

PRODUCTS CATALOG  
2021-22

Made In Israel

# SAMTEC

Your Partner For Innovative Tooling Solutions  
**Enhanced Threading Solutions**



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# THREAD TURNING

## About Us

SAMTEC Tools and Accessories Private Ltd., SAMTEC is a market leader in providing innovative cutting tool solutions to the manufacturing industry. The company is headquartered in Pune and has been serving the tooling needs of manufacturing companies across India for over 25 years.

The brand SAMTEC promises to deliver on 4 P's: Product, Performance, Productivity, Pricing. We provide customers the right product, optimized for peak performance to deliver highest productivity at the best pricing.

### Threading Product Range

SAMTEC Threading product line include the full range of thread turning, mill-thread, solid carbide and spiral mill thread. Our widest range of premium quality threading products covers all sizes in thread turning and thread milling and offers accurate geometry, excellent cutting performance and extended tool life. We have a variety of carbide grades and coatings for machining even advanced material compositions.

SAMTEC SwissTec line is designed for Swiss type sliding head machines for small part machining and offers a variety of tool holding systems. These tools enable high volume and cost effective machining of front turning, back turning, parting and grooving.

SAMTEC MicroTec line is designed for performing machining operations inside small bores as small as 0.6 mm. The product range covers application areas of boring, profiling, cavity machining, radial grooving, face grooving and chamfering.

SAMTEC delivers a number of innovative tailor made products that are made to the special requirements of our customers in the Automotive, Aerospace, Defence, Medical, Oil & Gas, Pump & Valve and General Engineering.

### Product Quality Assurance

SAMTEC products are manufactured in Israel and USA to meet the highest standards of performance and quality. Our partner is a certified AS 9100 manufacturer and operates a stringent Quality Assurance program through the adoption of modern technology, strict adherence to standards and proven processes for testing, analysis and inspection. A state-of-the-art tool performance testing center where tools are run under strenuous machining conditions before being inspected and shipped.

### Performance Optimization

SAMTEC products are supported by our team of experienced and trained Sales & Application Engineers. Our technical support team brings countless hours of experience in optimizing tool performance to customer's unique application, material or machining conditions.

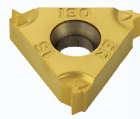
SAMTEC products deliver high productivity and focus on helping our customers reduce cost per component or machine cycle time in order to get the highest return on investments made on expensive machines and operating time.

## THREADING LAYDOWN INSERTS



# THREAD TURNING

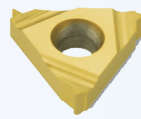
## Main Types of Laydown Inserts



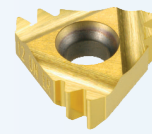
B/M-TYPE



U-TYPE



REGULAR TYPE



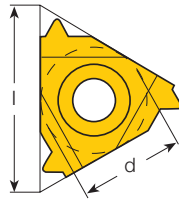
MULTI-TOOTH

16	E	R	M	1.50	ISO	2M	SC7819
1	2	3	4	5	6	7	8

1

### Insert Size

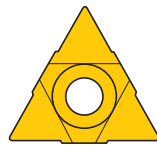
l (mm)	d
06	5/32"
08	3/16"
11	1/4"
16	3/8"
22	1/2"
27	5/8"



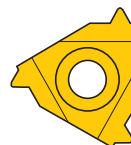
2

### Application

E	—	External
I	—	Internal
UE	—	U-type, External
UI	—	U-type, Internal
UEI	—	U-type, External and Internal



U-type



Regular Type

3

### Hand of Tool

R	—	Right-hand
L	—	Left-hand
RL	—	Right- and Left-hand

4

### Type

B	—	Peripherally ground & chipformer
M	—	Press to size with a chipformer
□	—	No indication regular type

5

### Pitch

Full Profile (value by number)		
0.35-9.0	mm	
72-2	TPI	
Partial Profile (Range by letter)		
	mm	TPI
A	0.5-1.5	48-16
AG	0.5-3.0	48-8
G	1.75-3.0	14-8
N	3.5-5.0	7-5
Q	5.5-6.0	4.5-4
U	5.5-9.0	4.5-2.75

6

### Thread Standard

60	—	Partial Profile 60°
55	—	Partial Profile 55°
ISO	—	ISO Metric
UN	—	American UN
W	—	Whitworth
BSPT	—	British BSPT
RND	—	Round DIN 405
TR	—	Trapeze DIN 103
ACME	—	ACME
STACME	—	Stub ACME
ABUT	—	American Buttress
UNJ	—	UNJ
NPT	—	NPT
API RD	—	API Round
BUT	—	API Buttress Casing
API	—	API
H90	—	H-90
EL	—	Extreme Line Casing
MJ	—	ISO 5855

7

### No. of Teeth

2M	—	2 teeth
3M	—	3 teeth

8

### Grade

SC7880
SC7819
SC7829
SC7839
SC7890

# THREAD TURNING

## Thread Turning Grades

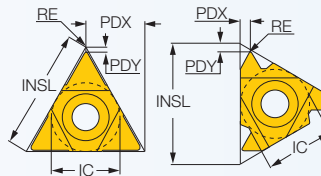
S	C	7	8	Coating	9*
		Thread Turning	Constant		Constant

\*0 - Uncoated

Coating	Material Group					
1 TiAlN	P15-P30	M20-M30	K20-K40	S15-S30	H20-H30	
2 TiCN + TiN	P15-P35	M20-M40				
3 TiCN + TiN	P30-P45	M25-M45				
8 UNCOATED	M15-M30	N10-N25	S15-S30			
9 UNCOATED	P20-P30	M25-M40				

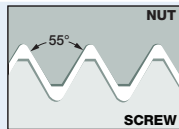
### ER/L-55°

External Laydown Threading  
Inserts with a 55° Partial  
Profile for General Industry



### EXTERNAL 55° PARTIAL

External right-hand shown



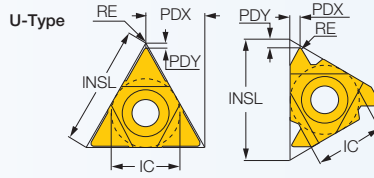
Designation	Dimensions									Tough ↔ Hard			
	IC	TPN <sup>(2)</sup>	TPX <sup>(3)</sup>	TPIX <sup>(4)</sup>	TPIN <sup>(5)</sup>	INSL	RE	PDY	PDX	SC7839	SC7890	SC7829	SC7819
11ER A 55	6.35	0.500	1.500	48.00	16	11.00	0.05	0.8	0.9			•	•
16ER/L A 55	9.52	0.500	1.500	48.00	16	16.49	0.05	0.8	0.9		•		•
16ER/L AG 55	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7	•		•	•
16ERB AG 55 <sup>(1)</sup>	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7				•
16ERM AG 55 <sup>(1)</sup>	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7		•	•	•
16ER/L G 55	9.52	1.750	3.000	14.00	8	16.49	0.20	1.2	1.7			•	•
16ERB G 55 <sup>(1)</sup>	9.52	1.750	3.000	14.00	8	16.49	0.23	1.2	1.7				•
16ERM G 55 <sup>(1)</sup>	9.52	1.750	3.000	14.00	8	16.49	0.23	1.2	1.7			•	•
22ER/L N 55	12.70	3.500	5.000	7.00	5	22.00	0.42	1.7	2.5			•	•
22UEIRL U 55	12.70	5.500	8.000	4.50	3	22.00	0.60	0.9	11.0		•	•	
27ER Q 55	15.88	5.500	6.000	4.50	4	27.50	0.60	2.0	2.9			•	•
27UEIRL U 55	15.88	6.500	9.000	4.00	3	27.50	0.81	1.2	13.7			•	

(1) With pressed chipformer (2) Thread pitch minimum (mm) (3) Thread pitch maximum (mm) (4) Threads per inch maximum (5) Threads per inch minimum

# THREAD TURNING

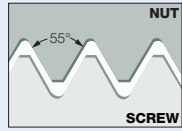
## IR/L-55°

Internal Laydown Threading Inserts with a 55° Partial Profile for General Industry



## INTERNAL 55° PARTIAL

Internal left-hand shown

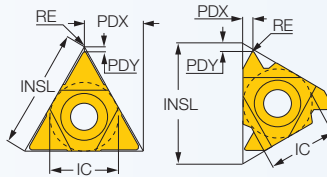


Designation	IC	TPN <sup>(2)</sup>	TPX <sup>(3)</sup>	TPIX <sup>(4)</sup>	TPIN <sup>(5)</sup>	INSL	RE	PDY	PDX	Tough ↔ Hard			
										SC7839	SC7890	SC7829	SC7819
06IR/L A 55	3.97	0.500	1.250	48.00	20	6.88	0.05	0.5	0.6	•			
08IR/L A 55	4.76	0.500	1.500	48.00	16	8.24	0.05	0.6	0.7	•			•
08UIRL U 55	4.76	1.750	2.000	14.00	11	8.24	0.10	0.9	4.0	•			
11IR/L A 55	6.35	0.500	1.500	48.00	16	11.00	0.05	0.8	0.9	•		•	•
16IR A 55	9.52	0.500	1.500	48.00	16	16.49	0.05	0.8	0.9		•		•
16IR/L AG 55	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7			•	•
16IRB AG 55 <sup>(1)</sup>	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7				•
16IRM AG 55 <sup>(1)</sup>	9.52	0.500	3.000	48.00	8	16.49	0.05	1.2	1.7			•	•
16IR/L G 55	9.52	1.750	3.000	14.00	8	16.49	0.20	1.2	1.7			•	•
16IRB G 55 <sup>(1)</sup>	9.52	1.750	3.000	14.00	8	16.49	0.23	1.2	1.7				•
16IRM G 55 <sup>(1)</sup>	9.52	1.750	3.000	14.00	8	16.49	0.20	1.2	1.7			•	•
22IR N 55	12.70	3.500	5.000	7.00	5	22.00	0.42	1.7	2.5		•	•	•
27IR Q 55	15.88	5.500	6.000	4.00	4	27.50	0.60	2.0	2.9				•

<sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Thread pitch minimum (mm) <sup>(3)</sup> Thread pitch maximum (mm) <sup>(4)</sup> Threads per inch maximum <sup>(5)</sup> Threads per inch minimum

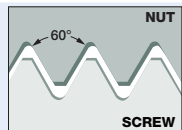
## ER/L-60°

External Laydown Threading Inserts with a 60° Partial Profile for General Industries



## EXTERNAL 60° PARTIAL

External right-hand shown



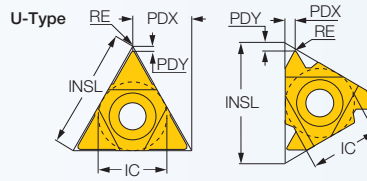
Designation	IC	TPN <sup>(2)</sup>	TPX <sup>(3)</sup>	TPIX <sup>(4)</sup>	TPIN <sup>(5)</sup>	INSL	RE	PDY	PDX	Tough ↔ Hard				
										SC7839	SC7890	SC7829	SC7880	SC7819
11ER/L A 60	6.35	0.500	1.500	48.00	16	11.00	0.05	0.8	0.9					•
16ER/L A 60	9.52	0.500	1.500	48.00	16	16.49	0.06	0.8	0.9	•	•	•	•	•
16ERB A 60 <sup>(1)</sup>	9.52	0.500	1.500	48.00	16	16.49	0.06	0.8	0.8				•	•
16ERM A 60 <sup>(1)</sup>	9.52	0.500	1.500	48.00	16	16.49	0.05	0.8	0.9		•	•		•
16ER/L AG 60	9.52	0.500	3.000	48.00	8	16.49	0.06	1.2	1.7	•	•	•	•	•
16ERB AG 60 <sup>(1)</sup>	9.52	0.500	3.000	48.00	8	16.49	0.06	1.2	1.7					•
16ERM AG 60 <sup>(1)</sup>	9.52	0.500	3.000	48.00	8	16.49	0.06	1.2	1.7		•	•		•
16ER/L G 60	9.52	1.750	3.000	14.00	8	16.49	0.22	1.2	1.7	•		•		•
16ERB G 60 <sup>(1)</sup>	9.52	1.750	3.000	14.00	8	16.49	0.22	1.2	1.7					•
16ERM G 60 <sup>(1)</sup>	9.52	1.750	3.000	14.00	8	16.49	0.17	1.2	1.7		•	•		•
22ER/L N 60	12.70	3.500	5.000	7.00	5	22.00	0.42	1.7	2.5	•	•	•		•
22ERM N 60 <sup>(1)</sup>	12.70	3.500	5.000	7.00	5	22.00	0.32	1.7	2.5		•	•		•
22UEIRL U 60	12.70	5.500	8.000	4.50	3	22.00	0.28	0.6	0.6			•		•
27ER/L Q 60	15.88	5.500	6.000	4.50	4	27.50	0.63	2.0	3.0	•	•	•		•
27UEIRL U 60	15.88	6.500	9.000	4.00	3	27.50	0.28	1.0	13.7		•	•		

<sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Thread pitch minimum (mm) <sup>(3)</sup> Thread pitch maximum (mm) <sup>(4)</sup> Threads per inch maximum <sup>(5)</sup> Threads per inch minimum

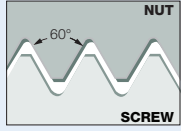
# THREAD TURNING

## INTERNAL 60° PARTIAL

**IR/L-60°**  
Internal Laydown Threading  
Inserts with a 60° Partial  
Profile for General Industry



Internal left-hand shown

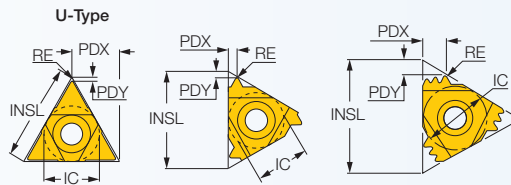


Designation	IC	TPN <sup>(2)</sup>	TPX <sup>(3)</sup>	TPIX <sup>(4)</sup>	TPIN <sup>(5)</sup>	INSL	RE	PDY	PDX	Tough ↔ Hard				
										SC7839	SC7890	SC7829	SC7880	SC7819
06IR/L A 60	3.97	0.500	1.250	48.00	20	6.88	0.04	0.6	0.6	•				
06IRM A 60 <sup>(1)</sup>	3.97	0.500	1.250	48.00	20	6.88	0.05	0.5	0.6	•				
08IR/L A 60	4.76	0.500	1.500	48.00	16	8.24	0.04	0.6	0.7	•				•
08IRM A 60 <sup>(1)</sup>	4.76	0.500	1.500	48.00	16	8.24	0.05	0.6	0.7	•				•
08UIRL U 60	4.76	1.750	2.000	14.00	11	8.24	0.10	0.8	4.0	•				
11IR/L A 60	6.35	0.500	1.500	48.00	16	11.00	0.04	0.8	0.9	•	•	•	•	•
11IRM A 60 <sup>(1)</sup>	6.35	0.500	1.500	48.00	16	11.00	0.05	0.7	0.9			•		•
16IR/L A 60	9.52	0.500	1.500	48.00	16	16.49	0.04	0.8	0.8	•	•	•		•
16IRB A 60 <sup>(1)</sup>	9.52	0.500	1.500	48.00	16	16.49	0.04	0.8	0.8					•
16IRM A 60 <sup>(1)</sup>	9.52	0.500	1.500	48.00	16	16.49	0.05	0.8	0.9			•		•
16IR/L AG 60	9.52	0.500	3.000	48.00	8	16.49	0.04	1.2	1.7	•	•	•		•
16IRB AG 60 <sup>(1)</sup>	9.52	0.500	3.000	48.00	8	16.49	0.03	1.2	1.7					•
16IRM AG 60 <sup>(1)</sup>	9.52	0.500	3.000	48.00	8	16.49	0.05	1.2	1.7		•	•		•
16IR/L G 60	9.52	1.750	3.000	14.00	8	16.49	0.13	1.2	1.7	•	•	•		•
16IRB G 60 <sup>(1)</sup>	9.52	1.750	3.000	14.00	8	16.49	0.13	1.2	1.7					•
16IRM G 60 <sup>(1)</sup>	9.52	1.750	3.000	14.00	8	16.49	0.10	1.2	1.7		•	•		•
22IR/L N 60	12.70	3.500	5.000	7.00	5	22.00	0.22	1.7	2.5			•		•
22IRM N 60 <sup>(1)</sup>	12.70	3.500	5.000	7.00	5	22.00	0.19	1.7	2.5			•		•
27IR/L Q 60	15.88	5.500	6.000	4.50	4	27.50	0.31	2.1	3.1			•		•

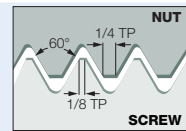
<sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Thread pitch minimum (mm) <sup>(3)</sup> Thread pitch maximum (mm) <sup>(4)</sup> Threads per inch maximum <sup>(5)</sup> Threads per inch minimum

## EXTERNAL ISO

**ER/L-ISO**  
External ISO Metric (DIN13  
12-1986 class: 6G)  
Laydown Threading Inserts  
for General Industry



External right-hand shown



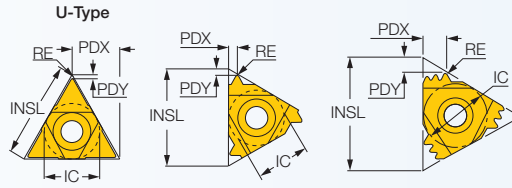
Designation	IC	TP <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>	Tough ↔ Hard					
								SC7839	SC7890	SC7829	SC7880	SC7819	
11ER/L 0.35 ISO	6.35	0.350	0.04	11.00	0.8	0.4	1		•				•
11ER 0.40 ISO	6.35	0.400	0.04	11.00	0.7	0.4	1						•
11ER 0.45 ISO	6.35	0.450	0.05	11.00	0.7	0.4	1	•					
11ER/L 0.50 ISO	6.35	0.500	0.06	11.00	0.6	0.6	1			•			•
11ER 0.60 ISO	6.35	0.600	0.07	11.00	0.6	0.6	1						•
11ER 0.70 ISO	6.35	0.700	0.07	11.00	0.6	0.6	1		•				•
11ER/L 0.75 ISO	6.35	0.750	0.08	11.00	0.6	0.6	1		•				•
11ER 0.80 ISO	6.35	0.800	0.09	11.00	0.6	0.6	1						•
11ER/L 1.00 ISO	6.35	1.000	0.13	11.00	0.7	0.7	1			•			•
11ER 1.25 ISO	6.35	1.250	0.16	11.00	0.8	0.9	1						•
11ER/L 1.50 ISO	6.35	1.500	0.19	11.00	0.8	0.9	1				•		•
11ER 1.75 ISO	6.35	1.750	0.22	11.00	1.1	0.8	1				•		
16ER/L 0.35 ISO	9.52	0.350	0.04	16.49	0.6	0.4	1						•

<sup>(1)</sup> Multi-tooth <sup>(2)</sup> With pressed chipformer <sup>(3)</sup> Thread pitch <sup>(4)</sup> Number of teeth per corner



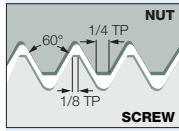
# THREAD TURNING

**ER/L-ISO (continued)**  
 External ISO Metric (DIN13  
 12-1986 class: 6G)  
 Laydown Threading Inserts  
 for General Industry



**EXTERNAL ISO**

External right-hand shown



## Dimensions

Tough ↔ Hard

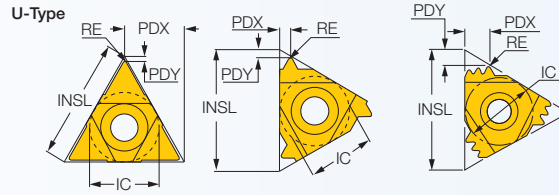
Designation	IC	TP <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>						
								SC7839	SC7890	SC7829	SC7880	SC7819	
16ER/L 0.40 ISO	9.52	0.400	0.05	16.49	0.7	0.4	1						•
16ER 0.45 ISO	9.52	0.450	0.05	16.49	0.6	0.4	1						•
16ER/L 0.50 ISO	9.52	0.500	0.06	16.49	0.6	0.6	1			•		•	•
16ER 0.60 ISO	9.52	0.600	0.10	16.49	0.6	0.6	1						•
16ER/L 0.70 ISO	9.52	0.700	0.11	16.49	0.6	0.6	1			•			•
16ER/L 0.75 ISO	9.52	0.750	0.11	16.49	0.6	0.6	1			•		•	•
16ER 0.75 ISO 3M <sup>(1)</sup>	9.52	0.750	0.07	16.49	1.4	1.9	3						•
16ERM 0.75 ISO <sup>(2)</sup>	9.52	0.750	0.08	16.49	0.6	0.6	1						•
16ER/L 0.80 ISO	9.52	0.800	0.12	16.49	0.6	0.6	1			•			•
16ERB 0.80 ISO <sup>(2)</sup>	9.52	0.800	0.12	16.49	0.7	0.7	1						•
16ER/L 1.00 ISO	9.52	1.000	0.13	16.49	0.7	0.7	1	•	•	•	•		•
16ER 1.00 ISO 3M <sup>(1)</sup>	9.52	1.000	0.07	16.49	1.7	2.5	3						•
16ERB 1.00 ISO <sup>(2)</sup>	9.52	1.000	0.13	16.49	0.7	0.7	1						•
16ERM 1.00 ISO <sup>(2)</sup>	9.52	1.000	0.11	16.49	0.7	0.7	1		•	•			•
16ER/L 1.25 ISO	9.52	1.250	0.16	16.49	0.8	0.9	1			•		•	•
16ERB 1.25 ISO <sup>(2)</sup>	9.52	1.250	0.16	16.49	0.8	0.9	1						•
16ERM 1.25 ISO <sup>(2)</sup>	9.52	1.250	0.14	16.49	0.8	0.9	1			•			•
16ER/L 1.50 ISO	9.52	1.500	0.19	16.49	0.9	1.2	1	•	•	•	•		•
16ER 1.50 ISO 2M <sup>(1)</sup>	9.52	1.500	0.18	16.49	1.5	2.3	2			•			•
16ERB 1.50 ISO <sup>(2)</sup>	9.52	1.500	0.19	16.49	0.8	1.0	1						•
16ERM 1.50 ISO <sup>(2)</sup>	9.52	1.500	0.19	16.49	0.8	1.0	1		•	•			•
16ER/L 1.75 ISO	9.52	1.750	0.22	16.49	0.9	1.2	1	•		•	•		•
16ERB 1.75 ISO <sup>(2)</sup>	9.52	1.750	0.22	16.49	0.9	1.2	1						•
16ERM 1.75 ISO <sup>(2)</sup>	9.52	1.750	0.20	16.49	0.9	1.2	1			•			•
16ER/L 2.00 ISO	9.52	2.000	0.25	16.49	1.0	1.3	1	•	•	•	•		•
16ER 2.00 ISO 2M <sup>(1)</sup>	9.52	2.000	0.09	16.49	1.8	2.9	2						•
16ERB 2.00 ISO <sup>(2)</sup>	9.52	2.000	0.25	16.49	0.9	1.2	1						•
16ERM 2.00 ISO <sup>(2)</sup>	9.52	2.000	0.24	16.49	1.0	1.3	1			•			•
16ER/L 2.50 ISO	9.52	2.500	0.32	16.49	1.1	1.5	1		•	•			•
16ERB 2.50 ISO	9.52	2.500	0.32	16.49	1.1	1.5	1						•
16ERM 2.50 ISO <sup>(2)</sup>	9.52	2.500	0.30	16.49	1.1	1.5	1			•			•
16ER/L 3.00 ISO	9.52	3.000	0.38	16.49	1.2	1.6	1	•	•	•			•
16ERB 3.00 ISO <sup>(2)</sup>	9.52	3.000	0.38	16.49	1.2	1.6	1						•
16ERM 3.00 ISO <sup>(2)</sup>	9.52	3.000	0.38	16.49	1.2	1.6	1		•	•			•
22ER 1.50 ISO 3M <sup>(1)</sup>	12.70	1.500	0.07	22.00	2.3	3.7	3				•		•
22ER 2.00 ISO 2M <sup>(1)</sup>	12.70	2.000	0.25	22.00	2.0	3.0	2						•
22ER 2.00 ISO 3M <sup>(1)</sup>	12.70	2.000	0.25	22.00	3.1	5.0	3				•		•
22ER/L 3.50 ISO	12.70	3.500	0.46	22.00	1.6	2.3	1	•		•			•
22ERM 3.50 ISO <sup>(2)</sup>	12.70	3.500	0.48	22.00	1.6	2.3	1						•
22ER/L 4.00 ISO	12.70	4.000	0.52	22.00	1.6	2.3	1		•	•			•
22ERM 4.00 ISO <sup>(2)</sup>	12.70	4.000	0.52	22.00	1.6	2.3	1						•
22ER 4.50 ISO	12.70	4.500	0.58	22.00	1.6	2.3	1			•			•
22ER/L 5.00 ISO	12.70	5.000	0.66	22.00	1.7	2.5	1			•			•
22UERL 5.50 ISO	12.70	5.500	0.70	22.00	2.3	11.0	1	•		•			
22ER/L 6.00 ISO	12.70	6.000	0.78	22.00	2.0	2.7	1			•			
22UERL 6.00 ISO	12.70	6.000	0.78	22.00	2.6	11.0	1	•		•			
27ER 3.00 ISO 2M <sup>(1)</sup>	15.88	3.000	0.38	27.50	2.9	4.6	2						•
27ER 5.50 ISO	15.88	5.500	0.71	27.50	2.0	2.9	1						•
27ER/L 6.00 ISO	15.88	6.000	0.78	27.50	2.0	2.9	1	•		•			•
27UERL 8.00 ISO	15.88	8.000	1.08	27.50	2.4	13.7	1						•

