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**NPA** New Product Announcement

TURNING  
08-2022  
MARCH 2022  
METRIC



New Generation Inserts



Roughing & Finishing Operations



High Productivity



**ISO-TURN**

# New Generation of ISO-Turn Inserts for the Railway Industry





New Generation Inserts



Roughing &amp; Finishing Operations



High Productivity

# NPA

## New Product Announcement

### ISOTURN

## Highlights

### LNMX 19/30 ... Turning Inserts with New F3P and WKR Chip Breakers for Re-Turning Train Wheels

#### Advantages

ISCAR introduces new railroad wheel re-turning LNMX 19/30... inserts chip formers, which are designed to complete a wide range of machining operations from light to heavy cuts. The inserts are coated with diverse carbide grades that can machine wheels under different machining conditions. ISCAR's new LNMX 19/30... inserts should be introduced on portal CAM conventional wheel re-turning or advanced CNC wheel re-turning lathes, by using compatible mono blocks or modular tools.

#### Note the new chipformers listed below

- The new F3P design is intended for finishing operations of up to 1.5 mm and recommended for "soft materials". The F3P features better chip formation when compared to other inserts.
- The new WKR chipformer was designed for roughing operations under unstable conditions.  
For LNMX 19... Ap max up to 6 mm and for LNMX 30... Ap max up to 12 mm.
- The new inserts are available with CVD coated grades IC8150.

[Click for Short Video](#)

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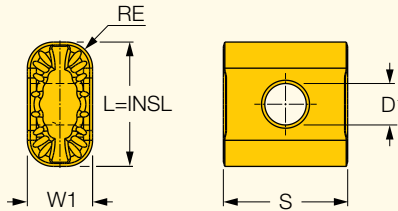
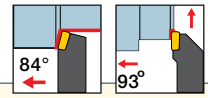
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### ISOTURN

#### LNMX 19/30

Tangentially Clamped Inserts for Railroad Wheel Re-Turning



Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	W1	INSL	S	RE	D1	IC8250	IC8150	$a_p$ (mm)	$f$ (mm/rev)
LNMX 191940-F3P	10.00	19.50	19.05	4.00	6.35	•	•	0.20-1.50	0.20-0.60
LNMX 191940-WF	10.00	19.05	19.05	4.00	6.35	•	•	1.00-3.50	0.25-1.00
LNMX 191940-WM	10.00	19.05	19.05	4.00	6.35	•	•	1.50-5.00	0.40-1.50
LNMX 191940-WKR	10.00	19.05	19.05	4.00	6.35	•	•	3.00-6.00	0.30-1.50
LNMX 301940-WM	12.00	30.00	19.05	4.00	6.35	•	•	3.00-7.00	0.70-1.70
LNMX 301940-WR	12.00	30.00	19.05	4.00	6.35	•	•	3.00-12.00	0.80-1.90
LNMX 301940-WKR	12.00	30.00	19.05	4.00	6.35	•	•	5.00-12.00	0.50-1.90



**LNMX 191940-F3P**  
For finish operation



**LNMX 191940-WF**  
For semi-finish operation



**LNMX 191940-WM**  
For medium/  
semi-finishing operations



**LNMX 1919-WKR**  
For roughing operations  
- Unstable conditions



**LNMX 301940-WM**  
For medium/  
semi-finishing operations



**LNMX 301940-WR**  
For roughing operations



**LNMX 301940-WKR**  
For roughing operations  
- Unstable conditions

NEW  
NEW  
NEW

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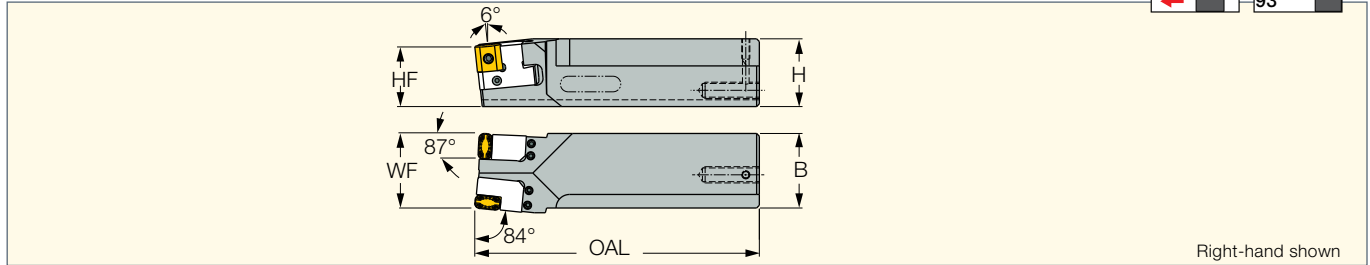
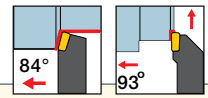
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## ISOTURN

### PRWR/L

Toolholders with Cartridges for Under Floor Railroad Wheel Re-Turning Lathes (Model 106 Thread Profile Machine)

