



# TURNING INSERTS FOR STEEL

P

Application Guide



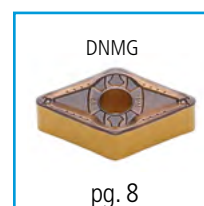
- Carbon Steels
- Alloy Steels
- Tool Steels
- Ductile Irons

## About This Guide

This guide is a partial listing of TMX's turning insert offering. Here you'll find our top Palbit recommendations for carbon, alloy and tool steels and ductile irons. They are organized by application so you can save time looking and get cutting. We know that every application is unique. This listing may not have the item that would best fit your application. For our full Palbit indexable offering, visit our website at [www.toolmex.com](http://www.toolmex.com).

## Contents:

Improve Your Productivity .....	4
CCMT - Diamond 80° Positive .....	6
CNMG - Diamond 80° Negative .....	6
CNMG - Diamond 80° Negative .....	7
CNMM - Diamond 80° Negative .....	7
DCMT - Diamond 55° Positive .....	7
DNMG - Diamond 55° Negative .....	8
SCMT - Square 90° Positive .....	8
SNMG - Square 90° Negative .....	9
SNMM - Square 90° Negative .....	9
TCMT - Triangular 60° Positive .....	9
TNMG - Triangular 60° Negative .....	10
TPMR - Triangular 60° Positive .....	10
TPUN - Triangular 60° Positive .....	11
VBMT - Diamond 35° Positive .....	11
VCMT - Diamond 35° Positive .....	11
WNMG - Trigon 80° Negative .....	12
VNMG - Diamond 35° Negative .....	12
Turning Grades Descriptions.....	13
Crossover Grade Chart .....	13
Crossover Chipbreaker Chart.....	14
Cutting Speeds (sfm) .....	14



# TMX + Palbit

## An Equation for European Excellence in Indexable Cutting Tools

With this offering, TMX continues its long-established relationship with European hardmetal tool producer, Palbit. Our shared goal is to deliver the highest level of quality and performance in all our products and services.

Palbit was established in Portugal in 1916. At that time, the company's core business was mining Copper and Zinc. This expanded into the crafting of mining tools. Over time, the company's expertise allowed them to expand into other fields such as tools for metal cutting. In 1952, the business took on the name "Palbit" with the development and production of hard metal tools as one of its primary focuses.

Now over 100 years old, Palbit continues to engineer and manufacture high performance indexable tools for metal cutting. Palbit pays close attention to quality as is attested by its world-class facilities and ISO 9001:2008 certification. Their qualified technicians are continuously researching and developing cutting-edge technology to increase the productivity of metalworking applications.

As we move into the future, count on Palbit and TMX to deliver precision, performance and reliability with every cut.





## Improve Your Productivity

NEW Palbit Grades and Chipbreaker for excellent chip control and increased wear resistance

### PHG Grade: PHG115 and PHG125

New medium temperature CVD coating with  $\alpha$ -Al<sub>2</sub>O<sub>3</sub>+TiN.

#### Application Operations

- Suitable for high to medium cutting speeds on steels & cast steels
- First choice for a majority of steel turning applications, roughing to finishing, continuous and interrupted cuts

#### Technical features

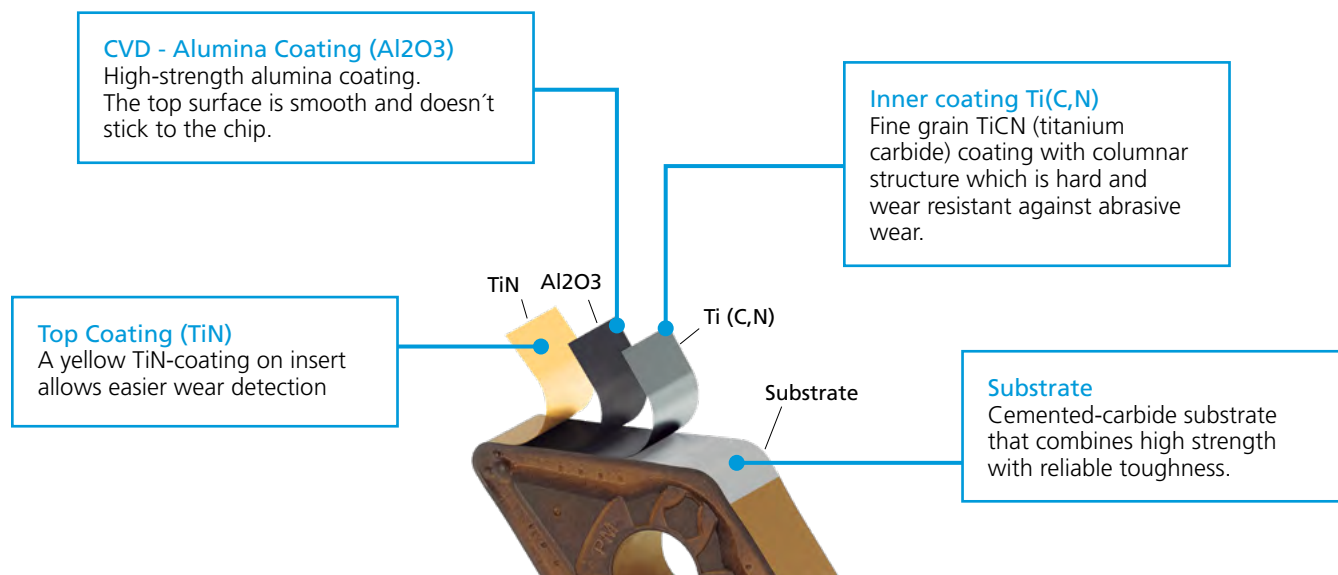
- New grade (PHGxxx) for high wear resistance and long tool life
- The new grade create a strong barrier towards the cutting zone and the chip

#### Heat-resistant substrate

- The cemented-carbide substrate adds high strength and reliable toughness
- Optimized to withstand heat, it is suitable for applications with focus on high material removal rate

#### Other Features

- The MT-TiCN inner coating is hard and wear-resistant against abrasive wear
- The yellow top TiN coating on the insert flank allows for easy wear detection



PHG grades and PM chipbreaker are available on DNMG, TNMG, WNMG and CNMG inserts



## PM Premium Chipbreaker

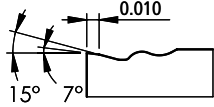
Chipbreaker indication

**Excellent Chip Control**  
even when machining with a small depth of cut. Suitable for machining with a variable depth of cut.