(1) Multi-tooth (2) With pressed chipformer (3) Thread pitch (4) Number of teeth per corner

# THREAD TURNING

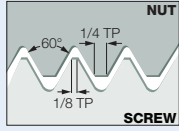
## IR/L-ISO

Internal ISO Metric (DIN13 12-1986 class 6H)  
Laydown Threading Inserts for General Industry



## INTERNAL ISO

Internal left-hand shown



### Dimensions

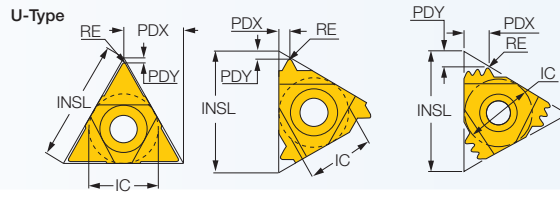
Tough ↔ Hard

Designation	IC	TP	RE	INSL	PDY	PDX	CICT <sup>(3)</sup>	Tough ↔ Hard				
								SC7839	SC7890	SC7829	SC7880	SC7819
06IR/L 0.50 ISO	3.97	0.500	0.04	6.88	0.9	0.4	1	•				•
06IR/L 0.75 ISO	3.97	0.750	0.05	6.88	0.6	0.5	1	•				•
06IR/L 1.00 ISO	3.97	1.000	0.05	6.88	0.6	0.6	1	•				•
06IR/L 1.25 ISO	3.97	1.250	0.07	6.88	0.6	0.6	1	•				•
08IR/L 0.50 ISO	4.76	0.500	0.04	8.24	0.6	0.5	1	•				•
08IR 0.75 ISO	4.76	0.750	0.05	8.24	0.6	0.5	1	•				•
08IR/L 1.00 ISO	4.76	1.000	0.05	8.24	0.6	0.6	1	•				•
08IR/L 1.25 ISO	4.76	1.250	0.07	8.24	0.7	0.7	1	•				•
08IR/L 1.50 ISO	4.76	1.500	0.09	8.24	0.7	0.7	1	•				•
08IR/L 1.75 ISO	4.76	1.750	0.10	8.24	0.6	0.8	1	•				•
08UIRL 2.00 ISO	4.76	2.000	0.12	8.24	0.9	4.0	1	•				
11IR/L 0.35 ISO	6.35	0.350	0.02	11.00	0.8	0.3	1				•	•
11IR 0.40 ISO	6.35	0.400	0.02	11.00	0.8	0.4	1					•
11IR/L 0.50 ISO	6.35	0.500	0.04	11.00	0.8	0.6	1			•	•	•
11IRB 0.50 ISO	6.35	0.500	0.04	11.00	0.8	0.6	1					•
11IR 0.70 ISO	6.35	0.700	0.04	11.00	0.6	0.6	1					•
11IR/L 0.75 ISO	6.35	0.750	0.05	11.00	0.6	0.6	1					•
11IRB 0.75 ISO	6.35	0.750	0.05	11.00	0.6	0.6	1					•
11IR 0.80 ISO	6.35	0.800	0.04	11.00	0.6	0.6	1					•
11IRB 0.80 ISO	6.35	0.800	0.04	11.00	0.6	0.6	1					•
11IR/L 1.00 ISO	6.35	1.000	0.07	11.00	0.6	0.7	1	•	•	•	•	•
11IRB 1.00 ISO	6.35	1.000	0.07	11.00	0.6	0.6	1					•
11IRM 1.00 ISO <sup>(1)</sup>	6.35	1.000	0.05	11.00	0.6	0.7	1					•
11IR/L 1.25 ISO	6.35	1.250	0.09	11.00	0.9	0.8	1					•
11IRB 1.25 ISO	6.35	1.250	0.09	11.00	0.8	0.9	1					•
11IR/L 1.50 ISO	6.35	1.500	0.11	11.00	0.8	0.9	1	•	•	•	•	•
11IRB 1.50 ISO	6.35	1.500	0.11	11.00	0.8	0.9	1					•
11IRM 1.50 ISO <sup>(1)</sup>	6.35	1.500	0.08	11.00	0.8	1.0	1			•		•
11IR/L 1.75 ISO	6.35	1.750	0.13	11.00	0.8	1.0	1		•			•
11IRB 1.75 ISO	6.35	1.750	0.13	11.00	0.8	0.9	1					•
11IR/L 2.00 ISO	6.35	2.000	0.14	11.00	0.8	0.9	1	•		•		•
16IR 0.35 ISO	9.52	0.350	0.02	16.49	0.6	0.3	1					•
16IR/L 0.40 ISO	9.52	0.400	0.02	16.49	0.8	0.4	1					•
16IL 0.45 ISO	9.52	0.450	0.02	16.49	0.8	0.4	1					•
16IR/L 0.50 ISO	9.52	0.500	0.04	16.49	0.8	0.6	1			•	•	•
16IR 0.60 ISO	9.52	0.600	0.03	16.49	0.6	0.6	1					•
16IR 0.70 ISO	9.52	0.700	0.04	16.49	0.6	0.6	1			•		•
16IR/L 0.75 ISO	9.52	0.750	0.05	16.49	0.6	0.6	1					•
16IR/L 0.80 ISO	9.52	0.800	0.04	16.49	0.6	0.6	1		•	•		
16IR/L 1.00 ISO	9.52	1.000	0.07	16.49	0.7	0.8	1		•	•	•	•
16IR 1.00 ISO 3M <sup>(2)</sup>	9.52	1.000	0.07	16.49	1.6	2.5	3					•
16IRB 1.00 ISO <sup>(1)</sup>	9.52	1.000	0.07	16.49	0.7	0.8	1					•
16IRM 1.00 ISO <sup>(1)</sup>	9.52	1.000	0.05	16.49	0.6	0.7	1		•	•		•
16IR/L 1.25 ISO	9.52	1.250	0.07	16.49	0.8	0.9	1		•	•	•	•
16IRB 1.25 ISO <sup>(1)</sup>	9.52	1.250	0.09	16.49	0.7	0.8	1					•
16IRM 1.25 ISO <sup>(1)</sup>	9.52	1.250	0.06	16.49	0.8	0.9	1			•		•

• Tolerance: Class 6H. <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Thread pitch

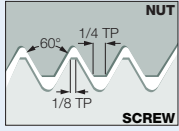
# THREAD TURNING

**IR/L-ISO (continued)**  
 Internal ISO Metric (DIN13  
 12-1986 class 6H)  
 Laydown Threading Inserts  
 for General Industry



**INTERNAL ISO**

Internal left-hand shown



## Dimensions

Tough ↔ Hard

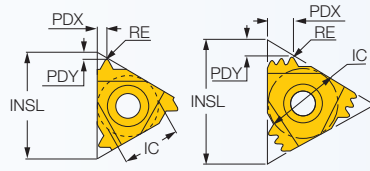
Designation	IC	TP	RE	INSL	PDY	PDX	CICT <sup>(3)</sup>	Tough ↔ Hard				
								SC7839	SC7890	SC7829	SC7880	SC7819
16IR/L 1.50 ISO	9.52	1.500	0.11	16.49	1.0	1.1	1	•	•	•	•	•
16IR 1.50 ISO 2M <sup>(2)</sup>	9.52	1.500	0.09	16.49	1.5	2.3	2					•
16IRB 1.50 ISO <sup>(1)</sup>	9.52	1.500	0.11	16.49	1.0	1.2	1					•
16IRM 1.50 ISO <sup>(1)</sup>	9.52	1.500	0.08	16.49	0.8	1.0	1		•	•		•
16IR/L 1.75 ISO	9.52	1.750	0.13	16.49	0.9	1.2	1			•	•	•
16IRB 1.75 ISO <sup>(1)</sup>	9.52	1.750	0.13	16.49	0.9	1.2	1					•
16IRM 1.75 ISO <sup>(1)</sup>	9.52	1.750	0.10	16.49	0.9	1.2	1			•		•
16IR/L 2.00 ISO	9.52	2.000	0.14	16.49	1.0	1.2	1	•		•		•
16IR 2.00 ISO 2M <sup>(2)</sup>	9.52	2.000	0.09	16.49	1.7	2.7	2					•
16IRB 2.00 ISO <sup>(1)</sup>	9.52	2.000	0.14	16.49	1.0	1.2	1					•
16IRM 2.00 ISO <sup>(1)</sup>	9.52	2.000	0.11	16.49	1.0	1.3	1			•		•
16IR/L 2.50 ISO	9.52	2.500	0.18	16.49	1.2	1.5	1	•		•		•
16IRB 2.50 ISO	9.52	2.500	0.18	16.49	1.2	1.5	1					•
16IRM 2.50 ISO <sup>(1)</sup>	9.52	2.500	0.14	16.49	1.1	1.5	1			•		•
16IR/L 3.00 ISO	9.52	3.000	0.21	16.49	1.1	1.5	1	•		•		•
16IRB 3.00 ISO <sup>(1)</sup>	9.52	3.000	0.22	16.49	1.1	1.5	1			•		•
16IRM 3.00 ISO <sup>(1)</sup>	9.52	3.000	0.17	16.49	1.1	1.5	1			•		•
22IR 1.50 ISO 3M <sup>(2)</sup>	12.70	1.500	0.07	22.00	2.3	3.7	3			•		•
22IR 2.00 ISO 2M <sup>(2)</sup>	12.70	2.000	0.09	22.00	2.3	3.0	2					•
22IR 2.00 ISO 3M <sup>(2)</sup>	12.70	2.000	0.07	22.00	3.2	5.0	3					•
22IL 3.00 ISO	12.70	3.000	0.17	16.00	1.1	1.5	1	•				
22IR/L 3.50 ISO	12.70	3.500	0.23	22.00	1.6	2.3	1			•		•
22IR/L 4.00 ISO	12.70	4.000	0.27	22.00	1.6	2.3	1		•	•		•
22IR/L 4.50 ISO	12.70	4.500	0.31	22.00	1.6	2.3	1			•		•
22IR/L 5.00 ISO	12.70	5.000	0.33	22.00	1.7	2.5	1		•	•		•
22IR 6.00 ISO	12.70	6.000	0.40	22.00	1.8	2.5	1					•
22UIRL 5.50 ISO	12.70	5.500	0.35	22.00	2.4	11.0	1		•	•		
22UIRL 6.00 ISO	12.70	6.000	0.39	22.00	2.1	11.0	1			•		
27IR 3.00 ISO 2M <sup>(2)</sup>	15.88	3.000	0.18	27.50	2.9	4.6	2					•
27IR 5.50 ISO	15.88	5.500	0.36	27.50	1.9	2.5	1			•		•
27IR 6.00 ISO	15.88	6.000	0.40	27.50	1.9	2.5	1			•		•

• Tolerance: Class 6H. <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Thread pitch

# THREAD TURNING

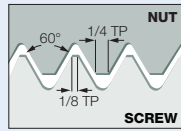
## ER/L-UN

External American UN Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts for General Industry



## EXTERNAL AMERICAN UN FULL PROFILE

External right-hand shown



### Dimensions

Tough ↔ Hard

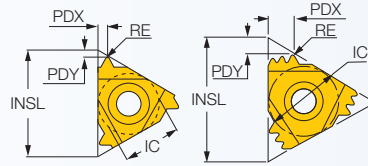
	IC	TPI <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>	SC7839	SC7890	SC7829	SC7880	SC7819
11ER 44 UN	6.35	44.0	0.05	11.00	0.6	0.6	1					•
11ER 36 UN	6.35	36.0	0.07	11.00	0.6	0.6	1					•
11ER 32 UN	6.35	32.0	0.10	11.00	0.6	0.6	1					•
11ER 28 UN	6.35	28.0	0.10	11.00	0.6	0.7	1					•
11ER 24 UN	6.35	24.0	0.12	11.00	0.7	0.8	1					•
11ER/L 20 UN	6.35	20.0	0.15	11.00	0.8	0.9	1			•		•
11ER 18 UN	6.35	18.0	0.17	11.00	0.8	1.0	1					•
11ER 16 UN	6.35	16.0	0.18	11.00	0.9	1.1	1		•	•		•
16ER 72 UN	9.52	72.0	0.04	16.49	0.8	0.4	1					•
16ER 56 UN	9.52	56.0	0.06	16.49	0.7	0.4	1					•
16ER 48 UN	9.52	48.0	0.05	16.49	0.6	0.6	1					•
16ER 40 UN	9.52	40.0	0.06	16.49	0.6	0.6	1					•
16ER/L 36 UN	9.52	36.0	0.07	16.49	0.6	0.6	1					•
16ER/L 32 UN	9.52	32.0	0.10	16.49	0.6	0.6	1				•	•
16ER/L 28 UN	9.52	28.0	0.11	16.49	0.6	0.7	1			•		•
16ER 27 UN	9.52	27.0	0.10	16.49	0.7	0.8	1		•			•
16ER/L 24 UN	9.52	24.0	0.13	16.49	0.7	0.8	1			•		•
16ERB 24 UN <sup>(1)</sup>	9.52	24.0	0.13	16.49	0.7	0.8	1					•
16ERM 24 UN <sup>(1)</sup>	9.52	24.0	0.11	16.49	0.7	0.8	1			•		•
16ER/L 20 UN	9.52	20.0	0.16	16.49	0.9	0.8	1			•	•	•
16ERB 20 UN <sup>(1)</sup>	9.52	20.0	0.16	16.49	0.8	0.9	1					•
16ERM 20 UN <sup>(1)</sup>	9.52	20.0	0.14	16.49	0.8	0.9	1			•		•
16ER/L 18 UN	9.52	18.0	0.17	16.49	0.7	0.8	1		•	•		•
16ERB 18 UN <sup>(1)</sup>	9.52	18.0	0.18	16.49	0.7	0.8	1					•
16ERM 18 UN <sup>(1)</sup>	9.52	18.0	0.15	16.49	0.8	1.0	1			•		•
16ER/L 16 UN	9.52	16.0	0.20	16.49	1.0	1.2	1	•		•		•
16ER 16 UN 2M <sup>(2)</sup>	9.52	16.0	0.09	16.49	1.5	2.3	2					•
16ERB 16 UN <sup>(1)</sup>	9.52	16.0	0.20	16.49	1.0	1.2	1					•
16ERM 16 UN <sup>(1)</sup>	9.52	16.0	0.19	16.49	0.9	1.1	1			•		•
16ER/L 14 UN	9.52	14.0	0.22	16.49	1.0	1.2	1			•		•
16ER 14 UN 2M <sup>(2)</sup>	9.52	14.0	0.09	16.49	1.6	2.6	2					•
16ERB 14 UN <sup>(1)</sup>	9.52	14.0	0.23	16.49	1.0	1.2	1					•
16ERM 14 UN <sup>(1)</sup>	9.52	14.0	0.22	16.49	1.0	1.2	1			•		•
16ER/L 13 UN	9.52	13.0	0.24	16.49	1.0	1.2	1			•		•
16ERB 13 UN <sup>(1)</sup>	9.52	13.0	0.25	16.49	0.9	1.2	1					•
16ERM 13 UN <sup>(1)</sup>	9.52	13.0	0.24	16.49	1.0	1.3	1					•
16ER/L 12 UN	9.52	12.0	0.27	16.49	1.1	1.2	1			•	•	•
16ER 12 UN 2M <sup>(2)</sup>	9.52	12.0	0.27	16.49	2.2	3.4	2					•
16ERB 12 UN <sup>(1)</sup>	9.52	12.0	0.27	16.49	0.9	1.2	1					•
16ERM 12 UN <sup>(1)</sup>	9.52	12.0	0.25	16.49	1.1	1.4	1		•	•		•
16ER 11.5 UN	9.52	11.5	0.27	16.49	1.2	1.5	1					•
16ER/L 11 UN	9.52	11.0	0.28	16.49	1.1	1.5	1			•		•
16ERB 11 UN <sup>(1)</sup>	9.52	11.0	0.29	16.49	1.1	1.5	1					•
16ER/L 10 UN	9.52	10.0	0.32	16.49	1.1	1.5	1		•	•		•
16ERB 10 UN <sup>(1)</sup>	9.52	10.0	0.32	16.49	1.1	1.5	1					•
16ER 9 UN	9.52	9.0	0.35	16.49	1.3	1.6	1					•
16ERB 9 UN <sup>(1)</sup>	9.52	9.0	0.35	16.49	1.3	1.6	1					•
16ER/L 8 UN	9.52	8.0	0.40	16.49	1.2	1.6	1			•		•
16ERB 8 UN <sup>(1)</sup>	9.52	8.0	0.40	16.49	1.2	1.6	1					•
16ERM 8 UN <sup>(1)</sup>	9.52	8.0	0.41	16.49	1.2	1.6	1			•		•

• Tolerance: Class 2A <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Threads per inch <sup>(4)</sup> Number of teeth per corner

# THREAD TURNING

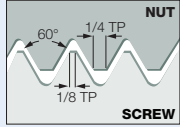
## ER/L-UN (continued)

External American UN Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts for General Industry



## EXTERNAL AMERICAN UN FULL PROFILE

External right-hand shown

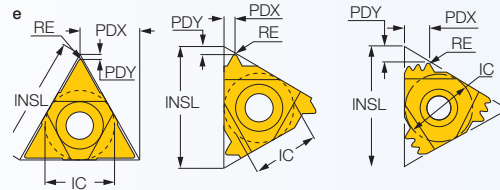


Designation	Dimensions							Tough ↔ Hard				
	IC	TPI <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>	SC7839	SC7890	SC7829	SC7880	SC7819
22ER 12 UN 2M <sup>(2)</sup>	12.70	12.0	0.27	22.00	2.2	3.4	2					•
22ER 12 UN 3M <sup>(2)</sup>	12.70	12.0	0.27	22.00	3.2	5.2	3		•			•
22ER 7 UN	12.70	7.0	0.47	22.00	1.6	2.3	1					•
22ER 6 UN	12.70	6.0	0.56	22.00	1.6	2.3	1					•
22ER 5 UN	12.70	5.0	0.67	22.00	1.7	2.5	1		•	•		•
27ER 8 UN 2M <sup>(2)</sup>	15.88	8.0	0.41	27.50	3.1	4.9	2					•
27ER 4.5 UN	15.88	4.5	0.75	27.50	1.9	2.7	1					•
27ER 4 UN	15.88	4.0	0.85	27.50	0.7	0.8	1		•	•		•

• Tolerance: Class 2A <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Threads per inch <sup>(4)</sup> Number of teeth per corner

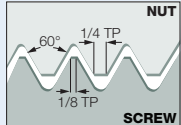
## IR/L-UN

Internal American UN Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts for General Industry



## INTERNAL AMERICAN UN FULL PROFILE

Internal left-hand shown

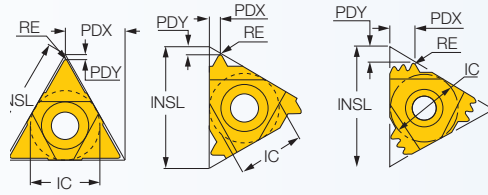


Designation	Dimensions							Tough ↔ Hard				
	IC	TPI <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>	SC7839	SC7890	SC7829	SC7880	SC7819
06IR 32 UN	3.97	32.0	0.04	6.88	0.8	0.5	1	•				
06IL 28 UN	3.97	28.0	0.04	6.88	0.8	0.6	1	•				
06IR/L 24 UN	3.97	24.0	0.05	6.88	0.7	0.6	1	•				
06IR 20 UN	3.97	20.0	0.09	6.88	0.6	0.6	1	•				
06IR/L 18 UN	3.97	18.0	0.07	6.88	0.6	0.7	1	•				
08IR 32 UN	4.76	32.0	0.04	8.24	0.6	0.5	1	•				
08IR/L 28 UN	4.76	28.0	0.04	8.24	0.6	0.6	1	•				
08IR/L 24 UN	4.76	24.0	0.05	8.24	0.6	0.6	1	•				
08IR/L 20 UN	4.76	20.0	0.08	8.24	0.7	0.7	1	•				
08IR 18 UN	4.76	18.0	0.08	8.24	0.8	0.7	1	•				
08IR 16 UN	4.76	16.0	0.09	8.24	0.6	0.7	1	•				
08IR 14 UN	4.76	14.0	0.10	8.24	0.6	0.8	1	•				•
08UIRL 13 UN	4.76	13.0	0.10	8.24	1.0	4.0	1					•
08UIRL 12 UN	4.76	12.0	0.10	8.24	0.9	4.0	1					•
08UIRL 11 UN	4.76	11.0	0.10	8.24	0.9	4.0	1	•				
11IR 64 UN	6.35	64.0	0.02	11.00	0.8	0.4	1					•
11IR 36 UN	6.35	36.0	0.04	11.00	0.6	0.6	1					•
11IR/L 32 UN	6.35	32.0	0.04	11.00	0.6	0.6	1					•
11IRB 32 UN	6.35	32.0	0.04	11.00	0.6	0.6	1					•
11IR/L 28 UN	6.35	28.0	0.04	11.00	0.6	0.7	1					•
11IRB 28 UN	6.35	28.0	0.05	11.00	0.6	0.6	1					•
11IR/L 24 UN	6.35	24.0	0.07	11.00	0.8	0.8	1					•
11IRB 24 UN	6.35	24.0	0.07	11.00	0.6	0.6	1					•
11IR/L 20 UN	6.35	20.0	0.09	11.00	0.8	0.9	1					•
11IRB 20 UN	6.35	20.0	0.09	11.00	0.8	0.9	1					•

