TURNING

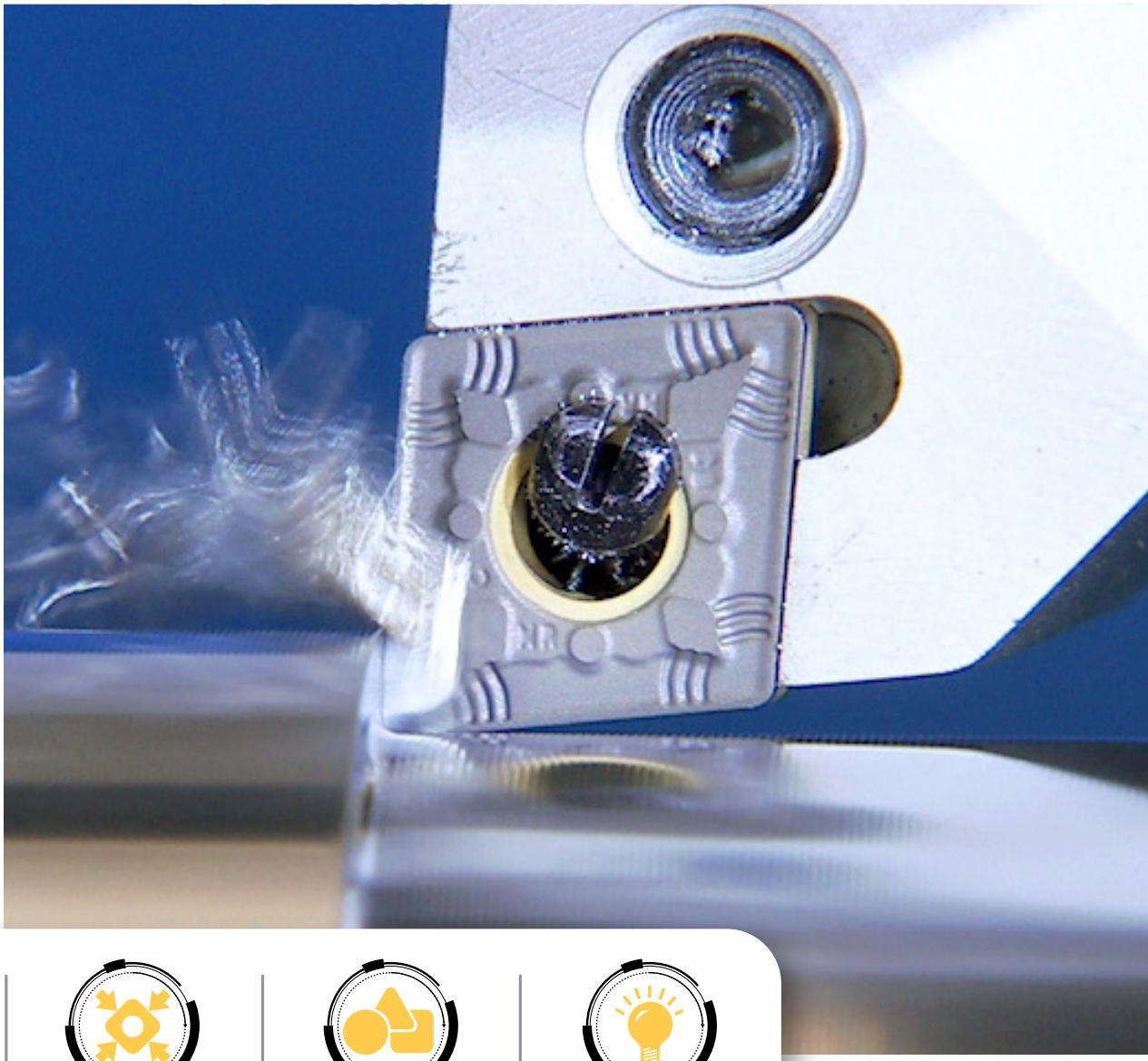
02-2022

FEBRUARY 2022

METRIC

NPA

New Product Announcement



Rigid Clamping

Variety of Geometries

Innovative Solutions

Member IMC Group

ISCAR

COMBIDLOCK

DUAL CLAMP

An Advanced Dual Clamping Lever Design

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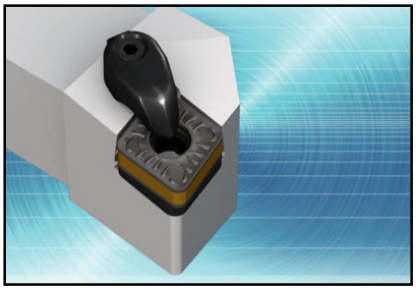
NPA New Product Announcement

COMBIDLOCK DUAL CLAMP

Highlights

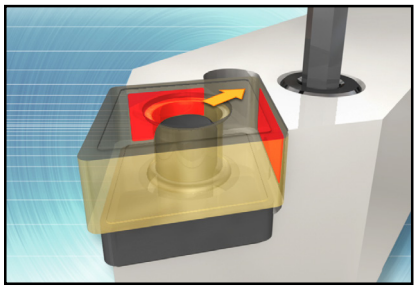
Upgraded Lever Lock Improves the Clamping Rigidity of the Lever Lock Insert Clamping System.

The new design combines the advantages of the current lever with the extra clamping rigidity of the top clamp method.



Top clamping conventional method

The current lever pushes the insert against the pocket, exerting perpendicular force to the cutting force. This method sometimes fails during interrupted cuts or heavy load applications, which causes the rear side of the insert to rise.