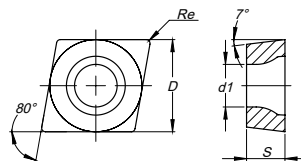
**Wide Contact Area**  
of insert with holder prevents chipping due to stable basis

**Tough Cutting Edge**  
Fracture resistance provides high strength and reduced cutting forces.

**Proper Rake Angle**  
of cutting edge ensures better surface finish and low cutting resistance



## CCMT - Diamond 80° Positive



Click or Scan here to view the entire TMX offering of CCMT inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1655-L8	CCMT 21.50.5-FP	CCMT 060202-FP	Finishing	PH5125	1/4	0.11	3/32	0.008
112-1658-L8	CCMT 21.51-FP	CCMT 060204-FP	Finishing	PH5125	1/4	0.11	3/32	0.015
112-1697-L8	CCMT 21.51-MP	CCMT 060204-MP	Medium	PH5125	1/4	0.11	3/32	0.015
112-1690-L8	CCMT 32.50.5-FP	CCMT 09T302-FP	Finishing	PH5125	3/8	0.173	5/32	0.008
112-1666-L8	CCMT 32.51-FP	CCMT 09T304-FP	Finishing	PH5125	3/8	0.173	5/32	0.015
112-1700-L8	CCMT 32.51-MP	CCMT 09T304-MP	Medium	PH5125	3/8	0.173	5/32	0.015
112-1687-L7	CCMT 32.52-MP	CCMT 09T308-MP	Medium	PH5115	3/8	0.173	5/32	0.031
112-1652-L8	CCMT 32.52-FP	CCMT 09T308-FP	Finishing	PH5125	3/8	0.173	5/32	0.031
112-1687-L8	CCMT 32.52-MP	CCMT 09T308-MP	Medium	PH5125	3/8	0.173	5/32	0.031
112-1719-L8	CCMT 431-MP	CCMT 120404-MP	Medium	PH5125	1/2	0.217	3/16	0.015
112-1722-L8	CCMT 432-MP	CCMT 120408-MP	Medium	PH5125	1/2	0.217	3/16	0.031

CCMT-FP



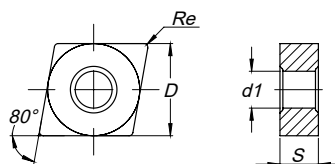
Finishing

CCMT-MP



Medium

## CNMG - Diamond 80° Negative



Click or Scan here to view the entire TMX offering of CNMG inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1318-L7	CNMG 322-MF	CNMG 090308-MF	Finishing	PH5115	3/8	0.15	1/8	0.031
112-1293-L8	CNMG 322-MR	CNMG 090308-MR	Medium	PH5125	3/8	0.15	1/8	0.031
112-1478-L7	CNMG 431-MF	CNMG 120404-MF	Finishing	PH5115	1/2	0.203	3/16	0.015
112-1180-L7	CNMG 431-MR	CNMG 120404-MR	Medium	PH5115	1/2	0.203	3/16	0.015
112-1180-L8	CNMG 431-MR	CNMG 120404-MR	Medium	PH5125	1/2	0.203	3/16	0.015
112-1480-L7	CNMG 432-MF	CNMG 120408-MF	Finishing	PH5115	1/2	0.203	3/16	0.031
112-1174-L7	CNMG 432-MR	CNMG 120408-MR	Medium	PH5115	1/2	0.203	3/16	0.031
112-1174-L8	CNMG 432-MR	CNMG 120408-MR	Medium	PH5125	1/2	0.203	3/16	0.031
112-1174-L9	CNMG 432-MR	CNMG 120408-MR	Medium	PH5740	1/2	0.203	3/16	0.031
112-3790-R2	CNMG 432-PM	CNMG 120408-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.031
112-3790-R3	CNMG 432-PM	CNMG 120408-PM	PREMIUM Medium	PHG125	1/2	0.203	3/16	0.031
112-1193-L7	CNMG 432-HR	CNMG 120408-HR	Roughing	PH5115	1/2	0.203	3/16	0.031
112-1193-L8	CNMG 432-HR	CNMG 120408-HR	Roughing	PH5125	1/2	0.203	3/16	0.031
112-1193-L9	CNMG 432-HR	CNMG 120408-HR	Roughing	PH5740	1/2	0.203	3/16	0.031
112-1482-L7	CNMG 433-MF	CNMG 120412-MF	Finishing	PH5115	1/2	0.203	3/16	0.047
112-1198-L7	CNMG 433-MR	CNMG 120412-MR	Medium	PH5115	1/2	0.203	3/16	0.047
112-1198-L8	CNMG 433-MR	CNMG 120412-MR	Medium	PH5125	1/2	0.203	3/16	0.047
112-1198-L9	CNMG 433-MR	CNMG 120412-MR	Medium	PH5740	1/2	0.203	3/16	0.047
112-3920-R2	CNMG 433-PM	CNMG 120412-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.047
112-1192-L7	CNMG 433-HR	CNMG 120412-HR	Roughing	PH5115	1/2	0.203	3/16	0.047
112-1192-L8	CNMG 433-HR	CNMG 120412-HR	Roughing	PH5125	1/2	0.203	3/16	0.047
112-1192-L9	CNMG 433-HR	CNMG 120412-HR	Roughing	PH5740	1/2	0.203	3/16	0.047
112-1485-L7	CNMG 434-MR	CNMG 120416-MR	Medium	PH5115	1/2	0.203	3/16	0.062
112-3921-R2	CNMG 434-PM	CNMG 120416-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.062

CNMG-MF



Finishing

CNMG-MR



Medium

CNMG-PM



PREMIUM Medium

CNMG-HR

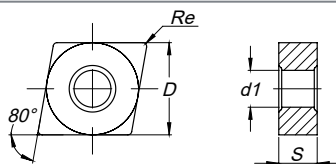


Roughing

(continued on next page)

## CNMG - Diamond 80° Negative

(continued from previous page)