• Tolerance: class 2B, ANSI B1, 3M-1986. • Tolerance: Class 2A <sup>(1)</sup> With pressed chipformer. <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Threads per inch <sup>(4)</sup> Number of teeth per corner

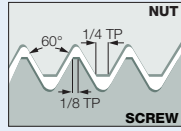
# THREAD TURNING

**IR/L-UN (continued)**  
Internal American UN Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts for General Industry



## INTERNAL AMERICAN UNFULL PROFILE

Internal left-hand shown



### Dimensions

Tough ↔ Hard

Designation	IC	TPI <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>					
								SC7839	SC7890	SC7829	SC7880	SC7819
11IR/L 18 UN	6.35	18.0	0.10	11.00	0.9	1.0	1			•		•
11IRB 18 UN	6.35	18.0	0.10	11.00	0.9	0.9	1					•
11IR/L 16 UN	6.35	16.0	0.11	11.00	0.9	1.0	1					•
11IRB 16 UN	6.35	16.0	0.11	11.00	0.9	0.9	1					•
11IR/L 14 UN	6.35	14.0	0.10	11.00	0.9	1.1	1		•			•
11IRB 14 UN	6.35	14.0	0.13	11.00	0.9	0.9	1					•
11IR 12 UN	6.35	12.0	0.12	11.00	0.9	1.1	1			•		•
11IRB 12 UN	6.35	12.0	0.13	11.00	0.9	0.9	1					•
11IR 11 UN	6.35	11.0	0.14	11.00	0.8	0.9	1			•		•
16IR 32 UN	9.52	32.0	0.04	16.49	0.6	0.6	1			•		•
16IR/L 28 UN	9.52	28.0	0.04	16.49	0.6	0.7	1					•
16IR 27 UN	9.52	27.0	0.04	16.49	0.7	0.8	1		•			
16IR 24 UN	9.52	24.0	0.07	16.49	0.7	0.8	1					•
16IRB 24 UN <sup>(1)</sup>	9.52	24.0	0.07	16.49	0.7	0.8	1					•
16IR/L 20 UN	9.52	20.0	0.06	16.49	0.8	0.9	1			•	•	•
16IRB 20 UN <sup>(1)</sup>	9.52	20.0	0.09	16.49	0.8	0.8	1					•
16IRM 20 UN <sup>(1)</sup>	9.52	20.0	0.06	16.49	0.8	0.9	1					•
16IR/L 18 UN	9.52	18.0	0.08	16.49	0.7	0.8	1			•		•
16IRB 18 UN <sup>(1)</sup>	9.52	18.0	0.08	16.49	0.7	0.8	1					•
16IRM 18 UN <sup>(1)</sup>	9.52	18.0	0.08	16.49	0.8	1.0	1					•
16IR/L 16 UN	9.52	16.0	0.11	16.49	1.0	1.1	1			•		•
16IR 16 UN-2M <sup>(2)</sup>	9.52	16.0	0.09	16.49	1.5	2.3	2					•
16IRB 16 UN <sup>(1)</sup>	9.52	16.0	0.11	16.49	0.9	1.1	1					•
16IRM 16 UN <sup>(1)</sup>	9.52	16.0	0.09	16.49	0.9	1.1	1			•		•
16IR/L 14 UN	9.52	14.0	0.13	16.49	0.9	1.1	1					•
16IRB 14 UN <sup>(1)</sup>	9.52	14.0	0.13	16.49	0.9	1.1	1					•
16IRM 14 UN <sup>(1)</sup>	9.52	14.0	0.11	16.49	0.9	1.2	1			•		•
16IR/L 13 UN	9.52	13.0	0.11	16.49	1.0	1.3	1		•			•
16IR/L 12 UN	9.52	12.0	0.13	16.49	1.0	1.1	1			•	•	•
16IRB 12 UN <sup>(1)</sup>	9.53	12.0	0.13	16.49	1.0	1.1	1					•
16IRM 12 UN <sup>(1)</sup>	9.52	12.0	0.12	16.49	1.1	1.4	1			•		•
16IR 11.5 UN	9.52	11.5	0.14	16.49	1.0	1.1	1					•
16IR 11 UN	9.52	11.0	0.14	16.49	1.0	1.1	1					•
16IR/L 10 UN	9.52	10.0	0.15	16.49	1.1	1.5	1			•		•
16IRB 10 UN <sup>(1)</sup>	9.52	10.0	0.15	16.49	1.1	1.5	1					•
16IR 9 UN	9.52	9.0	0.17	16.49	1.2	1.7	1					•
16IR/L 8 UN	9.52	8.0	0.23	16.49	1.1	1.5	1			•		•
16IRB 8 UN <sup>(1)</sup>	9.52	8.0	0.23	16.49	1.1	1.5	1					•
16IRM 8 UN <sup>(1)</sup>	9.52	8.0	0.20	16.49	1.1	1.5	1			•		•
22IR 16 UN 3M <sup>(2)</sup>	12.70	16.0	0.07	22.00	2.5	4.0	3					•
22IR 12 UN 2M <sup>(2)</sup>	12.70	12.0	0.09	22.00	2.3	3.4	2					•
22IR 12 UN 3M <sup>(2)</sup>	12.70	12.0	0.07	22.00	3.2	5.2	3					•
22IR/L 7 UN	12.70	7.0	0.22	22.00	1.6	2.3	1	•				•
22IR 6 UN	12.70	6.0	0.26	22.00	1.6	2.3	1					•
22IR 5 UN	12.70	5.0	0.32	22.00	1.6	2.3	1			•		•
22UIRL 4 UN	15.88	4.0	0.36	22.00	2.4	11.0	1					•
27IR 8 UN 2M <sup>(2)</sup>	15.88	8.0	0.19	27.50	3.1	4.9	2					•
27IR 4.5 UN	15.88	4.5	0.36	27.50	1.7	2.4	1			•		•
27IR 4 UN	15.88	4.0	0.43	27.50	1.9	2.5	1					•

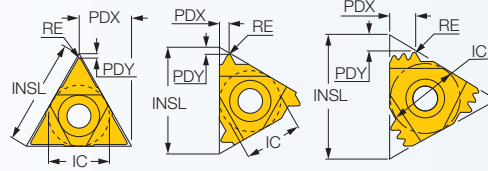
• Tolerance: class 2B, ANSI B1, 3M-1986. • Tolerance: Class 2A <sup>(1)</sup> With pressed chipformer. <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Threads per inch <sup>(4)</sup> Number of teeth per corner

# THREAD TURNING

## ER/L-W

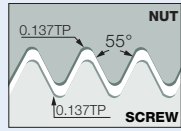
External Whitworth (BSW, BSF, BSP) B.S.84-1956 DIN 259 Medium Class Full Profile Laydown Threading Inserts

U-Type



## EXTERNAL WHITWORTH

External right-hand shown



### Dimensions

Tough → Hard

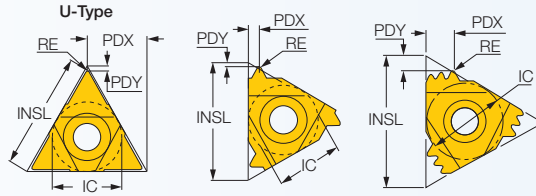
Designation	IC	TPI <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>						
								SC7839	SC7890	SC7829	SC7880	SC7819	
11ER 36 W	6.35	36.0	0.07	11.00	0.6	0.6	1						•
11ER 20 W	6.35	20.0	0.14	11.00	8.0	0.9	1		•				
11ER/L 19 W	6.35	19.0	0.15	11.00	0.8	1.0	1						•
11ER 18 W	6.35	18.0	0.16	11.00	0.8	1.0	1			•			
11ER 16 W	6.35	16.0	0.18	11.00	0.9	1.1	1		•				
11ER 14 W	6.35	14.0	0.21	11.00	0.9	1.1	1		•	•			•
16ER 40 W	9.52	40.0	0.06	16.49	0.6	0.6	1						
16ER 32 W	9.52	32.0	0.09	16.49	0.6	0.6	1		•				
16ER 28 W	9.52	28.0	0.11	16.49	0.6	0.7	1			•			•
16ER 26 W	9.52	26.0	0.12	16.49	0.7	0.7	1						•
16ER 24 W	9.52	24.0	0.14	16.49	0.7	0.8	1						•
16ER/L 22 W	9.52	22.0	0.13	16.49	0.8	0.9	1		•				•
16ER 20 W	9.52	20.0	0.16	16.49	0.7	0.8	1						•
16ER/L 19 W	9.52	19.0	0.17	16.49	0.7	0.8	1	•		•			•
16ERB 19 W <sup>(1)</sup>	9.52	19.0	0.17	16.49	0.7	0.8	1						•
16ERM 19 W <sup>(1)</sup>	9.52	19.0	0.16	16.49	0.8	1.0	1		•	•			•
16ER/L 18 W	9.52	18.0	0.17	16.49	0.9	1.2	1		•				•
16ER 16 W	9.52	16.0	0.20	16.49	0.9	1.2	1						•
16ERB 16 W <sup>(1)</sup>	9.52	16.0	0.20	16.49	0.9	1.2	1						•
16ERM 16 W <sup>(1)</sup>	9.52	16.0	0.20	16.49	0.9	1.1	1			•			•
16ER/L 14 W	9.52	14.0	0.23	16.49	1.0	1.2	1	•		•			•
16ER 14 W 2M <sup>(2)</sup>	9.52	14.0	0.21	16.49	1.7	2.7	2						•
16ERB 14 W <sup>(1)</sup>	9.52	14.0	0.23	16.49	1.0	1.2	1						•
16ERM 14 W <sup>(1)</sup>	9.52	14.0	0.24	16.49	1.0	1.2	1		•	•			•
16ER/L 12 W	9.52	12.0	0.27	16.49	1.2	1.4	1						•
16ER/L 11 W	9.52	11.0	0.29	16.49	1.1	1.5	1	•	•	•	•		•
16ERB 11 W <sup>(1)</sup>	9.52	11.0	0.29	16.49	1.1	1.5	1						•
16ERM 11 W <sup>(1)</sup>	9.52	11.0	0.27	16.49	1.1	1.5	1			•			•
16ER 10 W	9.52	10.0	0.32	16.49	1.1	1.5	1			•			•
16ERB 10 W <sup>(1)</sup>	9.52	10.0	0.32	16.49	1.1	1.5	1						•
16ER 9 W	9.52	9.0	0.34	16.49	1.2	1.7	1			•			
16ER/L 8 W	9.52	8.0	0.39	16.49	1.2	1.5	1						•
22ER 14 W 3M <sup>(2)</sup>	12.70	14.0	0.21	22.00	2.8	4.5	3						•
22ER 11 W 2M <sup>(2)</sup>	12.70	11.0	0.09	22.00	2.2	3.4	2						•
22ER 7 W	12.70	7.0	0.45	22.00	1.6	2.3	1						•
22ER 6 W	12.70	6.0	0.52	22.00	1.6	2.3	1						•
22ER 5 W	12.70	5.0	0.65	22.00	1.7	2.4	1		•	•			
22UEIRL 4.5 W	12.70	4.5	0.73	22.00	2.3	11.0	1		•				
22UEIRL 4 W	12.70	4.0	0.87	22.00	1.8	11.0	1		•				
27ER 4.5 W	15.88	4.5	0.73	27.50	1.8	2.6	1		•				
27ER 4 W	15.88	4.0	0.87	27.50	2.0	2.9	1						•
27UEIRL 3.5 W	15.88	3.5	0.95	27.50	2.1	13.7	1						•
27UEIRL 3 W	15.88	3.0	1.12	27.50	2.3	13.7	1			•			

• Tolerance: medium class <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Threads per inch <sup>(4)</sup> Number of teeth per corner

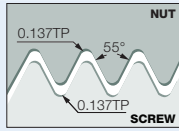
# THREAD TURNING

## IR/L-W

Internal Whitworth (BSW, BSF, BSP) B.S.84-1956 DIN 259 Medium Class Full Profile Laydown Threading Inserts



## INTERNAL WHITWORTH



### Dimensions

Tough → Hard

Designation	IC	TPI <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>					
								SC7839	SC7890	SC7829	SC7880	SC7819
06IR 26 W	3.97	26.0	0.10	6.88	0.7	0.6	1	•				
08IR 28 W	4.76	28.0	0.11	8.24	0.5	0.6	1	•				
08IR 24 W	4.76	24.0	0.11	8.24	0.6	0.6	1	•				
08IR 19 W	4.76	19.0	0.15	8.24	0.6	0.6	1	•				•
08IR 18 W	4.76	18.0	0.16	8.24	0.6	0.7	1	•				
08IR 16 W	4.76	16.0	0.18	8.24	0.6	0.7	1	•				
08UIRL 12 W	4.76	12.0	0.25	8.24	0.9	4.0	1	•				
11IR 36 W	6.35	36.0	0.07	11.00	0.6	0.6	1				•	
11IR 28 W	6.35	28.0	0.10	11.00	0.6	0.7	1			•		
11IRB 28 W	6.35	28.0	0.10	11.00	0.6	0.6	1					•
11IR 26 W	6.35	26.0	0.10	11.00	0.7	0.7	1	•				
11IR/L 24 W	6.35	24.0	0.11	11.00	0.7	0.8	1					•
11IRB 24 W	6.35	24.0	0.11	11.00	0.6	0.6	1					•
11IR 20 W	6.35	20.0	0.14	11.00	0.8	0.9	1			•		•
11IRB 20 W	6.35	20.0	0.14	11.00	0.8	0.9	1					•
11IR 19 W	6.35	19.0	0.15	11.00	0.8	1.0	1			•		•
11IRB 19 W	6.35	19.0	0.17	11.00	0.7	0.9	1					•
11IR/L 18 W	6.35	18.0	0.16	11.00	0.8	1.0	1					•
11IRB 18 W	6.35	18.0	0.18	11.00	0.9	0.9	1					•
11IR 16 W	6.35	16.0	0.18	11.00	0.9	1.1	1					•
11IRB 16 W	6.35	16.0	0.18	11.00	0.8	0.9	1					•
11IR/L 14 W	6.35	14.0	0.23	11.00	0.9	1.1	1	•		•	•	•
11IRB 14 W	6.35	14.0	0.23	11.00	0.9	1.0	1					•
11IL 12 W	6.35	12.0	0.27	11.00	1.0	1.1	1					•
16IR 40 W	9.52	40.0	0.06	16.49	0.6	0.6	1		•			
16IR/L 32 W	9.52	32.0	0.09	16.49	0.6	0.6	1		•			
16IR 28 W	9.52	28.0	0.09	16.49	0.6	0.7	1			•		
16IR 26 W	9.52	26.0	0.12	16.49	0.8	0.8	1					•
16IR 24 W	9.52	24.0	0.11	16.49	0.7	0.8	1					•
16IR 22 W	9.52	22.0	0.13	16.49	0.8	0.9	1		•	•		•
16IR/L 20 W	9.52	20.0	0.14	16.49	0.8	0.9	1			•		•
16IRM 20 W <sup>(1)</sup>	9.52	20.0	0.14	16.49	0.8	0.9	1					•
16IR/L 19 W	9.52	19.0	0.17	16.49	0.8	1.0	1		•	•		•
16IRB 19 W <sup>(1)</sup>	9.52	19.0	0.17	16.49	0.7	0.8	1					•
16IRM 19 W <sup>(1)</sup>	9.52	19.0	0.15	16.49	0.8	1.0	1			•		
16IR/L 18 W	9.52	18.0	0.18	16.49	0.8	0.8	1					•
16IR 16 W	9.52	16.0	0.20	16.49	1.0	1.0	1					•
16IRB 16 W <sup>(1)</sup>	9.52	16.0	0.20	16.49	1.0	1.2	1					•
16IRM 16 W <sup>(1)</sup>	9.52	16.0	0.18	16.49	0.9	1.1	1					•
16IR/L 14 W	9.52	14.0	0.23	16.49	1.0	1.2	1	•		•	•	•
16IR 14 W 2M <sup>(2)</sup>	9.52	14.0	0.19	16.49	1.7	2.6	2					•
16IRB 14 W <sup>(1)</sup>	9.52	14.0	0.23	16.49	1.0	1.2	1					•
16IRM 14 W <sup>(1)</sup>	9.52	14.0	0.21	16.49	1.0	1.2	1			•		•
16IR 12 W	9.52	12.0	0.27	16.49	1.2	1.5	1					•

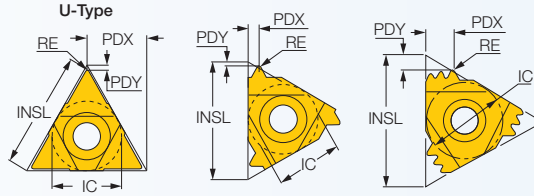
• Tolerance: medium class. <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Threads per inch <sup>(4)</sup> Number of teeth per corner



# THREAD TURNING

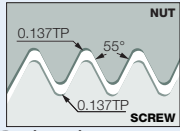
## IR/L-W (continued)

Internal Whitworth (BSW, BSF, BSP) B.S.84-1956 DIN 259 Medium Class Full Profile Laydown Threading Inserts



## INTERNAL WHITWORTH

Internal left-hand shown



### Dimensions

Tough ↔ Hard

Designation	IC	TPI <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>					
								SC7839	SC7890	SC7829	SC7880	SC7819
16IR/L 11 W	9.52	11.0	0.29	16.49	1.1	1.5	1	•	•	•	•	•
16IRB 11 W <sup>(1)</sup>	9.52	11.0	0.28	16.49	1.1	1.5	1					•
16IRM 11 W <sup>(1)</sup>	9.52	11.0	0.27	16.49	1.1	1.5	1			•		•
16IR 10 W	9.52	10.0	0.32	16.49	1.1	1.1	1					•
16IRB 10 W <sup>(1)</sup>	9.52	10.0	0.31	16.49	1.1	1.5	1					•
16IR 9 W	9.52	9.0	0.34	16.49	1.2	1.7	1			•		
16IR/L 8 W	9.52	8.0	0.41	16.49	1.1	1.1	1		•			•
22IR 14 W 3M <sup>(2)</sup>	12.70	14.0	0.21	22.00	2.8	4.5	3					•
22IR 11 W 2M <sup>(2)</sup>	12.70	11.0	0.09	22.00	2.3	3.4	2					•
22IR 7 W	12.70	7.0	0.45	22.00	1.6	2.3	1					•
22IR 6 W	12.70	6.0	0.52	22.00	1.6	2.3	1			•		
22IR/L 5 W	12.70	5.0	0.65	22.00	1.7	2.4	1		•	•		
27IR 4.5 W	15.88	4.5	0.73	27.50	1.8	2.6	1			•		
27IR 4 W	15.88	4.0	0.82	27.50	2.0	2.9	1					•

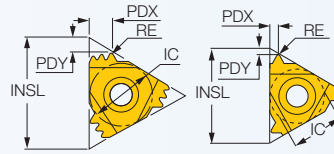
• Tolerance: medium class. <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Threads per inch <sup>(4)</sup> Number of teeth per corner

# THREAD TURNING

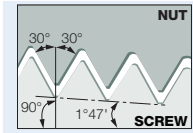
## EXTERNAL NPT

### ER/L-NPT

External NPT (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes



External right-hand shown



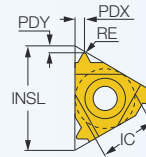
Designation	IC	TPI <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>	Tough ↔ Hard			
								SC7839	SC7890	SC7829	SC7819
16ER 27 NPT	9.52	27.0	0.04	16.49	0.7	0.8	1				•
16ER 18 NPT	9.52	18.0	0.06	16.49	0.9	1.1	1	•			•
16ERB 18 NPT <sup>(1)</sup>	9.52	18.0	0.06	16.49	0.9	1.1	1				•
16ERM 18 NPT <sup>(1)</sup>	9.52	18.0	0.05	16.49	0.8	1.0	1				•
16ER/L 14 NPT	9.52	14.0	0.07	16.49	0.9	1.2	1	•			•
16ERB 14 NPT <sup>(1)</sup>	9.52	14.0	0.07	16.49	0.9	1.2	1				•
16ERM 14 NPT <sup>(1)</sup>	9.52	14.0	0.05	16.49	0.9	1.2	1		•	•	•
16ER/L 11.5 NPT	9.52	11.5	0.09	16.49	1.1	1.5	1		•	•	•
16ERB 11.5 NPT <sup>(1)</sup>	9.52	11.5	0.09	16.49	1.1	1.5	1				•
16ERM 11.5 NPT <sup>(1)</sup>	9.52	11.5	0.09	16.49	1.1	1.5	1			•	•
16ER 8 NPT	9.52	8.0	0.11	16.49	1.4	1.6	1		•		•
16ERB 8 NPT <sup>(1)</sup>	9.52	8.0	0.11	16.49	1.4	1.7	1				•
16ERM 8 NPT <sup>(1)</sup>	9.52	8.0	0.12	16.49	1.3	1.8	1			•	•
22ER 11.5 NPT 2M <sup>(2)</sup>	12.70	11.5	0.09	22.00	2.3	3.5	2				•
27ER 11.5 NPT 3M <sup>(2)</sup>	15.88	11.5	0.09	27.50	3.3	5.5	3				•
27ER 8 NPT 2M <sup>(2)</sup>	15.88	8.0	0.09	27.50	3.3	5.0	2				•

• National Pipe Threads ANSI/ASME B1.20.1-1983 <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Threads per inch <sup>(4)</sup> Number of teeth per corner.

