CDX ⁽³⁾	B	OAL	WF	WB	LH	HBH		
GHDR/L 25-8A	25.0	8.00	8.00	25.00	25.0	150.00	22.00	6.00	40.0	7.6	SR M6X16 DIN912	HW 5.0 ⁽⁴⁾
GHDR 32-8A	32.0	8.00	8.00	25.00	32.0	170.00	29.00	6.00	40.0	-	SR M6X16 DIN912	HW 5.0 ⁽⁴⁾

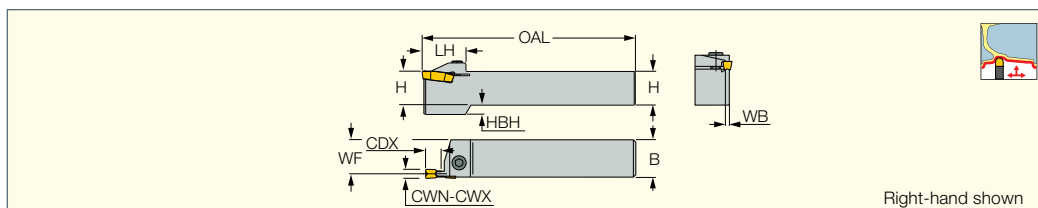
• Upper jaw with hard coating to sustain chip deflection

⁽¹⁾ Minimum cutting width ⁽²⁾ Maximum cutting width ⁽³⁾ Cutting depth maximum

CUTGRIP

GHDR-8A

External Tools for Turning, Grooving and Parting; Upper Jaw with Hard Coating to Sustain Chip Deflection



Right-hand shown

I N C H

Designation	H	CWN ⁽¹⁾	CWX ⁽²⁾	CDX ⁽³⁾	B	OAL	WF	WB	LH	HBH		
GHDR 25.4-8A	1.000	.315	.315	1.000	1.000	6.000	.884	.232	1.600	.30	SR M6X16 DIN912	HW 5.0 ⁽⁴⁾

• Upper jaw with hard coating to sustain chip deflection

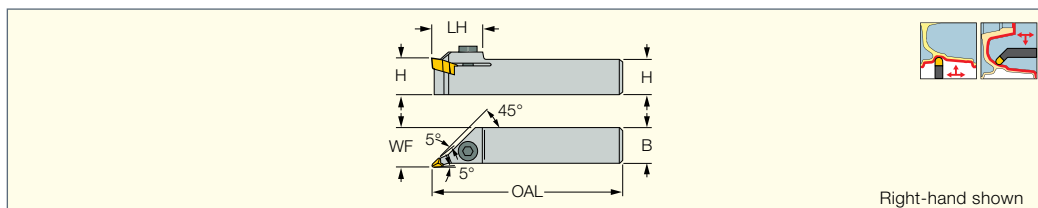
⁽¹⁾ Minimum cutting width ⁽²⁾ Maximum cutting width ⁽³⁾ Cutting depth maximum

⁽⁴⁾ For optional key with limited tightening torque click on "More Info"

CUTGRIP

GHVR/L

Internal and External Profiling Holders for Machining Aluminum Wheels



Right-hand shown

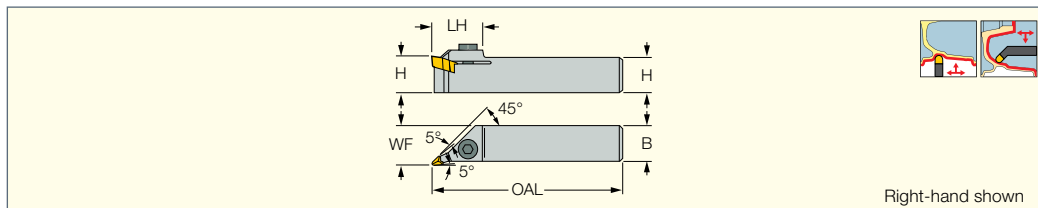
M E T R I C

Designation	H	B	OAL	WF	LH		
GHVR/L 25-8	25.0	25.0	150.00	29.00	41.0	SR M6X16 DIN912	HW 5.0

CUTGRIP

GHVR/L

Internal and External Profiling Holders for Machining Aluminum Wheels



Right-hand shown

I N C H

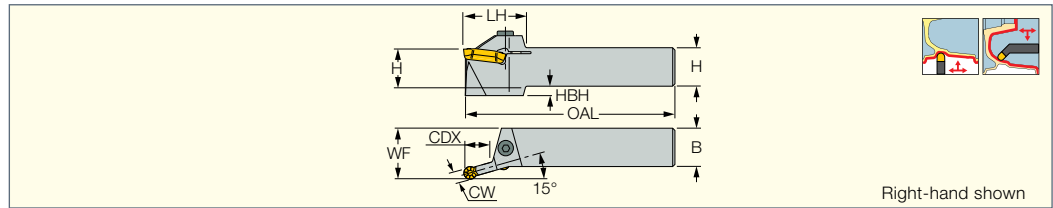
Designation	H	B	OAL	WF	LH		
GHVR/L 25.4-8	1.000	1.000	5.920	1.160	1.620	SR M6X16 DIN912	HW 5.0



Tools for Aluminum Wheels

CUTGRIP

GHDKR/L
External and Internal Profiling
Holders for Machining
Aluminum Wheels



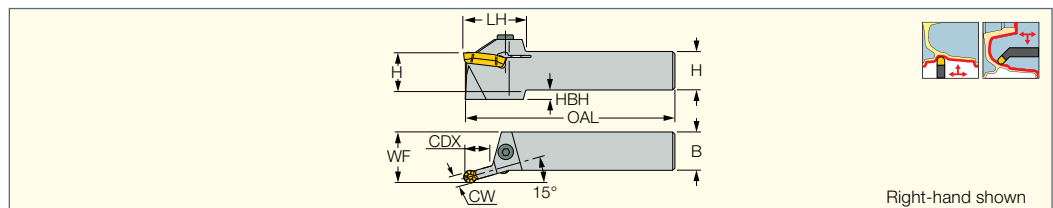
M E T R I C

Designation	CW	H	B	OAL	LH	WF	HBH		
GHDKR/L 25-6 ⁽¹⁾	6.00	25.0	25.0	150.00	40.0	32.20	6.0	SR M6X20 DIN912	HW 5.0
GHDKR/L 25-8	8.00	25.0	25.0	150.00	44.0	33.00	6.0	SR M6X20 DIN912	HW 5.0
GHDKR/L 32-8	8.00	32.0	32.0	170.00	44.0	40.00	-	SR M6X20 DIN912	HW 5.0

⁽¹⁾ Only insert GIPA 6.00-3.00 suitable for this tool.

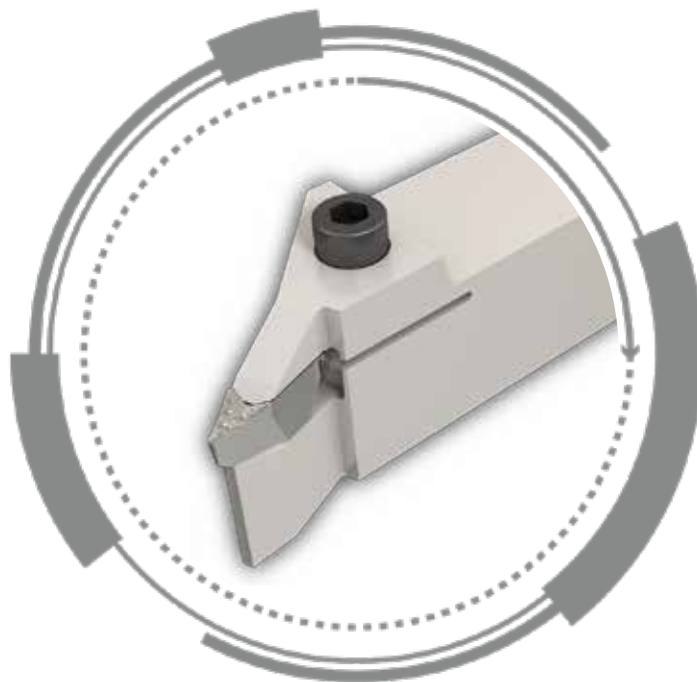
CUTGRIP

GHDKR/L
External and Internal Profiling
Holders for Machining
Aluminum Wheels



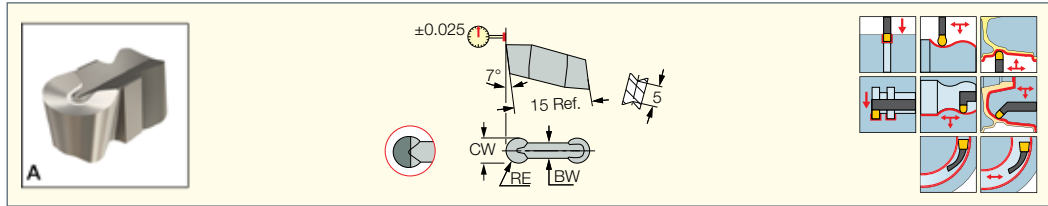
I N C H

Designation	CW	H	B	OAL	LH	WF	HBH	CDX		
GHDKR 25.4-8	.315	1.000	1.000	6.000	1.730	1.320	.24	.750	SR M6X20 DIN912	HW 5.0
GHDKR/L 31.7-8	.315	1.250	1.250	7.000	1.730	1.560	-	.750	SR M6X20 DIN912	HW 5.0



CUTGRIP

GIPA (full radius W=3-6)
Precision Double-Ended
Inserts with Polished Top Rake
for Machining Aluminum

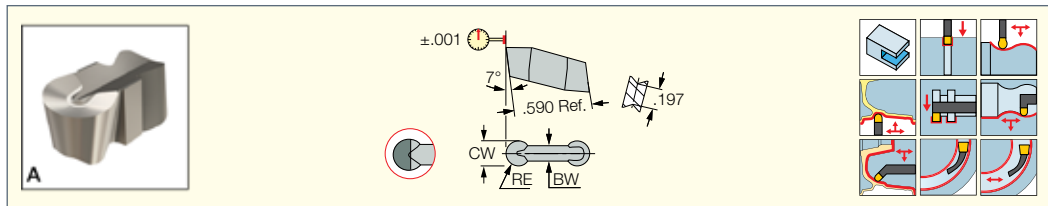


M E T R I C												
Designation	Dimensions					Tough ↔ Hard				Recommended Machining Data		
	CW	RE	CWTOL ⁽⁴⁾	RETOL ⁽⁵⁾	BW	IC20	IC806	IC4	ID5	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIPA 3.00-1.50	3.00	1.50	0.02	0.050	2.40	●				0.00-1.50	0.15-0.30	0.08-0.16
GIPA 3.00-1.50-D ⁽¹⁾	3.00	1.50	0.02	0.050	2.40				●	0.00-1.50	0.19-0.36	0.09-0.19
GIPA 4.00-2.00	4.00	2.00	0.02	0.050	3.20	●	●			0.00-2.00	0.20-0.43	0.10-0.22
GIPA 4.00-2.00-D ⁽¹⁾	4.00	2.00	0.02	0.050	3.20				●	0.00-2.00	0.25-0.53	0.12-0.26
GIPA 4.00-2.00YZ-D ⁽²⁾	4.00	2.00	0.02	0.050	3.20				●	0.00-2.00	0.25-0.53	0.12-0.26
GIPA 5.00-2.50	5.00	2.50	0.02	0.050	3.90	●	●			0.00-2.50	0.21-0.48	0.09-0.24
GIPA 5.00-2.50-D ⁽¹⁾	5.00	2.50	0.02	0.050	3.90				●	0.00-2.50	0.22-0.60	0.11-0.30
GIPA 5.00-2.50YZ-D ⁽²⁾	5.00	2.50	0.02	0.050	3.90				●	0.00-2.50	0.22-0.60	0.11-0.30
GIPA 6.00-3.00	6.00	3.00	0.02	0.050	4.80	●		●		0.00-3.00	0.21-0.58	0.11-0.29
GIPA 6.00-3.00-D ⁽¹⁾	6.00	3.00	0.02	0.050	4.80				●	0.00-3.00	0.26-0.72	0.13-0.36
GIPA 6.00-3.00YZ	6.00	3.00	0.02	0.050	4.80	●				0.00-3.00	0.21-0.58	0.11-0.29
GIPA 6.00-3.00YZ-D ⁽²⁾	6.00	3.00	0.02	0.050	4.80				●	0.00-3.00	0.26-0.72	0.13-0.36
GIPA 6.00-3.00CB ⁽³⁾	6.00	3.00	0.02	0.050	4.80				●	0.00-3.00	0.21-0.58	0.11-0.29

⁽¹⁾ Single-ended PCD tipped insert ⁽²⁾ Single-ended molded PCD chipformer tipped insert ⁽³⁾ Single-ended flat PCD tipped insert with chip deflector
⁽⁴⁾ Cutting width tolerance (+/-) ⁽⁵⁾ Corner radius tolerance (+/-)

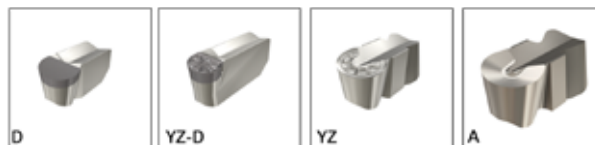
CUTGRIP

GIPA (round W=.118-.236)
Precision Double-Ended
Inserts with Polished Top Rake
for Machining Aluminum



I N C H												
Designation	Dimensions					Tough ↔ Hard				Recommended Machining Data		
	CW	RE	CWTOL ⁽⁴⁾	RETOL ⁽⁵⁾	BW	IC20	IC806	IC4	ID5	a _p (inch)	f turn (IPR)	f groove (IPR)
GIPA 3.00-1.50	.118	.059	.00078	.0020	.094	●				.000-.059	.0059-.0118	.0031-.0063
GIPA 3.00-1.50-D ⁽¹⁾	.118	.059	.00078	.0020	.094				●	.000-.059	.0075-.0142	.0035-.0075
GIPA 4.00-2.00	.157	.079	.00078	.0020	.126	●	●			.000-.079	.0079-.0169	.0039-.0087
GIPA 4.00-2.00-D ⁽¹⁾	.157	.079	.00078	.0020	.126				●	.000-.079	.0098-.0209	.0047-.0102
GIPA 4.00-2.00YZ-D ⁽²⁾	.157	.079	.00078	.0020	.126				●	.000-.079	.0098-.0209	.0047-.0102
GIPA 5.00-2.50	.197	.098	.00078	.0020	.154	●	●			.000-.098	.0083-.0189	.0035-.0094
GIPA 5.00-2.50-D ⁽¹⁾	.197	.098	.00078	.0020	.154				●	.000-.098	.0087-.0236	.0043-.0118
GIPA 5.00-2.50YZ-D ⁽²⁾	.197	.098	.00078	.0020	.154				●	.000-.098	.0087-.0236	.0043-.0118
GIPA 6.00-3.00	.236	.118	.00078	.0020	.189	●		●		.000-.118	.0083-.0228	.0043-.0114
GIPA 6.00-3.00-D ⁽¹⁾	.236	.118	.00078	.0020	.189				●	.000-.118	.0102-.0283	.0051-.0142
GIPA 6.00-3.00YZ	.236	.118	.00078	.0020	.189	●				.000-.118	.0083-.0228	.0043-.0114
GIPA 6.00-3.00YZ-D ⁽²⁾	.236	.118	.00078	.0020	.189				●	.000-.118	.0102-.0283	.0051-.0142
GIPA 6.00-3.00CB ⁽³⁾	.236	.118	.00078	.0020	.189				●	.000-.118	.0083-.0228	.0043-.0114

