



# **SUMOMILL**

290 LINE

## **Endmills with Tangentially Clamped Inserts**

ISCAR is introducing a new family of milling tools that uses tangentially clamped inserts with two helical cutting edges. The T290 LNMT ... TR inserts are the next evolution of ISCAR's most popular HELIMILL inserts.

These new SUMOMILL T290 inserts are available in cutting edge lengths of .197" and .394".

As a result of their tangential orientation in the pocket, the inserts enable tool design with larger core diameters than tools with regular, radially oriented inserts. This provides a much stronger tool construction, which sustains a higher impact load and reduces the risk of fracture to a minimum.

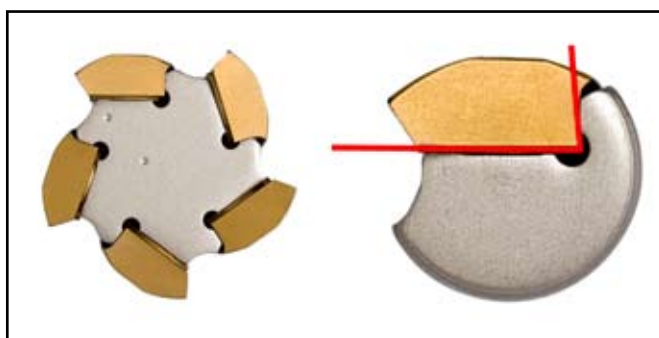


They feature a soft and clean cut, due to their helical cutting edges and positive rake angles.





The new tools are available in the most advanced SUMO TEC carbide grades. When compared to the current HELIMILL and HELIPLUS tools, they feature high durability and outstanding tool life, because of their tangential orientation of the inserts in their pockets and higher tooth density.



In the first stage, ISCAR will introduce the following SUMOMILL T290 tool range:

- Endmills in diameters .312" to .625", that carry T290 LNMT 05... inserts
- Endmills in diameters .750" to 1.250", that carry T290 LNMT 10... inserts

#### **SUMOMILL T290 tool features**

- Ability to run at higher table feeds, producing excellent surface finish and no mismatch
- Can be used for machining 90° shoulders at high rates, with no mismatch
- Capable of plunging
- All of the tools have coolant holes

#### **Advantages**

- Tangential clamping mechanism enables the resultant cutting force to be transmitted directly to the cutter body, without applying or adding any undesired stress to the tightening screw. The tangential clamping configuration also offers a higher insert density.
- Designed with axial and tangential angles that are significantly larger, in comparison to other tools that utilize conventional laydown inserts. This unique design leads to a major reduction in cutting forces, improves tool stability and prolongs life of the cutting edge.
- High feed rates combined with a large number of cutting edges deliver more output and increase productivity.
- The SUMOMILL T290 convex shaped insert with its unique tangential orientation enabled the development of small diameter cutting tools of even .312" diameter.





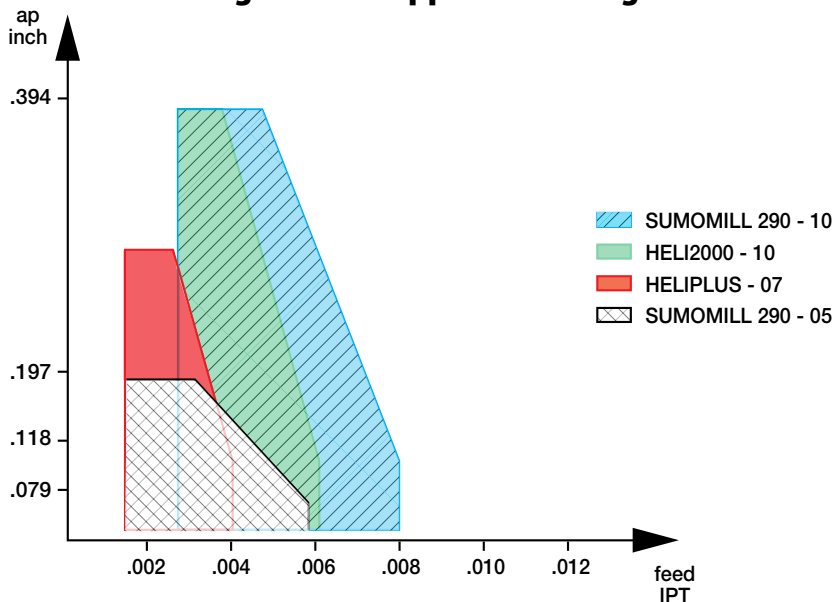
- The stable condition during the cutting operation prolongs tool life and improves the obtained surface finish.
- The SUMOMILL T290 is the only tool available in the market that is capable of performing rampdown milling operations with tangential inserts.