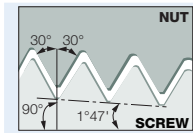
## INTERNAL NPT

### IR/L-NPT

Internal NPT (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes



Internal left-hand shown



Designation	IC	TPI <sup>(3)</sup>	RE	INSL	PDY	PDX	CICT <sup>(4)</sup>	Tough ↔ Hard			
								SC7839	SC7890	SC7829	SC7819
06IR 27 NPT	3.97	27.0	0.04	6.88	0.6	0.6	1	•			
08IR 18 NPT	4.76	18.0	0.06	8.24	0.6	0.8	1	•			•
11IR 27 NPT	6.35	27.0	0.04	11.00	0.7	0.8	1			•	
11IR/L 18 NPT	6.35	18.0	0.06	11.00	0.8	1.0	1			•	•
11IRB 18 NPT	6.35	18.0	0.06	11.00	0.8	1.0	1				•
11IR/L 14 NPT	6.35	14.0	0.07	11.00	0.8	1.0	1			•	•
16IR 27 NPT	9.52	27.0	0.04	16.49	0.7	0.8	1		•		•
16IR 18 NPT	9.52	18.0	0.06	16.49	0.8	1.0	1				•
16IRM 14 NPT <sup>(1)</sup>	9.52	14.0	0.05	16.49	0.9	1.2	1			•	•
16IRB 14 NPT <sup>(1)</sup>	9.52	14.0	0.07	16.49	0.9	1.2	1				•
16IR/L 14 NPT	9.52	14.0	0.07	16.49	0.9	1.2	1	•		•	•
16IRM 11.5 NPT <sup>(1)</sup>	9.52	11.5	0.09	16.49	1.1	1.5	1				•
16IRB 11.5 NPT <sup>(1)</sup>	9.52	11.5	0.09	16.49	1.1	1.5	1				•
16IR/L 11.5 NPT	9.52	11.5	0.09	16.49	1.1	1.5	1				•
16IRM 8 NPT <sup>(1)</sup>	9.52	8.0	0.12	16.49	1.3	1.8	1				•
16IRB 8 NPT <sup>(1)</sup>	9.52	8.0	0.11	16.49	1.2	1.7	1				•
16IR/L 8 NPT	9.52	8.0	0.11	16.49	1.3	1.8	1				•
22IR 11.5 NPT 2M <sup>(2)</sup>	12.70	11.5	0.09	22.00	2.3	3.5	2				•
27IR 11.5 NPT 3M <sup>(2)</sup>	15.88	11.5	0.09	27.50	3.3	5.5	3				•
27IR 8 NPT 2M <sup>(2)</sup>	15.88	8.0	0.12	27.50	3.1	5.0	2				•

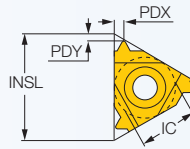
• National Pipe Threads ANSI/ASME B1.20.1-1983 <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Multi-tooth <sup>(3)</sup> Threads per inch <sup>(4)</sup> Number of teeth per corner.

# THREAD TURNING

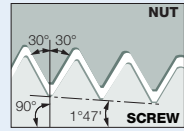
## EXTERNAL NPTF

### ER-NPTF

External NPTF (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes



External right-hand shown



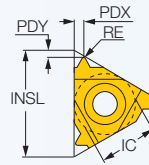
Designation	IC	TPI <sup>(1)</sup>	INSL	PDY	PDX	Tough ↔ Hard	
						SC7829	SC7819
11ER 18 NPTF	6.35	18.0	11.00	0.8	1.0	•	
11ER 14 NPTF	6.35	14.0	11.00	0.8	1.0		•
16ER 27 NPTF	9.52	27.0	16.49	0.7	0.8		•
16ER 18 NPTF	9.52	18.0	16.49	0.8	0.9		•
16ER 14 NPTF	9.52	14.0	16.49	0.9	1.1	•	•
16ER 11.5 NPTF	9.52	11.5	16.49	1.1	1.5		•

• (National Pipe Threads-Dry Seal) ANSI/ASME B1.20.1-1976 full profile <sup>(1)</sup> Threads per inch

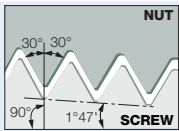
## INTERNAL NPTF

### IR/L-NPTF

Internal NPTF (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes



Internal left-hand shown



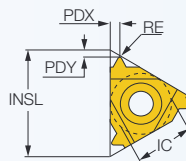
Designation	IC	TPI <sup>(1)</sup>	RE	INSL	PDY	PDX	Tough ↔ Hard		
							SC7839	SC7829	SC7819
06IR 27 NPTF	3.97	27.0	0.04	6.88	0.7	0.6	•		
08IR 27 NPTF	4.76	27.0	0.04	8.24	0.6	0.6	•		
08IR 18 NPTF	4.76	18.0	0.04	8.24	0.6	0.8	•		
11IR 18 NPTF	6.35	18.0	0.04	11.00	0.8	1.0			•
11IRB 18 NPTF	6.35	18.0	0.04	11.00	0.8	0.9			•
11IR 14 NPTF	6.35	14.0	0.04	16.49	0.8	1.1			•
16IR 18 NPTF	9.52	18.0	0.06	16.49	0.8	1.0			•
16IR/L 14 NPTF	9.52	14.0	0.07	16.49	0.9	1.2			•
16IR 11.5 NPTF	9.52	11.5	0.04	16.49	1.1	1.5		•	•

• (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976 <sup>(1)</sup> Threads per inch

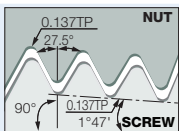
## EXTERNAL BSPT

### ER/L-BSPT

External BSPT (British Standard Pipe) B.S.21-1957 Full Profile Laydown Threading Inserts



External right-hand shown

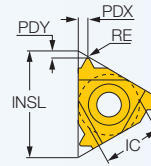


Designation	IC	INSL	TPI <sup>(2)</sup>	RE	PDY	PDX	Tough ↔ Hard	
							SC7829	SC7819
16ER 28 BSPT	9.52	16.49	28.0	0.11	0.6	0.6		•
16ER/L 19 BSPT	9.52	16.49	19.0	0.16	0.7	0.8		•
16ER/L 14 BSPT	9.52	16.49	14.0	0.23	1.0	1.1	•	•
16ERB 14 BSPT <sup>(1)</sup>	9.52	16.49	14.0	0.23	1.0	1.1		•
16ERM 14 BSPT <sup>(1)</sup>	9.52	16.49	14.0	0.24	1.0	1.2		•
16ER/L 11 BSPT	9.52	16.49	11.0	0.29	1.1	1.5	•	•
16ERB 11 BSPT <sup>(1)</sup>	9.52	16.49	11.0	0.29	1.1	1.5		•
16ERM 11 BSPT <sup>(1)</sup>	9.52	16.49	11.0	0.31	1.1	1.5		•

• (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976 <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Threads per inch

# THREAD TURNING

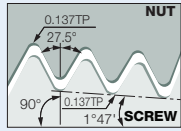
## INTERNAL BSPT



Internal left-hand shown

### IR/L-BSPT

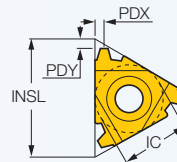
Internal BSPT (British Standard Pipe) B.S.21-1957 Full Profile Laydown Threading Inserts



Designation	IC	INSL	TPI <sup>(2)</sup>	RE	PDY	PDX	Tough ↔ Hard			
							SC7839	SC7890	SC7829	SC7819
06IR 28 BSPT	3.97	6.88	28.0	0.11	0.7	0.6	•			
08IR 28 BSPT	4.76	8.24	28.0	0.11	0.6	0.6	•			
08IR 19 BSPT	4.76	8.24	19.0	0.16	0.6	0.7	•			
11IR 19 BSPT	6.35	11.00	19.0	0.16	0.8	0.9				•
11IRB 19 BSPT	6.35	11.00	19.0	0.16	0.8	0.9				•
11IR/L 14 BSPT	6.35	11.00	14.0	0.23	0.9	1.0				•
16IR 28 BSPT	9.52	16.49	28.0	0.11	0.6	0.6				•
16IR 19 BSPT	9.52	16.49	19.0	0.16	0.8	0.9		•	•	
16IRB 14 BSPT <sup>(1)</sup>	9.52	16.49	14.0	0.23	1.0	1.1				•
16IRM 14 BSPT <sup>(1)</sup>	9.52	16.49	14.0	0.21	1.0	1.2				•
16IR/L 14 BSPT	9.52	16.49	14.0	0.21	1.0	1.2				•
16IRM 11 BSPT <sup>(1)</sup>	9.52	16.49	11.0	0.28	1.1	1.5				•
16IRB 11 BSPT <sup>(1)</sup>	9.52	16.49	11.0	0.29	1.1	1.5				•
16IR/L 11 BSPT	9.52	16.49	11.0	0.29	1.1	1.5	•			•

• (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976 <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Threads per inch

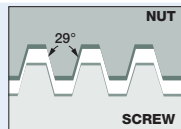
## EXTERNAL STUB ACME



External right-hand shown

### ER/L-STACME

External STUB ACME Laydown Threading Inserts with a Shallow ACME Profile for Control Valves



Designation	IC	INSL	TPI <sup>(1)</sup>	PDY	PDX	Tough ↔ Hard		
						SC7890	SC7829	SC7819
16ER/L 16 STACME	9.52	16.49	16.0	1.0	1.0	•	•	•
16ER 14 STACME	9.52	16.49	14.0	1.1	1.1		•	
16ER/L 12 STACME	9.52	16.49	12.0	1.2	1.2			•
16ER/L 10 STACME	9.52	16.49	10.0	1.3	1.3	•		•
16ER/L 8 STACME	9.52	16.49	8.0	1.5	1.5	•	•	•
16ER/L 6 STACME	9.52	16.49	6.0	1.8	1.8		•	•
22EL 6 STACME	12.70	22.00	6.0	1.8	1.8	•		
22ER/L 5 STACME	12.70	22.00	5.0	2.0	2.3	•		•
27ER/L 4 STACME	15.88	27.50	4.0	2.3	2.4	•		•
27ER/L 3 STACME	15.88	27.50	3.0	2.8	2.9			•

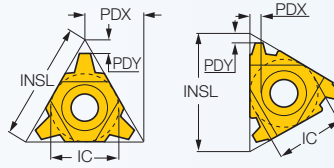
• STUB ACME ASME/ANSI B1.8-1988 Class 2G <sup>(1)</sup> Threads per inch

# THREAD TURNING

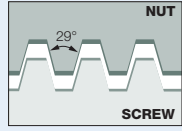
## INTERNAL STUB ACME

### IR/L-STACME

Internal STUB ACME Laydown  
Threading Inserts with a Shallow  
ACME Profile for Control Valves



Internal left-hand shown



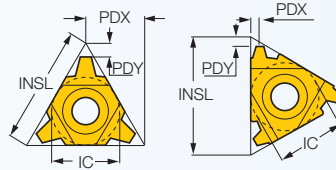
Designation	IC	INSL	TPI <sup>(1)</sup>	PDY	PDX	Dimensions		
						Tough	Hard	
						SC7890	SC7829	SC7819
16IR/L 16 STACME	9.52	16.49	16.0	1.0	1.0	•		
16IR/L 14 STACME	9.52	16.49	14.0	1.1	1.1	•		
16IR 12 STACME	9.52	16.49	12.0	1.2	1.2			•
16IR 10 STACME	9.52	16.49	10.0	1.2	1.2	•		•
16IR 8 STACME	9.52	16.49	8.0	1.5	1.5	•		•
16IR 6 STACME	9.52	16.49	6.0	1.6	1.7		•	•
22IR/L 5 STACME	12.70	22.00	5.0	2.0	2.3	•		
22UIR 3 STACME	12.70	22.00	3.0	3.3	11.0		•	
27IR/L 4 STACME	15.88	27.50	4.0	2.3	2.4	•		•
27IR/L 3 STACME	15.88	27.50	3.0	2.8	2.9		•	

• Tolerance: Class 2G. <sup>(1)</sup> Threads per inch

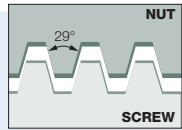
## EXTERNAL ACME

### ER/L-ACME

External ACME Profile Laydown  
Threading Inserts for Feed Screws



External right-hand shown



Designation	IC	INSL	TPI <sup>(1)</sup>	PDY	PDX	Dimensions		
						Tough	Hard	
						SC7890	SC7829	SC7819
11ER 16 ACME	6.35	11.00	16.0	0.9	1.0			•
16ER 16 ACME	9.52	16.49	16.0	1.0	1.0			•
16ER 12 ACME	9.52	16.49	12.0	1.0	1.0			•
16ER 10 ACME	9.52	16.49	10.0	1.4	1.3		•	•
16ER/L 8 ACME	9.52	16.49	8.0	1.3	1.5			•
22ER/L 6 ACME	12.70	22.00	6.0	1.8	2.1	•		•
22ER/L 5 ACME	12.70	22.00	5.0	2.0	2.4		•	•
22ER/L 4 ACME	12.70	22.00	4.0	2.1	2.3			•
22UERL 4 ACME	12.70	22.00	4.0	2.3	11.0	•		•
27ER/L 4 ACME	15.88	27.50	4.0	2.3	2.7		•	•
27UERL 3 ACME	15.88	27.50	3.0	2.8	13.7			•

• ACME ASME/ANSI B1.5-1988 Class 3G

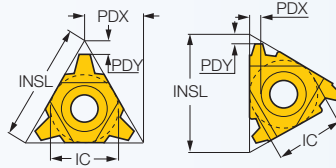
<sup>(1)</sup> Threads per inch

# THREAD TURNING

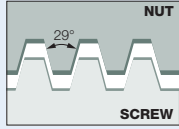
## INTERNAL ACME

### IR/L-ACME

Internal ACME Profile  
Laydown Threading  
Inserts for Feed Screws



Internal left-hand shown



Designation	Dimensions					Tough ↔ Hard			
	IC	INSL	TPI <sup>(1)</sup>	PDY	PDX	SC7890	SC7829	SC7880	SC7819
16IR/L 16 ACME	9.52	16.49	16.0	0.9	1.0	•	•		
16IR/L 14 ACME	9.52	16.49	14.0	1.0	1.2	•			
16IR/L 12 ACME	9.52	16.49	12.0	1.1	1.2	•			•
16IR/L 10 ACME	9.52	16.49	10.0	1.3	1.3	•	•		
16IR/L 8 ACME	9.52	16.49	8.0	1.5	1.5		•		•
22IR/L 6 ACME	12.70	22.00	6.0	1.9	2.1	•	•		•
22IR/L 5 ACME	12.70	22.00	5.0	2.0	2.1	•			•
22IR 4 ACME	12.70	22.00	4.0	2.1	2.1				•
22UIRL 4 ACME	12.70	22.00	4.0	2.3	11.0	•		•	
27IR/L 4 ACME	15.88	27.50	4.0	2.3	2.6		•		•
27UIRL 3 ACME	15.88	27.50	3.0	2.8	13.7				•

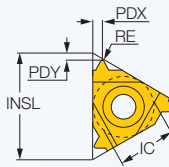
• ACME ASME/ANSI B1.5-1988 Class 3G

<sup>(1)</sup> Threads per inch

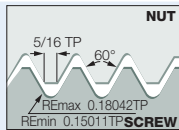
## EXTERNAL UNJ

### ER/L-UNJ

External UNJ Profile Laydown  
Threading Inserts for the Aviation  
and Aerospace Industry



External right-hand shown



Designation	Dimensions					Tough ↔ Hard				
	IC	TPI <sup>(1)</sup>	RE	INSL	PDY	PDX	SC7890	SC7829	SC7880	SC7819
11ER 28 UNJ	6.35	28.0	0.14	11.00	0.6	0.6				•
11ER 24 UNJ	6.35	24.0	0.16	11.00	0.7	0.8				•
11ER/L 20 UNJ	6.35	20.0	0.19	11.00	0.8	0.9				•
11EL 18 UNJ	6.35	18.0	0.21	11.00	0.8	1.0				•
16ER 48 UNJ	9.52	48.0	0.08	16.49	0.6	0.6				•
16ER 44 UNJ	9.52	44.0	0.09	16.49	0.6	0.6				•
16ER 40 UNJ	9.52	40.0	0.10	16.49	0.6	0.6				•
16ER 32 UNJ	9.52	32.0	0.13	16.49	0.6	0.6				•
16ER/L 28 UNJ	9.52	28.0	0.15	16.49	0.6	0.6				•
16ER/L 24 UNJ	9.52	24.0	0.16	16.49	0.7	0.8		•		•
16ER/L 20 UNJ	9.52	20.0	0.21	16.49	0.8	0.9				•
16ER/L 18 UNJ	9.52	18.0	0.23	16.49	0.7	0.8			•	•
16ER/L 16 UNJ	9.52	16.0	0.26	16.49	0.9	1.2	•			•
16ER/L 14 UNJ	9.52	14.0	0.30	16.49	1.1	1.2				•
16ER 13 UNJ	9.52	13.0	0.29	16.49	1.1	1.3				•
16ER/L 12 UNJ	9.52	12.0	0.35	16.49	1.1	1.2				•
16ER 11 UNJ	9.52	11.0	0.32	16.49	1.1	1.5				•
16ER 10 UNJ	9.52	10.0	0.38	16.49	1.1	1.5	•			•
16ER/L 8 UNJ	9.52	8.0	0.48	16.49	1.2	1.6	•	•		•

• UNJ MIL-S-8879C 9-1992 Class 3A

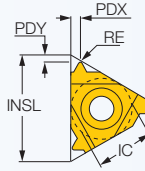
<sup>(1)</sup> Threads per inch

# THREAD TURNING

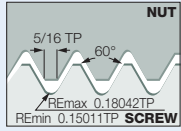
## INTERNAL UNJ

### IR/L-UNJ

Internal UNJ Profile Laydown  
Threading Inserts for the Aviation  
and Aerospace Industry



Internal left-hand shown



### Dimensions

Tough ↔ Hard

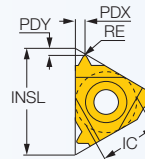
Designation	IC	TPI <sup>(1)</sup>	RE	INSL	PDY	PDX	Tough ↔ Hard		
							SC7839	SC7890	SC7819
08IR 20 UNJ	4.76	20.0	0.07	8.24	0.7	0.7	•		
08IR 18 UNJ	4.76	18.0	0.08	8.24	0.7	0.7	•		
11IR 32 UNJ	6.35	32.0	0.04	11.00	0.6	0.6			•
11IRB 32 UNJ	6.35	32.0	0.04	11.00	0.6	0.6			•
11IR 28 UNJ	6.35	28.0	0.05	11.00	0.6	0.6			•
11IRB 28 UNJ	6.35	28.0	0.05	11.00	0.6	0.6			•
11IR 24 UNJ	6.35	24.0	0.05	11.00	0.7	0.8			•
11IRB 24 UNJ	6.35	24.0	0.05	11.00	0.6	0.6			•
11IR 20 UNJ	6.35	20.0	0.07	11.00	0.8	0.9			•
11IRB 20 UNJ	6.35	20.0	0.07	11.00	0.8	0.9			•
11IR 18 UNJ	6.35	18.0	0.08	11.00	0.8	0.9			•
11IRB 18 UNJ	6.35	18.0	0.08	11.00	0.9	1.0			•
11IR 16 UNJ	6.35	16.0	0.09	11.00	0.8	0.9			•
11IRB 16 UNJ	6.35	16.0	0.09	11.00	0.8	0.9			•
11IRB 14 UNJ	6.35	14.0	0.10	11.00	0.8	0.9			•
16IR 24 UNJ	9.52	24.0	0.05	16.49	0.7	0.8		•	
16IR 20 UNJ	9.52	20.0	0.07	16.49	0.8	0.8			•
16IR 18 UNJ	9.52	18.0	0.08	16.49	0.7	0.8			•
16IR/L 16 UNJ	9.52	16.0	0.09	16.49	1.0	1.2			•
16IR 14 UNJ	9.52	14.0	0.10	16.49	1.1	1.1			•
16IR/L 12 UNJ	9.52	12.0	0.12	16.49	1.1	1.0			•
16IR/L 8 UNJ	9.52	8.0	0.19	16.49	1.2	1.6			•

<sup>(1)</sup> Threads per inch

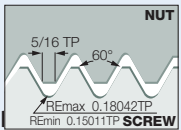
## INTERNAL MJ

### IR-MJ

Internal MJ ISO 5855 Metric  
Full Profile Laydown Threading  
Inserts for the Aviation and  
Aerospace Industry



Internal left-hand shown



### Dimensions

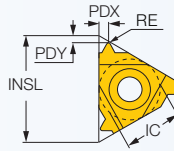
Designation	IC	TP	INSL	RE	PDY	PDX	SC7819
							•
11IR 1.00 MJ	6.35	1.000	11.00	0.05	0.6	0.6	•
11IRB 1.00 MJ	6.35	1.000	11.00	0.05	0.6	0.6	•
11IR 1.25 MJ	6.35	1.250	11.00	0.07	0.8	0.9	•
11IR 1.50 MJ	6.35	1.500	11.00	0.08	0.8	1.0	•
11IRB 1.50 MJ	6.35	1.500	11.00	0.08	0.8	0.9	•
11IR 2.00 MJ	6.35	2.000	11.00	0.12	0.9	1.0	•
16IR 1.00 MJ	9.52	1.000	16.49	0.05	0.7	0.8	•
16IR 1.25 MJ	9.52	1.250	16.49	0.07	0.8	0.9	•
16IR 1.50 MJ	9.52	1.500	16.49	0.08	1.1	1.1	•

# THREAD TURNING

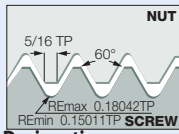
## EXTERNAL MJ

### ER-MJ

External MJ ISO 5855 Metric  
Full Profile Laydown Threading  
Inserts for the Aviation and  
Aerospace Industry



External right-hand shown



### Dimensions

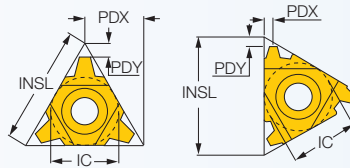
Tough ↔ Hard

Designation	IC	TP	INSL	RE	PDY	PDX	SC7829	SC7819
16ER 1.00 MJ	9.52	1.000	16.49	0.17	0.7	0.8		•
16ER 1.25 MJ	9.52	1.250	16.49	0.21	0.8	0.8		•
16ER 1.50 MJ	9.52	1.500	16.49	0.25	0.9	1.1	•	•
16ER 2.00 MJ	9.52	2.000	16.49	0.33	1.0	1.1		•

