

TURN^{EN}FEED

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Tungaloy Report No. 520-US

Now offering AH8015 for **exceptional performance**
in heat-resistant superalloys and stainless steel



INDUSTRY 4.0
FEED the SPEED!



ACCELERATED MACHINING



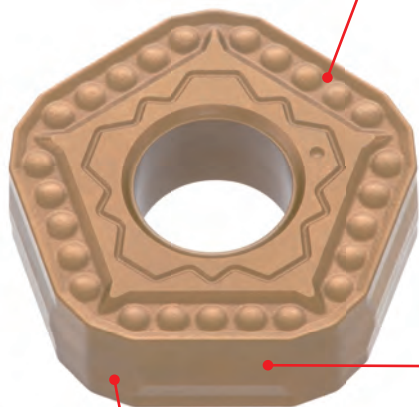
Innovative Tool for Machining Efficiency
and Tool Economy

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 0.276" depth of cut with HD type, and maximum feed 0.079" per rev with HF type is attainable!

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

Achieves outstanding cost efficiency over standard ISO inserts

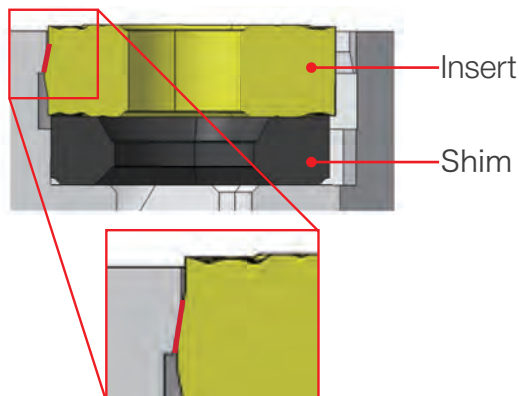


New – MNW style chipbreaker

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

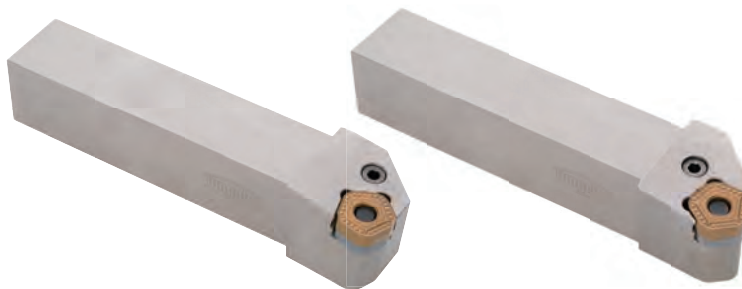
Flat Wiper

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

Holder selections

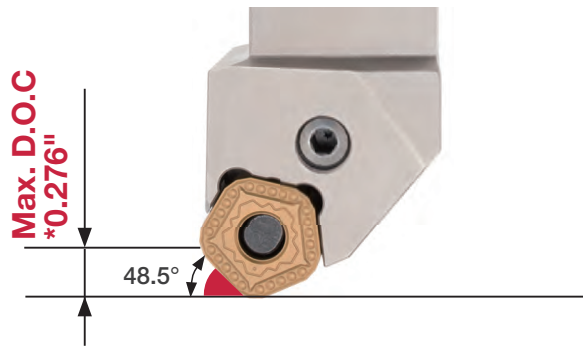
Available in 2 types:

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

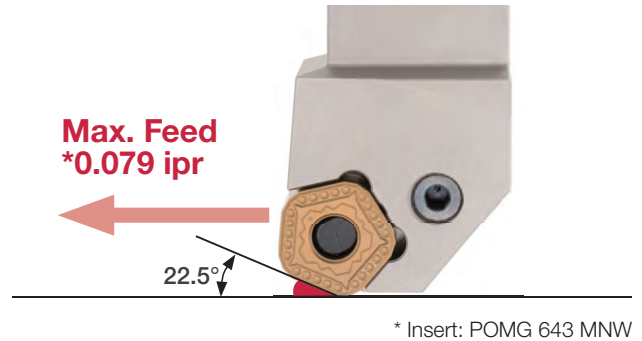


Features of Holders

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



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



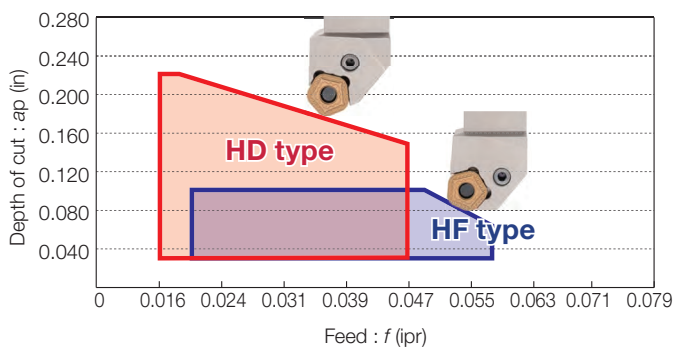
Grade properties

Application	Grade	Substrate			Coating layer	
		Specific gravity	Hardness (HRA)	T.R.S. (GPa)	Main Composition	Thickness (μm)
P	T9215	14.0	90.5	2.6	Ti compound + Al ₂ O ₃	18
	T9225	13.4	89.8	2.7	Ti compound + Al ₂ O ₃	18
M New	AH8015	14.9	91.8	3.1	(Al,Ti)N	3.5
S New	AH8015	14.9	91.8	3.1	(Al,Ti)N	3.5

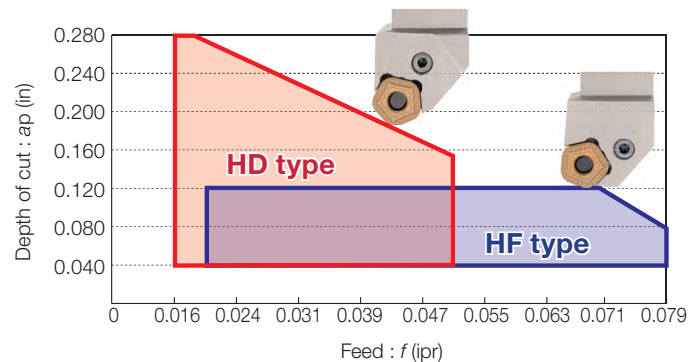
Application Area

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

Insert
POMG 543 MNW

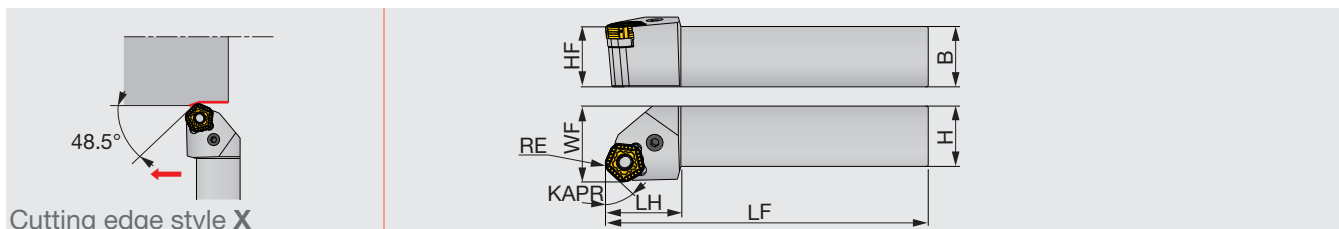


Insert
POMG 643 MNW



PPXOR/L-HD

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



Inch	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L165-HD	1.000	1.000	6.000	1.380	1.000	1.260	48.5°	0.047	POMG 543 MNW
PPXOR/L206-HD	1.250	1.250	7.000	1.500	1.250	1.510	48.5°	0.047	POMG 643 MNW

