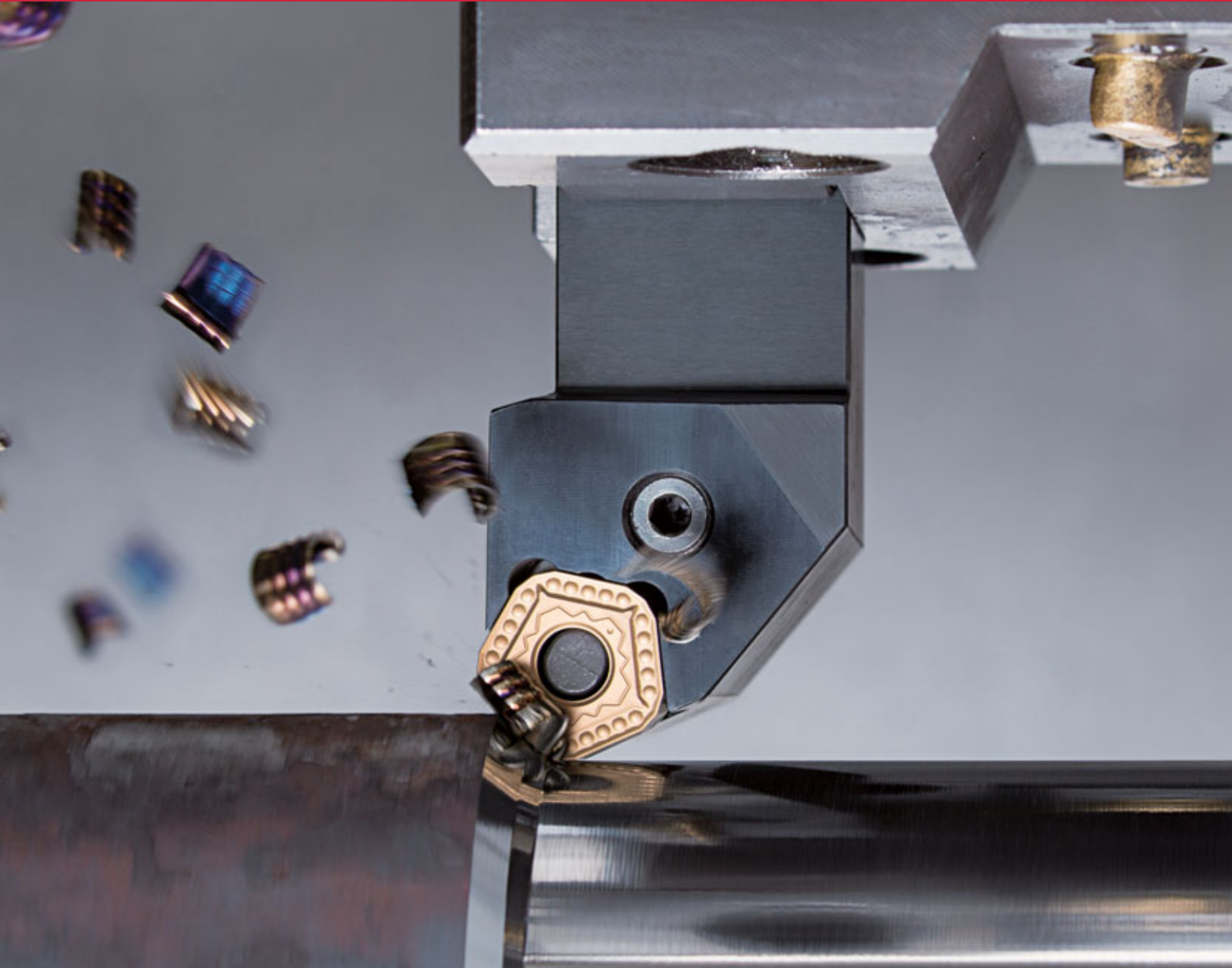


TURN^{TEN}FEED

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Tungaloy Report No. 520-G

Innovative Tool for Machining Efficiency and Tool Economy



INDUSTRY 4.0
FEED the SPEED!