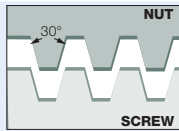
## EXTERNAL TRAPEZE

### ER/L-TR

External Trapeze Shaped  
DIN 103 Laydown Threading  
Inserts for Feed Screws



External right-hand shown



### Dimensions

Tough ↔ Hard

Designation	IC	TP	INSL	PDY	PDX	Tough ↔ Hard			
						SC7839	SC7890	SC7829	SC7819
16ER/L 1.5 TR	9.52	1.500	16.49	1.0	1.0			•	•
16ER/L 2 TR	9.52	2.000	16.49	1.0	1.0			•	•
16ER/L 3 TR	9.52	3.000	16.49	1.4	1.6	•		•	•
16ER 4 TR	9.52	4.000	16.49	1.8	1.9			•	
22ER/L 4 TR	12.70	4.000	22.00	1.8	1.9		•	•	•
22ER/L 5 TR	12.70	5.000	22.00	2.0	2.4		•	•	•
22ER/L 6 TR	12.70	6.000	22.00	2.0	2.4				•
22UERL 6 TR	12.70	6.000	22.00	2.0	11.0		•	•	•
22UERL 7 TR	12.70	7.000	22.00	2.3	11.0			•	
22UERL 8 TR	12.70	8.000	22.00	2.5	11.0			•	
27ER/L 6 TR	15.88	6.000	27.50	2.3	2.6			•	•
27ER/L 7 TR	15.88	7.000	27.50	2.2	2.6			•	•
27UERL 8 TR	15.88	8.000	27.50	2.5	13.7			•	•
27UERL 9 TR	15.88	9.000	27.50	3.0	13.7			•	•
27UERL 10 TR <sup>(1)</sup>	15.88	10.000	27.50	3.2	13.7			•	•

• DIN 103 04/1977, 1502901/1977 Class 7e

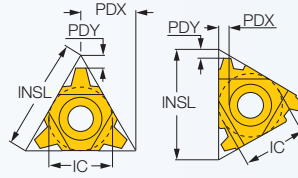
<sup>(1)</sup> One cutting edge only



# THREAD TURNING

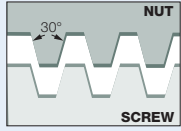
## IR/L-TR

Internal Trapeze Shaped DIN  
103 Laydown Threading  
Inserts for Feed Screws



## INTERNAL TRAPEZE

Internal left-hand shown

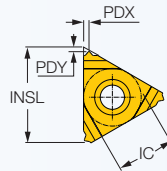


Designation	IC	TP	INSL	PDY	PDX	Tough ↔ Hard			
						SC7839	SC7890	SC7829	SC7819
08IR 1.5 TR <sup>(1)</sup>	4.76	1.500	8.24	0.6	0.6	•			
08UIRL 2 TR	4.76	2.000	8.24	0.9	4.0	•			
16IR 1.5 TR	9.52	1.500	16.49	1.0	1.0			•	•
16IR/L 2 TR	9.52	2.000	16.49	1.0	1.3			•	•
16IR/L 3 TR	9.52	3.000	16.49	1.3	1.5	•			•
22IR/L 4 TR	12.70	4.000	22.00	1.9	2.0			•	•
22IR/L 5 TR	12.70	5.000	22.00	2.0	2.3			•	•
22IR/L 6 TR	12.70	6.000	22.00	2.0	2.3		•	•	•
22UIRL 6 TR	12.70	6.000	22.00	2.0	11.0			•	•
22UIRL 7 TR	12.70	7.000	22.00	2.3	11.0			•	
27IR/L 6 TR	15.88	6.000	27.50	2.3	2.7			•	•
27IR 7 TR	15.88	7.000	27.50	2.2	2.6			•	
27UIRL 8 TR	15.88	8.000	27.50	2.5	13.7	•		•	•
27UIRL 9 TR	15.88	9.000	27.50	3.0	13.7			•	•
27UIRL 10 TR <sup>(1)</sup>	15.88	10.000	27.50	3.2	2.5				•

- Tolerance: Class 7H
- <sup>(1)</sup> A single threading corner

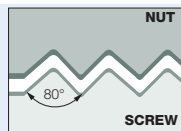
## ER-PG

External Threading Inserts  
for the Electrical Industry



## EXTERNAL PG

External right-hand shown



Designation	IC	TP	INSL	PDY	PDX	RE	SC7819
							•
16ER 16 PG	9.52	16.000	16.49	0.8	1.0	0.17	•
16ER 18 PG	9.52	18.000	16.49	0.8	0.9	0.15	•
16ER 20 PG	9.52	20.000	16.49	0.7	0.8	0.13	•

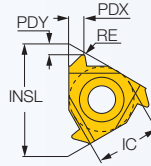
- (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976

# THREAD TURNING

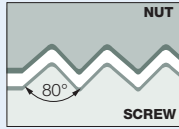
## INTERNAL PG

### IR/L-PG

Internal Thread Profile Inserts for the Electrical Industry



Internal left-hand shown



### Dimensions

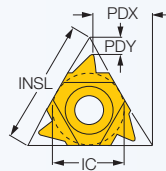
Designation	IC	TP	RE	INSL	PDY	PDX	SC7819
11IR 18 PG	6.35	18.000	0.15	11.00	0.8	0.9	•
16IR 18 PG	9.52	18.000	0.15	16.49	0.8	0.9	•
16IR 16 PG	9.52	16.000	0.17	16.49	0.7	0.9	•

• (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976

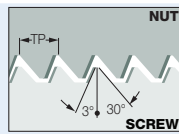
## EXTERNAL SAGE

### ER/L-SAGE

External Sagengengewinde Thread (DIN 513) for High Force in One Direction Applications



External right-hand shown



### Dimensions

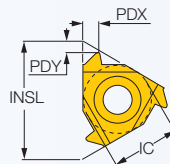
Designation	IC	INSL	TP	PDY	PDX	Tough ↔ Hard	
						SC7829	SC7819
16ER/L 2 SAGE	9.52	16.49	2.000	1.1	1.6		•
22ER 3 SAGE	12.70	22.00	3.000	1.5	2.4		•
22ER/L 4 SAGE	12.70	22.00	4.000	1.9	3.1	•	•
22UER 5 SAGE <sup>(1)</sup>	12.70	22.00	5.000	1.2	11.6		•
22UER/L 6 SAGE <sup>(1)</sup>	12.70	22.00	6.000	1.2	11.7		•

<sup>(1)</sup> Requires special anvil

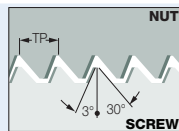
## INTERNAL SAGE

### IR/L-SAGE

Internal Sagengengewinde (DIN 513) Thread Application for High Force in One Direction



Internal left-hand shown



### Dimensions

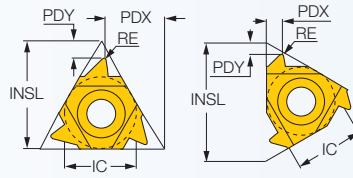
Designation	IC	TP	INSL	PDY	PDX	SC7819
16IR/L 2 SAGE	9.52	2.000	16.49	1.2	1.7	•
22IR 3 SAGE	12.70	3.000	22.00	1.9	2.9	•
22IR 4 SAGE	12.70	4.000	22.00	2.3	3.5	•
22UIR 5 SAGE	12.70	5.000	22.00	1.9	11.7	•
22UIR 6 SAGE <sup>(1)</sup>	12.70	6.000	22.00	2.1	11.9	•

<sup>(1)</sup> Requires special anvil

# THREAD TURNING

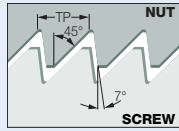
## ER/L-ABUT

External American Buttress Laydown Threading Inserts for High Force Transmission in One Direction



## EXTERNAL AMERICAN BUTTRESS

External right-hand shown



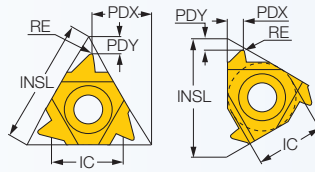
### Dimensions

Designation	IC	TPI <sup>(1)</sup>	RE	INSL	PDY	PDX	Tough ↔ Hard		
							SC7829	SC7880	SC7819
11ER 20 ABUT	6.35	20.0	0.07	11.00	1.0	1.3	•	•	
11ER 16 ABUT	6.35	16.0	-	11.00	1.0	1.5		•	
16ER 20 ABUT	9.52	20.0	0.07	16.49	1.0	1.3			•
16ER/L 16 ABUT	9.52	16.0	0.09	16.49	1.1	1.5			•
16ER/L 12 ABUT	9.52	12.0	0.12	16.49	1.4	2.0			•
16ER/L 10 ABUT	9.52	10.0	0.15	16.49	1.5	2.3			•
22ER 8 ABUT	12.70	8.0	0.18	22.00	2.1	3.3	•		•
22ER 6 ABUT	12.70	6.0	0.25	22.00	2.1	3.4			•
22UER 4 ABUT	12.70	4.0	0.41	22.00	2.3	9.5	•		•
27UER/L 3 ABUT	15.88	3.0	0.56	27.50	3.1	11.7	•		•
27UER 3 ABUT	15.88	3.0	-	27.50	3.1	11.7			•

• ANSI B1.9-1973 Class 2 <sup>(1)</sup> Threads per inch

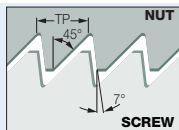
## IR/L-ABUT

Internal American Buttress Laydown Threading Inserts for High Force Transmission in One Direction



## INTERNAL AMERICAN BUTTRESS

Internal left-hand shown



### Dimensions

Designation	IC	TPI <sup>(1)</sup>	RE	INSL	PDY	PDX	Tough ↔ Hard		
							SC7890	SC7829	SC7819
11IR 20 ABUT	6.35	20.0	0.07	11.00	1.0	1.3			•
11IR/L 16 ABUT	6.35	16.0	0.09	11.00	1.0	1.5		•	•
16IR 20 ABUT	9.52	20.0	0.07	16.49	1.0	1.3		•	•
16IR/L 16 ABUT	9.52	16.0	0.09	16.49	1.0	1.5			•
16IR/L 12 ABUT	9.52	12.0	0.12	16.49	1.4	2.0		•	•
16IR/L 10 ABUT	9.52	10.0	0.15	16.49	1.5	2.3			•
22IR 8 ABUT	12.70	8.0	0.18	22.00	2.2	3.3			•
22IR 6 ABUT	12.70	6.0	0.25	22.00	2.2	3.4			•
22UIR 4 ABUT	12.70	4.0	0.41	22.00	2.3	9.5	•	•	
27UIR/L 3 ABUT	15.88	3.0	0.60	27.50	3.1	11.7			•

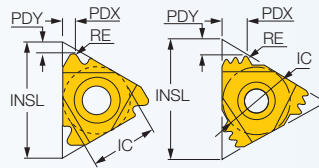
• ANSI B1.9-1973 Class 2 <sup>(1)</sup> Threads per inch

# THREAD TURNING

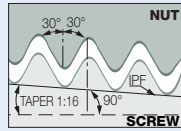
## EXTERNAL API RD

### ER/L-API RD

External API - Oil Thread Round  
Profile Laydown Threading Inserts



External right-hand shown



### Dimensions

Tough ↔ Hard

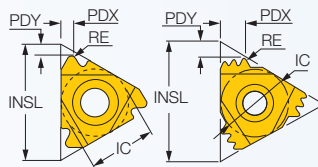
Designation	IC	TPI <sup>(2)</sup>	RE	INSL	IPF	PDY	PDX	CICT <sup>(3)</sup>	Tough ↔ Hard	
									SC7829	SC7819
16ER 10 API RD	9.52	10.0	0.36	16.49	0.75	1.2	1.5	1	•	•
16ER/L 8 API RD	9.52	8.0	0.43	16.49	0.75	1.3	1.6	1	•	•
22ER 10 API RD 2M <sup>(1)</sup>	12.70	10.0	0.36	22.00	0.75	2.4	3.7	2		•
27ER 8 API RD 2M <sup>(1)</sup>	15.88	8.0	0.43	27.50	0.75	3.0	4.5	2		•

• API Spec 5B8-1996. <sup>(1)</sup> Multi-tooth <sup>(2)</sup> Threads per inch <sup>(3)</sup> Number of teeth per corner

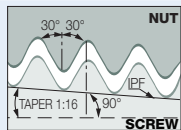
## INTERNAL API RD

### IR/L-API RD

Internal API - Oil Thread Round  
Profile Laydown Threading Inserts



Internal right-hand shown



### Dimensions

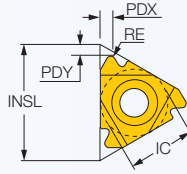
Tough ↔ Hard

Designation	IC	TPI <sup>(2)</sup>	RE	INSL	IPF	PDY	PDX	CICT <sup>(3)</sup>	Tough ↔ Hard	
									SC7829	SC7819
16IR 10 API RD	9.52	10.0	0.36	16.49	0.75	1.2	1.5	1	•	•
16IR/L 8 API RD	9.52	8.0	0.43	16.49	0.75	1.3	1.6	1	•	•
22IR 10 API RD 2M	12.70	10.0	0.36	22.00	0.75	2.4	3.7	2		•
27IR 8 API RD 2M	15.88	8.0	0.43	27.50	0.75	3.0	4.5	2		•

• API Spec 5B8-1996. <sup>(1)</sup> Multi-tooth <sup>(2)</sup> Threads per inch <sup>(3)</sup> Number of teeth per corner

# THREAD TURNING

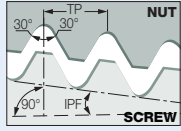
## EXTERNAL API



External right-hand shown

### ER/L-API

External API - Oil Thread Profile  
Laydown Threading Inserts



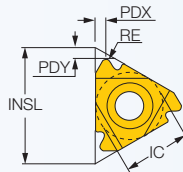
### Dimensions

Tough ↔ Hard

Designation	IC	RE	INSL	TPI <sup>(4)</sup>	IPF	PDX	PDY	Size <sup>(5)</sup>	Tough ↔ Hard	
									SC7829	SC7819
22ER 5 API 403 <sup>(1)</sup>	12.70	0.49	22.00	5.0	3	1.8	2.5	2.375"-4.5"REG	•	•
27ER 4 API 382 <sup>(2)</sup>	15.88	0.96	27.50	4.0	2	2.1	2.8	NC23-NC50	•	•
27ER 4 API 383 <sup>(2)</sup>	15.88	0.96	27.50	4.0	3	2.1	2.8	NC56-NC77	•	•
27ER/L 4 API 502 <sup>(3)</sup>	15.88	0.64	27.50	4.0	2	2.0	3.0	6-5/8" REG	•	•
27ER 4 API 503 <sup>(3)</sup>	15.88	0.64	27.50	4.0	3	2.0	3.0	5-1/2,7-5/8,8-5/8REG		•

<sup>(1)</sup> V-0.040 <sup>(2)</sup> V-0.038R <sup>(3)</sup> V-0.050 <sup>(4)</sup> Threads per inch <sup>(5)</sup> Connection no. or size

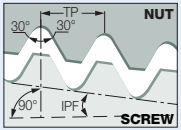
## INTERNAL API



Internal left-hand shown

### IR/L-API

Internal API - Oil Thread Profile  
Laydown Threading Inserts



### Dimensions

Tough ↔ Hard

Designation	IC	INSL	TPI <sup>(4)</sup>	RE	PDY	PDX	Size <sup>(5)</sup>	Tough ↔ Hard		
								SC7890	SC7829	SC7819
22IR 5 API 403 <sup>(1)</sup>	12.70	22.00	5.0	0.51	1.8	2.5	2.375"-4.5"REG		•	•
27IR 4 API 382 <sup>(2)</sup>	15.88	27.50	4.0	0.96	2.1	2.8	NC23-NC50		•	•
27IR 4 API 383 <sup>(2)</sup>	15.88	27.50	4.0	0.96	2.1	2.8	NC56-NC77			•
27IR/L 4 API 502 <sup>(3)</sup>	15.88	27.50	4.0	0.64	2.0	3.0	6-5/8" REG		•	
27IR/L 4 API 503 <sup>(3)</sup>	15.88	27.50	4.0	-	2.0	3.0	5-1/2,7-5/8,8-5/8REG	•	•	

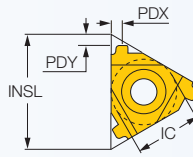
• 0.050, API Spec 74-1994 <sup>(1)</sup> V-0.040 <sup>(2)</sup> V-0.038R <sup>(3)</sup> V-0.050 <sup>(4)</sup> Threads per inch <sup>(5)</sup> Connection no. or size

# THREAD TURNING

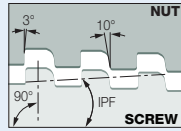
## EXTERNAL BUT

### ER-BUT

External BUT - Oil Thread  
Profile Laydown Threading  
Inserts for Buttress Casing



External right-hand shown



### Dimensions

Tough ↔ Hard

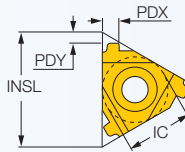
Designation	IC	TPI <sup>(1)</sup>	INSL	IPF	PDY	PDX	Size <sup>(2)</sup>	Tough ↔ Hard	
								SC7829	SC7819
22ER 5 BUT 0.75	12.70	5.0	22.00	0.75	2.2	2.4	4-1/2" - 13-3/8"	•	•
22ER 5 BUT-1.00	12.70	5.0	22.00	1.0	2.3	2.4	16" - 20"	•	

• ANSI B1.9.1973 Class 2 <sup>(1)</sup> Threads per inch <sup>(2)</sup> Connection no. or size

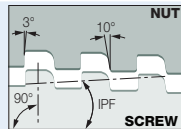
## INTERNAL BUT

### IR-BUT

Internal BUT - Oil Thread  
Profile Laydown Threading  
Inserts for Buttress Casing



Internal left-hand shown



### Dimensions

Tough ↔ Hard

Designation	IC	TPI <sup>(1)</sup>	INSL	IPF	PDY	PDX	Size <sup>(2)</sup>	THFT	Tough ↔ Hard	
									SC7829	SC7819
22IR 5 BUT 0.75	12.70	5.0	22.00	0.75	2.2	2.4	4-1/2" - 13-3/8"	BUT		•
22IR 5 BUT 1.00	12.70	5.0	22.00	1.00	2.3	2.4	16" - 20"	BUT	•	

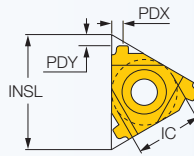
• ANSI B1.9.1973 Class 2 <sup>(1)</sup> Threads per inch <sup>(2)</sup> Connection no. or size

# THREAD TURNING

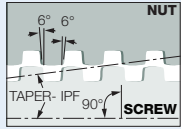
## EXTERNAL EXTREME LINE

### ER-EL

External EL - Extreme Line  
Oil Thread Profile Laydown  
Threading Inserts



External right-hand shown



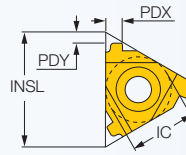
Designation	IC	TPI <sup>(1)</sup>	INSL	IPF	PDY	PDX	Size <sup>(2)</sup>	Dimensions	
								Tough ↔ Hard	
								SC7829	SC7819
22ER 6 EL 1.5	12.70	6.0	22.00	1.5	1.9	1.9	5" - 7-5/8"	•	•
22ER 5 EL 1.25	12.70	5.0	22.00	1.25	2.4	2.3	8-5/8" - 10-3/4"	•	•

• ANSI B1.9.1973 Class 2 <sup>(1)</sup> Threads per inch <sup>(2)</sup> Connection no. or size

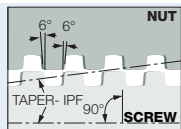
## INTERNAL EXTREME LINE

### IR-EL

Internal EL - Extreme Line  
Oil Thread Profile Laydown  
Threading Inserts



Internal left-hand shown



Designation	IC	TPI <sup>(1)</sup>	INSL	IPF	PDY	PDX	Size <sup>(2)</sup>	Dimensions	
								Tough ↔ Hard	
								SC7829	SC7819
22IR 6 EL 1.5	12.70	6.0	22.00	1.5	1.9	1.9	5" - 7-5/8"		•
22IR 5 EL 1.25	12.70	5.0	22.00	1.25	2.4	2.3	8-5/8" - 10-3/4"	•	

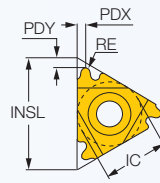
• ANSI B1.9.1973 Class 2 <sup>(1)</sup> Threads per inch <sup>(2)</sup> Connection no. or size

# THREAD TURNING

## EXTERNAL DIN 405 ROUND

### ER/L-RND

External DIN 405 Round  
Laydown Threading Inserts  
for Fire Fighting and Food  
Industry Pipe Couplings



External right-hand shown

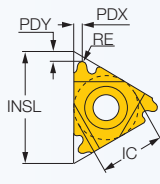
Designation	IC	TPI <sup>(2)</sup>	RE	INSL	PDY	PDX	Dimensions				Tough ↔ Hard			
							SC7839	SC7890	SC7829	SC7819	SC7839	SC7890	SC7829	SC7819
16ER/L 10 RND	9.52	10.0	0.61	16.49	1.1	1.2					•	•		
16ER/L 8 RND	9.52	8.0	0.76	16.49	1.4	1.3							•	•
16ERM 8 RND <sup>(1)</sup>	9.52	8.0	0.75	16.49	1.4	1.3								•
16ER/L 6 RND	9.52	6.0	1.01	16.49	1.5	1.7			•		•	•		•
16ERM 6 RND <sup>(1)</sup>	9.52	6.0	1.01	16.49	1.5	1.7								•
22ER 6 RND	12.70	6.0	1.01	22.00	1.5	1.7	•							•
22ER/L 4 RND	12.70	4.0	1.51	22.00	2.2	2.3							•	•
27ER 4 RND	15.88	4.0	1.51	27.50	2.2	2.3							•	

• Tolerance: Class 7H<sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Threads per inch

## INTERNAL DIN 405 ROUND

### IR/L-RND

Internal DIN 405 Round  
Laydown Threading Inserts  
for Fire Fighting and Food  
Industry Pipe Couplings



Internal left-hand shown

Designation	IC	TPI <sup>(2)</sup>	RE	INSL	PDY	PDX	Dimensions				Tough ↔ Hard	
							SC7829	SC7819	SC7829	SC7819		
16IR 10 RND	9.52	10.0	0.36	16.49	1.1	1.2						•
16IR/L 8 RND	9.52	8.0	0.70	16.49	1.4	1.4						•
16IR/L 6 RND	9.52	6.0	0.94	16.49	1.4	1.5			•			•
16IRM 6 RND <sup>(1)</sup>	9.52	6.0	0.94	16.49	1.4	1.5						•
22IR 6 RND	12.70	6.0	0.94	22.00	1.5	1.7						•
22IR 4 RND	12.70	4.0	1.40	22.00	2.2	2.3						•
27IR 4 RND	15.88	4.0	1.40	27.50	2.2	2.3			•			•

• Tolerance: Class 7H <sup>(1)</sup> With pressed chipformer <sup>(2)</sup> Threads per inch



# SHALLOW GROOVING

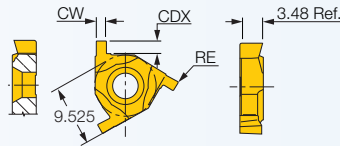
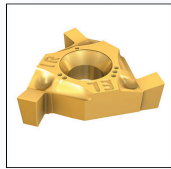
## Shallow Grooving Grades

S	C	6	8	Coating	9
		Shallow Grooving	Constant		Constant

Coating		Material Group				
6	TiCN+TiN	P30-P45	M30-M40			
7	TiCN+TiN	P20-P40	M20-M30	K20-K30		

### SMGA

Precision Shallow Grooving Inserts with 3 Cutting Edges



SMGA 16 ER/IL shown

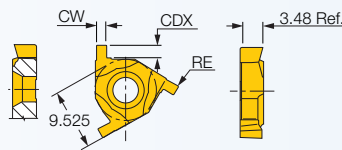
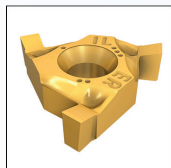
Designation	CW	CDX <sup>(1)</sup>	CWTOL <sup>(2)</sup>	RE	RETOL <sup>(3)</sup>	Tough ↔ Hard	
						SC6869	SC6879
SMGA 16EL/IR 100	1.00	1.55	0.02	0.10	0.030	•	•
SMGA 16ER/IL 100	1.00	1.55	0.02	0.10	0.030	•	•
SMGA 16EL/IR 120	1.20	1.60	0.02	0.10	0.030	•	•
SMGA 16ER/IL 120	1.20	1.60	0.02	0.10	0.030	•	•
SMGA 16EL/IR 140	1.40	1.80	0.02	0.10	0.030	•	•
SMGA 16ER/IL 140	1.40	1.80	0.02	0.10	0.030	•	•
SMGA 16EL/IR 170	1.70	2.00	0.02	0.10	0.030	•	•
SMGA 16ER/IL 170	1.70	2.00	0.02	0.10	0.030	•	•
SMGA 16EL/IR 195	1.95	2.00	0.02	0.10	0.030	•	•
SMGA 16ER/IL 195	1.95	2.00	0.02	0.10	0.030	•	•
SMGA 16EL/IR 225	2.25	2.10	0.02	0.10	0.030	•	•
SMGA 16ER/IL 225	2.25	2.10	0.02	0.10	0.030	•	•

- Inserts for right-hand external grooving can be used as left-hand internal grooving
- Use with anvil AE 16-0 on external tools and with anvil AI 16-0 on internal tools.