Click or Scan here to view the entire TMX offering of CNMG inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1239-L7	CNMG 542-MR	CNMG 160608-MR	Medium	PH5115	5/8	0.25	1/4	0.031
112-1239-L8	CNMG 542-MR	CNMG 160608-MR	Medium	PH5125	5/8	0.25	1/4	0.031
112-1239-L9	CNMG 542-MR	CNMG 160608-MR	Medium	PH5740	5/8	0.25	1/4	0.031
112-1331-L7	CNMG 542-HR	CNMG 160608-HR	Roughing	PH5115	5/8	0.25	1/4	0.031
112-1331-L8	CNMG 542-HR	CNMG 160608-HR	Roughing	PH5125	5/8	0.25	1/4	0.031
112-1355-L7	CNMG 543-MR	CNMG 160612-MR	Medium	PH5115	5/8	0.25	1/4	0.047
112-1355-L8	CNMG 543-MR	CNMG 160612-MR	Medium	PH5125	5/8	0.25	1/4	0.047
112-1355-L9	CNMG 543-MR	CNMG 160612-MR	Medium	PH5740	5/8	0.25	1/4	0.047
112-1358-L7	CNMG 543-HR	CNMG 160612-HR	Roughing	PH5115	5/8	0.25	1/4	0.047
112-1358-L8	CNMG 543-HR	CNMG 160612-HR	Roughing	PH5125	5/8	0.25	1/4	0.047
112-1358-L9	CNMG 543-HR	CNMG 160612-HR	Roughing	PH5740	5/8	0.25	1/4	0.047
112-1490-L7	CNMG 544-MR	CNMG 160616-MR	Medium	PH5115	5/8	0.25	1/4	0.062
112-1490-L8	CNMG 544-MR	CNMG 160616-MR	Medium	PH5125	5/8	0.25	1/4	0.062
112-1302-L7	CNMG 643-MR	CNMG 190612-MR	Medium	PH5115	3/4	0.313	1/4	0.047
112-1302-L8	CNMG 643-MR	CNMG 190612-MR	Medium	PH5125	3/4	0.313	1/4	0.047
112-1302-L9	CNMG 643-MR	CNMG 190612-MR	Medium	PH5740	3/4	0.313	1/4	0.047
112-1359-L7	CNMG 643-HR	CNMG 190612-HR	Roughing	PH5115	3/4	0.313	1/4	0.047
112-1359-L8	CNMG 643-HR	CNMG 190612-HR	Roughing	PH5125	3/4	0.313	1/4	0.047
112-1359-L9	CNMG 643-HR	CNMG 190612-HR	Roughing	PH5740	3/4	0.313	1/4	0.047
112-1301-L7	CNMG 644-MR	CNMG 190616-MR	Medium	PH5115	3/4	0.313	1/4	0.062
112-1301-L8	CNMG 644-MR	CNMG 190616-MR	Medium	PH5125	3/4	0.313	1/4	0.062

CNMG-MF



Finishing

CNMG-MR



Medium

CNMG-PM



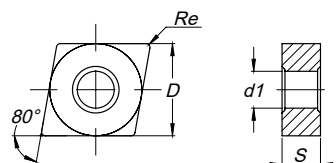
PREMIUM Medium

CNMG-HR



Roughing

## CNMM - Diamond 80° Negative\*



Click or Scan here to view the entire TMX offering of CNMM inserts at [www.toolmex.com](http://www.toolmex.com)



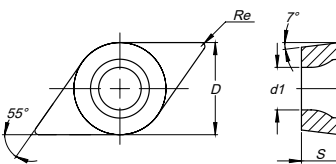
TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1251-L7	CNMM 644-HZ	CNMM 190616-HZ	Roughing	PH5115	3/4	0.313	1/4	0.062

CNMM-HZ



Roughing

## DCMT - Diamond 55° Positive



Click or Scan here to view the entire TMX offering of DCMT inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1681-L8	DCMT 21.51-MP	DCMT 070204-MP	Medium	PH5125	1/4	0.11	3/32	0.015
112-1668-L8	DCMT 32.50.5-FP	DCMT 11T302-FP	Finishing	PH5125	3/8	0.173	5/32	0.008
112-1711-L8	DCMT 32.51-FP	DCMT 11T304-FP	Finishing	PH5125	3/8	0.173	5/32	0.015
112-1648-L8	DCMT 32.51-MP	DCMT 11T304-MP	Medium	PH5125	3/8	0.173	5/32	0.015
112-1713-L8	DCMT 32.52-FP	DCMT 11T308-FP	Finishing	PH5125	3/8	0.173	5/32	0.031
112-1706-L8	DCMT 32.52-MP	DCMT 11T308-MP	Medium	PH5125	3/8	0.173	5/32	0.031