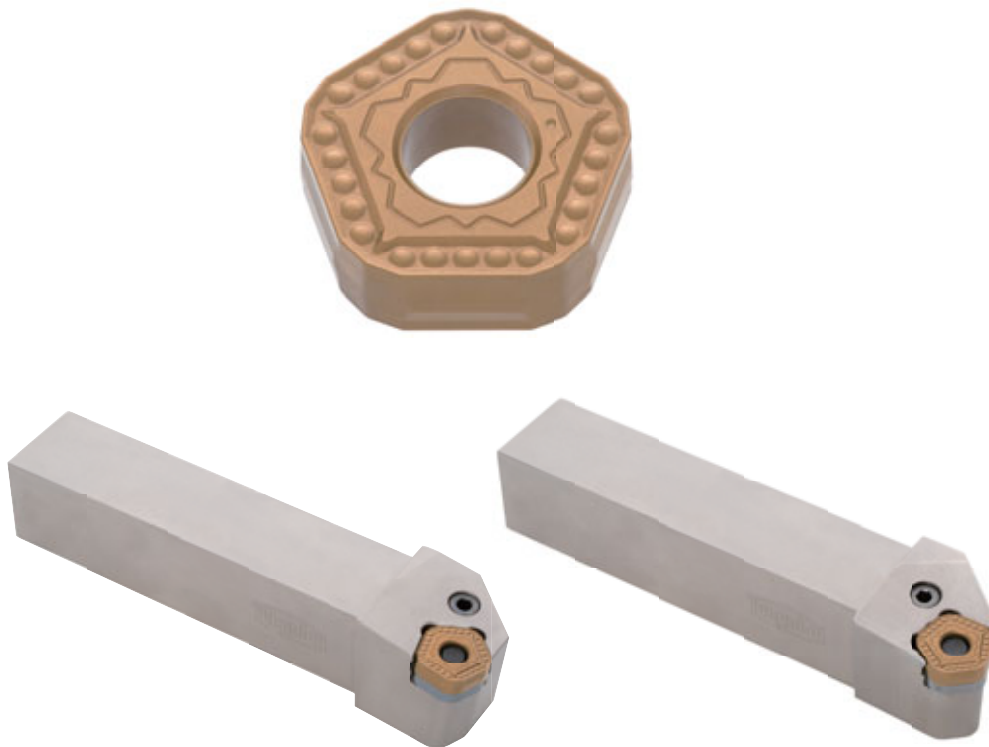


ACCELERATED MACHINING

TurnLine

TURN^{TEN}**FEED**
TUNGALOY

TUNG *FORCE* **TURN**
ACCELERATED MACHINING



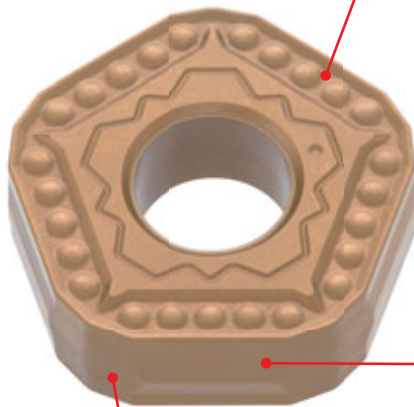
Unique insert geometry, combined with two types of dedicated holders, for *Accelerated Machining*

Economical, 10-cornered insert ensures high machining efficiency

- Available in 2 types of holders: HD type for large depths of cut and HF type for high feed turning
- Maximum 7 mm depth of cut, or maximum 2.0 mm feed per rev is attainable!

Economical 10-cornered, double-sided, M-class insert

Achieves outstanding cost efficiency over standard ISO inserts



Flat Wiper

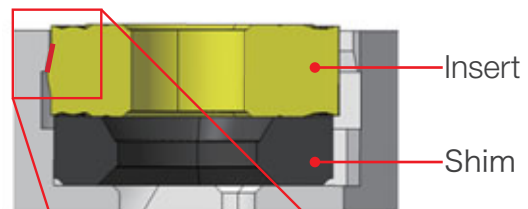
Built in the cutting edge to achieve superior machining surface at higher feed rates!

New – MNW style chipbreaker

Features protrusions on the rake face to facilitate smooth chip control, while achieving high crater wear resistance

Dovetail clamping

Ensures secure insert retention while promoting smooth chip flow thanks to the integration of lever lock and dovetail clamping methods.