Attached are field reports which show the advantage of using the SUMOMILL T290 tools over competitors' and also ISCAR's previous tool types.

**Marketing**

The SUMOMILL T290 should be offered for small depth of cut applications, pointing out the great advantages of providing higher productivity and longer tool life.

**Milling Families Application Ranges**



**Availability**

In stock.

**Prices**

Your price list will be sent to you by the pricing department and it is available in the **GAL** system.

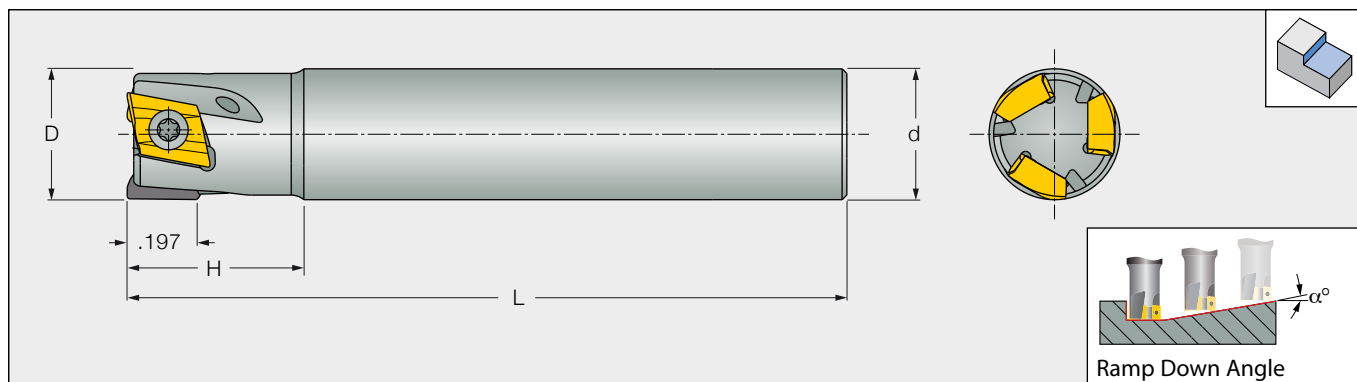
**ISCAR's New SUMOMILL T290 is  
the right choice for higher productivity and better profitability**

Sincerely,

**David Feldman**  
Chief Technical Officer,  
ROTATING TOOLS  
Iscar Headquarters

Sincerely,

**Reuven Shapir**  
Product Manager,  
HELMILL  
SUMOMILL T290  
HELIDO-H490  
MILL-THREAD  
Aerospace Project  
Iscar Headquarters



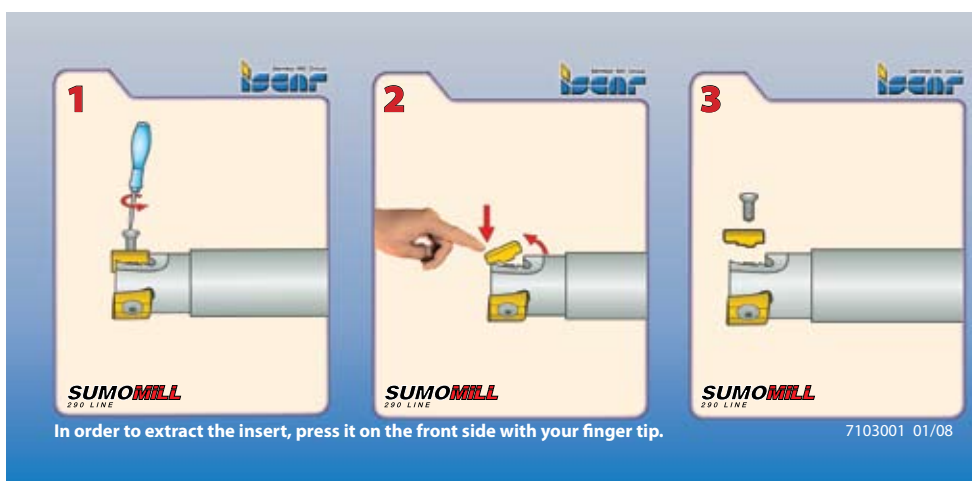
**T290 ELN...-05 Endmills with Tangentially Clamped Inserts, Diameter Range .312-.625"**