DCMT-FP



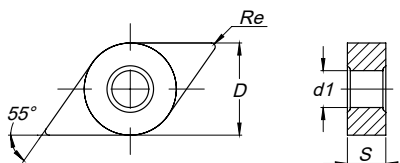
Finishing

DCMT-MP



Medium

## DNMG - Diamond 55° Negative



Click or Scan here to view the entire TMX offering of DNMG inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1497-L7	DNMG 331-MF	DNMG 110404-MF	Finishing	PH5115	3/8	0.15	3/16	0.015
112-1498-L7	DNMG 331-MR	DNMG 110404-MR	Medium	PH5115	3/8	0.15	3/16	0.015
112-1498-L8	DNMG 331-MR	DNMG 110404-MR	Medium	PH5125	3/8	0.15	3/16	0.015
112-1500-L7	DNMG 332-MR	DNMG 110408-MR	Medium	PH5115	3/8	0.15	3/16	0.031
112-1500-L8	DNMG 332-MR	DNMG 110408-MR	Medium	PH5125	3/8	0.15	3/16	0.031
112-1502-L7	DNMG 431-MF	DNMG 150404-MF	Finishing	PH5115	1/2	0.203	3/16	0.015
112-1218-L7	DNMG 431-MR	DNMG 150404-MR	Medium	PH5115	1/2	0.203	3/16	0.015
112-1218-L8	DNMG 431-MR	DNMG 150404-MR	Medium	PH5125	1/2	0.203	3/16	0.015
112-1218-L9	DNMG 431-MR	DNMG 150404-MR	Medium	PH5740	1/2	0.203	3/16	0.015
112-3924-R3	DNMG 431-PM	DNMG 150404-PM	PREMIUM Medium	PHG125	1/2	0.203	3/16	0.015
112-1504-L7	DNMG 432-MF	DNMG 150408-MF	Finishing	PH5115	1/2	0.203	3/16	0.031
112-1504-L8	DNMG 432-MF	DNMG 150408-MF	Finishing	PH5125	1/2	0.203	3/16	0.031
112-1219-L7	DNMG 432-MR	DNMG 150408-MR	Medium	PH5115	1/2	0.203	3/16	0.031
112-1219-L8	DNMG 432-MR	DNMG 150408-MR	Medium	PH5125	1/2	0.203	3/16	0.031
112-1219-L9	DNMG 432-MR	DNMG 150408-MR	Medium	PH5740	1/2	0.203	3/16	0.031
112-3916-R2	DNMG 432-PM	DNMG 150408-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.031
112-3916-R3	DNMG 432-PM	DNMG 150408-PM	PREMIUM Medium	PHG125	1/2	0.203	3/16	0.031
112-1253-L7	DNMG 432-HR	DNMG 150408-HR	Roughing	PH5115	1/2	0.203	3/16	0.031
112-1253-L8	DNMG 432-HR	DNMG 150408-HR	Roughing	PH5125	1/2	0.203	3/16	0.031
112-1507-L7	DNMG 433-MF	DNMG 150412-MF	Finishing	PH5115	1/2	0.203	3/16	0.047
112-1508-L8	DNMG 433-MR	DNMG 150412-MR	Medium	PH5125	1/2	0.203	3/16	0.047
112-3925-R2	DNMG 433-PM	DNMG 150412-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.047
112-1506-L9	DNMG 433-HR	DNMG 150412-HR	Roughing	PH5740	1/2	0.203	3/16	0.047
112-1224-L8	DNMG 441-MR	DNMG 150604-MR	Medium	PH5125	1/2	0.203	1/4	0.015
112-1328-L7	DNMG 442-MR	DNMG 150608-MR	Medium	PH5115	1/2	0.203	1/4	0.031
112-1328-L8	DNMG 442-MR	DNMG 150608-MR	Medium	PH5125	1/2	0.203	1/4	0.031
112-1254-L8	DNMG 442-HR	DNMG 150608-HR	Roughing	PH5125	1/2	0.203	1/4	0.031

DNMG-MF



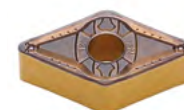
Finishing

DNMG-MR



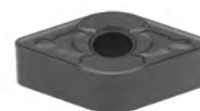
Medium

DNMG-PM



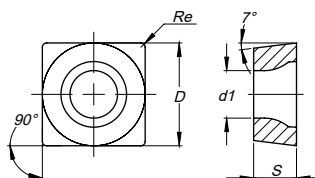
PREMIUM Medium

DNMG-HR



Roughing

## SCMT - Square 90° Positive



Click or Scan here to view the entire TMX offering of SCMT inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1762-L8	SCMT 32.51-MP	SCMT 09T304-MP	Medium	PH5125	3/8	0.173	5/32	0.015
112-1768-L7	SCMT 32.52-MP	SCMT 09T308-MP	Medium	PH5115	3/8	0.173	5/32	0.031
112-1768-L8	SCMT 32.52-MP	SCMT 09T308-MP	Medium	PH5125	3/8	0.173	5/32	0.031
112-1783-L8	SCMT 432-MP	SCMT 120408-MP	Medium	PH5125	1/2	0.217	3/16	0.031

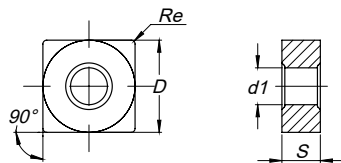
SCMT-MP



Medium



## SNMG - Square 90° Negative



Click or Scan here to view the entire TMX offering of SNMG inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1179-L7	SNMG 432-MR	SNMG 120408-MR	Medium	PH5115	1/2	0.203	3/16	0.031
112-1179-L8	SNMG 432-MR	SNMG 120408-MR	Medium	PH5125	1/2	0.203	3/16	0.031
112-1194-L7	SNMG 432-HR	SNMG 120408-HR	Roughing	PH5115	1/2	0.203	3/16	0.031
112-1194-L9	SNMG 432-HR	SNMG 120408-HR	Roughing	PH5740	1/2	0.203	3/16	0.031
112-1311-L9	SNMG 433-MR	SNMG 120412-MR	Medium	PH5740	1/2	0.203	3/16	0.047
112-1195-L9	SNMG 433-HR	SNMG 120412-HR	Roughing	PH5740	1/2	0.203	3/16	0.047
112-1536-L8	SNMG 543-MR	SNMG 150612-MR	Medium	PH5125	5/8	0.25	1/4	0.047
112-1536-L9	SNMG 543-MR	SNMG 150612-MR	Medium	PH5740	5/8	0.25	1/4	0.047
112-1535-L8	SNMG 543-HR	SNMG 150612-HR	Roughing	PH5125	5/8	0.25	1/4	0.047
112-1542-L9	SNMG 643-HR	SNMG 190612-HR	Roughing	PH5740	3/4	0.313	1/4	0.047

SNMG-MR



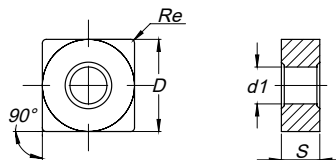
Medium

SNMG-HR



Roughing

## SNMM - Square 90° Negative\*



Click or Scan here to view the entire TMX offering of SNMM inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1159-L7	SNMM 866-HZ	SNMM 250924-HZ	Roughing	PH5115	1	0.359	3/8	0.093

