

THE NEW VALUE FRONTIER



# TF Series Inserts for Threading

Great Productivity Improvement with New Design and Grade

## ■ Advantages of TF Series

- **Long tool life**

New grade PR1115 enables remarkably long tool life

- **High quality**

High quality cutting edge by utilizing the state-of-the-art technology

- **Cost efficient**

Cost effective due to molded type insert

ADVANCING PRODUCTIVITY

## New PVD Coated Carbide PR1115

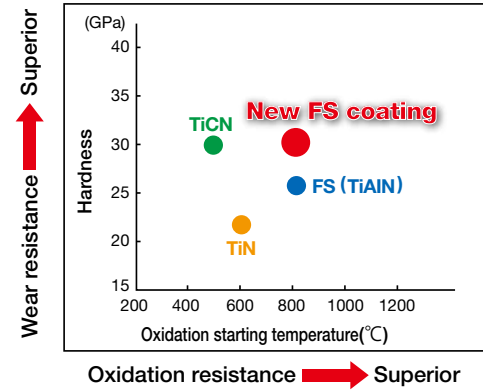
### Coating layer of PR1115

Sectional structure	Features
<p>→ <b>NEW FS (Fine Surface) Coat (TiAlN)</b> Suitable for high speed machining and excellent in wear resistance</p> <p>→ <b>Micro grain carbide substrate</b></p>	<ul style="list-style-type: none"> <li>• High hardness (30GPa)</li> <li>• High adhesiveness</li> <li>• Precised and refined structure</li> <li>• Superior oxidization resistance(800°C)</li> </ul>

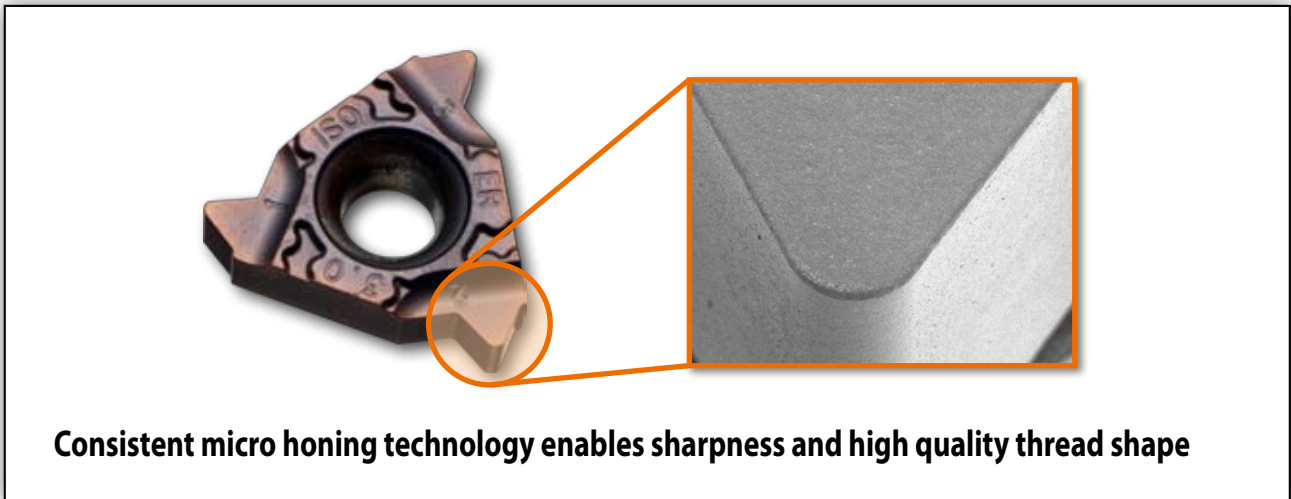
### NEW FS (Fine Surface) Coat (TiAlN)

Adopting TiAlN PVD coat that brings smooth surface and wear resistance provides excellent filming and adhesiveness compared to the existing FS coat.