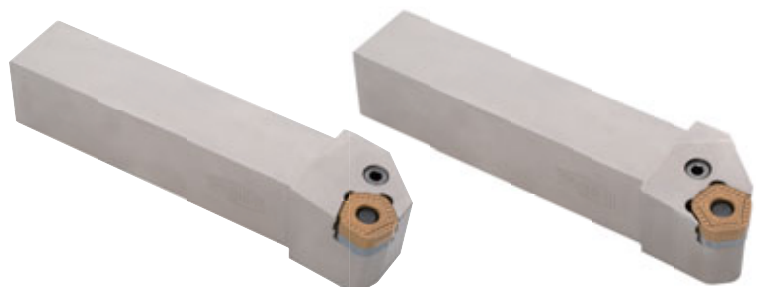


Insert / clamp contact cross section

Holder selections

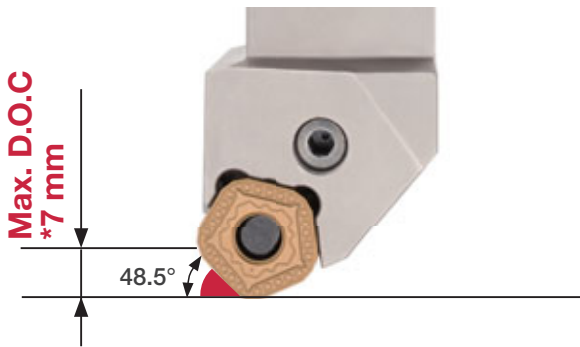
Available in 2 types:

- HD holder for large depths of cut
 - HF holder for high feed turning
- Inserts are interchangeable between these two holders.

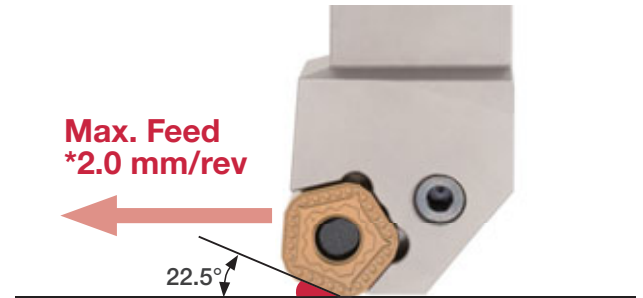


Features of Holders

HD holder
For **H**igh **D**epth of Cut



HF holder
For **H**igh **F**eed



* Insert: POMG130612-MNW

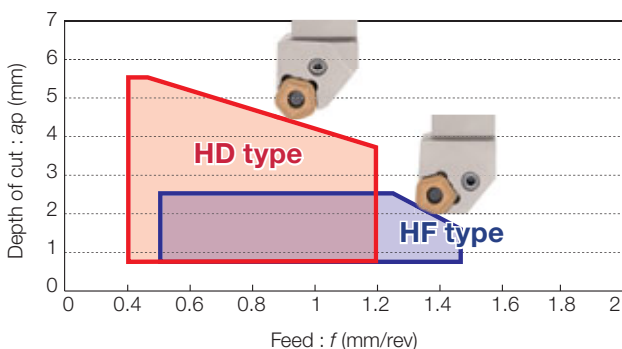
Grade properties

Application	Grade	Substrate			Coating layer	
		Specific gravity	Hardness (HRA)	T.R.S. (GPa)	Main Composition	Thickness (μm)
P	New T9215	14.0	90.5	2.6	Ti compound + Al ₂ O ₃	18
	T9125	13.7	90.0	2.6	Ti (C,N) + Al ₂ O ₃	16
	New T9225	13.4	89.8	2.7	Ti compound + Al ₂ O ₃	16

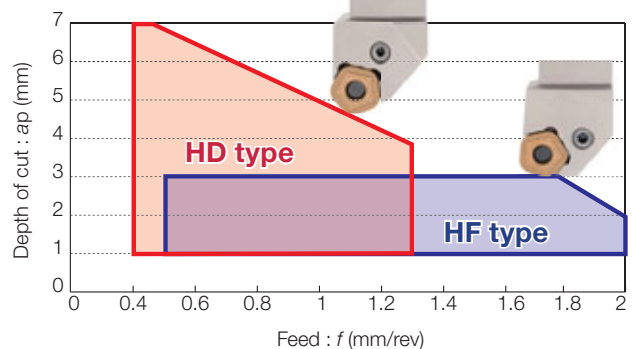
Application Area

Two types of holders to cover a wide range of applications!!