Conventional Locking of the Insert in One Direction

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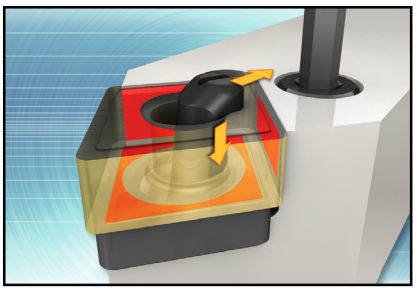
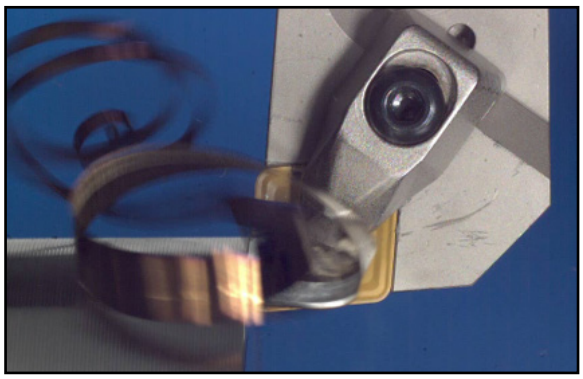
ISCAR's new **LR 4TL, LR 4DHTL and LR 3TL TOP LEVER** combines the advantages of both systems. It firmly holds the insert in the pocket and also exerts an upper force on the rear side of the insert. It leaves the insert rake face unobstructed for free chip flow, while maintaining convenient insert handling and extremely high clamping security.



Top Lever Locking of the Insert in Two Directions

Although the top clamp mechanism provides high clamping security, it is time consuming and inconvenient to index edges or inserts, and the top clamp can obstruct chip flow, especially during internal turning.



Top clamp interferes with chip flow.