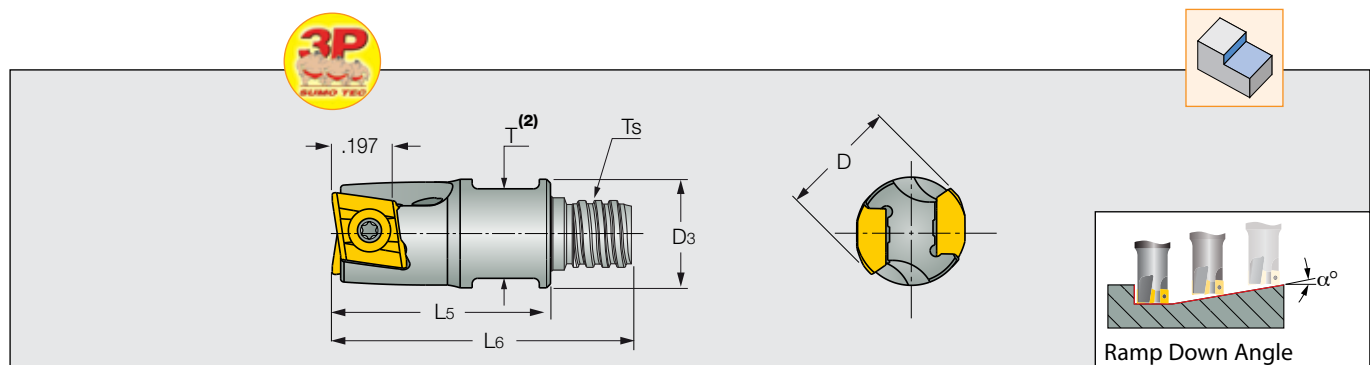
Designation	D	Z	L	H	d	Type	α°		Inserts
T290 ELN D.31-01-C.31-05	.312	1	2.50	.79	.312	C	2.5	●	T290 LNMT 05...
T290 ELN D.38-02-C.38-05	.375	2	3.00	.79	.375	C	2.3	●	
T290 ELN D.50-02-C.50-05	.500	2	3.25	.79	.500	C	2.0	●	
T290 ELN D.50-03-C.50-05	.500	3	3.25	.79	.500	C	2.0	●	
T290 ELN D.56-03-C.56-05	.562	3	3.25	.79	.562	C	1.5	●	
T290 ELN D.62-04-C.62-05	.625	4	3.11	1.00	.625	C	1.0	●	
T290 ELN D.62-05-C.62-05	.625	5	3.11	1.00	.625	C	1.0	●	

Spare parts:

Clamping screw: SR 10503833-S

Torx key: T-7/51





**T290 ELN...MM Endmills with Tangentially Clamped Inserts and MULTI-MASTER Adaptation**

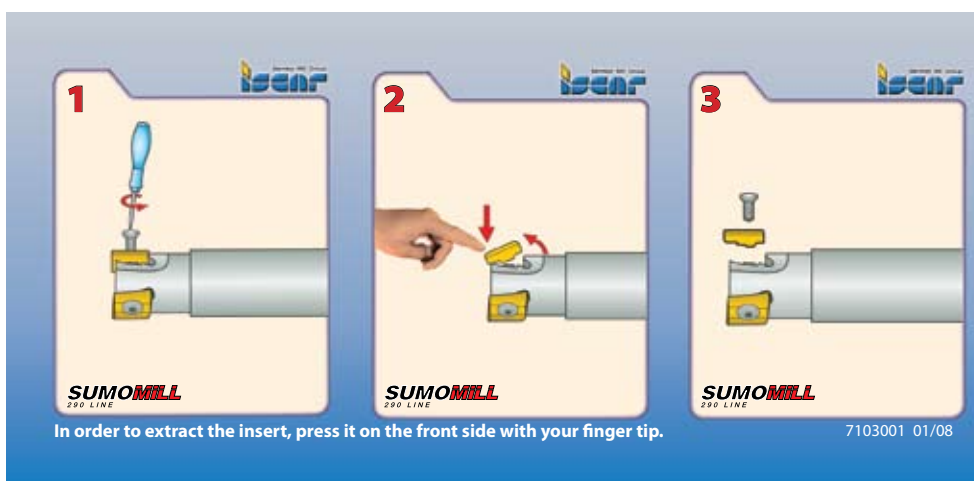
Designation	D	Z	D <sub>3</sub>	T <sub>s</sub>	L <sub>5</sub>	L <sub>6</sub>	T <sup>(1)</sup>	α°	Insert
<b>T290 ELN D.38-02-MMT06-05<sup>(1)</sup></b>	.38	2	.34	T06	.52	.79	.31	2.3	T290 LNMT 05...
<b>T290 ELN D.50-03-MMT08-05</b>	.50	3	.45	T08	.63	.94	.39	2.0	