### Relationship between hardness and oxidation resistance



## High quality cutting edge



# Longer Tool Life


## Case Studies

SCM415	16ER150ISO-TF (PR1115)	Competitor A
<p>Vc = 150m/min 9 pass WET M42xP1.5</p>	<p>300 pcs/edge</p>	<p>300 pcs/edge (Instable)</p>
<p>For Comp. A, the number of workpieces machined with one varied greatly. In contrast, TF series showed stability and its cutting edge was in good condition after machining the equal amount of workpieces. (still capable of machining)</p>		
Evaluation from the user		

S35C	16ER150ISO-TF (PR1115)	Competitor B
<p>Vc = 180m/min 5 pass L = 25mm WET</p>	<p>nose wear 0.03mm(270個/加工)</p> <p>270 pcs/edge</p>	<p>nose wear 0.1mm(180個/加工)</p> <p>180 pcs/edge</p>
<p>The nose wear of Comp.B was 0.1mm after processing 180pcs./edge. In case of TF series, it was 0.03mm even after processing 270pcs./edge. (1/3 wear compared with Comp. B)</p>		
Evaluation from the user		

## External Threading Insert

### ● 16(TNN32)Type

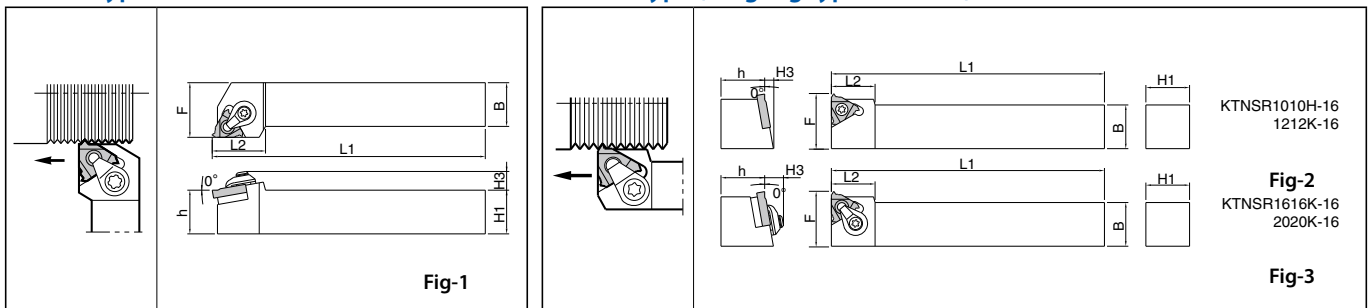
Description		Conventional									
16E\$		TNN32\$									
Insert Right-hand Shown	Description	Applicable Thread	Pitch	Dimension (mm)					Angle (°)	Stock Grades PVD Coated PR1115	Applicable Toolholder
				mm	A	T	∅d	rε			
Wiper insert 	16ER 100ISO-TF	Metric	1.0				0.12	0.80	60°	●	KTNR...-16 KTNSR...-16
	125ISO-TF		1.25				0.15	0.90		●	
	150ISO-TF		1.5	9.525	3.68	4.0	0.19	1.00		●	
	200ISO-TF		2.0				0.25	1.50		●	
	300ISO-TF		3.0				0.41	1.60		●	

● : Standard stock

## Applicable Toolholder

### ■ KTN type

### ■ KTNS type (for gang type NC lathe)








KTNSR1010H-16  
1212K-16

Fig-2  
KTNSR1616K-16  
2020K-16

Fig-3

## External Threading Toolholder Dimensions

Description	Stock	Dimension (mm)						Shape	Spare Parts					Applicable Toolholder		
		H1=h	H3	B	L1	L2	F		Clamp Set	Clamp Screw	Wrench	Shim	Shim Screw			
																
KTNR	1616H-16	●	16	8.5	16	100	25	20	Fig-1	CPS-5S	-	FT-15	TN-32	SP3X8	16ER...-TF	
	2020K-16	●	20		20	125		25								25
	2525M-16	●	25		25	150										30
KTNSR	1010H-16	●	10	8.5	10	100	18	16	Fig-2	-	SB-3.5TR	FT-15	-	-	16ER...-TF	
	1212K-16	●	12		12	125		18								18
	1616K-16	●	16		16	125			22	Fig-3	CPS-5S	-	FT-15	TN-32		SP3X8
	2020K-16	●	20		20	20		25								

