

# TURN<sup>TEN</sup>FEED

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Tungaloy Report No. 520-G

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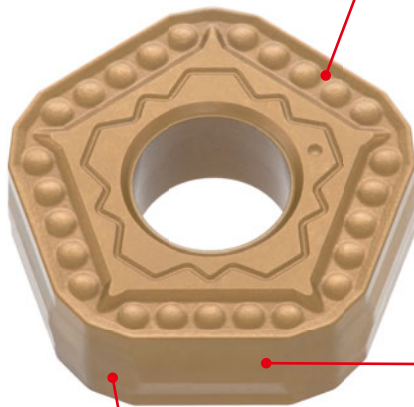


# Economical, 10-cornered insert ensures high machining efficiency

- 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 feed 2.0 mm per rev is attainable!

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

Achieves outstanding cost efficiency over standard ISO inserts

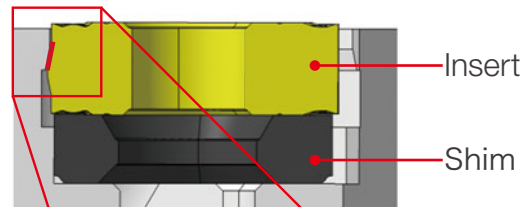


### New – MNW style chipbreaker

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

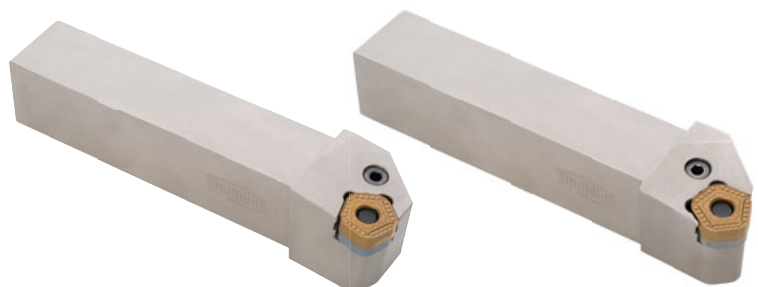
### Flat Wiper

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

### Holder selections

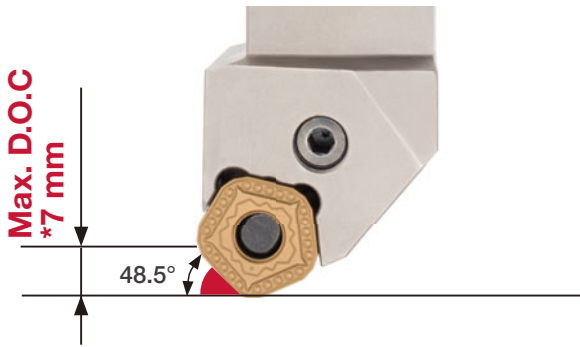
Available in 2 types:

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

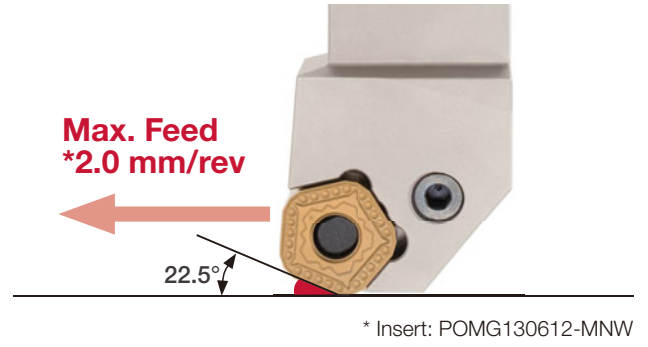


## Features of Holders

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



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



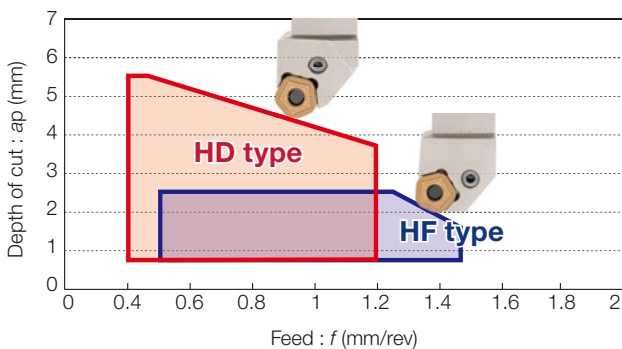
## Grade properties

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

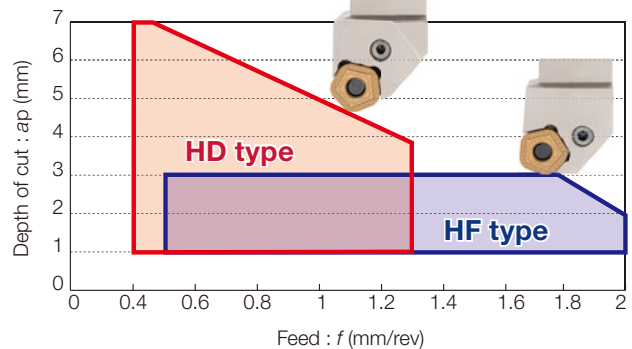
## Application Area

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

Insert  
POMG110612-MNW

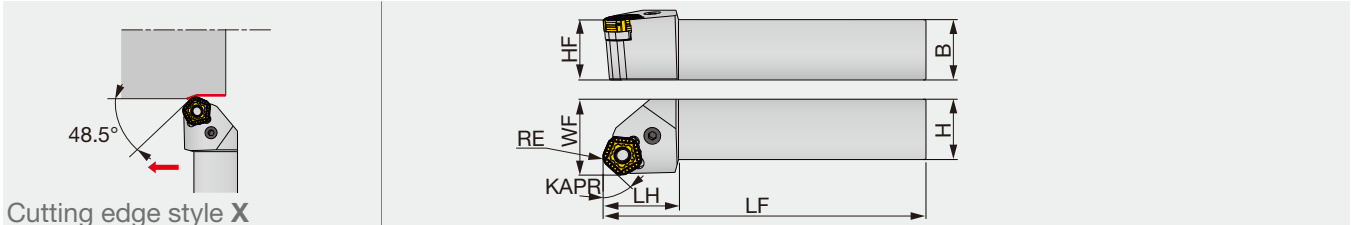


Insert  
POMG130612-MNW



## PPXOR/L-HD

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



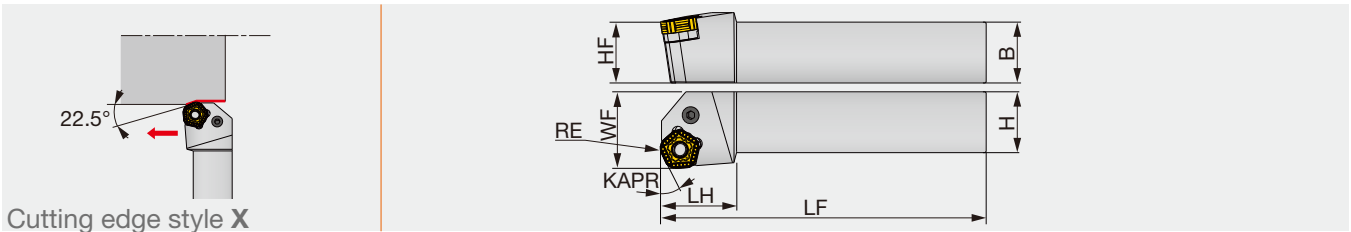
Designation	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HD	25	25	150	35	25	32	48.5	1.2	POMG110612
PPXOR/L3232P13-HD	32	32	170	40	32	40	48.5	1.2	POMG130612

### 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	POMG130612

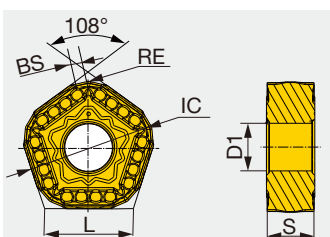
### SPARE PARTS

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	T9225	AH8015					
POMG110612-MNW	1.2	●	●	★	15.875	11.53	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 October 2019

## 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	T9225
<b>P</b>	POMG110612-MNW	0.8 - 5.5	0.4 - 1.2	150 - 400	120 - 300
	POMG130612-MNW	1.0 - 7.0	0.4 - 1.3	150 - 400	120 - 300