⁽¹⁾ Single-ended PCD tipped insert ⁽²⁾ Single-ended molded PCD chipformer tipped insert ⁽³⁾ Single-ended flat PCD tipped insert with chip deflector
⁽⁴⁾ Cutting width tolerance (+/-) ⁽⁵⁾ Corner radius tolerance (+/-)

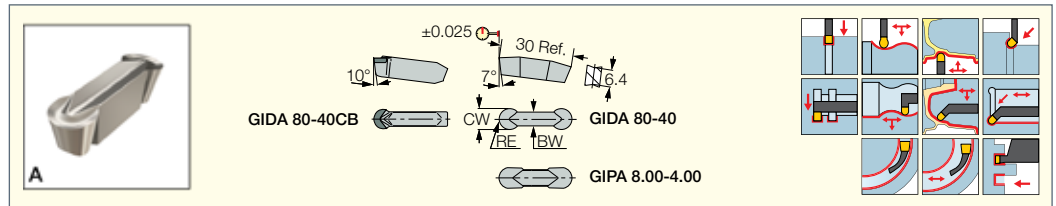




Tools for Aluminum Wheels

CUTGRIP

GIPA/GIDA 8 (full radius)
Precision Double-Ended
Inserts with Polished Top Rake
for Machining Aluminum

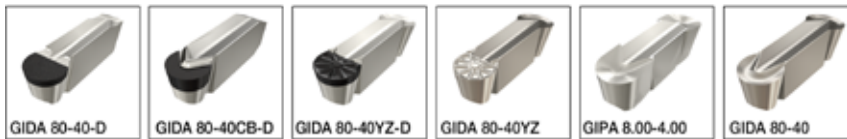


M E T R I C											
Designation	Dimensions					Tough ↔ Hard			Recommended Machining Data		
	CW	RE	CWTOL ⁽²⁾	RETOL ⁽³⁾	BW	IC20	IC4	ID5	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIDA 80-40	8.00	4.00	0.02	0.050	5.60	•	•		0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40-D	8.00	4.00	0.02	0.050	5.60			•	0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40CB-D ⁽¹⁾	8.00	4.00	0.02	0.050	5.60			•	0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40YZ	8.00	4.00	0.02	0.050	5.60	•	•		0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40YZ-D	8.00	4.00	0.02	0.050	5.60			•	0.00-4.00	0.35-0.96	0.18-0.48
GIPA 8.00-4.00	8.00	4.00	0.02	0.050	6.00	•			0.00-4.00	0.24-0.67	0.14-0.38

⁽¹⁾ Should not be clamped on tools with "A" suffix

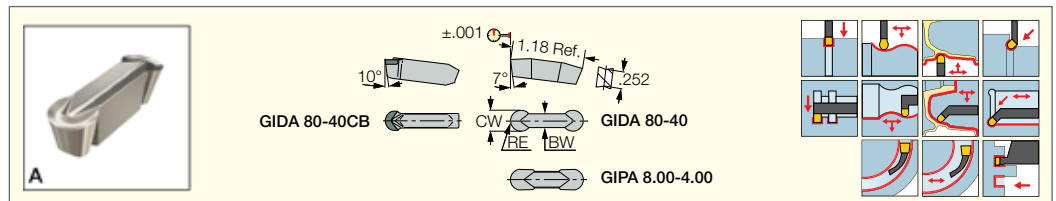
⁽²⁾ Cutting width tolerance (+/-)

⁽³⁾ Corner radius tolerance (+/-)



CUTGRIP

GIPA/GIDA 8 (full radius)
Precision Double-Ended
Inserts with Polished Top Rake
for Machining Aluminum



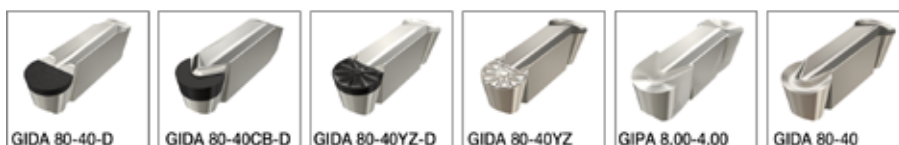
I N C H											
Designation	Dimensions					Tough ↔ Hard			Recommended Machining Data		
	CW	RE	CWTOL ⁽²⁾	RETOL ⁽³⁾	BW	IC20	IC4	ID5	a _p (inch)	f turn (IPR)	f groove (IPR)
GIDA 80-40	.315	.1575	.00078	.0020	.220	•	•		.000-.157	.0094-.0264	.0055-.0150
GIDA 80-40-D	.315	.1575	.00078	.0020	.220			•	.000-.157	.0094-.0264	.0055-.0150
GIDA 80-40CB-D ⁽¹⁾	.315	.1575	.00078	.0020	.220			•	.000-.157	.0094-.0264	.0055-.0150
GIDA 80-40YZ	.315	.1575	.00078	.0020	.220	•	•		.000-.157	.0094-.0264	.0055-.0150
GIDA 80-40YZ-D	.315	.1575	.00078	.0020	.220			•	.000-.157	.0138-.0378	.0071-.0189
GIPA 8.00-4.00	.315	.1575	.00078	.0020	.236	•			.000-.157	.0094-.0264	.0055-.0150

• ID5 is a single-ended PCD tipped insert

⁽¹⁾ Should not be clamped on tools with "A" suffix

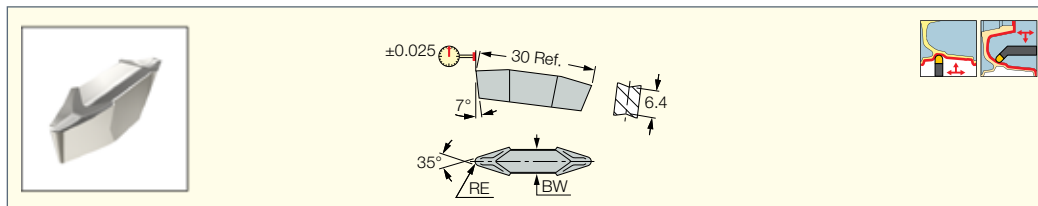
⁽²⁾ Cutting width tolerance (+/-)

⁽³⁾ Corner radius tolerance (+/-)



CUTGRIP

GIPA 8-35V (V-shape)
V-Shaped Inserts for Machining
Aluminum Wheels

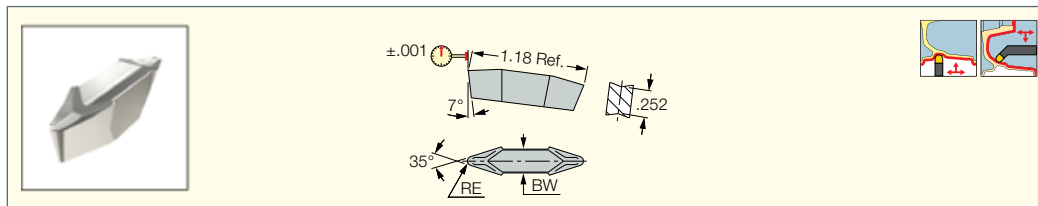


M E T R I C								
Designation	Dimensions			Tough ↔ Hard			Recommended Machining Data	
	RE	RETOL ⁽²⁾	BW	IC20	IC4	ID5	a _p (mm)	f _{turn} (mm/rev)
GIPA 6.0-35V-0.8	0.80	0.050	4.80	•			1.00-3.60	0.21-0.48
GIPA 8YZ-35V-0.80	0.80	0.050	6.00		•		1.00-4.80	0.24-0.56
GIPA 8YZ-35V-1.20	1.20	0.050	6.00		•		1.45-4.80	0.24-0.62
GIPA 8YZ-35V-1.20-D ⁽¹⁾	1.20	0.050	6.00			•	1.45-4.80	0.35-0.88
GIPA 8-35V-1.20	1.20	0.050	6.00	•			1.45-4.80	0.24-0.62
GIPA 8-35V-1.20-D ⁽¹⁾	1.20	0.050	6.00			•	1.45-4.80	0.35-0.88
GIPA 8-35V-3.0	3.00	0.050	6.00	•			3.60-4.80	0.24-0.67

- Precision ground and polished rake to avoid built-up edge • Toolholder seat needs to be modified according to insert profile to ensure clearance
- ⁽¹⁾ Single-ended PCD tipped insert
- ⁽²⁾ Corner radius tolerance (+/-)

CUTGRIP

GIPA 8-35V (V-shape)
V-Shaped Inserts for Machining
Aluminum Wheels



I N C H								
Designation	Dimensions			Tough ↔ Hard			Recommended Machining Data	
	RE	RETOL ⁽²⁾	BW	IC20	IC4	ID5	a _p (inch)	f _{turn} (IPR)
GIPA 6.0-35V-0.8	.0315	.0020	.189	•			.039-.142	.0083-.0189
GIPA 8YZ-35V-0.80	.0315	.0020	.236		•		.039-.189	.0094-.0220
GIPA 8YZ-35V-1.20	.0472	.0020	.236		•		.057-.189	.0094-.0244
GIPA 8YZ-35V-1.20-D ⁽¹⁾	.0472	.0020	.236			•	.057-.189	.0138-.0346
GIPA 8-35V-1.20	.0472	.0020	.236	•			.057-.189	.0094-.0244
GIPA 8-35V-1.20-D ⁽¹⁾	.0472	.0020	.236			•	.057-.189	.0138-.0346
GIPA 8-35V-3.0	.1181	.0020	.236	•			.142-.189	.0094-.0264

- Precision ground and polished rake to avoid built-up edge • Toolholder seat needs to be modified according to insert profile to ensure clearance
- ⁽¹⁾ Single-ended PCD tipped insert
- ⁽²⁾ Corner radius tolerance (+/-)

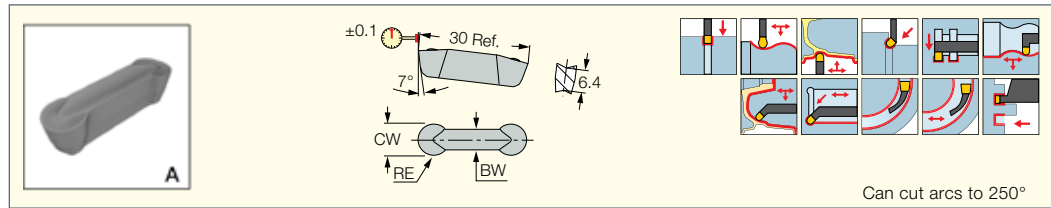


Tools for Aluminum Wheels

CUTGRIP

GDMA

Utility Double-Ended Insert for Machining Aluminum



M E T R I C										
Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data		
	CW	RE	CWTOL ⁽¹⁾	RETOL ⁽²⁾	BW	IC07	IC507	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMA 840	8.00	4.00	0.05	0.050	5.60	●	●	0.00-4.00	0.24-0.67	0.14-0.38

• For heavy-duty machining • DMIN for internal machining = 65 mm

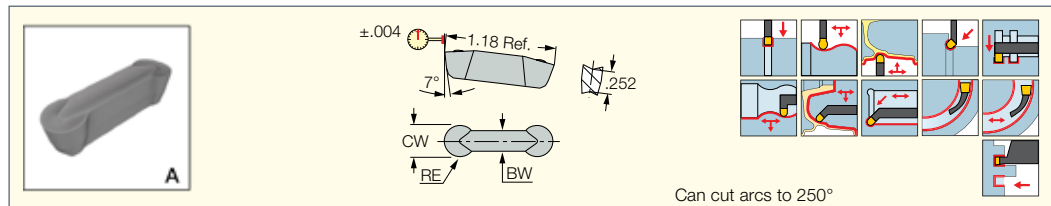
⁽¹⁾ Cutting width tolerance (+/-)

⁽²⁾ Corner radius tolerance (+/-)

CUTGRIP

GDMA

Utility Double-Ended Insert for Machining Aluminum



I N C H										
Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data		
	CW	RE	CWTOL ⁽¹⁾	RETOL ⁽²⁾	BW	IC07	IC507	a _p (inch)	f turn (IPR)	f groove (IPR)
GDMA 840	.315	.157	.00196	.0020	.220	●	●	.000-.157	.0094-.0264	.0055-.0150

• For heavy-duty machining • DMIN for internal machining = 2.56"

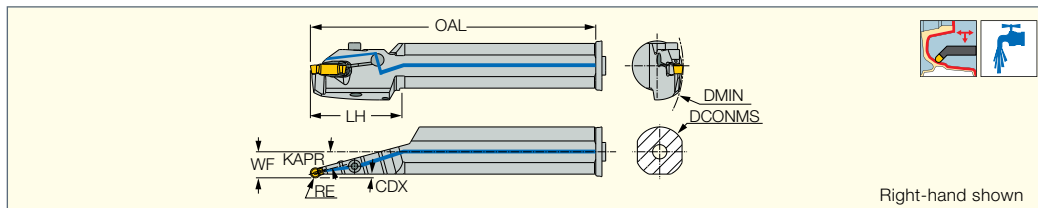
⁽¹⁾ Cutting width tolerance (+/-)

⁽²⁾ Corner radius tolerance (+/-)