<sup>(1)</sup> Cutting depth maximum <sup>(2)</sup> Cutting width tolerance (+/-) <sup>(3)</sup> Corner radius tolerance (+/-)

### SMMA

Utility Shallow Grooving Inserts with 3 Cutting Edges



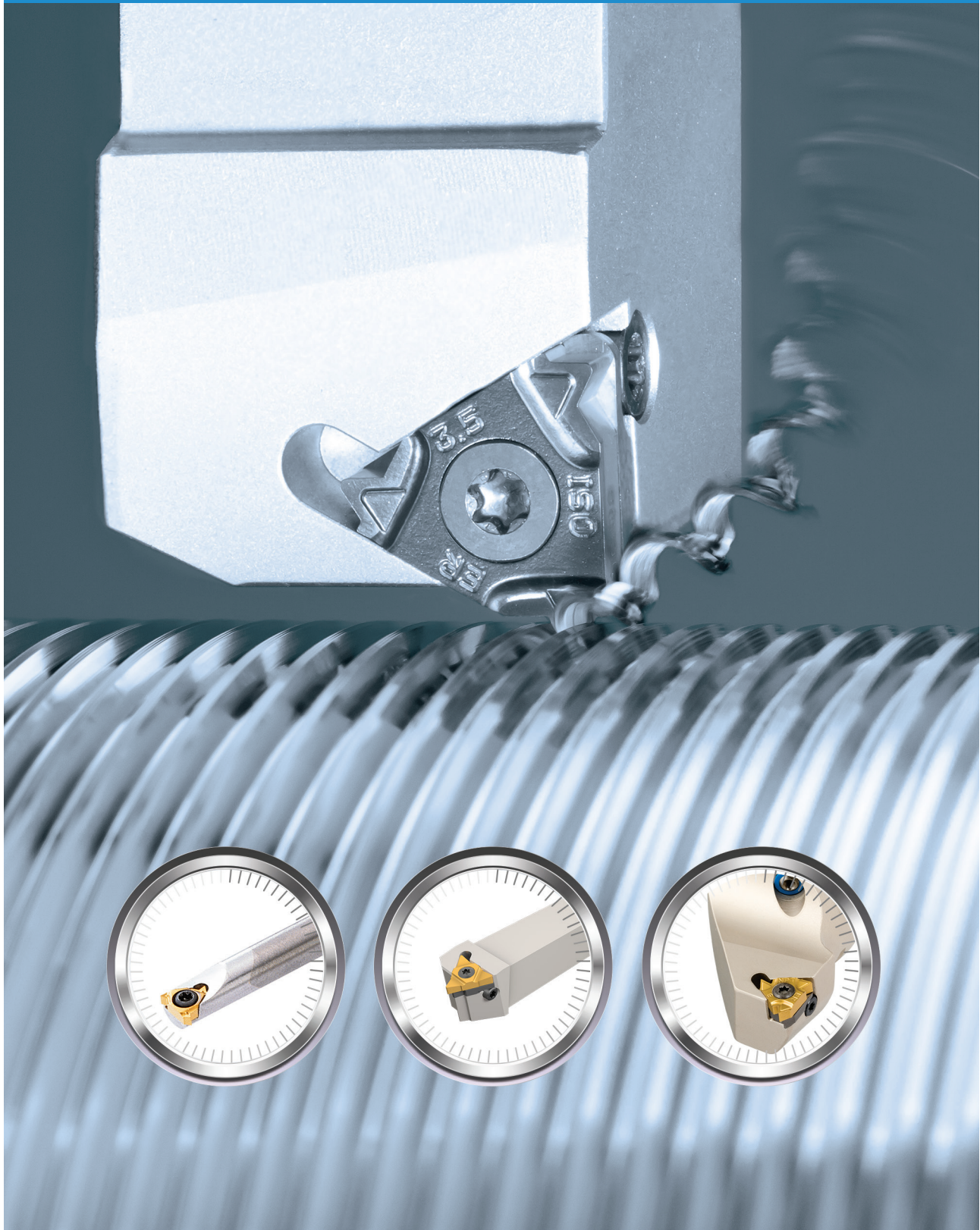
SMMA 16 ER/IL shown

Designation	CW	CDX <sup>(1)</sup>	CWTOL <sup>(2)</sup>	RE	RETOL <sup>(3)</sup>	SC6879
SMMA 16ER/IL 120	1.20	1.60	0.05	0.10	0.050	•
SMMA 16ER/IL 140	1.40	1.80	0.05	0.10	0.050	•
SMMA 16ER/IL 160	1.60	2.00	0.05	0.10	0.050	•
SMMA 16ER/IL 175	1.75	2.00	0.05	0.10	0.050	•
SMMA 16ER/IL 195	1.95	2.00	0.05	0.10	0.050	•
SMMA 16ER/IL 222	2.22	2.10	0.05	0.10	0.050	•

- Inserts for right-hand external grooving can be used as left-hand internal grooving
- Use with anvil AE 16-0 on external tools and with anvil AI 16-0 on internal tools.

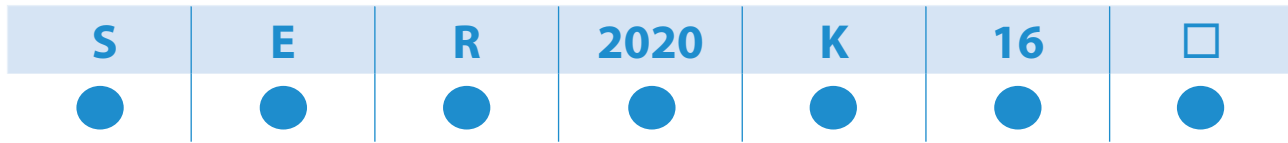
<sup>(1)</sup> Cutting depth maximum <sup>(2)</sup> Cutting width tolerance (+/-) <sup>(3)</sup> Corner radius tolerance (+/-)

# THREADING LAYDOWN TOOLS



# THREAD TURNING

## Toolholder Identification System



### 1 Clamping System

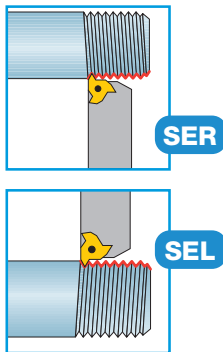
S — Screw Clamping

### 2 Application

E — External  
I — Internal

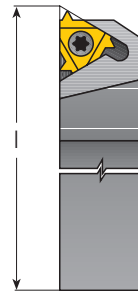
### 3 Hand of Tool

R — Right-hand  
L — Left-hand



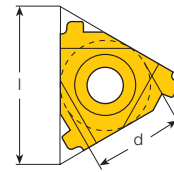
### 5 Tool Length

mm  
D — 60  
F — 80  
H — 100  
K — 125  
L — 140  
M — 150  
P — 170  
R — 200  
S — 250  
T — 300  
U — 350  
V — 400



### 6 Insert Size

l (mm)	d
06	5/32"
08	3/16"
08U	3/16"
11	1/4"
16	3/8"
22	1/2"
22U	1/2"
27	5/8"
27U	5/8"



### 4 Shank Size

External Toolholders  
Shank: hxb  
2020 - 20x20 mm

### 7 Optional Specifications

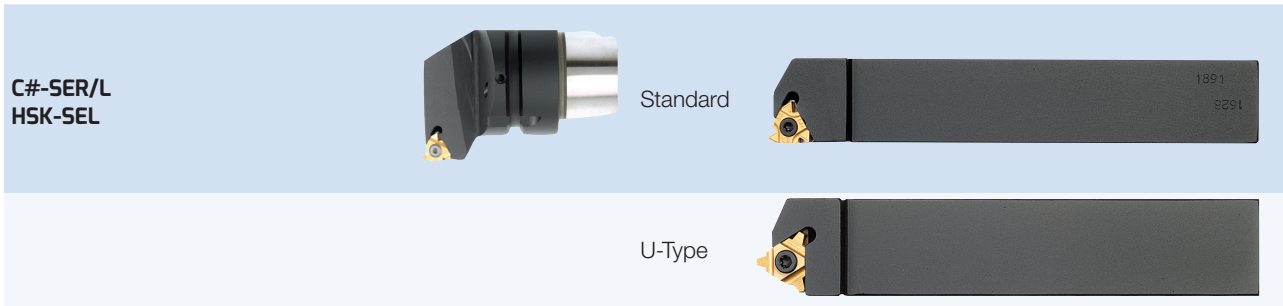
U - For U-type inserts  
B - Bore for coolant  
C - Carbide shank  
O - Offset style  
D - Drop head  
G - Gang tool  
SP - Special

### \* Optional Prefix

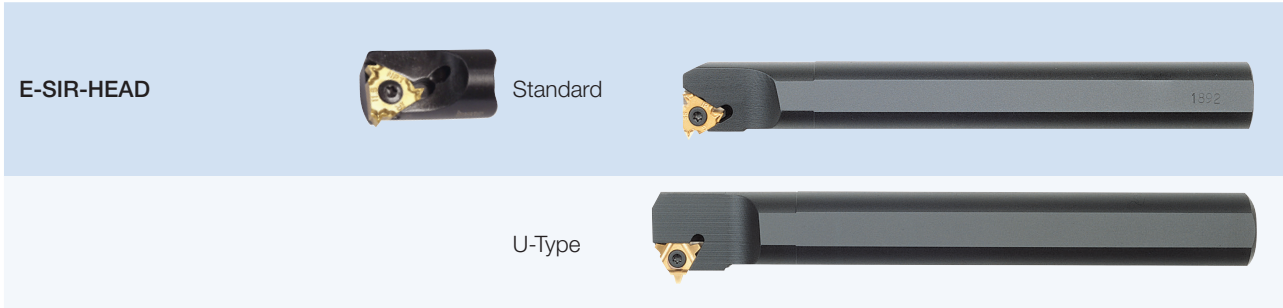
C  
HSK  
KM } Exchangeable Adaptation System

# THREAD TURNING

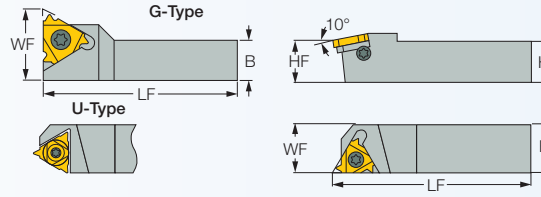
## Tool Types



## Boring Bars



# THREAD TURNING



## SER/L External Threading Toolholders

Designation	H	HF	B	LF	WF	Insert <sup>(2)</sup>
SER 0808 H11 <sup>(1)</sup>	8.0	8.0	8.0	100.00	11.00	11 ER..
SER/L 1010 H11 <sup>(1)</sup>	10.0	10.0	10.0	100.00	11.00	11 ER/L..
SER/L 1212 F16	12.0	12.0	12.0	80.00	12.00	16 ER/L..
SER/L 1616 H16	16.0	16.0	16.0	100.00	16.00	16 ER/L..
SER 1616 K16G	16.0	16.0	16.0	125.00	21.70	16 ER..
SER/L 2020-16-AD	20.0	20.0	20.0	67.00	20.00	16 ER/L..
SER/L 2020 K16	20.0	20.0	20.0	125.00	20.00	16 ER/L..
SER/L 2525 M16	25.0	25.0	25.0	150.00	25.00	16 ER/L..
SER/L 3232 P16	32.0	32.0	32.0	170.00	32.00	16 ER/L..
SER/L 2525 M22	25.0	25.0	25.0	150.00	25.00	22 ER/L..
SER/L 3232 P22	32.0	32.0	32.0	170.00	32.00	22 ER/L..
SER/L 2525 M22U	25.0	25.0	25.0	150.00	28.00	22 UER/L..
SER/L 3232 P22U	32.0	32.0	32.0	170.00	32.00	22 UER/L..
SER/L 4040 R22U	40.0	40.0	40.0	200.00	40.00	22 UER/L..
SER 4040 R22U	40.0	40.0	40.0	200.00	40.00	22 UER/L..
SER/L 2525 M27	25.0	25.0	25.0	150.00	25.00	27 ER/L..
SER/L 3232 P27	32.0	32.0	32.0	170.00	32.00	27 ER/L..
SER/L 2525 M27U	25.0	25.0	25.0	150.00	32.00	27 UER/L..
SER/L 3232 P27U	32.0	32.0	32.0	170.00	32.00	27 UER/L..
SER/L 4040 R27U	40.0	40.0	40.0	200.00	40.00	27 UER/L..
SER 4040 R27U	40.0	40.0	40.0	200.00	40.00	27 UER/L..

• All tools are made for 1.5 helix angle • For multi-tooth inserts use anvils AE16M / AI16M; AE22M / AI22M; AE27M / AI27M • For SMGA inserts, use anvil AE 16-0

<sup>(1)</sup> Toolholder without anvil

<sup>(2)</sup> Right-hand inserts (ER) for right-hand tools (SER)

## Spare Parts

Designation	Insert Screw	Anvil Screw	RH Anvil	LH Anvil	Torx Key
SER 0808 H11	SR M2.6-L6.7-S11				T-8/5
SER/L 1010 H11	SR M2.6-L6.7-S11				T-10/5
SEL 1212 F16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 1212 F16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SER 1212 X16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 1616 H16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 1616 H16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SER 1616 K16G	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 2020-16-AD	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 2020-16-AD	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 2020 K16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 2020 K16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 2525 M16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 2525 M16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 3232 P16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 3232 P16	SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-20/5
SEL 2525 M22	SR 8-32-L15-S22	SR 8-32-L5.8-A22		AI22	T-20/5
SER 2525 M22	SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22		T-20/5
SEL 3232 P22	SR 8-32-L15-S22	SR 8-32-L5.8-A22		AI22	T-20/5
SER 3232 P22	SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22		T-20/5
SER 4040 R22	SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22		T-20/5

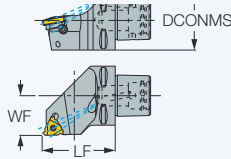
# THREAD TURNING

## Spare Parts (continued)

Designation	Insert Screw	Anvil Screw	RH Anvil	LH Anvil	Torx Key
SEL 2525 M22U	SR 8-32-L15-S22	SR 8-32-L5.8-A22		AI22U	T-20/5
SER 2525 M22U	SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22U		T-20/5
SEL 3232 P22U	SR 8-32-L15-S22	SR 8-32-L5.8-A22		AI22U	
SER 3232 P22U	SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22U		T-20/5
SEL 4040 R22U				AI22U	
SER/L 4040 R22U	SR 8-32-L15-S22	SR 8-32-L5.8-A22			T-20/5
SER 4040 R22U			AE22U		
SEL 2525 M27	SR M5-L22-S40	SR M5-L5.8-A27		AI27	T-25/3
SER 2525 M27	SR M5-L22-S40	SR M5-L5.8-A27	AE27		T-25/3
SEL 3232 P27	SR M5-L22-S40	SR M5-L5.8-A27		AI27	T-25/3
SER 3232 P27	SR M5-L22-S40	SR M5-L5.8-A27	AE27		T-25/3
SER 4040 R27	SR M5-L22-S40	SR M5-L5.8-A27	AE27		T-25/3
SEL 2525 M27U	SR M5-L22-S40	SR M5-L5.8-A27		AI27U	T-25/3
SER 2525 M27U	SR M5-L22-S40	SR M5-L5.8-A27	AE27U		T-25/3
SEL 3232 P27U	SR M5-L22-S40	SR M5-L5.8-A27		AI27U	T-25/3
SER 3232 P27U	SR M5-L22-S40	SR M5-L5.8-A27	AE27U		T-25/3
SEL 4040 R27U	SR M5-L22-S40	SR M5-L5.8-A27		AI27U	K40
SER 4040 R27U	SR M5-L22-S40	SR M5-L5.8-A27	AE27U		T-25/3

### C#-SER/L

External Threading Tools with CAPTO Exchangeable Shanks



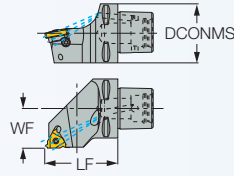
Designation	DCONMS	WF	LF	Insert <sup>(1)</sup>
C4 SER/L-27050-16	40	27.00	50.00	16ER/L...
C5 SER/L-35060-16	50	35.00	60.00	16ER/L...
C6 SER/L-45065-16	63	45.00	65.00	16ER/L...
C4 SER/L-27050-22	40	27.00	50.00	22ER/L...
C5 SER/L-35060-22	50	35.00	60.00	22ER/L...
C6 SER/L-45065-22	63	45.00	65.00	22ER/L...
C8 SER/L-55080-22	80	55.00	80.00	22ER/L...

<sup>(1)</sup> Right-hand inserts for right-hand tools and vice versa

# THREAD TURNING

## C#-SER/L

External Threading Tools with CAPTO Exchangeable Shanks



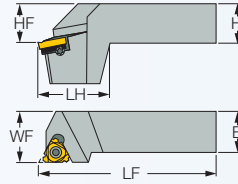
Right-hand shown

### Spare Parts

Designation	L/RH Anvil	Anvil Screw	Insert Screw	Torx Key	Plug
C4 SEL-27050-16	AI16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
C4 SER-27050-16	AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	EZ 83
C5 SEL-35060-16	AI16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	EZ 104
C5 SER-35060-16	AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	EZ 104
C6 SEL-45065-16	AI16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
C6 SER-45065-16	AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
C4 SEL-27050-22	AI22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C4 SER-27050-22	AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C5 SEL-35060-22	AI22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C5 SER-35060-22	AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C6 SEL-45065-22	AI22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C6 SER-45065-22	AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C8 SEL-55080-22	AI22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C8 SER-55080-22	AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	

## SER-D

External Threading Drophead Toolholders



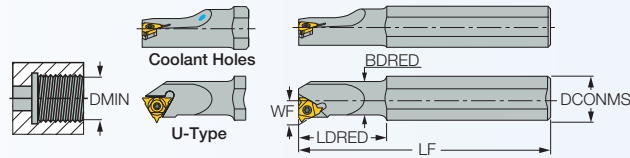
Right-hand shown

Designation	H	HF	B	LF	WF	LH	Insert	Insert Screw	Torx Key	RH Anvil	Anvil Screw
SER 2525 M22D	25.0	25.0	25.0	150.00	32.00	38.0	22 ER..	SR 8-32-L15-S22	T-20/5	AE22	SR 8-32-L5.8-A22

- All toolholders are made for 1.5 helix angle.
- For SMGA inserts, use anvil AE 16-0

# THREAD TURNING

## SIR/L Internal Threading Bars



Right-hand shown







Designation	DMIN	DCONMS	BDRD	LF	LDRED	WF	CSP <sup>(5)</sup>	Shank m. <sup>(6)</sup>	Insert <sup>(7)</sup>
SIR/L 0005 H06CB <sup>(1)</sup>	6.40	6.00	5.10	100.00	25.0	4.30	1	C	06 IR/IL..
SIR/L 0005 H06 <sup>(2)</sup>	6.40	12.00	5.10	100.00	12.0	4.30	0	S	06 IR/IL..
SIR 0005 H06-W <sup>(3)</sup>	6.40	12.00	5.10	100.00	12.0	4.30	0	S	06 IR/IL..
SIR/L 0007 K08CB <sup>(1)</sup>	7.80	8.00	6.60	125.00	30.0	5.30	1	C	08 IR/IL..
SIR/L 0007 K08 <sup>(2)</sup>	7.80	16.00	6.60	125.00	18.0	5.30	0	S	08 IR/IL..
SIR 0008 K08UCB <sup>(1)</sup>	9.00	8.00	7.30	125.00	35.0	6.40	1	C	08 UIRL..
SIR/L 0008 K08U <sup>(2)</sup>	9.00	16.00	7.30	125.00	21.0	6.60	0	S	08 UIRL..
SIR/L 0010 H11 <sup>(2)</sup>	12.00	10.00	10.00	100.00	-	7.40	0	S	11 IR/IL..
SIR/L 0010 M11CB <sup>(1)</sup>	12.00	10.00	10.00	150.00	-	7.40	1	C	11 IR/IL..
SIR 0010 H11B <sup>(2)</sup>	12.00	10.00	10.00	100.00	-	7.40	1	S	11 IR/IL..
SIR/L 0010 K11 <sup>(2)</sup>	12.00	16.00	10.00	125.00	25.0	6.50	0	S	11 IR/IL..
SIR/L 0010 K11B <sup>(2)</sup>	12.00	16.00	10.00	125.00	25.0	7.40	1	S	11 IR/IL..
SIR/L 0012 P11CB <sup>(1)</sup>	15.00	12.00	12.00	170.00	-	8.40	1	C	11 IR/IL..
SIR/L 0013 L11 <sup>(2)</sup>	15.00	16.00	13.00	140.00	32.0	8.90	0	S	11 IR/IL..
SIR/L 0013 M16 <sup>(2)</sup>	16.00	16.00	13.00	150.00	32.0	10.00	0	S	16 IR/IL..
SIR/L 0013 M16B <sup>(2)</sup>	16.00	16.00	13.00	150.00	32.0	10.20	1	S	16 IR/IL..
SIR 0016 R16CB <sup>(1)</sup>	19.00	16.00	16.00	200.00	-	11.70	1	C	16 IR/IL..
SIR/L 0016 P16 <sup>(2)</sup>	19.00	20.00	16.00	170.00	40.0	11.40	0	S	16 IR/IL..
SIR/L 0016 P16B <sup>(2)</sup>	19.00	20.00	16.00	170.00	40.0	11.70	1	S	16 IR/IL..
SIR/L 0020 P16	24.00	20.00	20.00	170.00	-	13.70	0	S	16 IR/IL..
SIR/L 0020 P16B	24.00	20.00	20.00	170.00	-	13.70	1	S	16 IR/IL..
SIR/L 0020 P22 <sup>(2)</sup>	24.00	20.00	20.00	170.00	-	15.60	0	S	22 IR/L..
SIR/L 0020-16-AD	24.00	20.00	20.00	80.00	-	13.70	0	S	16 IR/IL..
SIR 0020 S16CB	24.00	20.00	20.00	250.00	-	13.70	1	C	16 IR/IL..
SIR 0025 S16CB	28.00	25.00	25.00	250.00	-	16.20	1	C	16 IR/IL..
SIR/L 0025 R16	29.00	25.00	25.00	200.00	-	16.30	0	S	16 IR/IL..
SIR/L 0025 R16B	29.00	25.00	25.00	200.00	-	16.20	1	S	16 IR/IL..
SIR/L 0025 R22	29.00	25.00	25.00	200.00	-	17.20	0	S	22 IR/L..
SIR/L 0025 R22B	29.00	25.00	25.00	200.00	-	18.10	1	S	22 IR/L..
SIR/L 0025-16-AD	29.00	25.00	25.00	100.00	-	16.30	0	S	16 IR/IL..
SIR/L 0032 S16	36.00	32.00	32.00	250.00	-	19.70	0	S	16 IR/IL..
SIR/L 0032 S22	38.00	32.00	32.00	250.00	-	21.50	0	S	22 IR/L..
SIR/L 0032 S27	40.00	32.00	32.00	250.00	-	22.40	0	S	27 IR/L..
SIR/L 0032 S27U <sup>(4)</sup>	40.00	32.00	32.00	250.00	-	24.70	0	S	27 UIRL..
SIR/L 0040 T16	44.00	40.00	40.00	300.00	-	23.70	0	S	16 IR/IL..
SIR/L 0040 T22	46.00	40.00	40.00	300.00	-	25.80	0	S	22 IR/L..
SIR 0040 T22U	46.00	40.00	40.00	300.00	-	29.50	0	S	22 UIRL..
SIR/L 0040 T27	48.00	40.00	40.00	300.00	-	26.60	0	S	27 IR/IL..
SIR/L 0050 U16	54.00	50.00	50.00	350.00	-	28.70	0	S	16 IR/IL..
SIR/L 0050 U22	56.00	50.00	50.00	350.00	-	30.60	0	S	22 IR/IL..
SIR/L 0050 U27	58.00	50.00	50.00	350.00	-	31.60	0	S	27 IR/IL..