● : Standard stock


## Recommended cutting conditions

### ● KTN type/KTNS type

Work material	Grade(V:m/min)		Initial ap
	PR1115		
Carbon steel	100~150		0.3mm and below
Alloy steel	100~150		0.3mm and below
Stainless steel	60~80		0.25mm and below

## Internal Threading Insert

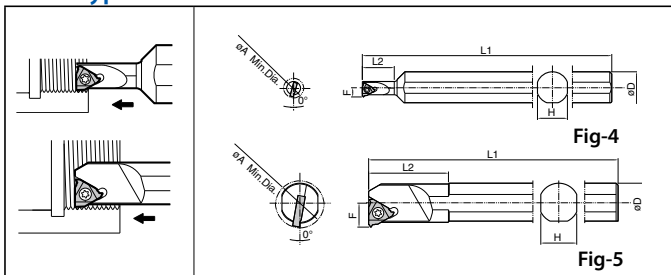
●11/16(TNN22/32)type

Description		Conventional										
11 I <sup>R</sup> /L		TNN22I <sup>R</sup> /L										
16 I <sup>R</sup> /L		TNN32I <sup>R</sup> /L										
Insert Right-hand Shown	Description	Applicable Thread	Pitch		Dimension (mm)					Angle (°)	Stock Grades	Applicable Toolholder
			mm	TPI/inch	A	T	ød	r ε	S	θ	PVD Coated PR1115	
Wiper insert 	11IR 100 ISO-TF 150 ISO-TF	Metric	1.0	-	6.35	3.18	3.0	0.07	0.8	60°	●	SINR...-11E SINR...-11
			1.5					0.11	1.1		●	
	16IR 100 ISO-TF 150 ISO-TF 200 ISO-TF 300 ISO-TF	Metric	1.0	-	9.525	3.68	4.0	0.07	0.8	60°	●	SINR...-16 CINR...-16
			1.5					0.11	1.1		●	
2.0			0.14					1.5	●			
3.0	0.19	1.6	●									

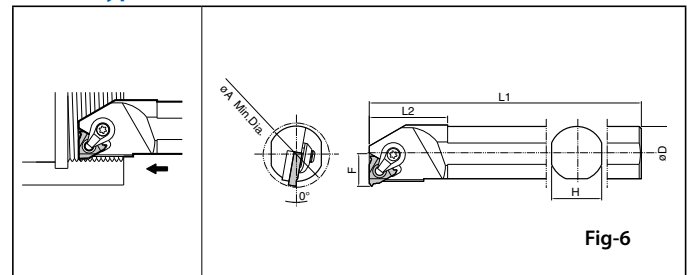
●: Standard stock

## Applicable Toolholder






■SIN type



■CIN type



## Internal Threading Toolholder Dimensions

Description	Stock	Min.Dia øA	Dimension (mm)					Shape	Spare Parts					Applicable Toolholder		
			øD	H	L1	L2	F		Clamp Screw	Clamp Set	Wrench	Shim	Shim Screw			
																
SINR 1216S-11E	●	12	16	14	150	25	6.3	Fig-4	SB-2TR	-	FT-8	-	-	11 IR...TF		
1516S-11	●	15				30	7.5		Fig-5	SB-3.5TR	-	FT-15	-		-	16 IR...TF
2016S-16	●	20				37	10.0			Fig-6	-	CPS-5S	FT-15		TN-32	
SINR 2420S-16	●	24	20	18	180	40	12.0	-	-		-	-	-			
CINR 3025S-16	●	30	25	23	200	36	15.0	Fig-6	-	CPS-5S	FT-15	TN-32	SP3X8	16 IR...TF		
3732S-16	●	37	32	30	250	45	18.5		-	-	-	-	-			

●: Standard stock

## Recommended cutting conditions

●SIN type/CIN type

Work material	Grade(V:m/min)		Initial ap
	PR1115		
Carbon steel	100~150		0.3mm and below
Alloy steel	100~150		0.3mm and below
Stainless steel	60~80		0.25mm and below



KYOCERA Industrial Ceramics Corp. ■ Cutting Tools Division  
 ph. 800-823-7284 ■ fax 828-692-1344  
 www.kyocera.com/cuttingtools ■ kyoceracuttingtools@kyocera.com