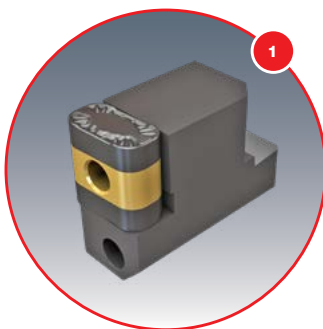


Designation	H	HF	B	OAL	WF		
PRWR/L 50-55	50.0	44.0	55.0	210.00	55.00	SR M6X1X16	HW 3.0

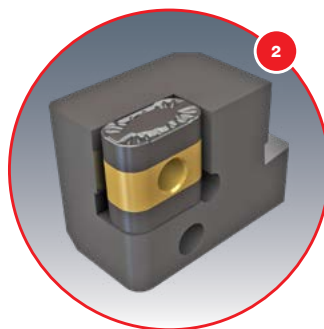
• Cartridges should be ordered separately

## Toolholders and Cartridges for Under Floor Re-turning Lathes (Model 106 Thread Profile Machine)

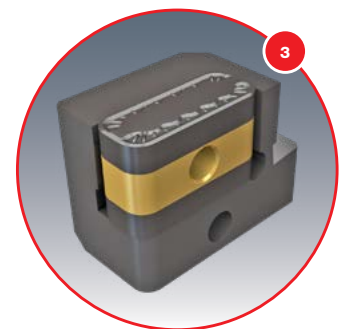
### Assembly and Spare Parts






PRWR/L 177-CA-19

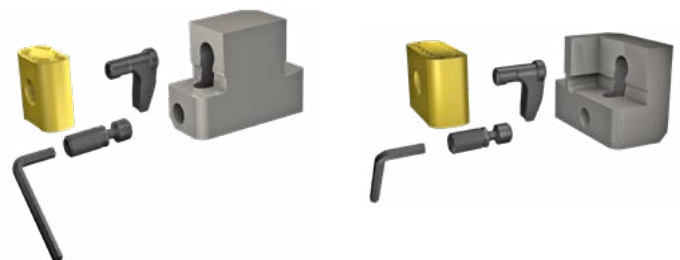


PRWR/L 175-CA-19



PRWR/L 175-CA-30

Designation	 Screw	 Lever	 Key
LNMX 191940	SR LCS 5	LR 5	HW 3.0
LNMX 301940			



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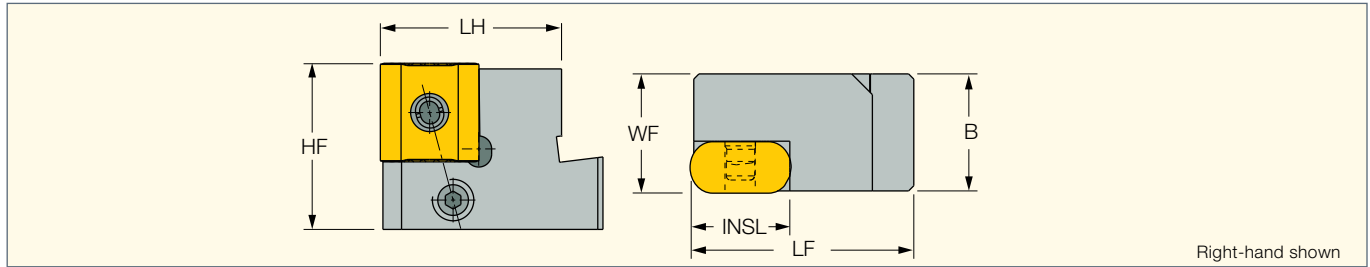
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### ISOTURN

#### PRWR/L 175-CA

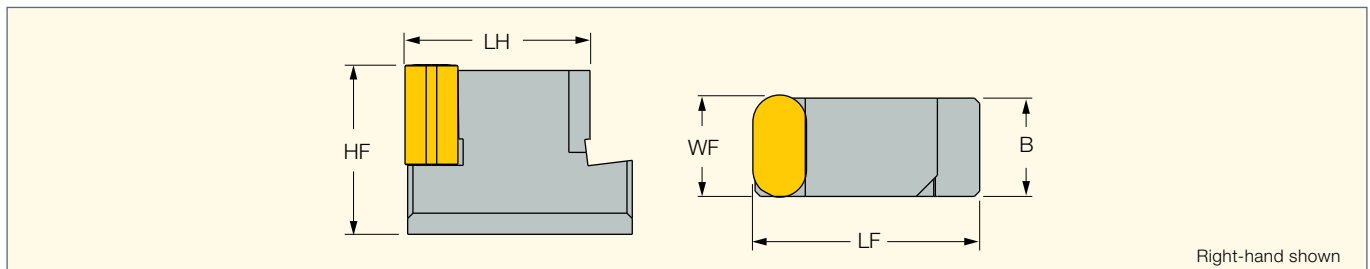
Cartridges for PRWR/L 50-55 Railroad Wheel Re-Turning Tools