- B-steel shank with coolant hole, C-carbide shank without coolant hole, CB-carbide shank with coolant hole
- All toolholders are made for 1.5 helix angle
- For SMGA inserts, use anvil AL 16-0<sup>(1)</sup> Carbide shank without anvil <sup>(2)</sup> Toolholder without anvil <sup>(3)</sup> For ACME, STUB ACME, TRAPEZ (DIN 103) and ROUND (DIN 405) thread profiles check in user guide for anvil information <sup>(4)</sup> 0 - Without coolant supply, 1 - With coolant supply <sup>(5)</sup> C-carbide, S-steel <sup>(6)</sup> Right-hand inserts (IR) for right-hand tools (SIR)
- <sup>(7)</sup> Right-hand inserts (IR) for right-hand tools (SIR)



# THREAD TURNING

## Spare Parts

Designation	 RH Anvil	 LH Anvil	 Anvil Screw	 Insert Screw	 Torx Key	 Plug
SIR/L 0005 H06CB				SR 14-552	T-6/5	
SIR/L 0005 H06				SR 14-552	T-6/5	
SIR 0005 H06-W				SR 14-552	T-6/5	
SIR/L 0007 K08CB				SR 14-558	T-6/5	
SIR/L 0007 K08				SR 14-558	T-6/5	
SIR 0008 K08UCB				SR 14-558	T-6/5	
SIR/L 0008 K08U				SR 14-558	T-6/5	
SIR/L 0010 H11				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0010 M11CB				SR M2.6-L6.7-S11	T-8/5	
SIR 0010 H11B				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0010 K11				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0010 K11B				SR M2.6-L6.7-S11	T-8/5	PL 16
SIR/L 0012 P11CB				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0013 L11				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0013 M16				SR 5-40-L9.7-S16S	T-10/5	
SIR/L 0013 M16B				SR 5-40-L9.7-S16S	T-10/5	PL 16
SIR 0016 R16CB				SR 5-40-L9.7-S16S	T-10/5	
SIR/L 0016 P16				SR 5-40-L9.7-S16S	T-10/5	
SIR/L 0016 P16B				SR 5-40-L9.7-S16S	T-10/5	PL 20
SIL 0020 P16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0020 P16B		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	PL 20
SIR/L 0020 P22				SR 8-32-L12-S22S	T-20/5	
SIL 0020-16-AD		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0020 P16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0020 P16B	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	PL 20
SIR 0020 S16CB	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0020-16-AD	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0025 S16CB	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0025 R16		AE16				
SIR/L 0025 R16			SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0025 R16B		AE16				
SIR/L 0025 R16B			SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	PL 25
SIL 0025 R22		AE22				
SIR/L 0025 R22			SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0025 R22B		AE22				
SIR/L 0025 R22B			SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	PL 25
SIL 0025-16-AD		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0025 R16	AI16					
SIR 0025 R16B	AI16					
SIR 0025 R22	AI22					
SIR 0025 R22B	AI22					
SIR 0025-16-AD	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0032 S16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0032 S16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0032 S22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0032 S22U		AE22U	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0032 S22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0032 S22U	AI22U		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0032 S27		AE27	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0032 S27U		AE27U	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0032 S27	AI27		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0032 S27U	AI27U		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0040 T16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0040 T16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0040 T22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0040 T22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0040 T22U	AI22U		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0040 T27		AE27	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	

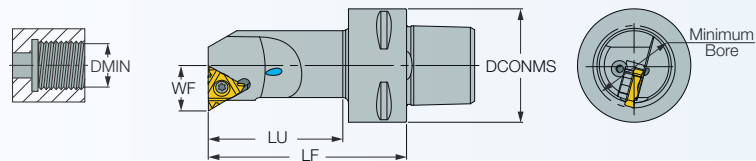
# THREAD TURNING

## Spare Parts (continued)

Designation	RH Anvil	LH Anvil	Anvil Screw	Insert Screw	Torx Key	Plug
SIR 0040 T27	AI27		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0040 T27U	AI27U		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0050 U16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0050 U16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0050 U22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0050 U22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0050 U27		AE27	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0050 U27U		AE27U	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0050 U27	AI27		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0050 U27U	AI27U		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0060 V27		AE27	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0060 V27U		AE27U	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0060 V27	AI27		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0060 V27U	AI27U		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	

### C#-SIR/L

Internal Threading Bars with CAPTO Exchangeable Shanks



Designation	DCONMS	DMIN	WF	LU	LF	Insert
C4 SIR/L-12060-16	40	20.00	11.70	37.0	60.00	16 IR/L..
C4 SIR/L-14060-16	40	25.00	13.50	38.0	60.00	16 IR/L..
C4 SIR-15065-22	40	25.00	15.40	42.0	65.00	22 IR/L..
C4 SIR/L-17070-16	40	29.00	16.00	48.0	70.00	16 IR/L..
C4 SIR/L-19070-22	40	29.00	17.90	48.0	70.00	22 IR/L..
C4 SIR/L-22090-16	40	36.00	19.50	69.0	90.00	16 IR/L..
C4 SIR/L-22090-22	40	38.00	21.40	69.0	90.00	22 IR/L..
C4 SIR/L-27080-16	40	44.00	23.50	60.0	80.00	16 IR/L..
C4 SIR/L-27080-22	40	46.00	25.40	60.0	80.00	22 IR/L..
C5 SIR/L-12060-16	50	20.00	11.70	35.0	60.00	16 IR/L..
C5 SIR/L-14060-16	50	25.00	13.50	36.0	60.00	16 IR/L..
C5 SIR/L-15065-22	50	25.00	15.40	41.0	65.00	22 IR/L..
C5 SIR/L-17070-16	50	29.00	16.00	47.0	70.00	16 IR/L..
C5 SIR/L-19070-22	50	29.00	17.90	47.0	70.00	22 IR/L..
C5 SIR/L-22090-16	50	36.00	19.50	68.0	90.00	16 IR/L..
C5 SIR/L-22090-22	50	38.00	21.40	68.0	90.00	22 IR/L..
C5 SIR/L-27105-16	50	44.00	23.50	84.0	105.00	16 IR/L..
C5 SIR/L-27105-22	50	46.00	25.40	84.0	105.00	22 IR/L..
C6 SIR/L-14070-16	63	25.00	13.50	42.0	70.00	16 IR/L..
C6 SIR/L-17075-16	63	29.00	16.00	48.0	75.00	16 IR/L..
C6 SIR/L-19075-22	63	29.00	17.90	48.0	75.00	22 IR/L..
C6 SIR/L-22090-16	63	36.00	19.50	64.0	90.00	16 IR/L..
C6 SIR/L-22090-22	63	38.00	21.40	64.0	90.00	22 IR/L..
C6 SIR/L-27105-16	63	44.00	23.50	80.0	105.00	16 IR/L..
C6 SIR/L-27105-22	63	46.00	25.40	80.0	105.00	22 IR/L..

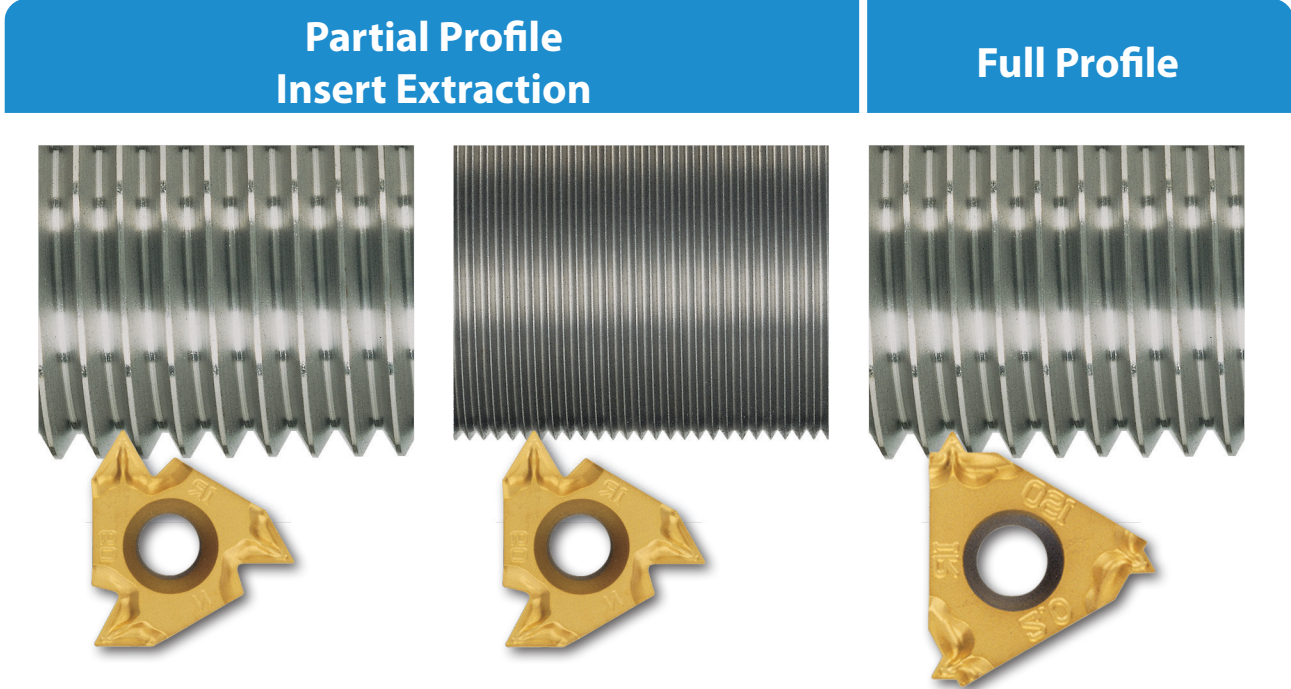
# THREAD TURNING

## Spare Parts

Designation	 RH Anvil	 LH Anvil	 Anvil Screw	 Insert Screw	 Torx Key
C4 SIL-12060-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-12060-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIL-14060-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-14060-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-15065-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIL-17070-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIL-19070-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIR-17070-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-19070-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIL-22090-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-22090-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIL-22090-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIR-22090-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIL-27080-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-27080-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIL-27080-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIR-27080-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIL-12060-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIR-12060-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-14060-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-15065-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIR-14060-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIR-15065-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIL-17070-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-19070-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIR-17070-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIR-19070-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIL-22090-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIR-22090-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-22090-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIR-22090-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIL-27105-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIR-27105-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-27105-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIR-27105-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIL-14070-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIR-14070-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIL-17075-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIL-19075-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIR-17075-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIR-19075-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIL-22090-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIR-22090-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIL-22090-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIR-22090-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIL-27105-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIR-27105-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIL-27105-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIR-27105-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5

# THREAD TURNING

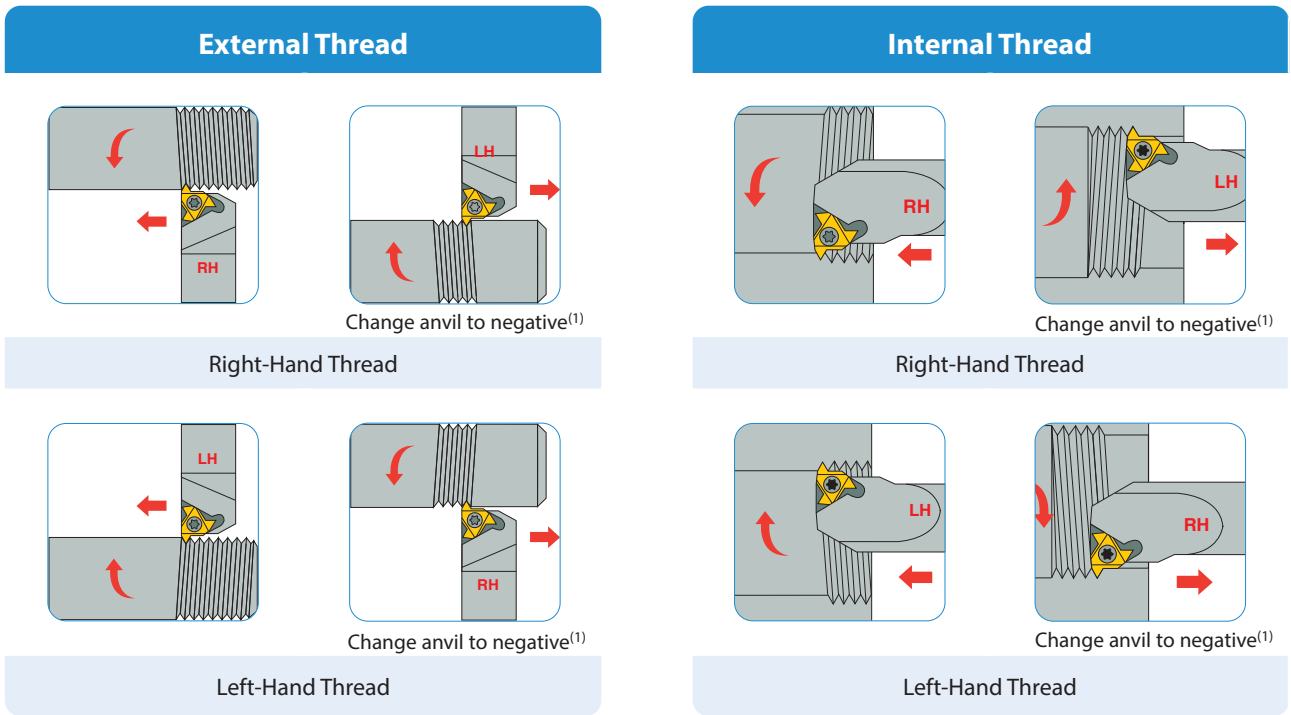
## User Guide and Cutting Data Types and Profiles of Threading Inserts



- Performs different thread standards and is suitable for a wide range of pitches that have a common angle (60° or 55°)
- Inserts with a small root-corner radius suitable for the smallest pitch of the range
- Additional operations to complete the outer/ internal diameter are necessary
- Not recommended for mass production
- Eliminates the need for different inserts

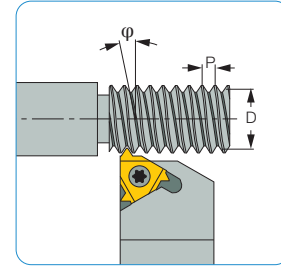
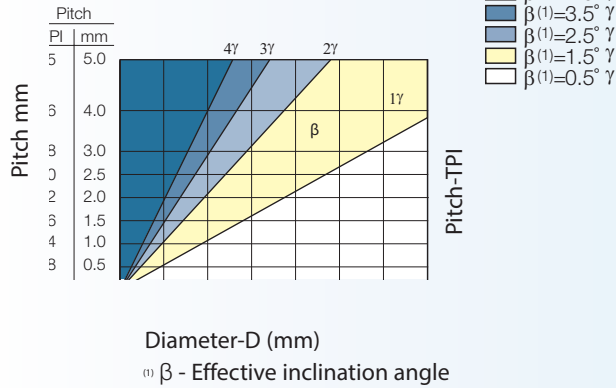
- Performs complete thread profile
- Root corner radius is only suitable for the relevant pitch
- Recommended for mass production
- Suitable for one profile only

### Thread Turning Methods



## Thread Helix Angle and Anvil Selection

### Helix Angle $\lambda$ Evaluation



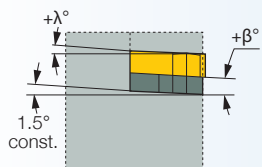
$$\operatorname{tg} l = \frac{P}{3.14 \cdot D}$$

$$\lambda^\circ = 2D \cdot P$$

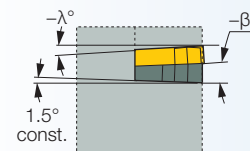
P - Pitch in mm  
D - Effective diameter of thread in mm  
 $\lambda$  - Angle of inclination

### Anvil Selection According to Thread Helix Angle $\lambda$

l (d)	Thread Helix Angle $\lambda$ Inclination Angle $\beta$ Toolholder	>4°	3°-4°	Standard		1°-2°	0°-1°	Negative Anvils	
		4.5°	3.5°	2°-3°	2.5°	1.5°	0.5°	-0.5°	-1.5°
Anvil Designation									
16	EX RH OR IN LH	AE16+4.5	AE16+3.5	AE16+2.5	AE16	AE16+0.5	AE16-0.5	AE16-1.5	
(3/8)	EX LH OR IN RH	AI16+4.5	AI16+3.5	AI16+2.5	AI16	AI16+0.5	AI16-0.5	AI16-1.5	
22	EX RH OR IN LH	AE22+4.5	AE22+3.5	AE22+2.5	AE22	AE22+0.5	AE22-0.5	AE22-1.5	
(1/2)	EX LH OR IN RH	AI22+4.5	AI22+3.5	AI22+2.5	AI22	AI22+0.5	AI22-0.5	AI22-1.5	
27	EX RH OR IN LH	AE27+4.5	AE27+3.5	AE27+2.5	AE27	AE27+0.5	AE27-0.5	AE27-1.5	
(5/8)	EX LH OR IN RH	AI27+4.5	AI27+3.5	AI27+2.5	AI27	AI27+0.5	AI27-0.5	AI27-1.5	
22U	EX RH OR IN LH	AE22U+4.5	AE22U+3.5	AE22U+2.5	AE22U	AE22U+0.5	AE22U-0.5	AE22U-1.5	
(1/2U)	EX LH OR IN RH	AI22U+4.5	AI22U+3.5	AI22U+2.5	AI22U	AI22U+0.5	AI22U-0.5	AI22U-1.5	
27U	EX RH OR IN LH	AE27U+4.5	AE27U+3.5	AE27U+2.5	AE27U	AE27U+0.5	AE27U-0.5	AE27U-1.5	
(5/8U)	EX LH OR IN RH	AI27U+4.5	AI27U+3.5	AI27U+2.5	AI27U	AI27U+0.5	AI27U-0.5	AI27U-1.5	

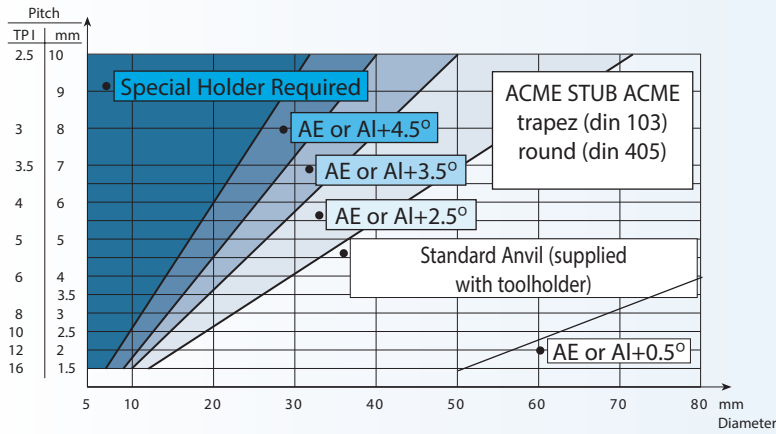


Anvils for positive inclination angle applicable when turning RH thread with RH holders or LH thread with LH toolholders.

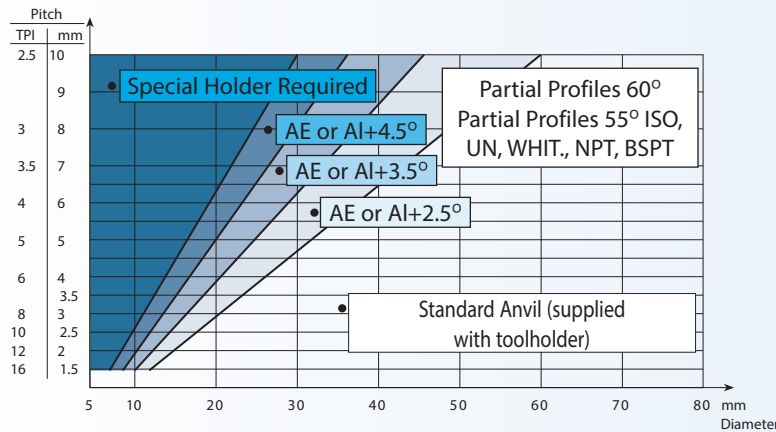
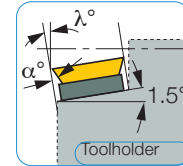


Anvils for negative inclination used when turning RH thread with LH holder or LH thread with RH toolholder.