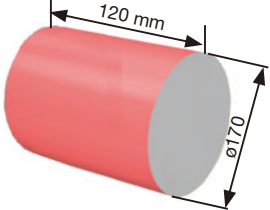
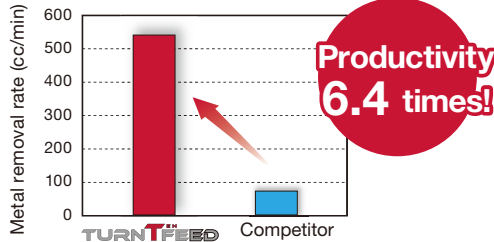
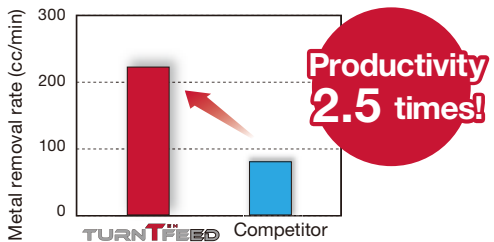
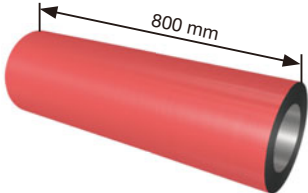
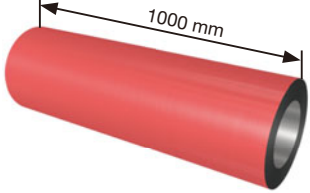
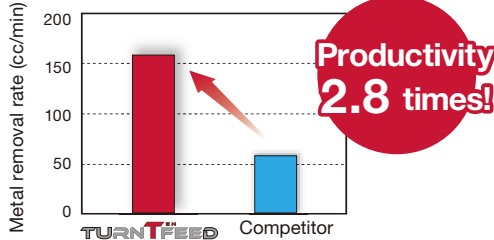
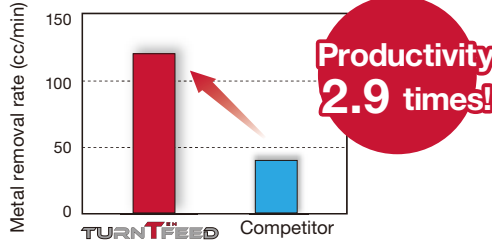
ISO	Insert	Depth of cut $a_p$ (mm)	Feed $f$ (mm/rev)	Cutting speed $V_c$ (m/min)	
				AH8015	
<b>M</b>	POMG110612-MNW	0.8 - 5.5	0.4 - 1.2	50 - 150	
	POMG130612-MNW	1.0 - 7.0	0.4 - 1.3	50 - 150	
<b>S</b>	POMG110612-MNW	0.8 - 5.5	0.4 - 1.2	20 - 80	
	POMG130612-MNW	1.0 - 7.0	0.4 - 1.3	20 - 80	