Insert
POMG110612-MNW

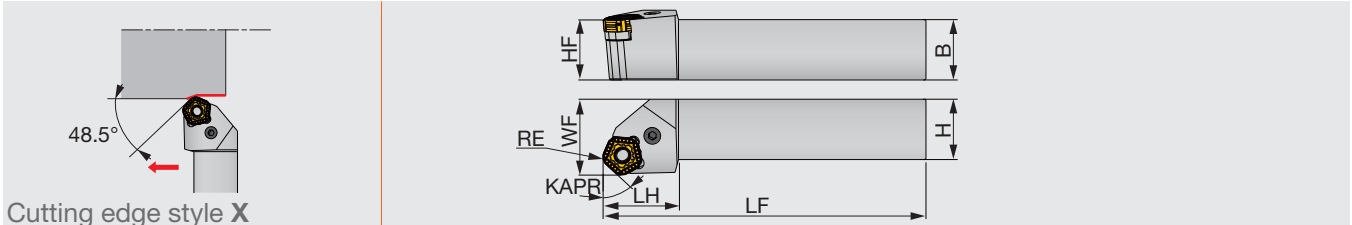


Insert
POMG130612-MNW



PPXOR/L-HD

Lever lock holder, with 48.5° approach angle, negative 108° pentagonal insert



Designation	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HD	25	25	150	35	25	32	48.5	1.2	POMG110612
PPXOR/L3232P13-HD	32	32	170	40	32	40	48.5	1.2	POMG110612

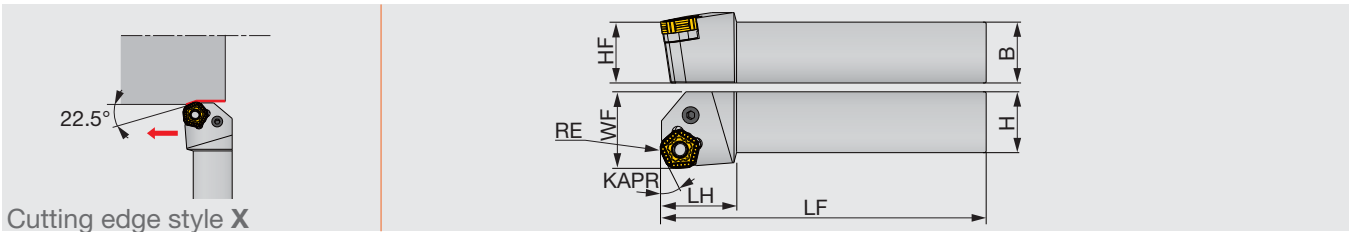
SPARE PARTS



Designation	Shim	Spring	Lever	Clamping screw	Wrench
PPXOR/L2525M11-HD	LSPO53	LSP5	LCL5	LCS5	P-3
PPXOR/L3232P13-HD	LSPO63	LSP6	LCL6	LCS6	P-4

PPXOR/L-HF

Lever lock holder, with 22.5° approach angle, for negative 108° pentagonal insert



Designation	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HF	25	25	150	35	25	32	22.5	1.2	POMG110612
PPXOR/L3232P13-HF	32	32	170	40	32	40	22.5	1.2	POMG110612

SPARE PARTS

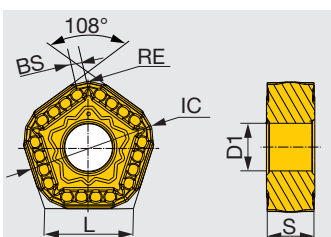


Designation	Shim	Spring	Lever	Clamping screw	Wrench
PPXOR/L2525M11-HF	LSPO53	LSP5	LCL5	LCS5	P-3
PPXOR/L3232P13-HF	LSPO63	LSP6	LCL6	LCS6	P-4

Note : Since the corner angle of TurnTenFeed insert is 108°, the workpiece corner may require additional post-process to remove stock to achieve a right angle.