FIXGRIP

FSHIUR

10° / 15° Approach Angle
Bars for Facing and Internal
Profiling of Aluminum



M E T R I C

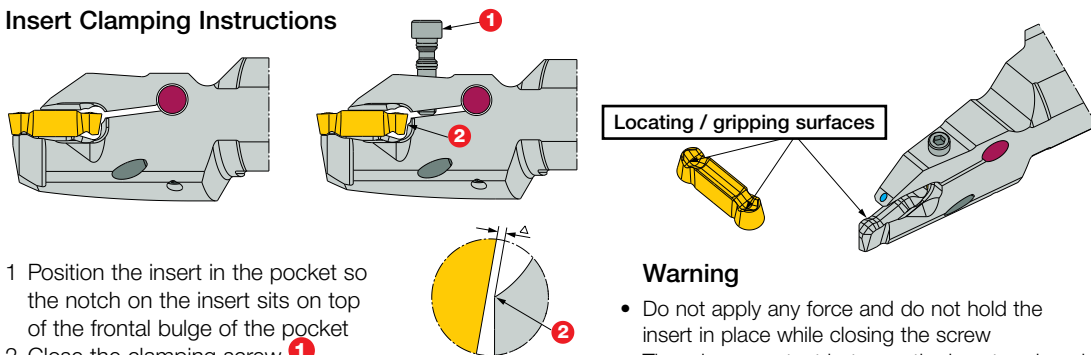
Designation	CW	DCONMS	DMIN	OAL	LH	CDX ⁽¹⁾	WF	KAPR ⁽²⁾					
FSHIUR 40C-15A-6	6.00	40.00	160.00	320.00	68.0	2.20	21.00	15.0	SR M6X1-28509	HW 5.0	OR 5X1N	PU SEAL-28510	PL 40
FSHIUR 40C-10A-8	8.00	40.00	160.00	320.00	68.0	2.40	24.30	10.0	SR M6X1-28509	HW 5.0	OR 5X1N	PU SEAL-28510	PL 40
FSHIUR 40C-15A-8	8.00	40.00	160.00	320.00	68.0	3.00	21.00	15.0	SR M6X1-28509	HW 5.0	OR 5X1N	PU SEAL-28510	PL 40

• Clamping torque for FSHIUR...-6: 9 Nxm, for FSHDR...-8: 10.5 Nxm

⁽¹⁾ Cutting depth maximum

⁽²⁾ Tool cutting edge angle

Insert Clamping Instructions



- 1 Position the insert in the pocket so the notch on the insert sits on top of the frontal bulge of the pocket
- 2 Close the clamping screw

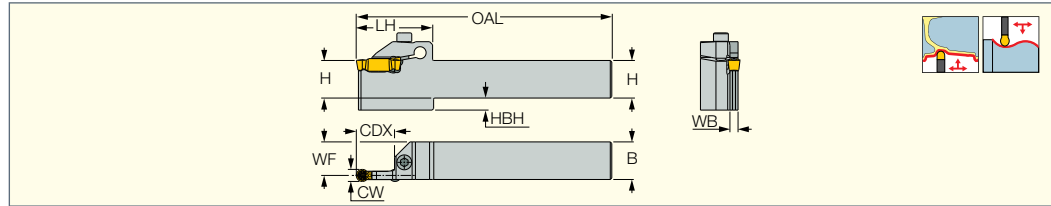


Tools for Aluminum Wheels

FIXGRIP

FSHDR

Tools with a Very Strong Insert Grip for Interrupted Cuts and Back Turning of Aluminum Wheels



M E T R I C

Designation	CW	CDX ⁽¹⁾	H	B	WF	WB	LH	HBH	OAL		
FSHDR 25-6	6.00	21.00	25.0	25.0	22.80	4.40	51.0	8.0	150.00	SR M5X20DIN912	HW 4.0
FSHDR 25-8	8.00	25.50	25.0	25.0	22.30	5.40	51.5	8.0	170.00	SR M6X25 DIN912	HW 5.0

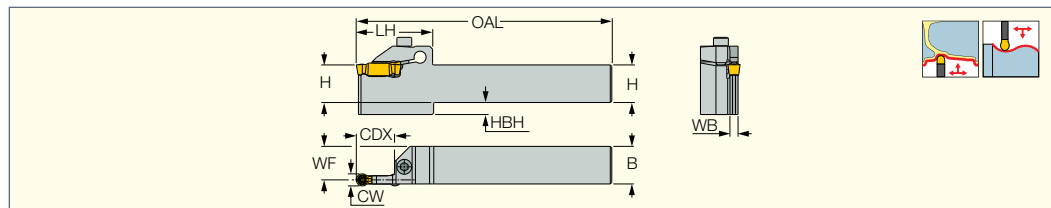
• Clamping torque for FSHDR..-6: 7.5 Nxm, for FSHDR..-8: 10 Nxm

⁽¹⁾ Cutting depth maximum

FIXGRIP

FSHDR

Tools with a Very Strong Insert Grip for Interrupted Cuts and Back Turning Aluminum Wheels



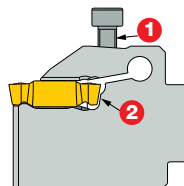
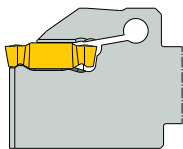
I N C H

Designation	CW	CDX ⁽¹⁾	H	B	WF	WB	LH	HBH	OAL		
FSHDR 25.4-6	.236	.826	1.000	1.000	.910	.173	2.010	.30	5.900	SR M5X20DIN912	HW 4.0
FSHDR 25.4-8	.315	1.004	1.000	1.000	.890	.213	2.030	.30	6.700	SR M6X25 DIN912	HW 5.0

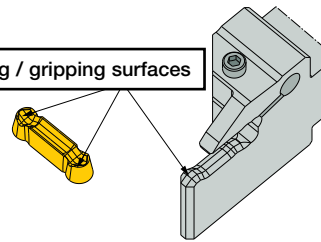
• Clamping torque for FSHDR..-6: 66 lbf·in, for FSHDR..-8: 88 lbf·in

⁽¹⁾ Cutting depth maximum

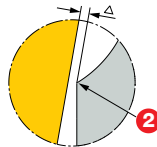
Insert Clamping Instructions



Locating / gripping surfaces



- 1 Position the insert in the pocket so the notch on the insert sits on top of the front bulge of the pocket
- 2 Close the clamping screw **1**



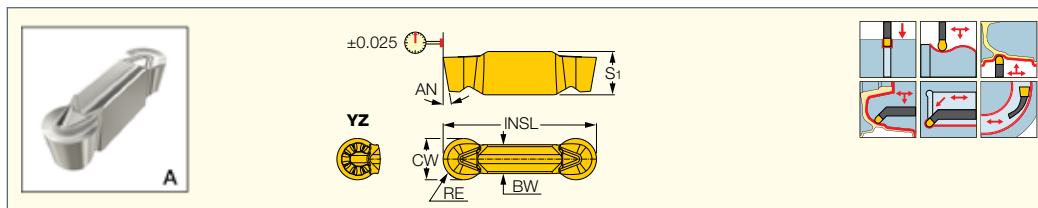
Warning

- Do not apply force and do not hold the insert in place while closing the screw
- There is no contact between the insert and pocket rear wall **2**

FIXGRIP

FSPA/FSMA

Full Radius Precision Inserts for Machining Aluminum at Medium to High Feeds



M E T R I C												
Designation	Dimensions							Tough ↔ Hard			Recommended Machining Data	
	CW	CWTOL ⁽²⁾	RE	S ₁	BW	INSL	AN	IC20	IC07	ID5	a _p (mm)	f turn (mm/rev)
FSPA 6.00-3.00	6.00	0.02	3.00	7.50	4.60	25.00	9.0	●			0.05-3.00	0.30-0.55
FSPA 6.00-3.00YZ	6.00	0.02	3.00	7.50	4.60	25.00	9.0	●			0.05-3.00	0.30-0.55
FSPA 6.00-3.00YZ-D	6.00	0.02	3.00	7.50	4.60	25.00	9.0			●	0.05-3.00	0.30-0.55
FSPA 80-40	8.00	0.02	4.00	8.40	5.60	29.70	10.0	●			0.05-4.00	0.40-0.72
FSPA 80-40-D	8.00	0.02	4.00	8.40	5.60	29.70	10.0			●	0.05-4.00	0.40-0.72
FSPA 80-40YZ	8.00	0.02	4.00	8.40	5.60	29.70	10.0	●			0.05-4.00	0.40-0.72
FSPA 80-40YZ-D	8.00	0.02	4.00	8.40	5.60	29.70	10.0			●	0.05-4.00	0.40-0.72
FSMA 80-40 ⁽¹⁾	8.00	0.04	4.00	8.40	5.60	29.70	10.0		●		0.05-4.00	0.40-0.72

⁽¹⁾ Utility insert

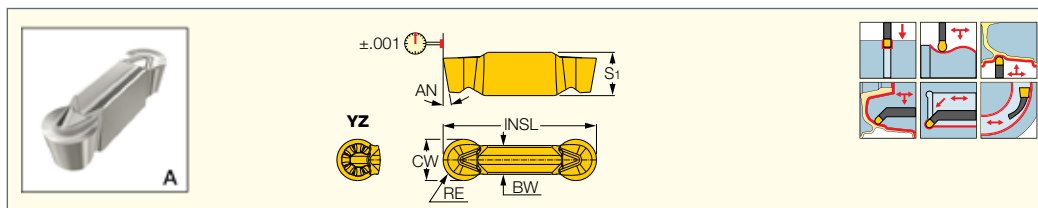
⁽²⁾ Cutting width tolerance (+/-)



FIXGRIP

FSPA/FSMA

Full Radius Precision Inserts for Machining Aluminum at Medium to High Feeds



I N C H												
Designation	Dimensions							Tough ↔ Hard			Recommended Machining Data	
	CW	CWTOL ⁽²⁾	RE	S ₁	BW	INSL	AN	IC20	IC07	ID5	a _p (inch)	f turn (IPR)
FSPA 6.00-3.00	.236	.00078	.118	.295	.181	.984	9.0	●			.002-.118	.0118-.0216
FSPA 6.00-3.00YZ	.236	.00078	.118	.295	.181	.984	9.0	●			.002-.118	.0118-.0216
FSPA 6.00-3.00YZ-D	.236	.00078	.118	.295	.181	.984	9.0			●	.002-.118	.0118-.0216
FSPA 80-40	.315	.00078	.157	.331	.220	1.169	10.0	●			.002-.157	.0157-.0283
FSPA 80-40-D	.315	.00078	.157	.331	.220	1.169	10.0			●	.002-.157	.0157-.0283
FSPA 80-40YZ	.315	.00078	.157	.331	.220	1.169	10.0	●			.002-.157	.0157-.0283
FSPA 80-40YZ-D	.315	.00078	.157	.331	.220	1.169	10.0			●	.002-.157	.0157-.0283
FSMA 80-40 ⁽¹⁾	.315	.00157	.157	.331	.220	1.169	10.0		●		.002-.157	.0157-.0283

⁽¹⁾ Utility insert

⁽²⁾ Cutting width tolerance (+/-)



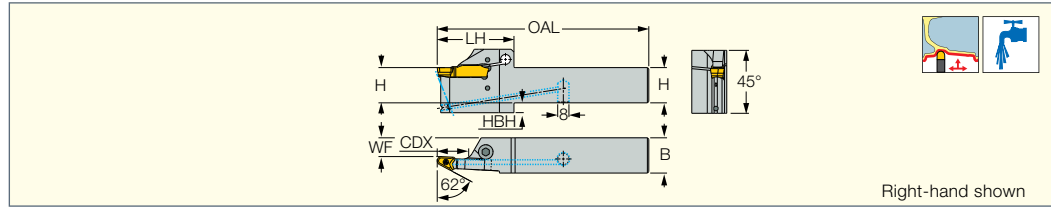


Tools for Aluminum Wheels

FIXGRIP

FGHDUR

Tools for Interrupted Cuts and Back Turning of Aluminum Wheels



Right-hand shown

M E T R I C

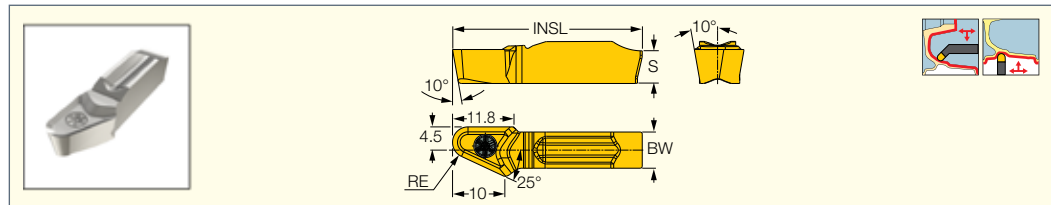
Designation	CDX ⁽¹⁾	H	B	OAL	WF	LH	HBH		
FGHDUR 25C-3A-10S	22.30	25.0	25.0	150.00	13.30	54.4	7.0	SR M6X25 DIN912	HW 5.0

- Upper jaw with hard coating to sustain chip deflection
- ⁽¹⁾ Cutting depth maximum

FIXGRIP

FGPAM

V-Shaped Inserts for Machining Aluminum Wheels



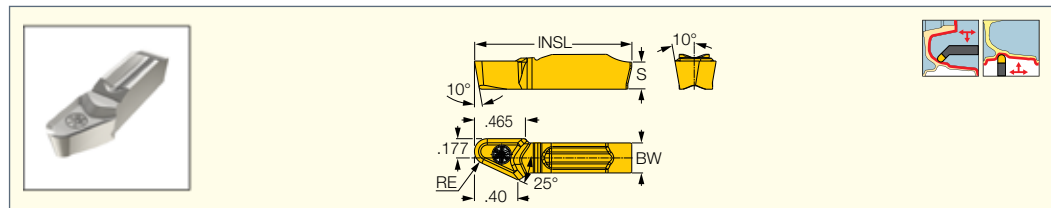
M E T R I C

Designation	Dimensions					IC20	Recommended Machining Data	
	RE	BW	S	INSL	a_p (mm)		f turn (mm/rev)	
FGPAM 10S-3R-25A	3.00	7.00	8.20	36.50	•	0.05-12.00	0.40-0.72	

FIXGRIP

FGPAM

V-Shaped Inserts for Machining Aluminum Wheels

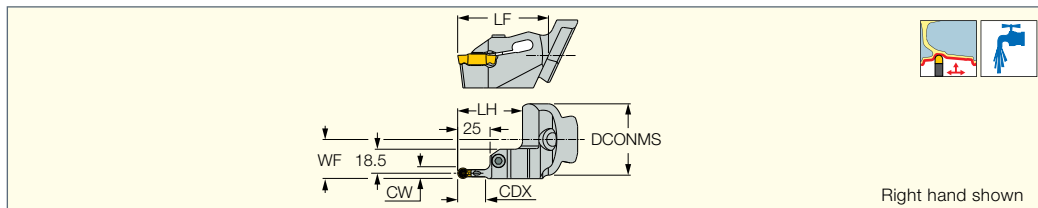


I N C H

Designation	Dimensions					IC20	Recommended Machining Data	
	RE	BW	S	INSL	a_p (inch)		f turn (IPR)	
FGPAM 10S-3R-25A	.1181	.276	.323	1.437	•	.002-.472	.0157-.0283	

FIXGRIP

DTF50 FSHDR-8
 CUT-GRIP Heads with
 DOVE-TAIL Connection
 for External Turning
 Aluminum Wheels



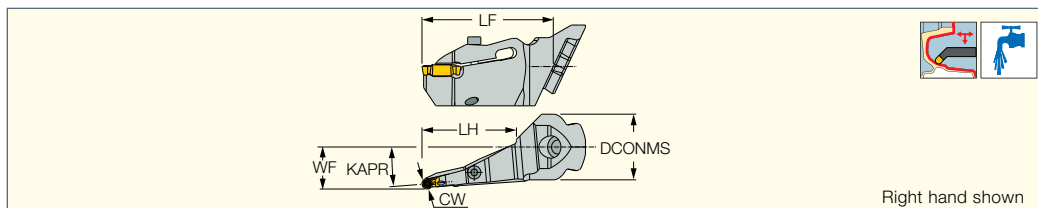
M E T R I C								
Designation	CW	CDX	LH	WF	LF	DCONMS	Insert	
DTF50 FSHDR-8	8.00	21.50	50.0	30.00	70.00	55.00	FSPA 8...	