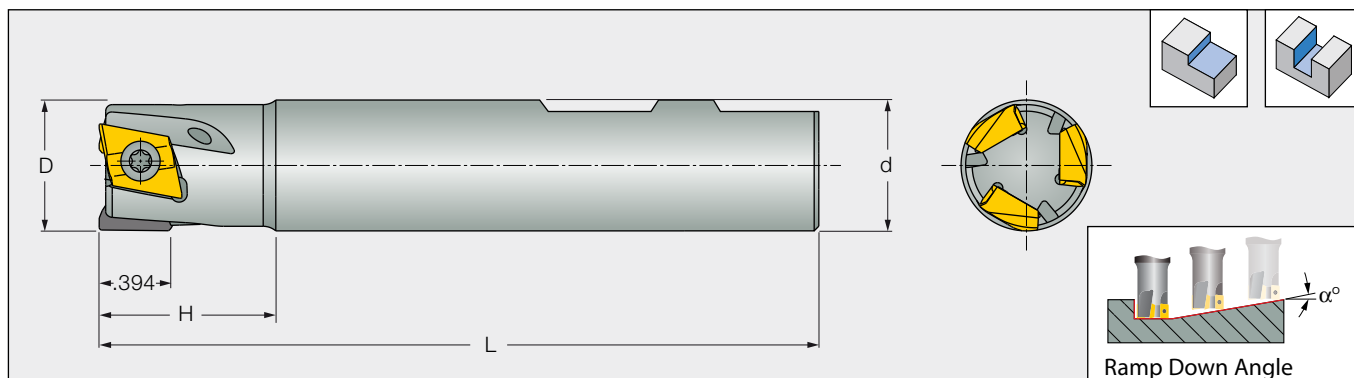
Spare parts:

Clamping screw: SR 10503833-S


Torx key: T-7/51

<sup>(1)</sup> Clamping wrench size





**T290 ELN...-10 Endmills with Tangentially Clamped Inserts, Diameter Range .75-1.25"**

Designation	D	Z	L	H	d	Type	$\alpha^\circ$		Inserts
<b>T290 ELN D.75-03-W.75-10<sup>(1)</sup></b>	.750	3	3.50	1.22	.750	W	4	●	T290 LNMT ...10
<b>T290 ELN D.75-2W.75-10-XL</b>	.750	2	4.75	1.22	.750	W	4	●	
<b>T290 ELN D1.0-04-W1.0-10</b>	1.000	4	4.00	1.22	1.000	W	2.2	●	
<b>T290 ELN D1.0-3W1.0-10-XL</b>	1.000	3	5.00	1.22	1.000	W	2.2	●	
<b>T290 ELN D125-05-W125-10</b>	1.250	5	4.00	1.22	1.250	W	1.6	●	
<b>T290 ELN D125-4W125-10-XL</b>	1.250	4	5.00	1.22	1.250	W	1.6	●	

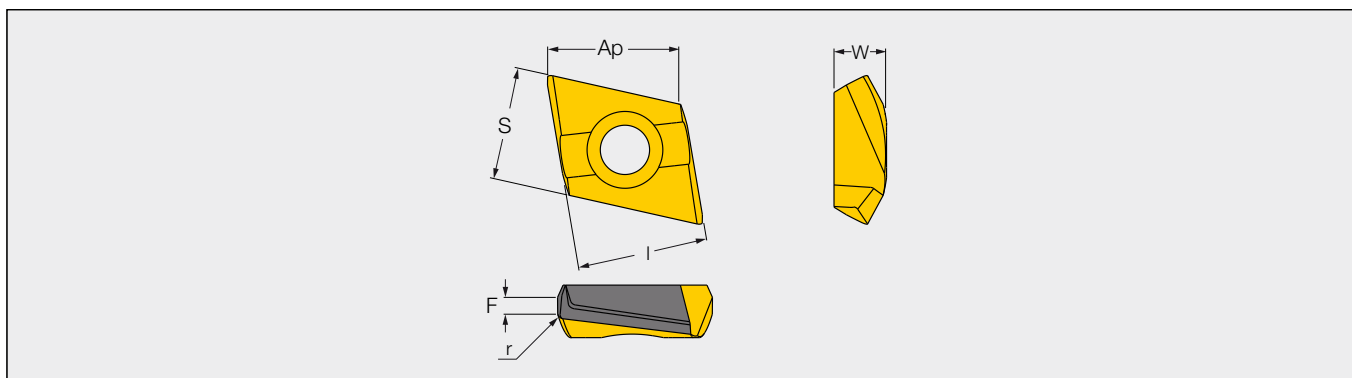
Spare parts:

<sup>(1)</sup> Clamping screw: SR M3.5x7.6 IP15

Clamping screw: SR 10504970

Torx blade: BLD 15/M7

Handle: SW6-T short



**T290 LNMT 0502 Tangential Insert, 2 Cutting Edges**

Hard ← → Tough

Designation	l	Ap	S	W	F	r	Tool Types	Type of Machining	IC808	IC5100	IC810	IC830	IC330
<b>T290 LNHT 050202 TR</b>	.224	.197	.228	.110	.050	.008	1	Light/Medium				●	
<b>T290 LNMT 050204 TR</b>	.224	.197	.228	.110	.039	.016	1	Light/Medium	○	●	○	●	●
<b>T290 LNHT 050204 TR</b>	.224	.197	.228	.110	.039	.016	1	Light/Medium				●	

○ Available beginning of 2009.

<b>P Steel</b>	✓	✓	✓	✓	✓
<b>M Stainless Steel</b>	✓			✓	✓
<b>K Cast Iron</b>		✓	✓	✓	
<b>S High Temp. Alloy</b>	✓			✓	✓
<b>H Hardened Steel</b>	✓		✓		

**T290 LNMT 1004 Tangential Insert, 2 Cutting Edges**

Hard ← → Tough

Designation	l	Ap	S	W	F	r	Tool Types	Type of Machining	IC808	IC5100	IC810	IC830	IC330
<b>T290 LNMT 100405 TR</b>	.409	.394	.350	.161	.051	.020	2	Medium/Heavy	●	●	●	●	●
<b>T290 LNHT 100405 TR</b>	.409	.394	.350	.161	.051	.020	2	Medium/Heavy				○	○

○ Available beginning of 2009.

<b>P Steel</b>	✓	✓	✓	✓	✓
<b>M Stainless Steel</b>	✓			✓	✓
<b>K Cast Iron</b>		✓	✓	✓	
<b>S High Temp. Alloy</b>	✓			✓	✓
<b>H Hardened Steel</b>	✓		✓		

Tool Types	
<b>1</b>	<b>T290 ELN...05</b>
<b>2</b>	<b>T290 ELN...10</b>

Type of Machining							
<b>T290 ELN-05</b>		<b>T290 ELN-10</b>					
fz (inch/t)		fz (inch/t)					
ap (inch)	Light	Medium	ap (inch)	Medium	Heavy		
↑ ap	.20	.003	.004	↑ ap	.35	.003	.004
	.08	.004	.006		.28	.005	.006
					.12	.006	.008
	→ fz →			→ fz →			



## FIELD TEST REPORTS

### Material Impax Suprime (P20) Tool Steel

	ISCAR	SECO
Tool designation	T290 ELN D.50-03-C.50-05	Nano-turbo
Cutter diameter (inch)	.50"	.50"
Insert	T290 LNMT 050204	XOMX 060204R-M05
Grade	IC830	F40M
No teeth	3	3
Cutting speed (SFM)	490	440
Feed (IPT)	.003	.003
Depth of cut	.080	.080
Toolife (parts)	<b>30</b>	12

Dry machining

**Industry:** Aerospace

**Group:** Stainless steel and cast steel austenitic

**Standard code:** AFNOR Z15 CN17-03

	ISCAR	SECO
Tool designation	T290 ELN D.50-03-C.50-05	
Diameter (inch)	50"	50"
No. of teeth	3	3
Insert type	T290 LNMT 050204TR	XOMX 060202R-M05
Grade	IC830	F40M
Coolant type	Soluble	Soluble
Cutting speed (SFM)	330	330
Depth of cut (inch)	.051	.051
Width of cut (inch)	.500	.500
Feed per tooth (IPT)	.0025	.0025
Pieces per cutting edge	<b>150</b>	60
Wear	1-Flank Wear	1-Flank Wear

Emulsion coolant

	ISCAR	SECO
Tool designation	T290 ELN D.75-03-W.75-10	Ø.75" cutter 3 effective flutes
Insert	T290 LNMT 100405TR	XOMT 090308TR M08
Grade	IC808	F40M
Material	17-4 PH	17-4 PH
Vc (SFM)	610	610
Feed (IPT)	.0025	.0025
Width of cut (inch)	.750	.750
Depth of cut (inch)	.118	.118
Toolife (parts)	<b>24</b>	16

Dry machining