### For HF holder (High Feed)

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

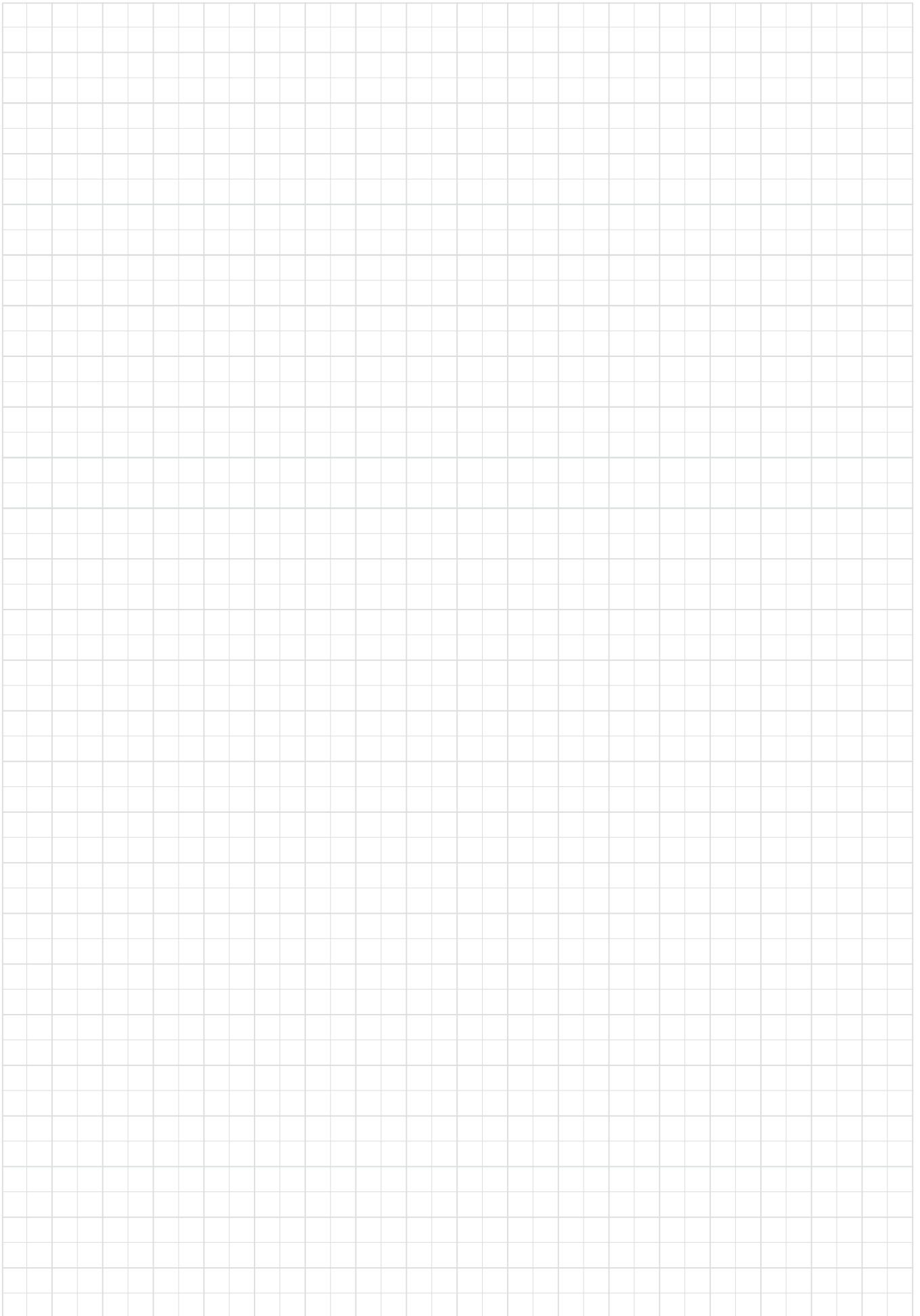
ISO	Insert	Depth of cut $a_p$ (mm)	Feed $f$ (mm/rev)	Cutting speed $V_c$ (m/min)	
				AH8015	
<b>M</b>	POMG110612-MNW	1.0 - 2.5	0.5 - 1.5	50 - 150	
	POMG130612-MNW	1.0 - 3.0	0.5 - 2.0	50 - 150	
<b>S</b>	POMG110612-MNW	1.0 - 2.5	0.5 - 1.5	20 - 80	
	POMG130612-MNW	1.0 - 3.0	0.5 - 2.0	20 - 80	