Spare Parts

Designation		
DTF50 FSHDR-8	SR M6X25DIN912	HW 5.0X120 MM

FIXGRIP

DTF50 FSHIUR
 CUT-GRIP Heads for Internal
 Profiling, Undercutting and
 Facing Aluminum Wheels



M E T R I C								
Designation	DMIN	CW	KAPR ⁽¹⁾	LH	WF	LF	DCONMS	Insert
DTF50 FSHIUR-5A-8	250.00	8.00	5.0	72.0	32.00	100.00	50.00	FSPA 8...
DTF50 FSHIUR-8A-8	250.00	8.00	8.0	72.0	32.00	100.00	50.00	FSPA 8...
DTF50 FSHIUR-15A-8	250.00	8.00	15.0	80.0	36.00	100.00	50.00	FSPA 8...
DTF50 FSHIUR-22.5A-8	250.00	8.00	22.5	50.0	36.00	70.00	50.00	FSPA 8...
DTF50 FSHIUR-27.5A-8	250.00	8.00	27.5	60.0	40.00	80.00	50.00	FSPA 8...
DTF50 FSHIUR-45A-8	250.00	8.00	45.0	-	55.00	70.00	50.00	FSPA 8...
DTF50 FSHIUR-67.5A-8	250.00	8.00	67.5	-	60.00	70.00	50.00	FSPA 8...
DTF50 FSHIUR-80A-8	250.00	8.00	80.0	-	60.00	70.00	50.00	FSPA 8...

⁽¹⁾ Tool cutting edge angle

Spare Parts

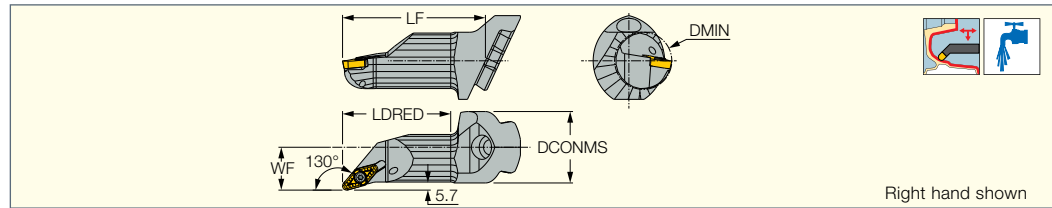
Designation			
DTF50 FSHIUR-5A-8	SR M6X25DIN912	SR M5X6 DIN913	HW 5.0X120 MM
DTF50 FSHIUR-8A-8	SR M6X25DIN912	SR M6X6 DIN913	HW 5.0X120 MM
DTF50 FSHIUR-15A-8	SR M6X25DIN912	SR M6X6 DIN913	HW 5.0X120 MM
DTF50 FSHIUR-22.5A-8	SR M6X25DIN912		HW 5.0X120 MM
DTF50 FSHIUR-27.5A-8	SR M6X25DIN912		HW 5.0X120 MM
DTF50 FSHIUR-45A-8	SR M6X25DIN912		HW 5.0X120 MM
DTF50 FSHIUR-67.5A-8	SR M6X25DIN912	SR M5X6 DIN913	HW 5.0X120 MM
DTF50 FSHIUR-80A-8	SR M6X25DIN912		HW 5.0X120 MM



Tools for Aluminum Wheels

ISOTURN



DTF50 SVXCR-22
ISO Boring Heads with DOVE-TAIL Connection for VCGT 22 Inserts



Right hand shown

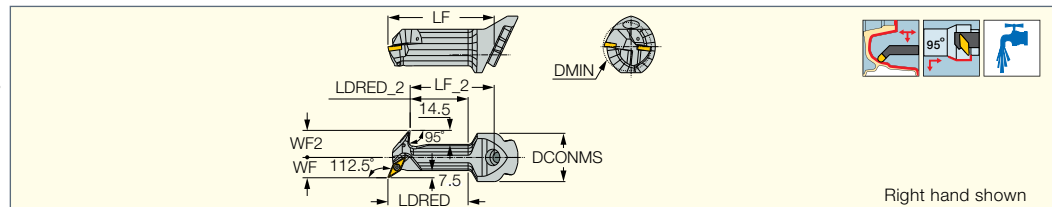
M E T R I C							
Designation	DMIN	WF	LF	LDRED	DCONMS	Insert	
DTF50 SVXCR-22	40.00	30.00	100.00	76.0	50.00	VCGT 22...	

Spare Parts

Designation		
DTF50 SVXCR-22	SR 16-212	T-20/5

ISOTURN


DTF50 SVXCR-16X2
ISO Double Pocket Boring Heads with DOVE-TAIL Connection for VCGT 16 Inserts



Right hand shown

M E T R I C										
Designation	DMIN	WF	WF2	LF	LF_2	LDRED	LDRED_2	DCONMS	Insert	
DTF50 SVXCR-16X2	50.00	21.00	28.0	110.00	87.00	83.0	60.0	50.00	VCGT 16...	

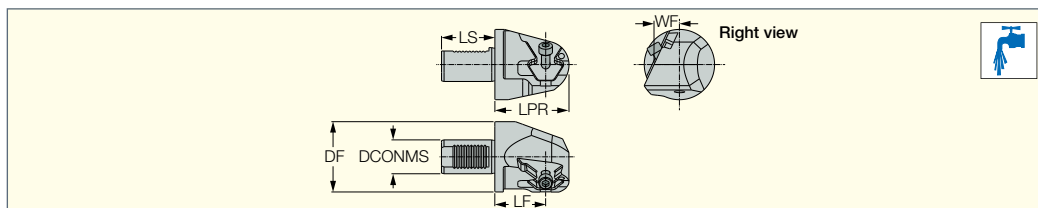
Spare Parts

Designation			
DTF50 SVXCR-16X2	SR 16-236	T-15/5	SR M5X8 DIN913



VDI

VDI-DTF50E-L60R
 QUICK-CHANGE Holder with a DOVE-TAIL Connection for External Turning of Aluminum Wheels with CUT-GRIP Heads



M E T R I C						
Designation	WF	LF	LPR	LS	DF	DCONMS
VDI40-DTF50E-L60R	30.00	60.00	87.50	63.0	83.00	40.00
VDI50-DTF50E-L60R ⁽¹⁾	37.00	60.00	87.50	78.0	98.00	50.00

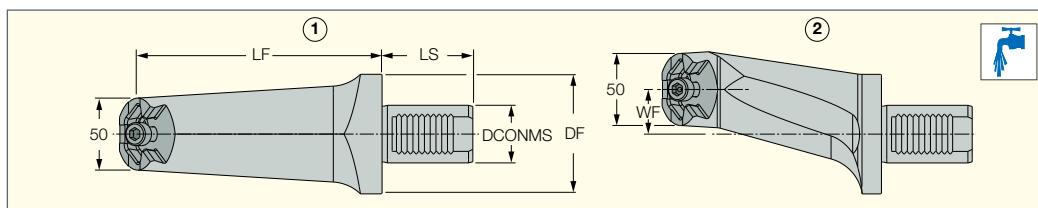
⁽¹⁾ on request

Spare Parts

Designation			
VDI-DTF50E-L60R	SR M10X45 DIN912	HW8 L208	OR 5X1N

VDI

VDI-DTF50
 QUICK-CHANGE Holder with DOVE-TAIL Connection for Internal Turning of Aluminum Wheels with CUT-GRIP and ISO-TURN Heads



M E T R I C						
Designation	WF	LF	LS	DF	DCONMS	Fig.
VDI40-DTF50F31L140R	31.00	140.00	63.0	83.00	40.00	2
VDI40-DTF50L110	0.00	110.00	63.0	83.00	40.00	1
VDI40-DTF50L140	0.00	140.00	63.0	83.00	40.00	1
VDI40-DTF50L170	0.00	170.00	63.0	83.00	40.00	1
VDI50-DTF50F31L140R ⁽¹⁾	31.00	140.00	78.0	98.00	50.00	2
VDI50-DTF50L110 ⁽¹⁾	0.00	110.00	78.0	98.00	50.00	1
VDI50-DTF50L140 ⁽¹⁾	0.00	140.00	78.0	98.00	50.00	1
VDI50-DTF50L170 ⁽¹⁾	0.00	170.00	78.0	98.00	50.00	1

⁽¹⁾ on request

Spare Parts

Designation		
VDI-DTF50	SR M10X45 DIN912	HW8 L208

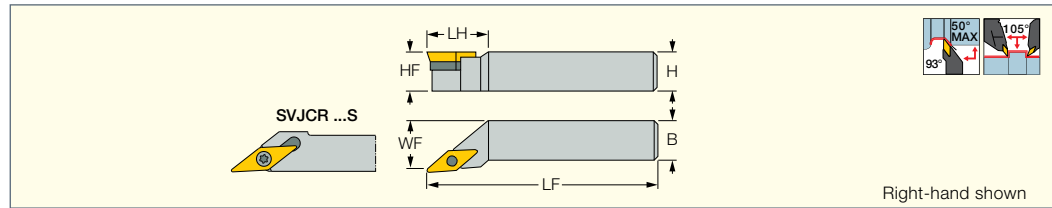


Tools for Aluminum Wheels

ISOTURN

SVJCR/L

93° Lead Angle Screw Lock
Tools Carrying 35° Diamond
Inserts with 7° Clearance Angle



M E T R I C

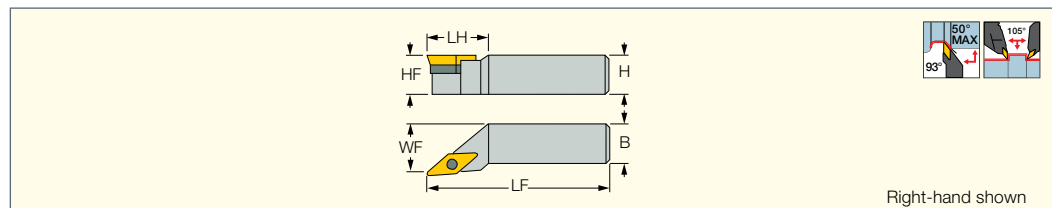
Designation	H	HF	B	LF	LH	WF	GAMP	GAMF	Insert					
SVJCR/L 0808K-11S ⁽¹⁾	8.0	8.0	8.0	125.00	11.5	8.20	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVJCR/L 1010K-11S ⁽¹⁾	10.0	10.0	10.0	125.00	22.0	10.20	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVJCR/L 1212K-11S ⁽¹⁾	12.0	12.0	12.0	125.00	-	12.20	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVJCR/L 1616K-11	16.0	16.0	16.0	125.00	25.0	20.00	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVJCR/L 2020K-11	20.0	20.0	20.0	125.00	30.0	25.00	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVJCR/L 2525M-11	25.0	25.0	25.0	150.00	30.0	32.00	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVJCR/L 2020K-16	20.0	20.0	20.0	125.00	30.0	25.00	0.0	0.0	VC..1604	SR 16-236 P	T-15/5	TVC 3-1	SR TC-3	HW 2.5
SVJCR/L 2525M-16	25.0	25.0	25.0	150.00	30.0	32.00	0.0	0.0	VC..1604	SR 16-236 P	T-15/5	TVC 3-1	SR TC-3	HW 2.5

⁽¹⁾ For Swiss-type machines

ISOTURN

SVJCR/L

93° Lead Angle Screw Lock
Tools Carrying 35° Diamond
Inserts with 7° Clearance Angle



I N C H

Designation	H	HF	B	LF	LH	WF	GAMP	GAMF
SVJCR 10-3	.625	.625	.625	2.900	1.430	.750	.0	.0
SVJCR/L 12-3	.750	.750	.750	4.500	1.180	1.000	.0	.0
SVJCR/L 16-3	1.000	1.000	1.000	6.000	1.180	1.250	.0	.0

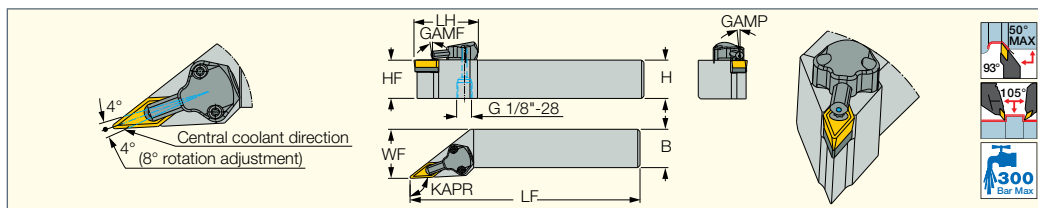
Spare Parts

Designation					
SVJCR 10-3	SR 16-236 P	T-15/5			
SVJCR/L 12-3	SR 16-236 P	T-15/5	TVC 3-1	SR TC-3	HW 2.5
SVJCR/L 16-3	SR 16-236 P	T-15/5	TVC 3-1	SR TC-3	HW 2.5

ISOTURN JETCUT

SVJCR/L-16-JHP

Screw Lock Tools with Channels for High Pressure Coolant Carrying 35° Rhombic Inserts with 7° Clearance Angle



M E T R I C										
Designation	H	B	HF	LF	LH	WF	KAPR ⁽¹⁾	GAMP	GAMF	Insert
SVJCR/L 2525M-16-JHP	25.0	25.0	25.0	150.00	42.0	32.00	93.0	0.0	0.0	VCMT 1604

⁽¹⁾ Tool cutting edge angle

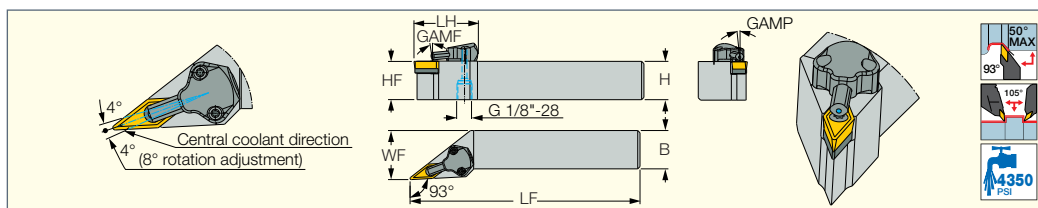
Spare Parts

Designation							
SVJCR/L 2525M-16-JHP	TVC 3-1	SR TC-3	SR 16-236 P	CU-V-JHP	T-15/5	HW 2.5	T-8/5