Designation	HF	B	LF	LH	WF	INSL	Insert			
PRWR/L 175-CA-19	32.0	22.6	43.00	35.0	23.00	19.00	LNMX 191940	SR LCS 5	LR 5	HW 3.0
PRWR/L 175-CA-30	32.0	22.6	43.00	35.0	23.00	30.00	LNMX 301940	SR LCS 5	LR 5	HW 3.0

#### PRWR/L 177-CA

Cartridges for PRWR/L 50-55 Railroad Wheel Re-Turning Tools



Designation	HF	B	LF	LH	WF	Insert			
PRWR/L 177-CA-19	32.0	18.6	43.00	35.0	19.10	LNMX 191940	SR LCS 5	LR 5	HW 3.0



### ISOTURN

#### Cutting Data

Speed	High ↑ ↓ Low	P	Grade Recommendation
		IC8150	A very hard substrate with a cobalt enriched layer, improved MTCVD TiCN and a thick alpha Al <sub>2</sub> O <sub>3</sub> CVD coating. Features excellent thermal stability, resistance to chipping and plastic deformation. Recommended for high speed machining of steel at stable or slightly unstable conditions.
		IC8250	A tough substrate with a cobalt enriched layer combined with improved MTCVD TiCN and a thick alpha Al <sub>2</sub> O <sub>3</sub> CVD coating. Recommended for general use machining of steel in a wide range of conditions, featuring high toughness and resistance to chipping and plastic deformation.

#### Cutting Data Recommendations



#### Cutting Data by Area:

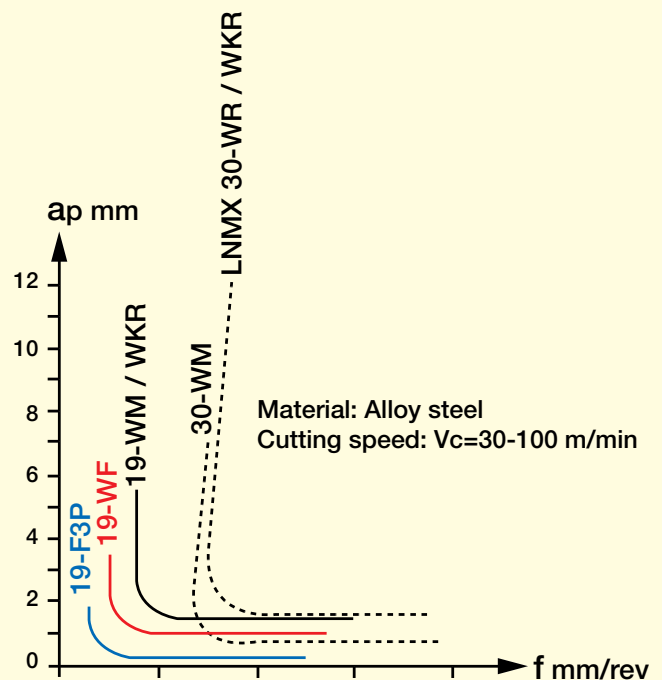
Area	V <sub>c</sub>	f
A	30 - 70 m/min	0.3 - 1.8 mm/rev
B	50 - 100 m/min	0.5 - 2.0 mm/rev
C	50 - 100 m/min	0.5 - 2.0 mm/rev

#### Depth of cut according to chipbreaker geometry:

F3P	0.20-1.50
WF	1.00-3.50
WM (19)	1.50-5.00
WKR (19)	3.00-6.00
WKR/WR (30)	3.00-12.00

In case of worn wheels with skid flats, built-up and shelled tread or thermal cracks, reduce the cutting speed to **ISCAR's** recommended minimum speed.

High carbon wheels should be machined at **ISCAR's** recommended low range cutting speed. Feeds should be optimized within the recommended range per chipformer and actual chip formation.



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### ISOTURN

## TEST NO. 1

**Part name:** Railway wheel

**Material:** Alloy steel

**Machine manufacturer:** RAFAMET

**Coolant method:** None

	ISCAR
Insert type	LNMX 191940-F3P
Carbide grade	IC8150
Cutting speed (m/min)	80-100
Part diameter (mm)	830
Feed per revolution (mm/rev)	0.40
Depth of cut (mm)	0.20-0.50
Length of cut (mm) x3	140
Number of edges per insert	2
Number of parts per edge	<b>10</b>

- With the F3P the customer achieved short chips
- The F3P recommended for soft wheels and finishing operations.



## TEST NO. 2

**Part name:** Railway wheel

**Material:** Alloy steel

**Machine manufacturer:** Hegenscheidt

**Coolant method:** None

	ISCAR	Competitor
Insert type	LNMX 191940-WKR	LNMX 191940 SN-RF
Carbide grade	IC8150	T9315
Cutting speed (m/min)	45	45
Part diameter (mm)	828	828
Feed per revolution (mm/rev)	0.45	0.45
Depth of cut (mm)	4.00	4.00
Length of cut (mm) x3	140	140
Number of edges per insert	1	1
Number of parts per edge	<b>12</b>	8

\* Cartridge – PRWR 175-CA-19