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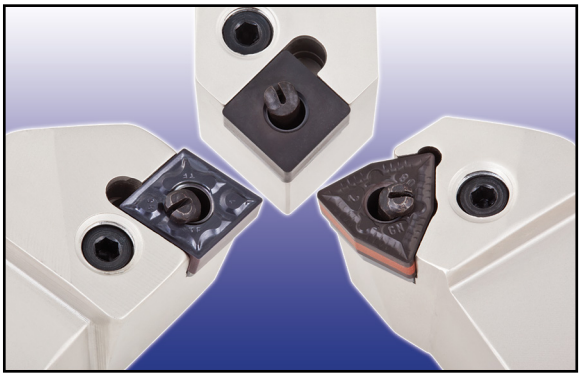
Advantages

Insert locking in two directions from the top and bottom provides better stability and rigidity.
This improves the tool life and increases productivity in comparison to the conventional lever. There is no need to change tools as the top lever can be clamped on our standard tools.

The new

4305853 LR 4TL can be mounted in tools with standard LR 4
4308430 LR 4DHTL can be mounted in tools with standard LR 4DH
4308084 LR 3TL can be mounted in tools with standard LR 3

COMBI-D-LOCK Top P-levers are not included in the tool assembly and should be ordered separately.



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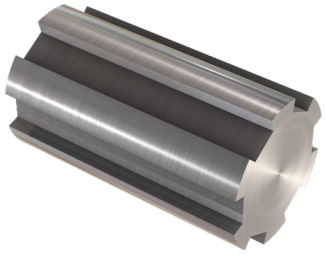
Test : External Turning Insert Movement Comparison:

Interrupted Cut: Material AISI 1045



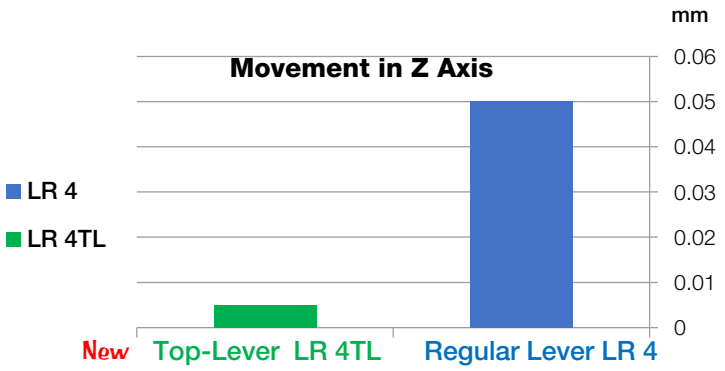
PWLNL 2525M-08 with **Regular LEVER LR 4**
WNMG 080408-GN IC8350

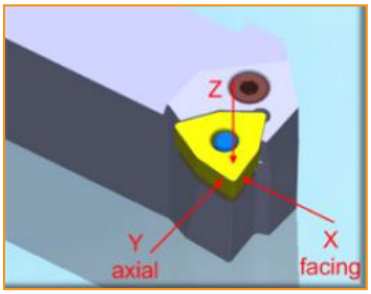
Vs.

PWLNL 2525M-08 with **TOP LEVER LR 4-TL**
WNMG 080408-GN IC8350

Conditions: ap=3 [mm] , f=0.5 [mm/rev] , Vc= 130 [m/min]

Test target: To measure insert movement in Z axis





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TEST REPORTS

Turning Comparison of Tool with Regular Lever vs. Tool with the New TOP-LEVER

	ISCAR - with Regular Lever	ISCAR with New TOP-LEVER
Tool	C4 PWLNN 06X2-54413	C4 PWLNN 06X2-54413
Insert	WNMG 060404-NF..	WNMG 060404-NF..
Edge preparation	Standard	Standard
External starting diameter (mm)	50	50
Cutting speed Vc (m/mm)	355	355
Spindle speed (rpm)	2260	2260
Feed (mm/rev)	0.3	0.3
Depth of cut ap (Ap)	3	3
Number of passes	2	2
Length of cut (mm)	25	25
Parts per cutting edge	100	**220**
Wear	Flank Wear	Flank Wear
Reason for stopping the test	Dimensional Stability	Dimensional Stability
Surface quality	Fair	Fair
Chip type	Tangled	Tangled
Metal removal rate (mm^3/min)	16.5	16.5
No. of corners tested	100	100