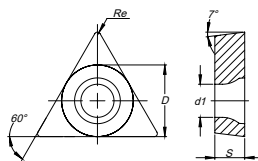
\*inserts are one sided

SNMM-HR



Roughing

## TCMT - Triangular 60° Positive



Click or Scan here to view the entire TMX offering of TCMT inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1970-L7	TCMT 21.51-MP	TCMT 110204-MP	Medium	PH5115	1/4	0.11	3/32	0.015
112-1970-L8	TCMT 21.51-MP	TCMT 110204-MP	Medium	PH5125	1/4	0.11	3/32	0.015
112-1971-L7	TCMT 21.52-MP	TCMT 110208-MP	Medium	PH5115	1/4	0.11	3/32	0.031
112-1971-L8	TCMT 21.52-MP	TCMT 110208-MP	Medium	PH5125	1/4	0.11	3/32	0.031
112-1972-L8	TCMT 21.53-MP	TCMT 110212-MP	Medium	PH5125	1/4	0.11	3/32	0.047
112-1832-L8	TCMT 32.51-FP	TCMT 16T304-FP	Finishing	PH5125	3/8	0.173	5/32	0.015
112-1836-L8	TCMT 32.51-MP	TCMT 16T304-MP	Medium	PH5125	3/8	0.173	5/32	0.015
112-1840-L8	TCMT 32.52-MP	TCMT 16T308-MP	Medium	PH5125	3/8	0.173	5/32	0.031
112-1849-L8	TCMT 432-MP	TCMT 220408-MP	Medium	PH5125	1/2	0.217	3/16	0.031

TCMT-FP



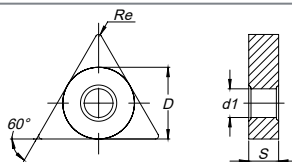
Finishing

TCMT-MP



Medium

## TNMG - Triangular 60° Negative



Click or Scan here to view the entire TMX offering of TNMG inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1556-L8	TNMG 331-MF	TNMG 160404-MF	Finishing	PH5125	3/8	0.15	3/16	0.015
112-1281-L7	TNMG 331-MR	TNMG 160404-MR	Medium	PH5115	3/8	0.15	3/16	0.015
112-1281-L8	TNMG 331-MR	TNMG 160404-MR	Medium	PH5125	3/8	0.15	3/16	0.015
112-1281-L9	TNMG 331-MR	TNMG 160404-MR	Medium	PH5740	3/8	0.15	3/16	0.015
112-1558-L7	TNMG 332-MF	TNMG 160408-MF	Finishing	PH5115	3/8	0.15	3/16	0.031
112-1269-L7	TNMG 332-MR	TNMG 160408-MR	Medium	PH5115	3/8	0.15	3/16	0.031
112-1269-L8	TNMG 332-MR	TNMG 160408-MR	Medium	PH5125	3/8	0.15	3/16	0.031
112-3917-R2	TNMG 332-PM	TNMG 160408-PM	PREMIUM Medium	PHG115	3/8	0.15	3/16	0.031
112-3917-R3	TNMG 332-PM	TNMG 160408-PM	PREMIUM Medium	PHG125	3/8	0.15	3/16	0.031
112-1270-L8	TNMG 332-HR	TNMG 160408-HR	Roughing	PH5125	3/8	0.15	3/16	0.031
112-1270-L9	TNMG 332-HR	TNMG 160408-HR	Roughing	PH5740	3/8	0.15	3/16	0.031
112-1282-L8	TNMG 333-MR	TNMG 160412-MR	Medium	PH5125	3/8	0.15	3/16	0.047
112-3992-R2	TNMG 333-PM	TNMG 160412-PM	PREMIUM Medium	PHG115	3/8	0.15	3/16	0.047
112-1283-L7	TNMG 333-HR	TNMG 160412-HR	Roughing	PH5115	3/8	0.15	3/16	0.047
112-1283-L8	TNMG 333-HR	TNMG 160412-HR	Roughing	PH5125	3/8	0.15	3/16	0.047
112-1625-L7	TNMG 431-MR	TNMG 220404-MR	Medium	PH5115	1/2	0.203	3/16	0.015
112-1625-L8	TNMG 431-MR	TNMG 220404-MR	Medium	PH5125	1/2	0.203	3/16	0.015
112-1369-L7	TNMG 432-MF	TNMG 220408-MF	Finishing	PH5115	1/2	0.203	3/16	0.031
112-1305-L8	TNMG 432-MR	TNMG 220408-MR	Medium	PH5125	1/2	0.203	3/16	0.031
112-1305-L9	TNMG 432-MR	TNMG 220408-MR	Medium	PH5740	1/2	0.203	3/16	0.031
112-3923-R2	TNMG 432-PM	TNMG 220408-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.031
112-1306-L7	TNMG 432-HR	TNMG 220408-HR	Roughing	PH5115	1/2	0.203	3/16	0.031
112-1306-L9	TNMG 432-HR	TNMG 220408-HR	Roughing	PH5740	1/2	0.203	3/16	0.031
112-1307-L8	TNMG 433-MR	TNMG 220412-MR	Medium	PH5125	1/2	0.203	3/16	0.047
112-3994-R3	TNMG 433-PM	TNMG 220412-PM	PREMIUM Medium	PHG125	1/2	0.203	3/16	0.047
112-1308-L7	TNMG 433-HR	TNMG 220412-HR	Roughing	PH5115	1/2	0.203	3/16	0.047
112-1308-L8	TNMG 433-HR	TNMG 220412-HR	Roughing	PH5125	1/2	0.203	3/16	0.047
112-1564-L8	TNMG 434-MR	TNMG 220416-MR	Medium	PH5125	1/2	0.203	3/16	0.062
112-3995-R2	TNMG 434-PM	TNMG 220416-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.062
112-1309-L8	TNMG 434-HR	TNMG 220416-HR	Roughing	PH5125	1/2	0.203	3/16	0.062
112-1309-L9	TNMG 434-HR	TNMG 220416-HR	Roughing	PH5740	1/2	0.203	3/16	0.062

TNMG-MF



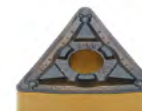
Finishing

TNMG-MR



Medium

TNMG-PM



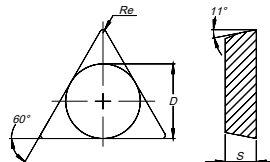
PREMIUM Medium

TNMG-HR



Roughing

## TPMR - Triangular 60° Positive



Click or Scan here to view the entire TMX offering of TPMR inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-0741-L8	TPMR 221-13	TPMR 110304-13	Medium	PH5125	1/4	-	1/8	0.015
112-0745-L8	TPMR 321-12	TPMR 160304-12	Finishing	PH5125	3/8	-	1/8	0.015
112-0746-L8	TPMR 321-13	TPMR 160304-13	Medium	PH5125	3/8	-	1/8	0.015
112-0749-L8	TPMR 322-13	TPMR 160308-13	Medium	PH5125	3/8	-	1/8	0.031
112-0753-L8	TPMR 432-13	TPMR 220408-13	Medium	PH5125	1/2	-	3/16	0.031