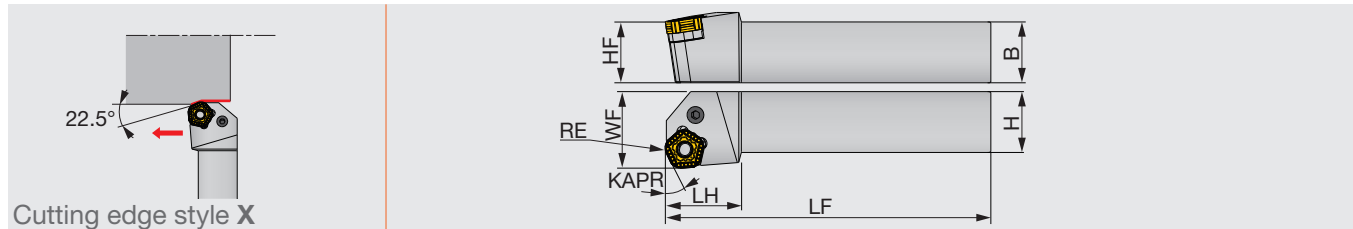
Metric	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HD	25	25	150	35	25	32	48.5°	1.2	POMG110612
PPXOR/L3232P13-HD	32	32	170	40	32	40	48.5°	1.2	POMG130612

SPARE PARTS

Designation	Shim	Spring	Lever	Clamping screw	Wrench
PPXOR/L165-HD	LSPO53	LSP5	LCL5	LCS5	P-3
PPXOR/L206-HD	LSPO63	LSP6	LCL6	LCS6	P-4

PPXOR/L-HF

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



Inch	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L165-HF	1.000	1.000	6.000	1.380	1.000	1.260	22.5°	0.047	POMG 543 MNW
PPXOR/L206-HF	1.250	1.250	7.000	1.500	1.250	1.510	22.5°	0.047	POMG 643 MNW

Metric	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	POMG130612

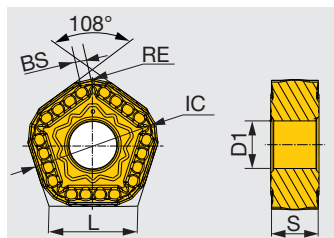
SPARE PARTS

Designation	Shim	Spring	Lever	Clamping screw	Wrench
PPXOR/L165-HF	LSPO53	LSP5	LCL5	LCS5	P-3
PPXOR/L206-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					
POMG 543 MNW	0.047	●	●	●	0.625	0.454	0.059	0.250	0.047
POMG 643 MNW	0.047	●	●	●	0.750	0.545	0.079	0.250	0.047

● : Line-up

STANDARD CUTTING CONDITIONS

For HD holder
(High Depth of Cut)

ISO	Insert	Depth of cut ap (in)	Feed f (ipr)	Cutting speed Vc (sfm)	
				T9215	T9225
P	POMG 543 MNW	0.031 - 0.217	0.016 - 0.047	492 - 1312	394 - 984
	POMG 643 MNW	0.039 - 0.276	0.016 - 0.051	492 - 1312	394 - 984