ISOTURN JETCUT

SVJCR/L-3-JHP

Screw Lock Toolholders for 35° Rhombic Inserts with 7° Clearance Angle and Channels for High Pressure Coolant



I N C H										
Designation	H	B	HF	LF	LH	WF	GAMP	GAMF	Insert	
SVJCR/L 16-3-JHP	1.000	1.000	1.000	6.000	1.650	1.250	.0	.0	VC..33	

Spare Parts

Designation							
SVJCR/L 16-3-JHP	TVC 3-1	SR TC-3	T-8/5	HW 2.5	CU-V-JHP	SR 16-236 P	T-15/5

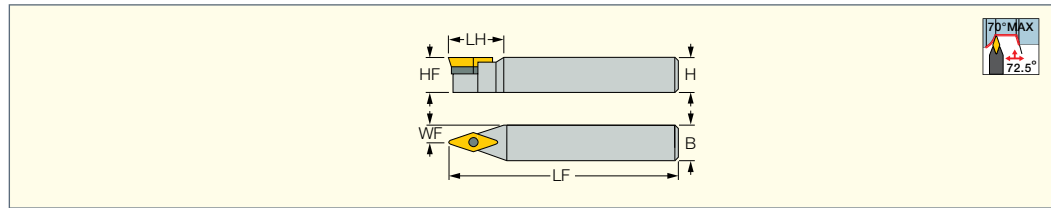


Tools for Aluminum Wheels

ISOTURN

SVVCN

72.5° Lead Angle Screw Lock
Tools Carrying 35° Diamond
Inserts with 7° Clearance Angle



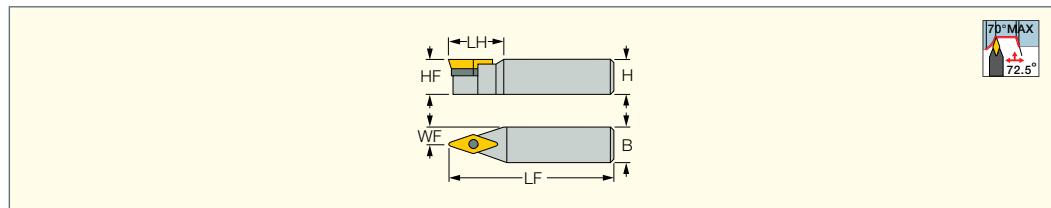
M E T R I C														
Designation	H	HF	B	LF	LH	WF	GAMP	GAMF	Insert					
SVVCN 0808K-11S ⁽¹⁾	8.0	8.0	8.0	125.00	-	4.30	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVVCN 1010K-11S ⁽¹⁾	10.0	10.0	10.0	125.00	-	5.30	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVVCN 1212K-11S ⁽¹⁾	12.0	12.0	12.0	125.00	-	6.30	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVVCN 1616K-11S ⁽¹⁾	16.0	16.0	16.0	125.00	-	8.30	0.0	0.0	VC..1103	SR 14-560	T-8/5			
SVVCN 2020K-16	20.0	20.0	20.0	125.00	34.0	10.00	0.0	0.0	VC..1604	SR 16-236 P	T-15/5	TVC 3-1	SR TC-3	HW 2.5
SVVCN 2525M-16	25.0	25.0	25.0	150.00	38.1	12.50	0.0	0.0	VC..1604	SR 16-236 P	T-15/5	TVC 3-1	SR TC-3	HW 2.5

⁽¹⁾ For Swiss-type machines

ISOTURN

SVVCN

72.5° Lead Angle Screw Lock
Tools Carrying 35° Diamond
Inserts with 7° Clearance Angle

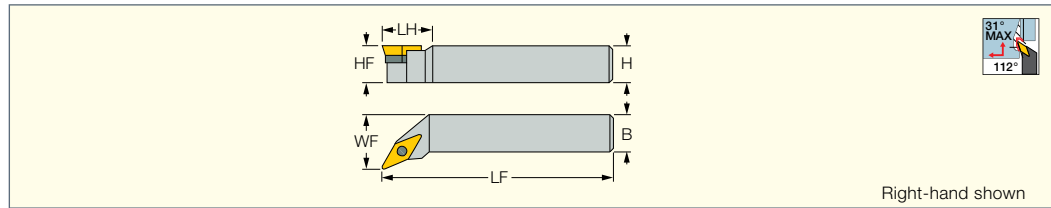


I N C H														
Designation	H	HF	B	LF	LH	WF	GAMP	GAMF	Insert					
SVVCN 12-3	.750	.750	.750	4.500	1.130	.380	.0	.0	SR 16-236 P	T-15/5	TVC 3-1	SR TC-3	SR TC-3	HW 2.5
SVVCN 16-3	1.000	1.000	1.000	6.000	1.500	.500	.0	.0	SR 16-236 P	T-15/5	TVC 3-1	SR TC-3	SR TC-3	HW 2.5

ISOTURN

SVXCR/L

112° Lead Angle Screw Lock
Tools Carrying 35° Diamond
Inserts with 7° Clearance Angle



Right-hand shown

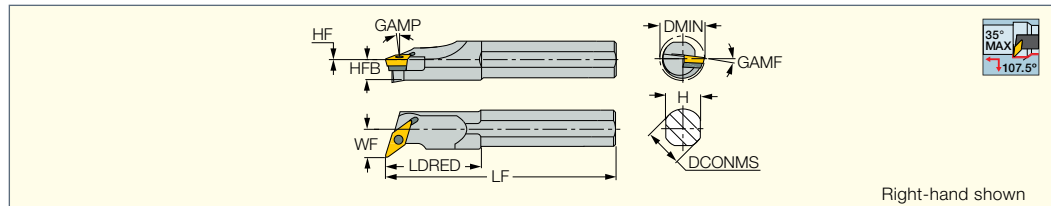
M E T R I C

Designation	H	HF	B	LF	LH	WF	GAMP	GAMF	Insert					
SVXCR/L 2020K-16	20.0	20.0	20.0	125.00	25.0	25.00	0.0	0.0	VC..1604	TVC 3-1	SR TC-3	HW 2.5	SR 16-236 P	T-15/5
SVXCR/L 2525M-16	25.0	25.0	25.0	150.00	30.0	32.00	0.0	0.0	VC..1604	TVC 3-1	SR TC-3	HW 2.5	SR 16-236 P	T-15/5

ISOTURN

A/S-SVQCR/L

Screw Lock Boring Bars
Carrying the 35° Rhombic
Inserts with 7° Clearance



Right-hand shown

M E T R I C

Designation	DCONMS	LF	LDRED	H	HFB	WF	HF	DMIN	GAMP	GAMF	CSP ⁽¹⁾	Insert
S25S SVQCR/L-16	25.00	250.00	61.0	23.0	12.0	17.00	0.5	32.00	0.0	-5.0	0	VC.. 1604
S32T SVQCR/L-16	32.00	300.00	70.0	30.0	15.0	22.00	0.0	40.00	0.0	-5.0	0	VC.. 1604
A40U SVQCR/L-22	40.00	350.00	64.0	36.0	18.0	27.00	0.0	47.50	0.0	-8.0	1	VCGT 2205

⁽¹⁾ 0 - Without coolant supply, 1 - With coolant supply

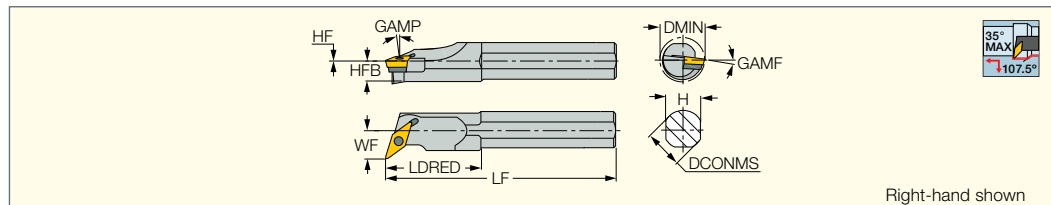
Spare Parts

Designation						
S25S SVQCR/L-16	SR 16-236 P	T-15/5				
S32T SVQCR/L-16	SR 16-236 P	T-15/5	TVC 3-1P	SR TC-3P	HW 4.0	
A40U SVQCR/L-22	SR 14-536	T-20/5	TVC 22T330	SR TC-3	HW 2.5	PL 40

ISOTURN

A/S-SVQCR/L

Screw Lock Boring Bars
Carrying 35° Rhombic
Inserts with 7° Clearance



Right-hand shown

I N C H

Designation	DCONMS	LF	LDRED	H	HFB	WF	DMIN	CSP ⁽¹⁾	GAMP	GAMF	Insert
S-SVQCR/L 16-3	1.000	12.000	2.440	.920	.480	.630	1.220	0	.0	-5.0	VC..33..

⁽¹⁾ 0 - Without coolant supply, 1 - With coolant supply

Spare Parts

Designation					
S-SVQCR/L 16-3	SR 16-236 P	T-15/5	TVC 3-1P	SR TC-3P	HW 4.0

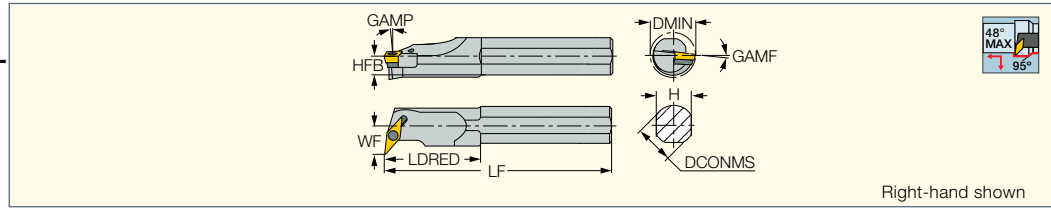


Tools for Aluminum Wheels

ISOTURN

A/S-SVLFCR/L; A-SVUCR/L

Screw Lock Boring Bars
Carrying the 35° Rhombic
Inserts with 7° Clearance



Right-hand shown

Designation	M E T R I C										
	DCONMS	LF	LDRED	H	HFB	WF	DMIN	GAMP	GAMF	CSP ⁽²⁾	Insert
A32T SVUCR/L-16 ⁽¹⁾	32.00	300.00	50.0	29.0	14.5	22.00	40.00	0.0	-8.0	1	VC.. 1604
S32T SVLFCR/L-16	32.00	300.00	56.0	29.0	14.5	22.00	39.50	0.0	-8.0	0	VC.. 1604
S40U SVLFCR/L-16	40.00	350.00	-	36.0	18.0	27.00	49.00	0.0	-5.0	0	VC.. 1604
A40U SVLFCR/L-22	40.00	350.00	70.0	36.0	18.0	27.00	48.00	0.0	-8.0	1	VC.. 2205

⁽¹⁾ 93° approach angle

⁽²⁾ 0 - Without coolant supply, 1 - With coolant supply

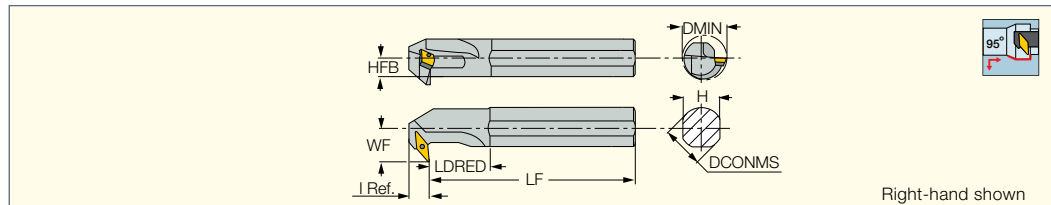
Spare Parts

Designation							
A32T SVUCR/L-16	TVC 3-1P	SR TC-3P	HW 1.5	HW 4.0	SR 16-236 P	PL 32	T-15/5
S32T SVLFCR/L-16	TVC 3-1P	SR TC-3P	HW 4.0		SR 16-236 P		T-15/5
S40U SVLFCR/L-16	TVC 3-1P	SR TC-3P	HW 4.0		SR 16-236 P		T-15/5
A40U SVLFCR/L-22	TVC 22T330	SR TC-3	HW 2.5		SR 14-536	PL 40	T-20/5

ISOTURN

A/S-SVLBCR/L

Screw Lock Back Boring
Bars Carrying 35° Rhombic
Inserts with 7° Clearance



Right-hand shown

Designation	M E T R I C											
	DCONMS	LF	LDRED	I Ref.	H	HFB	WF	DMIN	GAMP	GAMF	CSP ⁽¹⁾	Insert
A32T SVLBCL-16	32.00	300.00	76.5	18.50	29.0	14.5	27.50	40.00	0.0	-8.0	1	VC.. 1604
A32T SVLBCR-16	32.00	300.00	76.5	18.50	29.0	14.5	27.50	40.00	0.0	-8.0	0	VC.. 1604
S32T SVLBCR/L-16	32.00	300.00	63.2	18.50	29.0	14.5	22.00	40.00	0.0	-8.0	0	VC.. 1604
S40U SVLBCR/L-16	40.00	350.00	60.0	20.00	36.0	18.0	27.00	49.50	0.0	-5.0	0	VC.. 1604

⁽¹⁾ 0 - Without coolant supply, 1 - With coolant supply

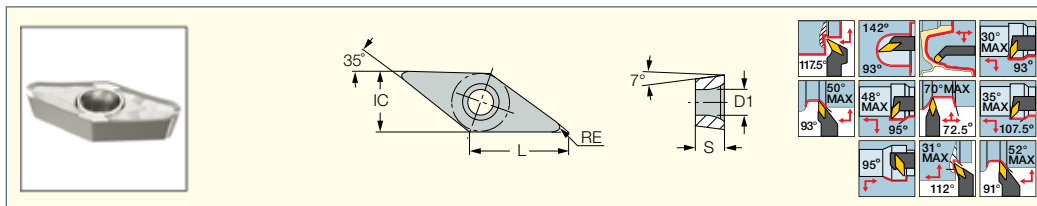
Spare Parts

Designation					
A/S-SVLBCR/L	TVC 3-1P	SR TC-3P	HW 4.0	SR 16-236 P	T-15/5

ISOTURN

VCGT-AS

35° Rhombic Inserts with a 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge for Machining Aluminum