TPMR-12



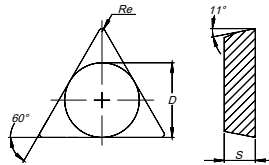
Finishing

TPMR-13



Medium

## TPUN - Triangular 60° Positive



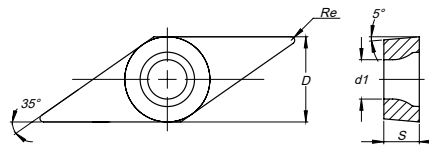
Click or Scan here to view the entire TMX offering of TPUN inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-0766-L8	TPUN 322	TPUN 160308	Medium	PH5125	3/8	–	1/8	0.031
112-0770-L8	TPUN 323	TPUN 160312	Medium	PH5125	3/8	–	1/8	0.047
112-0777-L8	TPUN 431	TPUN 220404	Medium	PH5125	1/2	–	3/16	0.015
112-0779-L8	TPUN 432	TPUN 220408	Medium	PH5125	1/2	–	3/16	0.031



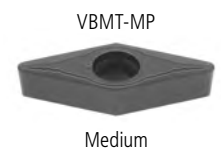
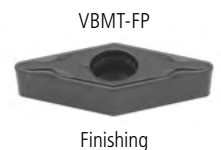
## VBMT - Diamond 35° Positive



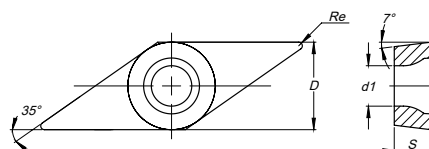
Click or Scan here to view the entire TMX offering of VBMT inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1865-L8	VBMT 331-FP	VBMT 160404-FP	Finishing	PH5125	3/8	0.173	3/16	0.015
112-1868-L8	VBMT 331-MP	VBMT 160404-MP	Medium	PH5125	3/8	0.173	3/16	0.015
112-1670-L8	VBMT 332-FP	VBMT 160408-FP	Finishing	PH5125	3/8	0.173	3/16	0.031
112-1791-L7	VBMT 332-MP	VBMT 160408-MP	Medium	PH5115	3/8	0.173	3/16	0.031
112-1791-L8	VBMT 332-MP	VBMT 160408-MP	Medium	PH5125	3/8	0.173	3/16	0.031



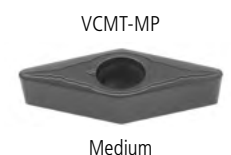
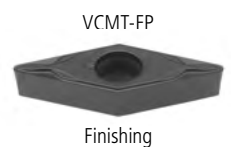
## VCMT - Diamond 35° Positive



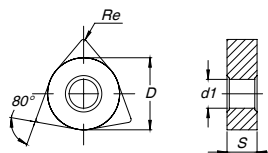
Click or Scan here to view the entire TMX offering of VCMT inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1779-L8	VCMT 221-FP	VCMT 110304-FP	Finishing	PH5125	1/4	0.110	1/8	0.110
112-1977-L8	VCMT 330.5-FP	VCMT 160402-FP	Finishing	PH5125	3/8	0.173	3/16	0.008
112-1978-L8	VCMT 331-FP	VCMT 160404-FP	Finishing	PH5125	3/8	0.173	3/16	0.015
112-1988-L8	VCMT 331-MP	VCMT 160404-MP	Medium	PH5125	3/8	0.173	3/16	0.015
112-1989-L8	VCMT 332-MP	VCMT 160408-MP	Medium	PH5125	3/8	0.173	3/16	0.031



## WNMG - Trigon 80° Negative



Click or Scan here to view the entire TMX offering of WNMG inserts at [www.toolmex.com](http://www.toolmex.com)



TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1207-L7	WNMG 331-MF	WNMG 060404-MF	Finishing	PH5115	3/8	0.15	3/16	0.015
112-1207-L8	WNMG 331-MF	WNMG 060404-MF	Finishing	PH5125	3/8	0.15	3/16	0.015
112-1208-L7	WNMG 332-MF	WNMG 060408-MF	Finishing	PH5115	3/8	0.15	3/16	0.031
112-1168-L8	WNMG 332-MR	WNMG 060408-MR	Medium	PH5125	3/8	0.15	3/16	0.031
112-1213-L7	WNMG 431-MF	WNMG 080404-MF	Finishing	PH5115	1/2	0.203	3/16	0.015
112-1213-L8	WNMG 431-MF	WNMG 080404-MF	Finishing	PH5125	1/2	0.203	3/16	0.015
112-1356-L7	WNMG 431-MR	WNMG 080404-MR	Medium	PH5115	1/2	0.203	3/16	0.015
112-1356-L8	WNMG 431-MR	WNMG 080404-MR	Medium	PH5125	1/2	0.203	3/16	0.015
112-1214-L7	WNMG 432-MF	WNMG 080408-MF	Finishing	PH5115	1/2	0.203	3/16	0.031
112-1327-L7	WNMG 432-MR	WNMG 080408-MR	Medium	PH5115	1/2	0.203	3/16	0.031
112-1327-L8	WNMG 432-MR	WNMG 080408-MR	Medium	PH5125	1/2	0.203	3/16	0.031
112-1327-L9	WNMG 432-MR	WNMG 080408-MR	Medium	PH5740	1/2	0.203	3/16	0.031
112-3918-R2	WNMG 432-PM	WNMG 080408-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.031
112-3918-R3	WNMG 432-PM	WNMG 080408-PM	PREMIUM Medium	PHG125	1/2	0.203	3/16	0.031
112-1127-L8	WNMG 432-HR	WNMG 080408-HR	Roughing	PH5125	1/2	0.203	3/16	0.031
112-1127-L9	WNMG 432-HR	WNMG 080408-HR	Roughing	PH5740	1/2	0.203	3/16	0.031
112-1589-L7	WNMG 433-MF	WNMG 080412-MF	Finishing	PH5115	1/2	0.203	3/16	0.047
112-1261-L7	WNMG 433-MR	WNMG 080412-MR	Medium	PH5115	1/2	0.203	3/16	0.047
112-1261-L8	WNMG 433-MR	WNMG 080412-MR	Medium	PH5125	1/2	0.203	3/16	0.047
112-3989-R2	WNMG 433-PM	WNMG 080412-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.047
112-1128-L7	WNMG 433-HR	WNMG 080412-HR	Roughing	PH5115	1/2	0.203	3/16	0.047
112-1128-L8	WNMG 433-HR	WNMG 080412-HR	Roughing	PH5125	1/2	0.203	3/16	0.047
112-1128-L9	WNMG 433-HR	WNMG 080412-HR	Roughing	PH5740	1/2	0.203	3/16	0.047
112-3990-R2	WNMG 434-PM	WNMG 080416-PM	PREMIUM Medium	PHG115	1/2	0.203	3/16	0.062