## PRACTICAL EXAMPLES

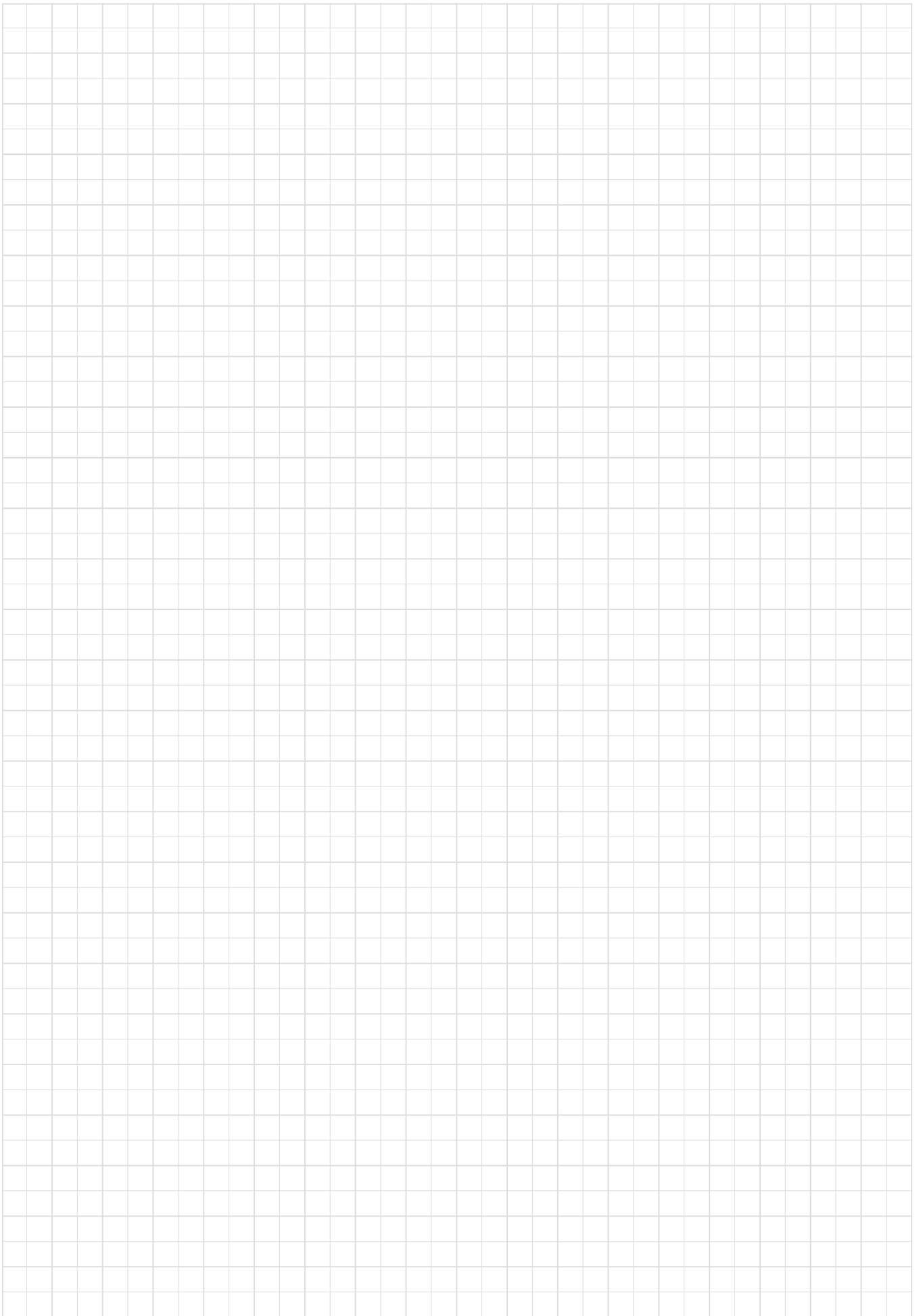
Workpiece type		Machine parts	Machine parts	
Holder		PPXOR3232P13- <b>HD</b>	PPXOR3232P13- <b>HF</b>	
Insert		POMG130612-MNW	POMG130612-MNW	
Grade		T9225	T9215	
Workpiece material		Alloy steel	C45, 1045	
Workpiece material				
Cutting conditions	Cutting speed: $V_c$ (m/min)	120	120	
	Feed : $f$ (mm/rev)	1.0	1.5	
	Depth of cut : $a_p$ (mm)	4.5	1.2	
	Coolant	Wet	Wet	
Results	 <p><b>Productivity 6.4 times!</b></p> <p>MRR has improved by 6.4 times over standard ISO turning insert. TurnTenFeed ensures machining stability at high feed rates.</p>		 <p><b>Productivity 2.5 times!</b></p> <p>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.</p>	
	<p>MRR has improved by 6.4 times over standard ISO turning insert. TurnTenFeed ensures machining stability at high feed rates.</p>		<p>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.</p>	
Workpiece type		Forged steel pipe	Bar work	
Holder		PPXOR3232P13- <b>HF</b>	PPXOR3232P13- <b>HD</b>	
Insert		POMG130612-MNW	POMG130612-MNW	
Grade		AH8015	AH8015	
Workpiece material		Inconel 925	Heat resistant alloy	
Workpiece material				
Cutting conditions	Cutting speed: $V_c$ (m/min)	65	60	
	Feed : $f$ (mm/rev)	1.2	0.5	
	Depth of cut : $a_p$ (mm)	2	4	
	Coolant	Wet	Wet	
Results	 <p><b>Productivity 2.8 times!</b></p> <p>2.8 times M.R.R. over the competitor's ISO insert. TurnTenFeed insert in AH8015 doubled the tool life.</p>		 <p><b>Productivity 2.9 times!</b></p> <p>2.9 times M.R.R. over the competitor's ISO insert. Low cutting force and stability at an elevated feed rate.</p>	
	<p>2.8 times M.R.R. over the competitor's ISO insert. TurnTenFeed insert in AH8015 doubled the tool life.</p>		<p>2.9 times M.R.R. over the competitor's ISO insert. Low cutting force and stability at an elevated feed rate.</p>	