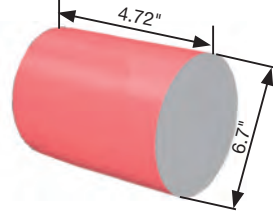
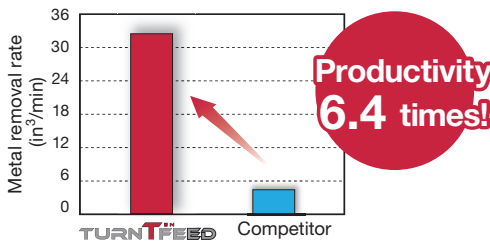
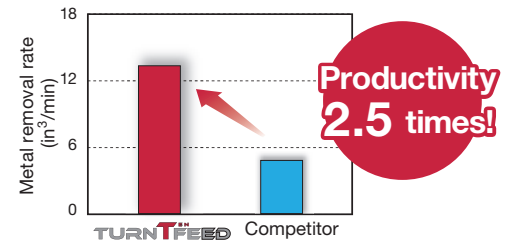
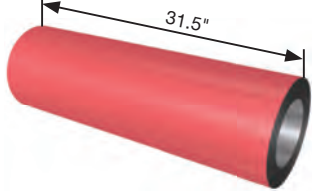
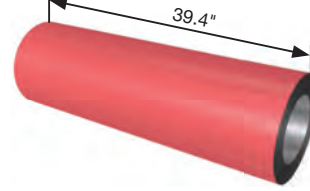
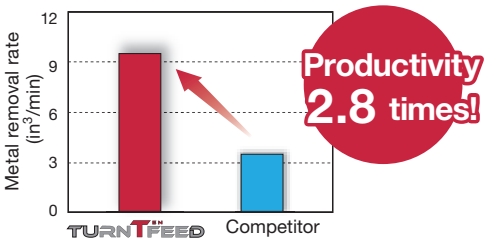
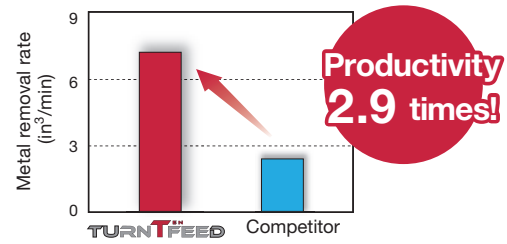
ISO	Insert	Depth of cut ap (in)	Feed f (ipr)	Cutting speed Vc (sfm)	
				AH8015	
M	POMG 543 MNW	0.031 - 0.217	0.016 - 0.047	164 - 492	
	POMG 643 MNW	0.039 - 0.276	0.016 - 0.051	164 - 492	
S	POMG 543 MNW	0.031 - 0.217	0.016 - 0.047	66 - 262	
	POMG 643 MNW	0.039 - 0.276	0.016 - 0.051	66 - 262	

For HF holder
(High Feed)

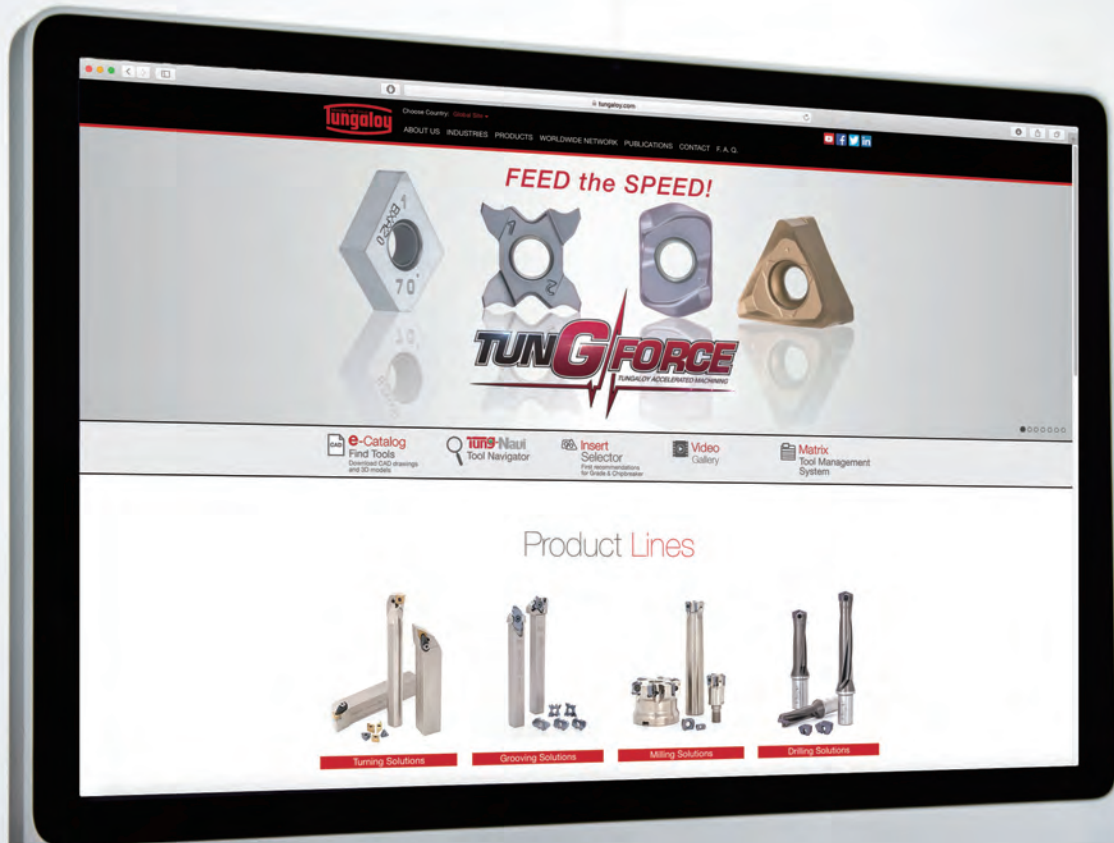
ISO	Insert	Depth of cut ap (in)	Feed f (ipr)	Cutting speed Vc (sfm)	
				T9215	T9225
P	POMG 543 MNW	0.039 - 0.098	0.020 - 0.059	492 - 1312	394 - 984
	POMG 643 MNW	0.039 - 0.118	0.020 - 0.079	492 - 1312	394 - 984