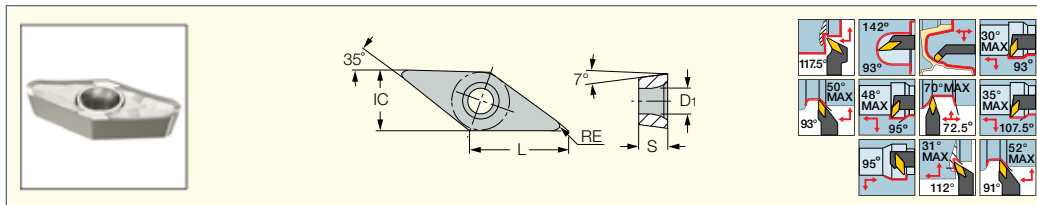


M E T R I C									
Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	L	IC	S	RE	D ₁	IC920	IC20	a _p (mm)	f (mm/rev)
VCGT 110302-AS	11.10	6.35	3.18	0.20	2.90	●	●	0.20-2.50	0.05-0.20
VCGT 110304-AS	11.10	6.35	3.18	0.40	2.90		●	0.50-3.00	0.05-0.25
VCGT 160401-AS	16.60	9.52	4.76	0.10	4.40		●	0.20-2.50	0.05-0.20
VCGT 160402-AS	16.60	9.52	4.76	0.20	4.40		●	0.50-2.50	0.05-0.25
VCGT 160404-AS	16.60	9.52	4.76	0.40	4.40		●	0.50-3.00	0.05-0.25
VCGT 160408-AS	16.60	9.52	4.76	0.80	4.40		●	0.50-3.00	0.10-0.25
VCGT 160412-AS	16.60	9.52	4.76	1.20	4.40		●	0.50-3.00	0.10-0.25
VCGT 220530-AS	22.10	12.70	5.56	3.00	5.50		●	1.50-4.50	0.15-0.30

ISOTURN

VCGT-AS

35° Rhombic Inserts with a 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge for Machining Aluminum



I N C H									
Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	L	IC	S	RE	D ₁	IC920	IC20	a _p (inch)	f (IPR)
VCGT 220-AS	.437	.250	.125	.0079	.114	●	●	.008-.098	.0020-.0079
VCGT 221-AS	.437	.250	.125	.0157	.114		●	.020-.118	.0020-.0098
VCGT 33-.004-AS	.654	.375	.187	.0039	.173		●	.008-.098	.0020-.0079
VCGT 330-AS	.654	.375	.187	.0079	.173		●	.020-.098	.0020-.0098
VCGT 331-AS	.654	.375	.187	.0157	.173		●	.020-.118	.0020-.0098
VCGT 332-AS	.654	.375	.187	.0315	.173		●	.020-.118	.0039-.0098
VCGT 333-AS	.654	.375	.187	.0472	.173		●	.020-.118	.0039-.0098
VCGT 220530-AS	.870	.500	.219	.1181	.217		●	.059-.177	.0059-.0118

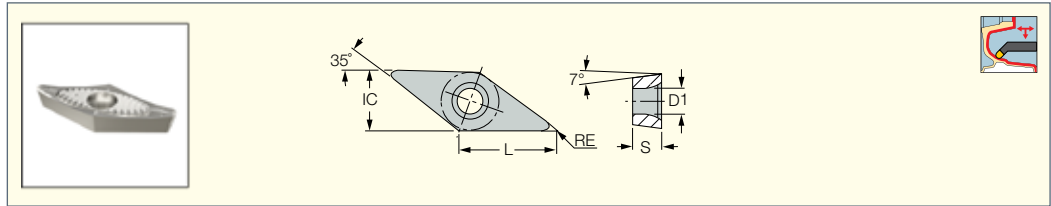


Tools for Aluminum Wheels

ISOTURN

VCGT-AF

Inserts with a Very Positive Rake Angle and Sharp Cutting Edge for Semi-Finishing and Finishing Aluminum

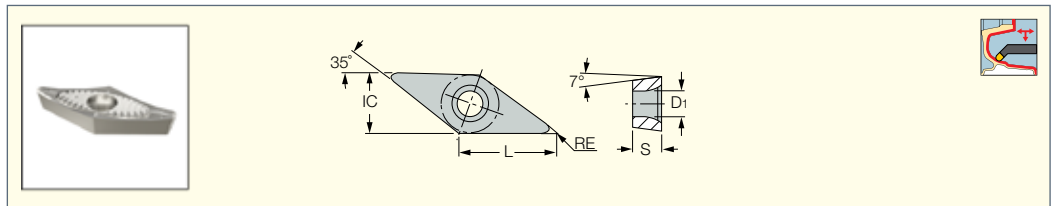


M E T R I C								
Designation	Dimensions					IC20	Recommended Machining Data	
	L	IC	S	RE	D ₁		a _p (mm)	f (mm/rev)
VCGT 220508-AF	22.10	12.70	5.56	0.80	5.50	●	1.00-4.50	0.10-0.25
VCGT 220512-AF	22.10	12.70	5.56	1.20	5.50	●	1.00-4.50	0.10-0.30
VCGT 220516-AF	22.10	12.70	5.56	1.60	5.50	●	1.50-4.50	0.10-0.35

ISOTURN

VCGT-AF

Inserts with a Very Positive Rake Angle and Sharp Cutting Edge for Semi-Finishing and Finishing Aluminum

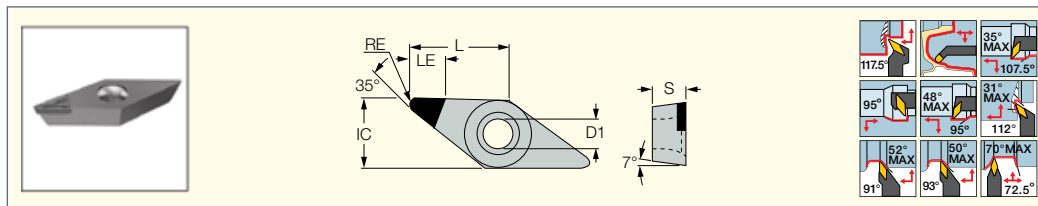


I N C H								
Designation	Dimensions					IC20	Recommended Machining Data	
	L	IC	S	RE	D ₁		a _p (inch)	f (IPR)
VCGT 220508-AF	.870	.500	.219	.0315	.217	●	.039-.177	.0039-.0098
VCGT 220512-AF	.870	.500	.219	.0472	.217	●	.039-.177	.0039-.0118
VCGT 220516-AF	.870	.500	.219	.0630	.217	●	.059-.177	.0039-.0138

ISOTURN

VCGT-DW (PCD)

Inserts with 7° Clearance and a Single PCD Top Corner Tip Chipformer for Machining Aluminum

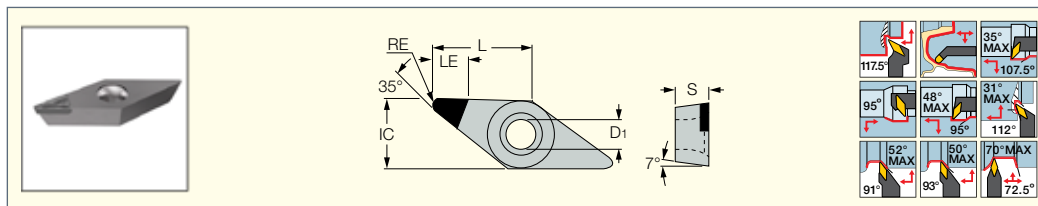


M E T R I C									
Designation	Dimensions						ID6	Recommended Machining Data	
	L	IC	S	RE	D ₁	a _p (mm)		f (mm/rev)	
VCGT 160404-DW	16.60	9.52	4.76	0.40	4.40	●	0.10-3.00	0.05-0.30	
VCGT 160408-DW	16.60	9.52	4.76	0.80	4.40	●	0.10-3.00	0.05-0.30	
VCGT 160412-DW	16.60	9.52	4.76	1.20	4.40	●	0.10-3.00	0.05-0.30	
VCGT 220516-DW	22.10	12.70	5.56	1.60	5.50	●	0.10-3.00	0.05-0.30	
VCGT 220520-DW	22.10	12.70	5.56	2.00	5.50	●	0.10-3.00	0.05-0.30	
VCGT 220530-DW	22.10	12.70	5.56	3.00	5.50	●	0.10-3.00	0.05-0.30	

ISOTURN

VCGT-DW (PCD)

Inserts with 7° Clearance and a Single PCD Top Corner Tip Chipformer for Machining Aluminum



I N C H									
Designation	Dimensions						ID6	Recommended Machining Data	
	L	IC	S	RE	LE	D ₁		a _p (inch)	f (IPR)
VCGT 331-DW	.654	.375	.187	.0157	.260	.173	●	.004-.118	.0020-.0118
VCGT 332-DW	.654	.375	.187	.0315	.252	.173	●	.004-.118	.0020-.0118
VCGT 333-DW	.654	.375	.187	.0472	.248	.173	●	.004-.118	.0020-.0118
VCGT 220516-DW	.870	.500	.219	.0630	.248	.217	●	.004-.118	.0020-.0118
VCGT 220520-DW	.870	.500	.219	.0787	.244	.217	●	.004-.118	.0020-.0118
VCGT 220530-DW	.870	.500	.219	.1181	.236	.217	●	.004-.118	.0020-.0118

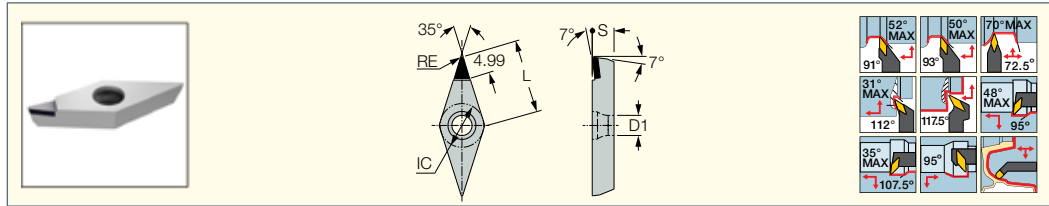


Tools for Aluminum Wheels

ISOTURN

VCGT (PCD)

35° Rhombic Single Brazed
Tip Corner Inserts for
Finishing Aluminum (PCD)

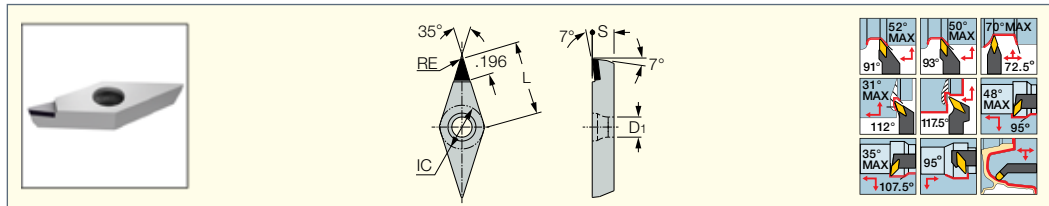


M E T R I C								
Designation	Dimensions					ID5	Recommended Machining Data	
	IC	S	RE	L	D ₁		a _p (mm)	f (mm/rev)
VCGT 160404D	9.52	4.76	0.40	16.60	4.40	•	0.10-3.00	0.05-0.30
VCGT 160408D	9.52	4.76	0.80	16.60	4.40	•	0.10-3.00	0.05-0.30

ISOTURN

VCGT (PCD)

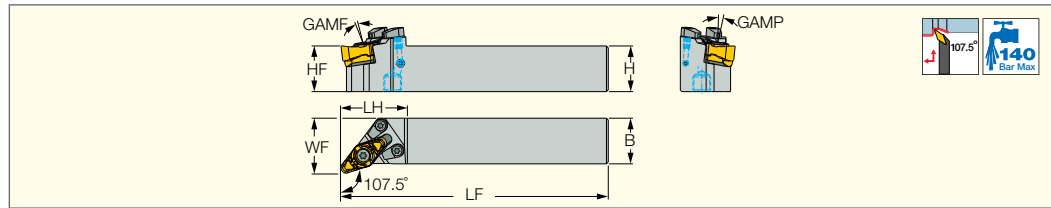
35° Rhombic Single Brazed
Tip Corner Inserts for
Finishing Aluminum (PCD)



I N C H								
Designation	Dimensions					ID5	Recommended Machining Data	
	IC	S	RE	L	D ₁		a _p (inch)	f (IPR)
VCGT 331D	.375	.187	.0157	.654	.173	•	.004-.118	.0020-.0118
VCGT 332D	.375	.187	.0315	.654	.173	•	.004-.118	.0020-.0118

ISOTURN JETCUT

SVHNR/L-AL-JHP
Screw Lock Tools with Channels
for High Pressure Coolant
Carrying 35° Rhombic Inserts



	M E T R I C									
Designation	H	B	HF	LF	LH	WF	GAMP	GAMF	MIID ⁽¹⁾	
SVHNR/L 2525M-22-AL-JHP	25.0	25.0	25.0	146.34	36.3	30.03	7.0	6.0	VNGU 220630-R3N	

⁽¹⁾ Master insert identification

Spare Parts

Designation									
SVHNR/L 2525M-22-AL-JHP	TVX 2230 ^(a)	SR 14-591/L-SN	SW6-T-SH	BLD T20/S7	HW 3.0	SR TC-4	CH-1.9D-JHP-A SET	TVX 2212 ^(b) *	TVX 2216 ^(c) *

* Optional, to be ordered separately

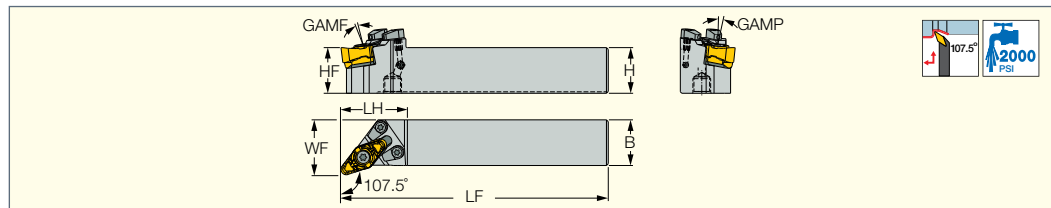
^(a) For VNGU 220630-R3N insert

^(b) For VNGU 220612-R3N insert

^(c) For VNGU 220616-R3N insert

ISOTURN JETCUT

SVHNR/L-AL-JHP
Screw Lock Tools with Channels
for High-Pressure Coolant
Carrying 35° Rhombic Inserts



	I N C H									
Designation	H	B	HF	LF	LH	WF	GAMP	GAMF	MIID ⁽¹⁾	
SVHNR/L 16-4-AL-JHP	1.000	1.000	1.000	5.761	1.431	1.182	7.0	6.0	VNGU 220630-R3N	

⁽¹⁾ Master insert identification

Spare Parts

Designation									
SVHNR/L 16-4-AL-JHP	TVX 2230 ^(a)	SR TC-4	SW6-T-SH	BLD T20/S7	SR 14-591/L-SN	HW 3.0	CH-1.9D-JHP-A SET	TVX 2212 ^(b) *	TVX 2216 ^(c) *