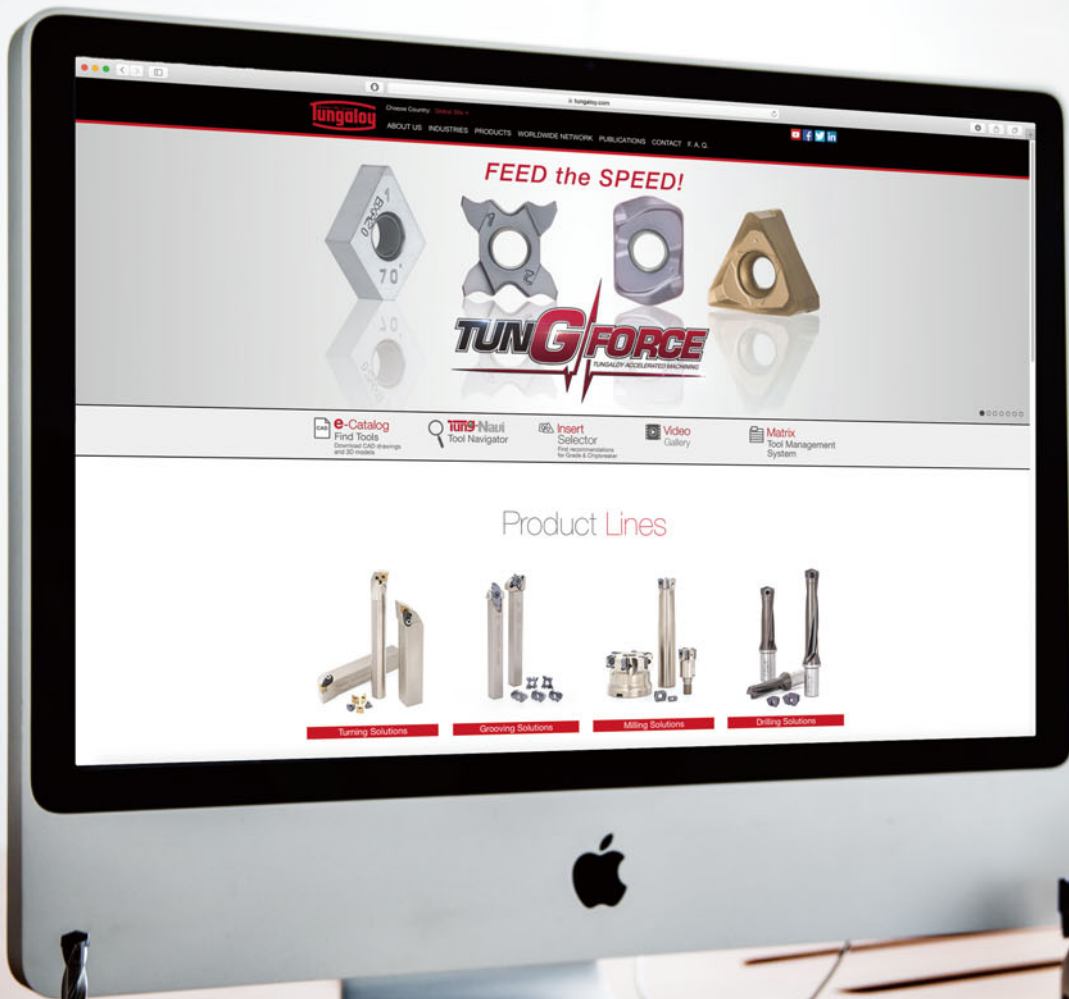
# MEMO

A large grid of graph paper for writing a memo. The grid consists of 20 columns and 30 rows of small squares. The grid is empty and occupies most of the page.

# MEMO

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

# Check our site and our App to get more info!



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