ISO	Insert	Depth of cut ap (in)	Feed f (ipr)	Cutting speed Vc (sfm)	
				AH8015	
M	POMG 543 MNW	0.039 - 0.098	0.02 - 0.059	164 - 492	
	POMG 643 MNW	0.039 - 0.118	0.02 - 0.079	164 - 492	
S	POMG 543 MNW	0.039 - 0.098	0.02 - 0.059	66 - 262	
	POMG 643 MNW	0.039 - 0.118	0.02 - 0.079	66 - 262	

PRACTICAL EXAMPLES

Workpiece type		Machine parts	Machine parts
Holder		PPXOR206- HD	PPXOR206- HF
Insert		POMG 643 MNW	POMG 643 MNW
Grade		T9225	T9215
		Alloy steel	1045
Workpiece material			
Cutting conditions	Cutting speed: V_c (sfm)	394	394
	Feed : f (ipr)	0.039	0.059
	Depth of cut : a_p (in)	0.177	0.047
	Coolant	Wet	Wet
Results		 MRR has improved by 6.4 times over standard ISO turning insert. TurnTenFeed ensures machining stability at high feed rates.	 MRR has improved by 2.5 times over standard ISO insert. A combination of high feed geometry insert with MNW chipbreaker provided light cutting action, improving tool life 8 times.
Workpiece type		Forged steel pipe	Bar work
Holder		PPXOR206- HF	PPXOR206- HD
Insert		POMG 643 MNW	POMG 643 MNW
Grade		AH8015	AH8015
		Inconel 925	Heat resistant alloy
Workpiece material			
Cutting conditions	Cutting speed: V_c (sfm)	213	197
	Feed : f (ipr)	0.047	0.020
	Depth of cut : a_p (in)	0.079	0.157
	Coolant	Wet	Wet
Results		 2.8 times M.R.R. over the competitor's ISO insert. TurnTenFeed insert in AH8015 doubled the tool life.	 2.9 times M.R.R. over the competitor's ISO insert. Low cutting force and stability at an elevated feed rate.

Check our site and our App to get more info!



Tungaloy America, Inc.

3726 N Ventura Drive, Arlington Heights, IL 60004, U.S.A.

Inside Sales: +1-888-554-8394

Technical Support: +1-888-554-8391

Fax: +1-888-554-8392

www.tungaloy.com/us

Tungaloy Canada

432 Elgin St. Unit 3, Brantford, Ontario N3S 7P7, Canada

Phone: +1-519-758-5779 Fax: +1-519-758-5791

www.tungaloy.com/ca

Tungaloy de Mexico S.A.

C Los Arellano 113, Parque Industrial Siglo XXI

Aguascalientes, AGS, Mexico 20290

Phone: +52-449-929-5410 Fax: +52-449-929-5411

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