INSERT

POMG-MNW



Designation	RE	Grade			IC	L	BS	S	D1
		T9215	T9125	T9225					
POMG110612-MNW	1.2	●	●	★	15.875	11.90	1.5	6.35	1.2
POMG130612-MNW	1.2	●	●	★	19.05	13.84	2	6.35	1.2

● : Line-up
★ : To be released in 2019 summer

STANDARD CUTTING CONDITIONS

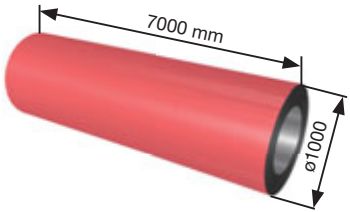
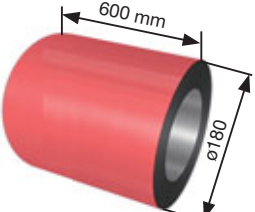
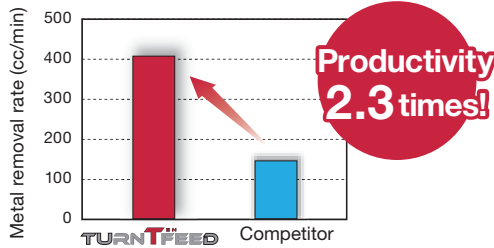
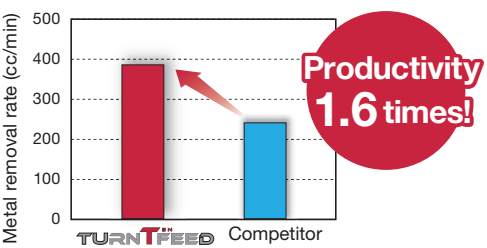
For HD holder
(High Depth of Cut)

ISO	Insert	Depth of cut a_p (mm)	Feed f (mm/rev)	Cutting speed V_c (m/min)		
				T9215	T9125	T9225
P	POMG110612-MNW	0.8 - 5.5	0.4 - 1.2	150 - 400	80 - 180	120 - 300
	POMG130612-MNW	1.0 - 7.0	0.4 - 1.3	150 - 400	80 - 180	120 - 300

For HF holder
(High Feed)

ISO	Insert	Depth of cut a_p (mm)	Feed f (mm/rev)	Cutting speed V_c (m/min)		
				T9215	T9125	T9225
P	POMG110612-MNW	1.0 - 2.5	0.5 - 1.5	150 - 400	80 - 180	120 - 300
	POMG130612-MNW	1.0 - 3.0	0.5 - 2.0	150 - 400	80 - 180	120 - 300

PRACTICAL EXAMPLES

Workpiece type		Forged steel pipe	Bar work
Holder		PPXOR3232P13- HD	PPXOR3232P13- HF
Insert		POMG130612-MNW	POMG130612-MNW
Grade		T9125	T9125
Workpiece material		9%Cr 	SCM430 
Cutting conditions	Cutting speed: V_c (m/min)	100	100
	Feed : f (mm/rev)	1.3	1.5
	Depth of cut : a_p (mm)	4	2.6 x 11 passes
	Coolant	Dry	Wet
Results		 <p>MRR has improved by 2.3 times over standard ISO turning insert. TurnTenFeed ensures machining stability at high feed rates.</p>	 <p>MRR has improved by 1.6 times over standard ISO insert. A combination of high feed geometry insert with MNW chipbreaker provided light cutting action, improving tool life 5 times.</p>

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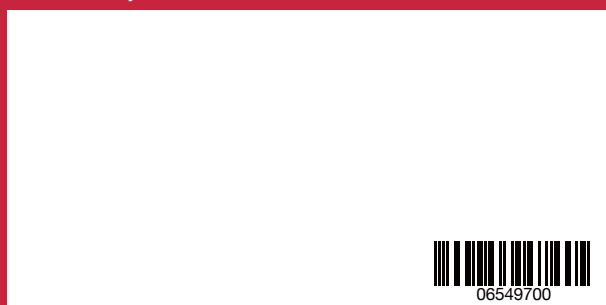
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