WNMG-MF



Finishing

WNMG-PM



PREMIUM Medium

WNMG-MR



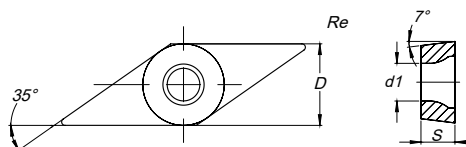
Medium

WNMG-HR



Roughing

## VNMG - Diamond 35° Negative



Click or Scan here to view the entire TMX offering of VNMG inserts at [www.toolmex.com](http://www.toolmex.com)



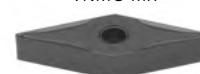
TMX Item Number	ANSI Reference	ISO Reference	Application	Grade	D (IC)	d1 (hole)	S (thickness)	Re (radius)
112-1278-L7	VNMG 331-MR	VNMG 160404-MR	Medium	PH5115	3/8	0.15	3/16	0.015
112-1278-L8	VNMG 331-MR	VNMG 160404-MR	Medium	PH5125	3/8	0.15	3/16	0.015
112-3636-L7	VNMG 332-MF	VNMG 160408-MF	Finishing	PH5115	3/8	0.15	3/16	0.031
112-1279-L7	VNMG 332-MR	VNMG 160408-MR	Medium	PH5115	3/8	0.15	3/16	0.031
112-1279-L8	VNMG 332-MR	VNMG 160408-MR	Medium	PH5125	3/8	0.15	3/16	0.031
112-1279-L9	VNMG 332-MR	VNMG 160408-MR	Medium	PH5740	3/8	0.15	3/16	0.031
112-1581-L7	VNMG 432-MR	VNMG 220408-MR	Medium	PH5115	1/2	0.203	3/16	0.031
112-1581-L8	VNMG 432-MR	VNMG 220408-MR	Medium	PH5125	1/2	0.203	3/16	0.031
112-1581-L9	VNMG 432-MR	VNMG 220408-MR	Medium	PH5740	1/2	0.203	3/16	0.031

VNMG-MF



Finishing

VNMG-MR



Medium

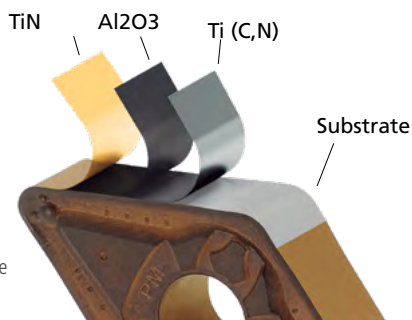


## Turning Grades Descriptions

### PHG115

**P10-P25**

New medium temperature CVD coating with  $\alpha$ -Al<sub>2</sub>O<sub>3</sub>+TiN. Carbide grade with a gradient layer close to the surface. Suitable for high to medium cutting speeds on steels.



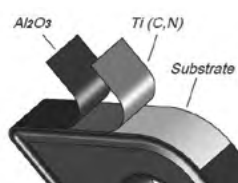
### PHG125

**P20-P35**

Carbide grade suitable for medium machining of steels & cast steels at medium cutting speeds. The substrate is suitable for the adhesion of the Alumina coating ( $\alpha$ -Al<sub>2</sub>O<sub>3</sub>+TiN) medium temperature - CVD, improving the tool life.

### PH5115

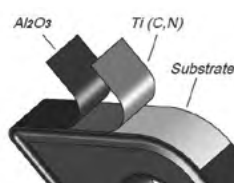
**P10-P25**



Medium temperature CVD coating with  $\alpha$ -Al<sub>2</sub>O<sub>3</sub>. Carbide grade with a gradient layer close to the surface. Suitable for high to medium cutting speeds on steels & cast steels.

### PH5125

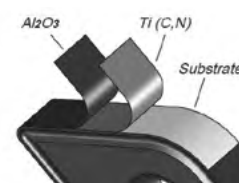
**P20-P35**



Carbide grade suitable for medium machining of steels & cast steels at medium cutting speeds. The substrate is suitable for the adhesion of the Alumina coating ( $\alpha$ -Al<sub>2</sub>O<sub>3</sub>) medium temperature - CVD, improving the tool life.


### PH5740

**P25-P45**




Substrate grade binary (Wc & Co) with medium grain size combined with the medium temperature CVD coating. Suitable for heavy roughing to roughing operations with interrupted cuts at medium to low cutting speeds.