* Optional, to be ordered separately

^(a) For VNGU 220630-R3N insert

^(b) For VNGU 220612-R3N insert

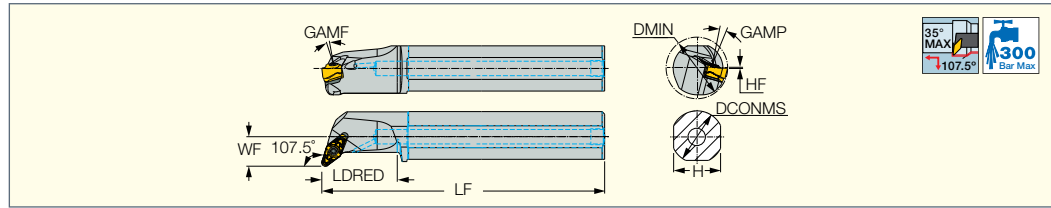
^(c) For VNGU 220616-R3N insert



Tools for Aluminum Wheels

ISOTURN

A-SVQNR/L-AL-JHP
Screw Lock Boring
Bars Carrying the 35°
Rhombic Inserts



M E T R I C										
Designation	DCONMS	LF	LDRED	H	HF	WF	DMIN	GAMP	GAMF	MIID ⁽¹⁾
A40U SVQNR/L-22-AL-JHP	40.00	348.10	60.0	36.0	0.1	23.40	49.00	14.5	6.5	VNGU 220630-R3N

⁽¹⁾ Master insert identification

Spare Parts

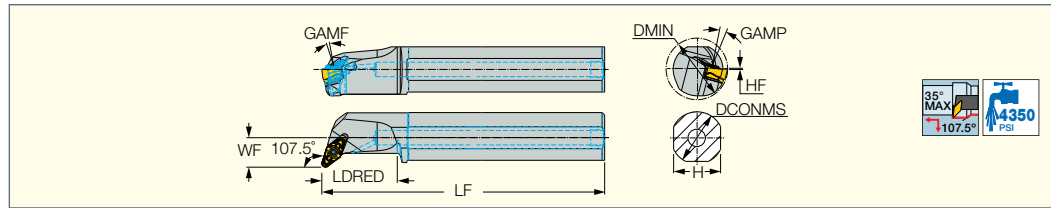
Designation									
A40U SVQNR/L-22-AL-JHP	TVX 2230 ^(a)	SR 14-591/L-SN	HW 3.0	SW6-T-SH	BLD T20/S7	PL 40	SR TC-4	TVX 2212 ^{(b)*}	TVX 2216 ^{(c)*}

* Optional, to be ordered separately

^(a) For VNGU 220630-R3N insert ^(b) For VNGU 220612-R3N insert ^(c) For VNGU 220616-R3N insert

ISOTURN

A-SVQNR/L-AL-JHP
Screw Lock Boring Bars
Carrying 35° Rhombic Inserts



I N C H										
Designation	DCONMS	LF	LDRED	H	HF	WF	DMIN	GAMP	GAMF	MIID ⁽¹⁾
A-SVQNL 24-4-AL-JHP	1.500	13.705	2.36	1.417	.004	.921	1.929	6.5	14.5	VNGU 220630-R3N
A-SVQNR 24-4-AL-JHP	1.500	13.705	2.36	1.417	.004	.921	1.929	6.5	14.5	VNGU 220630-R3N

⁽¹⁾ Master insert identification

Spare Parts

Designation									
A-SVQNR/L-AL-JHP	TVX 2230 ^(a)	SR TC-4	SW6-T-SH	BLD T20/S7	SR 14-591/L-SN	HW 3.0	PL 150	TVX 2212 ^{(b)*}	TVX 2216 ^{(c)*}

* Optional, to be ordered separately

^(a) For VNGU 220630-R3N insert

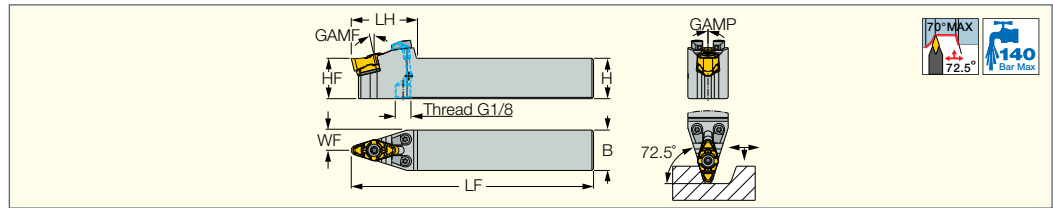
^(b) For VNGU 220612-R3N insert

^(c) For VNGU 220616-R3N insert

ISOTURN JETCUT

SVNNA-AL-JHP

Screw Lock Tools with Channels for High Pressure Coolant Carrying 35° Rhombic Inserts



M E T R I C										
Designation	H	HF	B	LF	LH	WF	GAMP	GAMF	MIID ⁽¹⁾	
SVNNA 2525M-22-AL-JHP	25.0	25.0	25.0	150.00	41.0	12.50	0.0	-13.5	VNGU 220630-R3N	

⁽¹⁾ Master insert identification

Spare Parts

Designation									
SVNNA 2525M-22-AL-JHP	TXV 2230 ^(*)	HW 3.0	BLD T20/S7	SW6-T-SH	SR TC-4	SR 14-591/L-SN	CH-1.9D-JHP-A SET	TVX 2212 ^(*)	TVX 2216 ^(*)

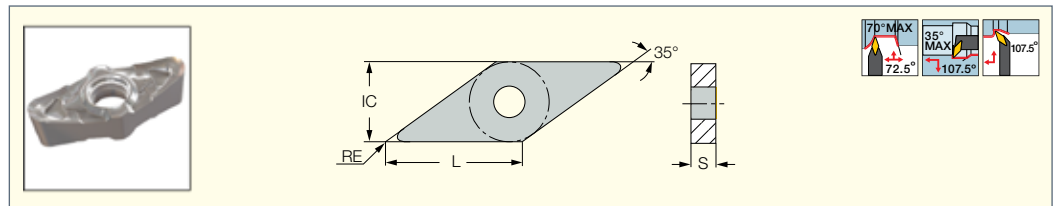
* Optional, to be ordered separately

^(*) For VNGU 220630-R3N insert ^(*) For VNGU 220612-R3N insert ^(*) For VNGU 220616-R3N insert

ISOTURN

ALUPTURN

DOUBLE SIDED
VNGU-R3N
Double-Sided Sharp-Edged Positive Rake Inserts for Rough Machining on Aluminum and Non-Ferrous Materials

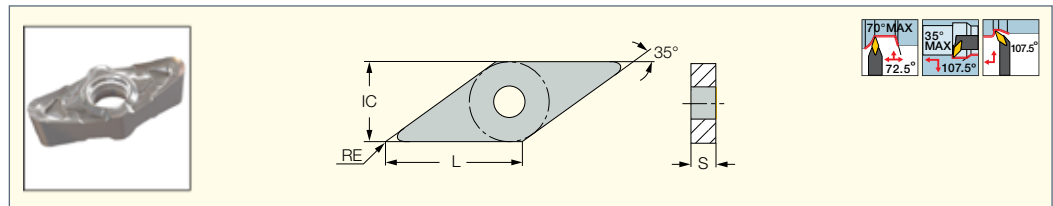


M E T R I C								
Designation	Dimensions					IC20	Recommended Machining Data	
	L	IC	S	RE	a _p (mm)		f (mm/rev)	
VNGU 220612-R3N	22.00	12.70	6.77	1.20	●	1.00-4.50	0.10-0.30	
VNGU 220616-R3N	22.00	12.70	6.51	1.60	●	1.50-4.50	0.10-0.35	
VNGU 220630-R3N	22.00	12.70	6.35	3.00	●	1.50-4.50	0.15-0.40	

ISOTURN

ALUPTURN

DOUBLE SIDED
VNGU-R3N
Double-Sided Sharp-Edged Positive Rake Inserts for Rough Machining on Aluminum and Non-Ferrous Materials



I N C H								
Designation	Dimensions					IC20	Recommended Machining Data	
	L	IC	S	RE	a _p (inch)		f (IPR)	
VNGU 220612-R3N	.866	.500	.267	.0472	●	.039-.177	.0039-.0118	
VNGU 220616-R3N	.866	.500	.256	.0630	●	.059-.177	.0039-.0138	
VNGU 220630-R3N	.866	.500	.250	.1181	●	.059-.177	.0059-.0157	



Tailor made tools

ISCAR provides special tools with up to 3 pockets on one toolholder for increased productivity and reduced cycle time.

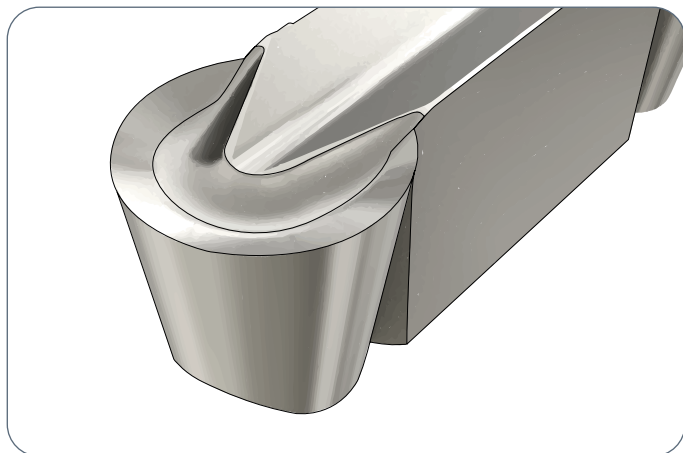


Cutting Speed Recommendations

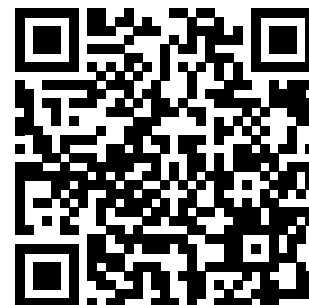
Groove-Turn cutting speed recommendations

ISO	Material	Condition	Hardness HB	Material No.(1)	ID5	IC20	IC04	IC07	
N	Aluminum-wrought alloy		Not cureable	60	21	400-2500	400-1200	460 - 1380	440 - 1320
			Cured	100	22	400-2500	300-1000	345 - 1150	330 - 1100
	Aluminum-cast, alloyed	<=12% Si	Not cureable	75	23	400-2500	300-1000	345 - 1150	330 - 1100
			Cured	90	24	400-2500	200-600	230 - 690	220 - 660
		>12% Si	High temperature	130	25	300-1500	200-400	230 - 460	220 - 440
	Copper alloys	>1% Pb	Free cutting	110	26	300-1000	200-400	230 - 460	220 - 440
			Brass	90	27	300-800	150-300	170 - 345	165 - 330
			Electrolytic copper	100	28	300-800	100-200	115 - 230	110 - 220
	Non-metallic	Duroplastics, fiber plastics			29	150-600	50-200	55 - 230	55 - 220
		Hard rubber			30				

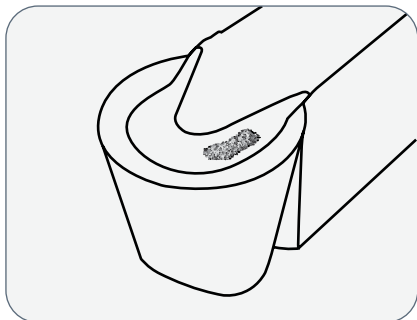
Insert wear problems and solutions



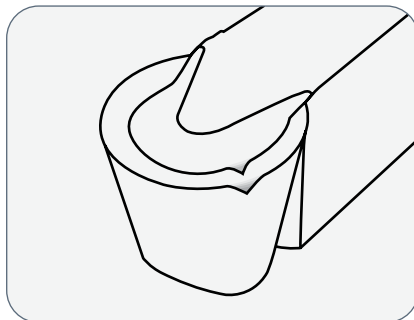
To see more information,
scan the barcode



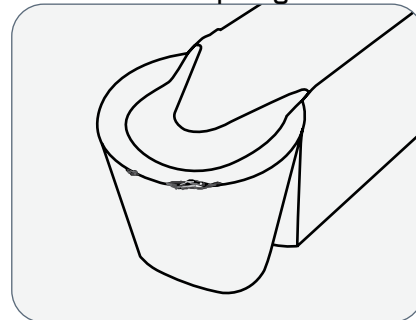
Crater wear



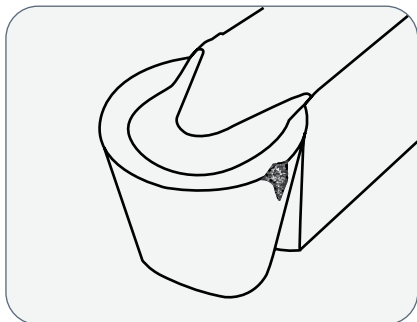
Plastic deformation



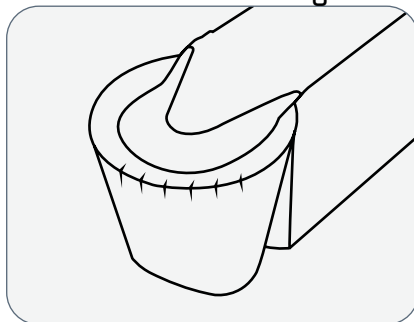
Built-up edge



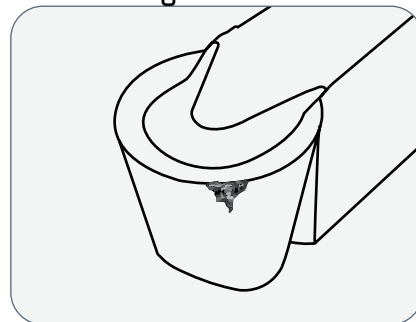
Notch wear



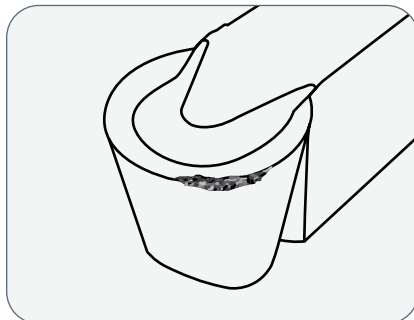
Thermal cracking



Edge fracture



Flank wear





Partnership with ISCAR

A Leader in Metalworking Innovations

Innovation has made ISCAR the great metalworking company that it is today. But metalworking innovation would not be possible without a total commitment to research and development and ISCAR devotes approximately 6% of its total resources to R&D activities. At ISCAR, creativity is a way of life.

Each new product begins as an idea in an engineer's mind. The image is entered into a computer aided design/machining (CAD/CAM) program. A prototype is produced and goes through exhaustive analyses. Repeated refinements, analyses, and testing continue until the desired results are achieved. Only after

this extensive development and testing sequence can the new idea move from the prototype phase to development for manufacturing.

ISCAR innovations are not limited to new metalworking products. More efficient and cost-effective manufacturing procedures and processes are constantly being tested, evaluated, and implemented. Improvements in computerization, data flow, quality assurance, employee safety, and environmental protection are all a part of the ISCAR philosophy. ISCAR is truly a company where innovation never stops.



Complete Solutions for Machining Aluminum Wheels

To initiate a new project, please provide the following information:

1. Wheel drawing as DXF file – casting and final wheel
2. Machine type
3. Coolant type – emulsion / MQL
4. External/internal coolant
5. Areas to be machined – OD/ID/FACE/BORE

To download this file, scan the barcode

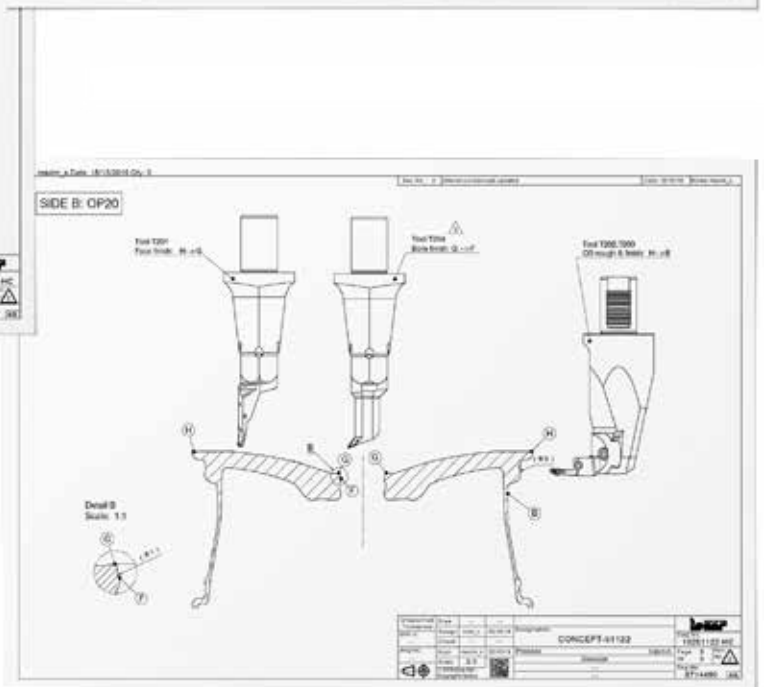
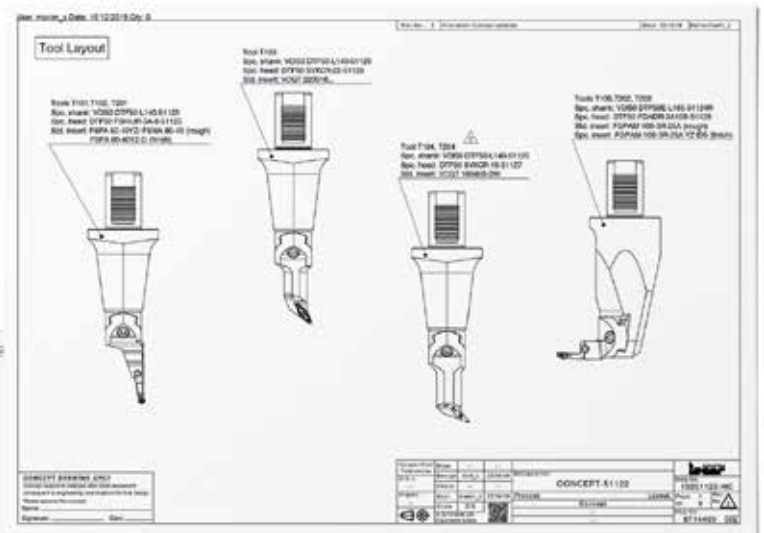
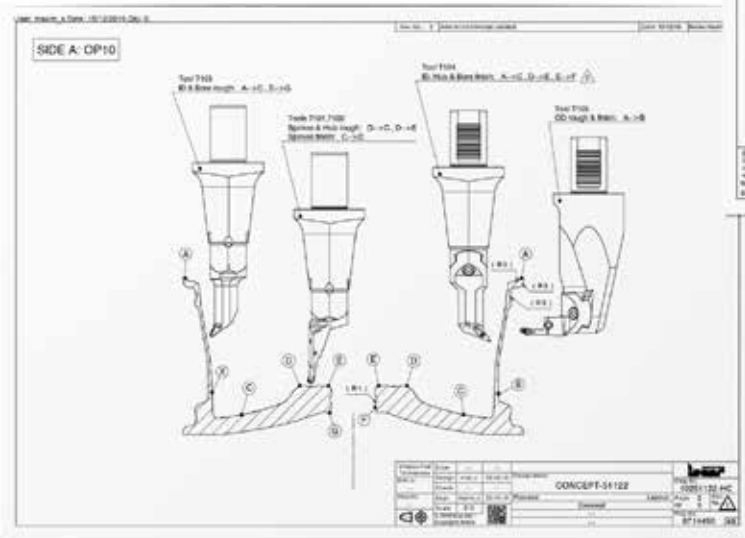




Concept Drawings

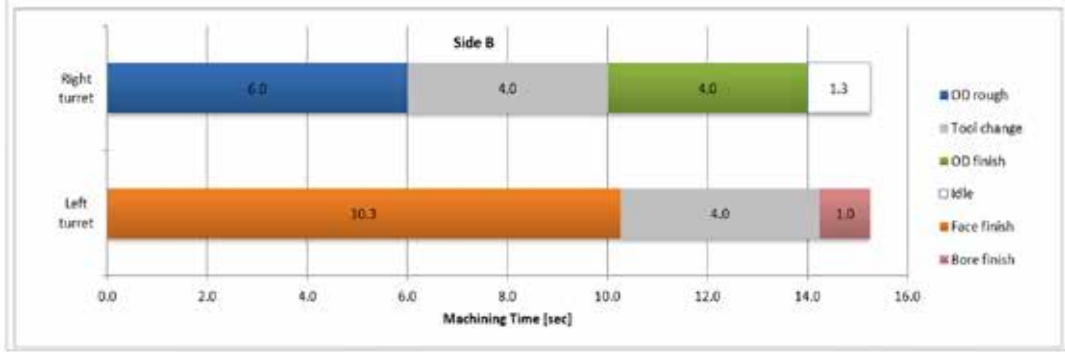
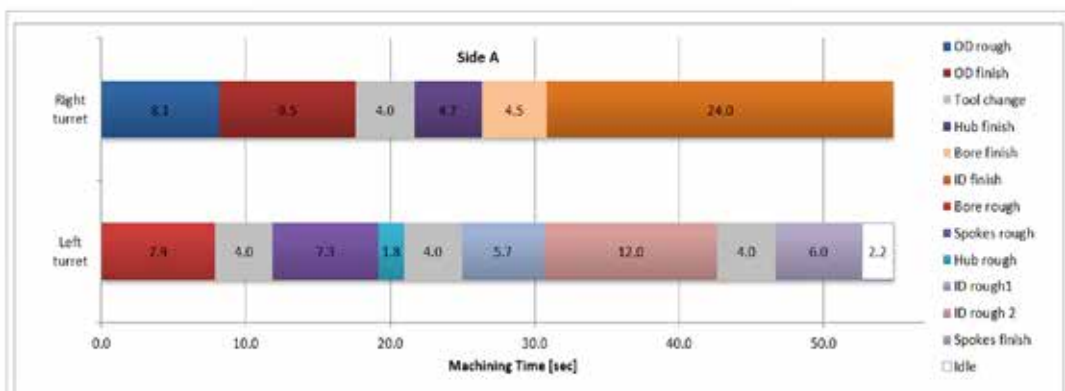
Concept drawings

ISCAR's dedicated teams of engineers will provide the most appropriate solution based on standard or special tools. ISCAR's offer will include concept drawings, machining steps, tool sequences, time studies, CPU (cost per unit), price list and delivery time.



Machining steps and tools sequences


Operation		Machining Data			General Data			Cutting time/Tool change [sec]	Left turret time [sec]	Right turret time [sec]
Segment	Description	Tool #	w [rpm]	Feed [mm/rev]	# of passes	Total cutting length [mm]	Depth of cut [mm]			
OP 10 (Side A)										
A-B	OD rough	T105	2000	0.7	1	190	1+3.3	8.1		8.1
	OD finish		2000	0.6	1	190	1	9.5		9.5
	Tool change							4.0		4.0
D-E	Hub finish	T104	2000	0.3	1	47	1	4.7		4.7
E-G	Bore finish		2000	0.3	1	45	1	4.5		4.5
A-C	ID finish		2000	0.3	1	240	1	24.0		24.0
E-G	Bore rough	T103	2000	0.4	2	105	-4.2	7.9	7.9	
	Tool change							4.0		4.0
C-D	Spokes rough	T101	2000	0.8	2	195	0.2-3.4	7.3		7.3
D-E	Hub rough		2000	0.8	1	47	1.5	1.8		1.8
	Tool change							4.0		4.0
X-C	ID rough1	T103	2000	0.6	2	114	-2	5.7		5.7
A-C	ID rough 2		2000	0.6	1	240	-2	12.0		12.0
	Tool change								4.0	
D-C	Spokes finish	T102	2000	0.5	1	100	1	6.0		6.0
	Idle									2.2
Total time for OP 10									54.8	54.8
OP 20 (Side B)										
H-B	OD rough	202	2000	0.7	3	140	0.5-3.5	6.0		6.0
	Tool change							4.0		4.0
H-B	OD finish	203	2000	0.6	1	80	1	4.0		4.0
	Idle									1.3
H-G	Face finish	T201	2000	0.6	1	205	1.5	10.3	10.3	
	Tool change							4.0		4.0
F-G	Bore finish	T204	2000	0.3	1	10	1	1.0		1.0
Total time for OP 20									15.3	15.3

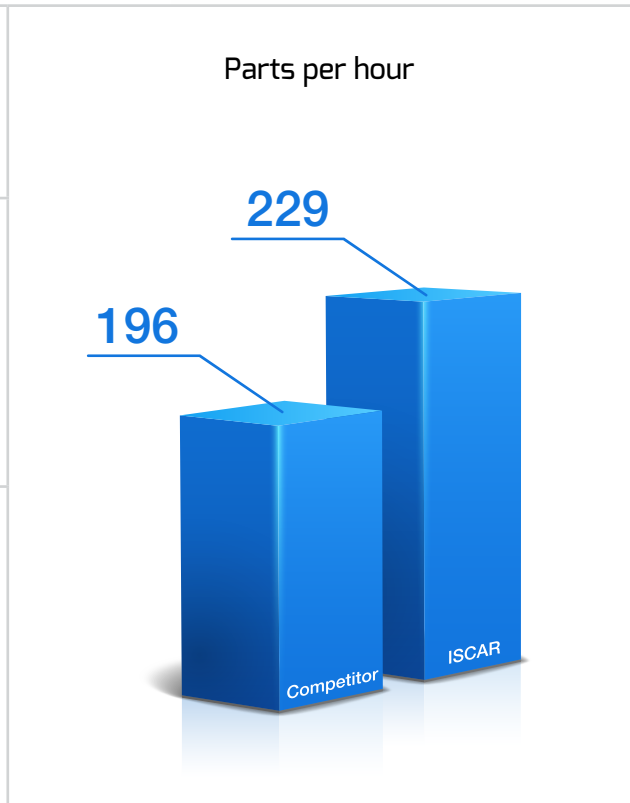




Test Reports

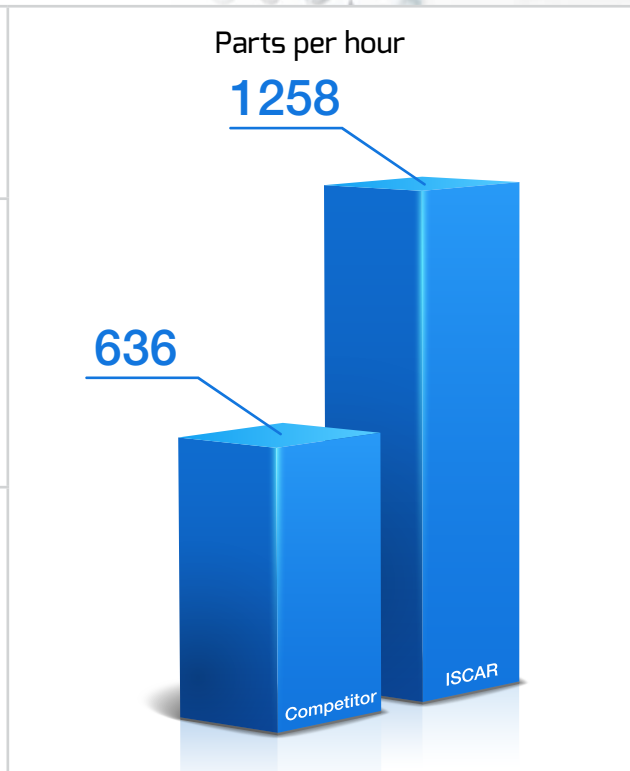
Groove-Turn test report

Industry Part Raw Material Material No. Hardness	Cars Aluminum Wheel Casting AISI/SAE 130 HB
Tool Insert Carbide Grade Cutting Speed Feed Turning Depth of Cut Turning No. of Passes Turning Parts per Cutting Edge	DTF50 FSHDL-8 FSPA 80-40YZ-D ID5 2,577 0.68 1.5 3 9000
	




Drilling test report

Industry Part Raw Material Material No. Hardness	Cars Aluminum Wheel Casting AISI/SAE 130 HB
Tool Insert Insert Grade Cutting Speed Spindle Speed Hole Depth Metal Removal Rate Holes per Cutting Edge	MN280 090XXN1 ICP 280 IC908 528 6,002 40 1,293.6 50000
	



Turning test report

Industry Part Raw Material Material No. Hardness	Cars Aluminum Wheel Chilled Cast Iron 3.2371 130 HB	<p>Parts per hour</p>  <table border="1"> <thead> <tr> <th>Brand</th> <th>Parts per hour</th> </tr> </thead> <tbody> <tr> <td>Competitor</td> <td>128</td> </tr> <tr> <td>ISCAR</td> <td>142</td> </tr> </tbody> </table>	Brand	Parts per hour	Competitor	128	ISCAR	142
Brand	Parts per hour							
Competitor	128							
ISCAR	142							
Tool Insert Insert Grade Cutting Speed Spindle Speed Feed Depth of Cut Number of Passes	DTF50 SVQPL-22 VPGT 220516-DW ID5 2,560 1,734 0.5 2.5 2							





ISCAR'S MACHINING SOLUTIONS FOR **ALUMINUM WHEELS**