## Crossover Grade Chart

Coating	ISO	Palbit 	Sandvik	Kennametal	Iscar	Seco	Mitsubishi	Sumitomo	Tungaloy	Walter	Kyocera	Ingersoll Taegutec	Korloy	Ceratizit
MTCVD Coated Grades	P10	<b>PH5115</b> <b>PHG115</b>	GC4315 GC4215 GC4015 GC4325	KCP10B KCP10 KCP25 KC9110	IC9150 IC9015 IC8150 IC8250	TP1500 TP2500	UE6105 MC6015 UE6110 MY5015	AC810P AC700G AC820P AC2000	T9105 T9005 T9115	WPP01 WPP05	CA5510 CA5505 CA515 CA5515	TT1300 TT7310 TT7400	NC3215	CTC1110 CTC1115 CTC3110 TCC410
	P20	<b>PH5115</b> <b>PHG115</b> <b>PH5125</b> <b>PHG125</b>	GC4315 GC4215 GC4015 GC4325 GC4225 GC4025	KCP25B KCP25 KC9125	IC9015 IC8250 IC9050 IC9250 IC8350	TP2500	MC6015 UE6110 MC6025 UE6020 MY5015	AC820P AC2000 AC830P	T9115 T9125	WPP10S WPP20S	CA515 CA5515 CA525 CA5525 CR9025	TT3500 TT5100 TT7400 KT7300 TT7800	NC3220 NC3220 NC3120	CTC1110 CTC1115 CTC1125 CTC1130 CTC1425
	P30	<b>PH5125</b> <b>PHG125</b>	GC4325 GC4225 GC4025 GC4235 GC4035	KCP30 KCP40 KCP8050	IC8350 IC9250 IC9350	TP3500 TP3000	MC025 UE6020 UE6035 UH6400	AC830P AC630M	T9125 T9135 T9035	WPP30S	CA525 CA5525 CA530 CA5335 CR9025	TT3500 TT5100 TT7400 KT7300	NC3215 NC3225 NC3120	CTC1125 CTC1130 CTC1135 CTC1425
	P40	<b>PH5740</b>	GC4235 GC4035	KCP30 KCP40 KC9140 KC9040 KC9240 KC9245	IC9350	TP3500 TP3000	UE6035 UH6400	AC630M	T9135 T9035	—	CA530 CA5535	TT5100 TT7100 KT7300 TT7800	NC500H NC5330	CTC1135 CTC1435 CTC2135

## Crossover Chipbreaker Chart

	Application Operation	Palbit 	Sandvik	Kennametal	Iscar	Seco	Mitsubishi	Sumitomo	Tungaloy	Walter	Kyocera	Ingersoll Taegutec	Korloy	Ceratizit
Negatives	Finishing	MF	QF	FS, LF	SF, PP, TF	—	01, TF	PK, FH	FA	—	DP	FA	VF, HU	—
	Medium to Finishing	MF, LC	PF, QF, LC, MF, R/L-K	FF, FN	F3P, NF, SF	FF2, FF1	TS TSF, ZF, 11, NS, AS, TQ, NM, CB, C	SA, FY, C, SH, MP	SU, FL, SE, SX	NF3, NS6	PQ VF CJ, PQ, GP, PP, HQ, GS, CQ	FG, VF, EA, FC, MC, ML, MP	VL	CF TF
	Medium to Roughing	PM, MR	PM, QM, XM, XRM	P, MN	M3P, M3M, PP, TF, GN	MR7, MR6, M5, M6	TM AM, DM, ZM, All-round	MA, MH, MP	GU, GE, UX	NMT, NM4	HS, PT, GT, CS, PS	PC MT, MC, MG	VM	TMF, TMM, M50
	Roughing	HR, RP"	HM PR, MR	RN RP, MR	NR, MR	MR6, R5	TH, THS	RP, GH, HZ, HL	MU, ME, HG	NM5, NM6, NM9	PH All-round	RT	GR, HR	TM, TRM
	Heavy Roughing	RP", HY", HZ"	PR, MR, HR, QR	RM, RH	R3P, NM	R4, RR6	TU, TRS, TUS	HM, HX, HV	HG, HP, HU, HW, HF	NR6, NRF, NRR	PX	HT, HD, RX, RH, HY, HZ	GH, VT	TRR TR, R28, R58, R88
Positives	Finishing	FS, FP	R/L-K, PF, XF UF	11, GM, LF	PF, SM, 14, 17, 19, XL	FF1, F2, M3, MF2	PSF, PF, SS PS, PSS, TS	FP, FV, SV, LP	FP, FZ, LU, FK, SS, SC, SU, SK, SF	PF5, PF4, PSS	CQ, GK, GP HQ, XP, XQ	FG, GF	VF, VL, F	SF, SMF, SMQ
	Finishing to Medium	MP	PM	MF, MP, GM, MR	DT, HQ	MF2	PM, 23, 24 RS	MP, MV	SU, UM, UJ	PM5	VF, MF	MT, PC	HMP, C25, M.CMX	SM

## Cutting Speeds (sfm)

Cutting Speeds or Turning Steel (sfm)	Steel Material	HB (brinell)	MTCVD Coating								
			← Wear Resistance						Toughness →		
			PH5115		PH5125		PHG125		PH5740		
			0.008	0.008	0.016	0.031	0.008	0.016	0.031	0.008	0.016
Unalloyed steel	125-170	820-1148	656-968	558-788	492-706	656-968	558-788	492-706	443-755	394-689	378-656
Low-alloy steel	180-350	624-820	558-755	460-689	394-624	558-755	460-689	394-624	410-673	345-607	312-607
High-alloy steel	200-325	443-722	410-706	361-607	328-558	410-706	361-607	328-558	345-673	246-574	164-443



# Indexable Tool Holders

TMX indexable tools are engineered and manufactured to deliver exceptional levels of quality and reliability. The result: **less downtime**, **longer tool life** and **greater productivity**. Quality European craftsmanship in ISO 9001 certified factories give our premium tools the highest accuracy, rigidity and value.



GTN cut-off blade and insert kit.  
Item number  
6-895-722



**European Alloy Steel**  
Provides tool rigidity for a high quality machined surface.

MCLNR 16-4D  
tool holder kit with  
10 CNMG inserts.  
Item number  
6-710-516R



**Better Finish, Less Chatter**  
Our tools are Case Hardened which reduces chatter, gives a better finish and makes them safer to use than thru hardened tools



SER 100 M16 external  
threading holder.  
Item number  
6-SER-1000-M16



**Consistent Quality**  
ISO 9001 certified factories means the high quality of our tools is always consistent. Our quality control specialists oversee the entire manufacturing process.

SI-MCLNR 16-4  
boring bar.  
Item number  
6-760-164R



SI-MWLN 16-4  
boring bar.  
Item number  
6-765-164R



Check out the entire line of TMX and Palbit indexable holders and inserts for turning, milling and drilling at

[www.tmxtools.com](http://www.tmxtools.com)



# TURNING INSERTS FOR STEEL



34 Talbot Road  
Northborough, MA 01532  
**Toll Free:** 1-844-TMX-TOOL (1-844-869-8665)  
**International:** +1-508-653-8897  
**Fax:** 508-653-5110  
**Email:** support@tmxtools.com

[www.tmxtools.com](http://www.tmxtools.com)

TMX is a brand of Toolmex Industrial Solutions © 2018  
4-999-1801 v2 2018-10