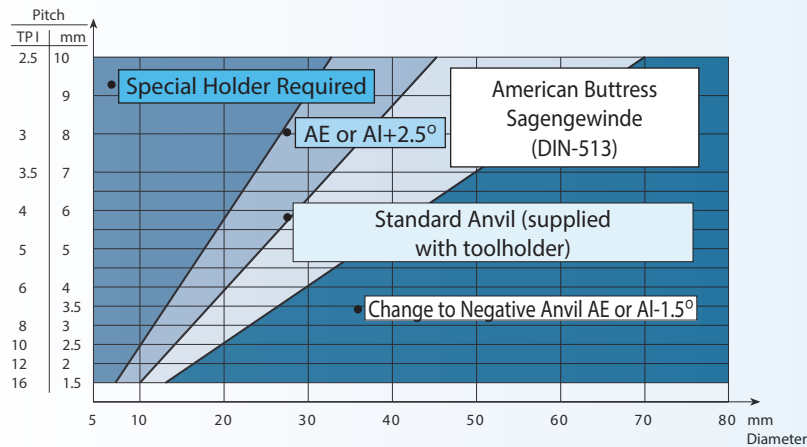
## Thread Helix Angle and Anvil Selection



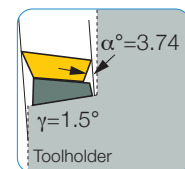
Use AE Anvils for EX-RH and IN-LH Toolholders. Use AI Anvils for IN-RH and EX-LH Toolholders.



Use AE Anvils for EX-RH and IN-LH Toolholders. Use AI Anvils for IN-RH and EX-LH Toolholders.



Use AE Anvils for EX-RH and IN-LH Toolholders. Use AI Anvils for IN-RH and EX-LH Toolholders.



Replacing the standard anvil with a negative angle anvil will eliminate side rubbing

## Number of Cutting Passes for Regular Type Inserts

TPI Pitch mm	0.5 48	1.0 24	1.5 16	2.0 12	2.5 10	3.0 8	4.0 6	6.0 4
Number of Passes	4-6	5-9	5-12	6-14	7-15	8-17	10-20	11-22

For mini-tools (06IR or 08IR) add 1-3 passes. Increase for hard materials.

## Maximum Depth of First Cut for CNC Control External Threading - M-Type Inserts

Full Profile	Pitch	TPI	Insert Designation	No. of Passes		Max. Depth for First Pass (D1) mm									
						Low Carbon Steel		High Carbon Steel		Alloy Steel		Stainless Steel		Nonferrous Aluminium	
				Min.	Max.	Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>	Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>	Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>	Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>	Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>
ISO Metric	1.00		16 ER/L 1.00 ISO	5	9	0.34	0.51	0.31	0.46	0.27	0.41	0.22	0.33	0.48	0.71
	1.25		16 ER/L 1.25 ISO	6	11	0.42	0.63	0.38	0.57	0.34	0.50	0.27	0.41	0.59	0.88
	1.50		16 ER/L 1.50 ISO	6	12	0.46	0.69	0.41	0.62	0.37	0.55	0.30	0.45	0.64	0.97
	1.75		16 ER/L 1.75 ISO	8	13	0.48	0.72	0.43	0.65	0.38	0.58	0.31	0.47	0.67	1.01
	2.00		16 ER/L 2.00 ISO	8	14	0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
	2.50		16 ER/L 2.50 ISO	10	15	0.53	0.80	0.48	0.72	0.42	0.64	0.34	0.52	0.74	1.12
	3.00		16 ER/L 3.00 ISO	12	17	0.56	0.84	0.50	0.76	0.45	0.67	0.36	0.55	0.78	1.18
American UN		24	16 ER/L 24 UN	5	9	0.34	0.51	0.31	0.46	0.27	0.41	0.22	0.33	0.48	0.71
		20	16 ER/L 20 UN	6	10	0.42	0.63	0.38	0.57	0.34	0.50	0.27	0.41	0.59	0.88
		18	16 ER/L 18 UN	6	11	0.46	0.69	0.41	0.62	0.37	0.55	0.30	0.45	0.64	0.97
		16	16 ER/L 16 UN	7	12	0.47	0.71	0.42	0.64	0.38	0.57	0.31	0.46	0.66	0.99
		14	16 ER/L 14 UN	6	13	0.46	0.69	0.41	0.62	0.37	0.55	0.28	0.41	0.64	0.97
		12	16 ER/L 12 UN	8	14	0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
		8	16 ER/L 8 UN	12	17	0.56	0.84	0.50	0.76	0.45	0.67	0.36	0.55	0.78	1.18
British BSW		19	16 ER/L 19 W	6	11	0.35	0.52	0.32	0.47	0.28	0.42	0.21	0.31	0.49	0.73
		16	16 ER/L 16 W	7	12	0.47	0.71	0.42	0.64	0.38	0.57	0.31	0.46	0.66	0.99
		14	16 ER/L 14 W	8	13	0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
		11	16 ER/L 11 W	9	14	0.44	0.66	0.40	0.59	0.35	0.53	0.29	0.43	0.62	0.92
NPT		18	16 ER/L 18 NPT	10	20	0.24	0.36	0.22	0.32	0.19	0.29	0.16	0.23	0.34	0.50
		14	16 ER/L 14 NPT	13	26	0.24	0.36	0.22	0.32	0.19	0.29	0.14	0.22	0.34	0.50
		11.5	16 ER/L 11.5 NPT	15	24	0.27	0.40	0.24	0.36	0.22	0.32	0.18	0.26	0.38	0.56
		8	16 ER/L 8 NPT	17	30	0.31	0.46	0.28	0.41	0.25	0.37	0.20	0.30	0.43	0.64
Round		6	16 ER/L 6 Rnd	9	20	0.42	0.63	0.38	0.57	0.34	0.50	0.27	0.41	0.59	0.88
Partial Profile 60°	0.50-1.50	48-16	16 ER/L A60		(1)	0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46
	1.75-3.00	14-8	16 ER/L G60			0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
	0.50-3.00	48-8	16 ER/L AG60			0.24	0.36	0.22	0.32	0.19	0.29	0.16	0.23	0.34	0.50
	3.50-5.00	7-5	22 ER/L N60			0.41	0.62	0.37	0.56	0.33	0.50	0.27	0.40	0.57	0.87
Partial Profile 55°	1.75-3.00	14-8	16 ER/L G55			0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
	0.50-3.00	48-8	16 ER/L AG55			0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46

(1) Per the number of passes for the relevant pitch (2) Equal depth of cut method (3) Diminished depth of cut for each pass method

## Cutting Data

### Maximum Depth of First Cut for CNC Control Internal Threading - M-Type Inserts

Full Profile	Pitch	TPI	Insert Designation	No. of Passes		Max. Depth for First Pass (D1) mm									
				Min.	Max.	Low Carbon Steel		High Carbon Steel		Alloy Steel		Stainless Steel		Nonferrous Aluminium	
						Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>	Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>	Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>	Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>	Eq. <sup>(2)</sup>	Dim. <sup>(3)</sup>
ISO Metric	1.50		11 IRM 1.50 ISO	10	20	0.20	0.30	0.18	0.27	0.16	0.24	0.12	0.18	0.28	0.42
	1.00		16 IRM 1.00 ISO	9	16	0.14	0.20	0.13	0.18	0.11	0.16	0.09	0.13	0.20	0.28
	1.25		16 IRM 1.25 ISO	9	16	0.19	0.28	0.17	0.25	0.15	0.22	0.12	0.18	0.27	0.39
	1.50		16 IRM 1.50 ISO	10	20	0.20	0.30	0.18	0.27	0.16	0.24	0.12	0.18	0.28	0.42
	1.75		16 IRM 1.75 ISO	11	18	0.21	0.32	0.19	0.29	0.17	0.26	0.14	0.21	0.29	0.45
	2.00		16 IRM 2.00 ISO	12	21	0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46
	2.50		16 IRM 2.50 ISO	14	21	0.23	0.34	0.21	0.31	0.18	v0.27	0.15	0.22	0.32	0.48
3.00		16 IRM 3.00 ISO	16	22	0.24	0.35	0.22	0.32	0.19	0.29	0.16	0.23	0.34	0.50	
American UN 16		20	16 IRM 20UN	7	13	0.20	0.30	0.18	0.27	0.16	0.24	0.12	0.18	0.28	0.42
		18	16 IRM 18UN	8	15	0.20	0.30	0.18	0.27	0.16	0.24	0.12	0.18	0.28	0.42
			16 IRM 16 UN	11	19	0.20	0.30	0.18	0.27	0.16	0.24	0.13	0.20	0.28	0.42
		14	16 IRM 14 UN	11	20	0.21	0.31	0.19	0.28	0.17	0.25	0.13	0.19	0.29	0.43
		12	16 IRM 12 UN	12	21	0.23	0.34	0.21	0.31	0.18	0.27	0.15	0.22	0.32	0.48
		8	16 IRM 8 UN	14	20	0.24	0.36	0.22	0.32	0.19	0.29	0.16	0.23	0.34	0.50
British BSW		19	16 IRM 19 W	7	12	0.28	0.42	0.25	0.38	0.22	0.34	0.17	0.25	0.39	0.59
		16	16 IRM 16 W	9	14	0.26	0.39	0.23	0.35	0.21	0.31	0.17	0.25	0.36	0.55
		14	16 IRM 14 W	10	16	0.27	0.41	0.24	0.37	0.22	0.33	0.18	0.27	0.38	0.57
		11	16 IRM 11 W	12	19	0.31	0.46	0.28	0.41	0.25	0.37	0.20	0.30	0.43	0.64
NPT		14	16 IRM 14 NPT	21	35	0.13	0.20	0.12	0.18	0.10	0.16	0.08	0.12	0.18	0.28
		11.5	16 IRM 11.5 NPT	21	33	0.17	0.25	0.15	0.23	0.14	0.20	0.11	0.16	0.24	0.35
		8	16 IRM 8 NPT	20	34	0.23	0.34	0.21	0.31	0.18	0.27	0.14	0.20	0.32	0.48
Round		6	16 IRM 6 RND	12	24	0.30	0.46	0.27	0.41	0.24	0.37	0.20	0.30	0.42	0.64
Partial Profile 60°	0.50-1.25	48-16	06 IRM A60			0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46
	0.50-1.50	48-16	08 IRM A60		(1)	0.13	0.20	0.12	0.18	0.10	0.16	0.08	0.13	0.18	0.28
	0.50-1.50	48-16	11 IRM A60			0.13	0.20	0.12	0.18	0.10	0.16	0.08	0.13	0.18	0.28
	0.50-1.50	48-16	16 IRM A60			0.13	0.20	0.12	0.18	0.10	0.16	0.08	0.13	0.18	0.28
	1.75-3.00	14-8	16 IRM G60			0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46
	0.50-3.00	48-8	16 IRM AG60			0.14	0.21	0.13	0.19	0.11	0.17	0.09	0.14	0.20	0.29
	3.50-5.00	7-5	22 IRM N60			0.23	0.34	0.21	0.31	0.18	0.27	0.15	0.22	0.32	0.48
Partial Profile 55°	1.75-3.00	14-8	16 IRM G55			0.34	0.50	0.31	0.45	0.27	0.40	0.22	0.33	0.48	0.70
	0.50-3.00	48-8	16 IRM AG55			0.14	0.20	0.13	0.18	0.11	0.16	0.09	0.13	0.20	0.28

(1) Per the number of passes for the relevant pitch (2) Equal depth of cut method (3) Diminished depth of cut for each pass method



## Recommended Number of Passes for Multi-Tooth Insert

### ISO - (Metric) External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 ER 1.0 ISO 3M	2	0.39	0.24	—	—
16 ER 1.5 ISO 2M	3	0.40	0.31	0.21	—
22 ER 1.5 ISO 3M	2	0.54	0.38	—	—
22 ER 2.0 ISO 2M	3	0.56	0.42	0.27	—
22 ER 2.0 ISO 3M	2	0.75	0.50	—	—
27 ER 3.0 ISO 2M	4	0.60	0.52	0.44	0.30

### Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 IR 1.0 ISO 3M	2	0.32	0.26	—	—
16 IR 1.5 ISO 2M	3	0.36	0.29	0.22	—
22 IR 1.5 ISO 3M	2	0.49	0.38	—	—
22 IR 2.0 ISO 2M	3	0.50	0.40	0.25	—
22 IR 2.0 ISO 3M	2	0.72	0.43	—	—
27 IR 3.0 ISO 2M	4	0.57	0.45	0.38	0.33

### UN External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 ER 16 UN 2M	3	0.45	0.32	0.20	—
22 ER 16 UN 3M	2	0.60	0.37	—	—
22 ER 12 UN 2M	3	0.60	0.39	0.31	—
22 ER 12 UN 3M	2	0.80	0.50	—	—
27 ER 8 UN 2M	4	0.63	0.55	0.42	0.36

### Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 IR 16 UN 2M	3	0.40	0.29	0.23	—
22 IR 16 UN 3M	2	0.57	0.35	—	—
22 IR 12 UN 2M	3	0.55	0.39	0.28	—
22 IR 12 UN 3M	2	0.75	0.47	—	—
27 IR 8 UN 2M	4	0.65	0.49	0.42	0.27

### NPT External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
22 ER 11.5 NPT 2M	4	0.55	0.46	0.35	0.32
27 ER 11.5 NPT 3M	3	0.75	0.57	0.36	—
27 ER 8 NPT 2M	4	0.80	0.62	0.54	0.45

### Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
22 IR 11.5 NPT 2M	4	0.55	0.46	0.35	0.32
27 IR 11.5 NPT 3M	3	0.75	0.57	0.36	—
27 IR 8 NPT 2M	4	0.80	0.62	0.54	0.45

### WHITWORTH External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 ER 14 W 2M	3	0.51	0.39	0.26	—
22 ER 14 W 3M	2	0.72	0.44	—	—
22 ER 11 W 2M	3	0.65	0.46	0.37	—

### Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 IR 14 W 2M	3	0.51	0.39	0.26	—
22 IR 14 W 3M	2	0.72	0.44	—	—
22 IR 11 W 2M	3	0.65	0.46	0.37	—

### API-ROUND External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
22 ER 10 API RD 2M	3	0.58	0.53	0.30	—
27 ER 10 API RD 3M	2	0.98	0.43	—	—
27 ER 8 API RD 2M	3	0.82	0.59	0.40	—

### Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
22 IR 10 API RD 2M	3	0.58	0.53	0.30	—
27 IR 10 API RD 3M	2	0.98	0.43	—	—
27 IR 8 API RD 2M	3	0.82	0.59	0.40	—

## Machining Data for Threading

ISO	Material	Condition	Tensile Strength [N/mm <sup>2</sup> ]	Hardness HB	Material No.		
<b>P</b>	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1	
		>= 0.25 %C	Annealed	650	190	2	
		< 0.55 %C	Quenched and tempered	850	250	3	
		>= 0.55 %C	Annealed	750	220	4	
			Quenched and tempered	1000	300	5	
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6	
		Quenched and tempered		930	275	7	
				1000	300	8	
				1200	350	9	
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	10	
			Quenched and tempered	1100	325	11	
	Stainless steel and cast steel		Ferritic/martensitic	680	200	12	
			Martensitic	820	240	13	
<b>M</b>	Stainless steel		Austenitic	600	180	14	
<b>K</b>	Cast iron nodular (GGG)		Ferritic/pearlitic		180	15	
			Pearlitic		260	16	
	Grey cast iron (GG)		Ferritic		160	17	
			Pearlitic		250	18	
	Malleable cast iron		Ferritic		130	19	
			Pearlitic		230	20	
<b>N</b>	Aluminum-wrought alloy		Not cureable		60	21	
			Cured		100	22	
	Aluminum-cast, alloyed	<=12% Si		Not cureable		75	23
				Cured		90	24
		>12% Si		High temperature		130	25
	Copper alloys	>1% Pb		Free cutting		110	26
				Brass		90	27
				Electrolitic copper		100	28
	Non-metallic			Duroplastics, fiber plastics			29
			Hard rubber			30	
<b>S</b>	High temp. alloys	Fe based		Annealed		200	31
				Cured		280	32
		Ni or Co based		Annealed		250	33
				Cured		350	34
				Cast		320	35
	Titanium Ti alloys			RM 400			36
			Alpha+beta alloys cured	RM 1050			37
<b>H</b>	Hardened steel		Hardened		55 HRC	38	
			Hardened		60 HRC	39	
	Chilled cast iron		Cast		400	40	
	Cast iron		Hardened		55 HRC	41	

# THREAD TURNING

Coated	
SC7839	SC7819
Cutting Speed (m/min)	
60-100	115-190
60-95	110-180
50-90	100-175
45-85	90-165
45-85	90-165
50-95	100-180
40-75	75-140
35-70	70-135
35-70	70-135
40-65	80-120
25-50	50-100
35-70	70-130
45-60	85-110
45-75	90-140
65-85	125-160
45-65	90-120
35-70	70-130
30-60	60-115
30-35	60-70
30-75	60-145
50-195	100-365
40-115	80-220
105-215	200-400
105-150	200-280
105-150	200-280
40-135	80-255
40-135	80-255
40-130	80-255
40-130	80-250
40-130	80-250
25-30	45-60
15-25	35-50
10-15	20-30
5-10	15-25
5-10	15-25
75-90	140-170
25-35	50-70
25-30	45-60
25-30	45-60
25-30	45-60
25-30	45-60

## Mini-Tool Features

(1)	øD M8; 5/16"-UN; 1/16"-NPT	
(2)	4H ÷ 8H/1B ÷ 3B	
(3)	A	0.00

- (1) Smallest possible thread
- (2) All tolerances
- (3) Minimum runout
- (4) High surface quality

## Flank Clearance and Effective Inclination Angle

Inclination angle  $\beta$  of the cutting edges corresponds to a specific thread helix angle  $\lambda$  and ensures an equal clearance angle on both sides of the insert.

$\alpha_L = \alpha_R$

**Incorrect**  
 $\alpha_L < \alpha_R$

$\alpha$ - Flank clearance angle  
 $\lambda$ - Helix angle  
 $\beta$ - Effective inclination angle is achieved by selecting the suitable anvil

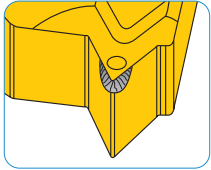
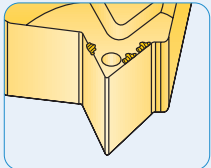
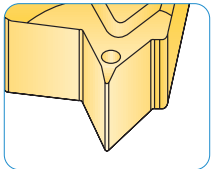
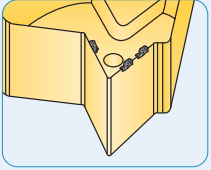
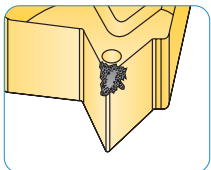
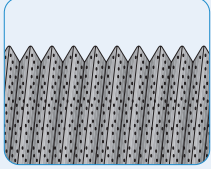
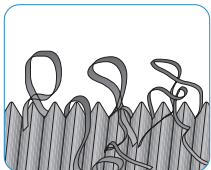
H - Depth of thread profile (on  $\varnothing$ )  
 D - Depth of pass (on  $\varnothing$ )  
 U - Depth of finishing pass (on  $\varnothing$ )

## Infeed Methods for Threading Operations

<p><b>Flank Infeed</b></p>	<p><b>Radial Infeed</b></p>	<p><b>Alternating Flanks Infeed</b></p>
<p><b>Flank Equal</b> Equal depth of cut for each pass</p> <p><math>\frac{D_1}{2} = \frac{D_2}{2} = \frac{D_3}{2} = \frac{D_n}{2}</math></p>	<p><b>Flank Diminishing</b> Diminished depth of cut for each pass</p> <p><math>\frac{D_1}{2} &gt; \frac{D_2}{2} &gt; \frac{D_3}{2} &gt; \frac{D_n}{2} &gt; \frac{D_{n+1}}{2}</math></p>	<p><b>Modified Flank Infeed</b></p>

# THREAD TURNING

## Troubleshooting

Problem	Cause	Solution
 <p><b>Premature Wear</b></p>	<ul style="list-style-type: none"> <li>• Cutting speed too high</li> <li>• Infeed depth too small</li> <li>• Highly abrasive material</li> <li>• Inadequate coolant supply</li> <li>• Wrong inclination anvil</li> <li>• Wrong turned dia. prior to threading</li> <li>• Insert is above center line</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce RPM</li> <li>• Modify flank infeed</li> <li>• Increase depth of cut</li> <li>• Use coated grade</li> <li>• Apply coolant</li> <li>• Reselect anvil</li> <li>• Check turned dia.</li> <li>• Check center height</li> </ul>
 <p><b>Chipped Edge</b></p>	<ul style="list-style-type: none"> <li>• Cutting speed too high</li> <li>• Depth of cut large</li> <li>• Wrong grade</li> <li>• Poor chip control</li> <li>• Inadequate coolant supply</li> <li>• Center height incorrect</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce RPM</li> <li>• Reduce depth of cut</li> <li>• Use coated grade</li> <li>• Use tougher grade</li> <li>• Modify flank infeed</li> <li>• Apply coolant</li> <li>• Adjust center height</li> </ul>
 <p><b>Plastic Deformation</b></p>	<ul style="list-style-type: none"> <li>• Excessive heat in cutting zone</li> <li>• Wrong grade</li> <li>• Inadequate coolant supply</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce RPM</li> <li>• Reduce depth of cut</li> <li>• Check turned dia.</li> <li>• Use coated grade</li> <li>• Use harder grade</li> <li>• Apply coolant</li> </ul>
 <p><b>Built-Up Edge</b></p>	<ul style="list-style-type: none"> <li>• Cutting edge too cold</li> <li>• Wrong grade</li> <li>• Inadequate coolant supply</li> <li>• Cutting edge too cold</li> </ul>	<ul style="list-style-type: none"> <li>• Increase RPM</li> <li>• Increase depth of cut</li> <li>• Use coated grade</li> <li>• Apply coolant</li> </ul>
 <p><b>Broken Nose During 1<sup>st</sup> Pass</b></p>	<ul style="list-style-type: none"> <li>• Depth of cut too large</li> <li>• Wrong grade</li> <li>• Wrong turned dia. prior to threading</li> <li>• Corner height incorrect</li> <li>• Infeed depth too shallow</li> <li>• Wrong inclination anvil</li> <li>• Tool overhang too long</li> </ul>	<ul style="list-style-type: none"> <li>• Increase RPM</li> <li>• Reduce depth of cut</li> <li>• Increase number of infeed passes</li> <li>• Use tougher grade</li> <li>• Check turned dia.</li> <li>• Adjust center height</li> <li>• Modify flank infeed</li> <li>• Re-select anvil</li> <li>• Reduce tool overhang</li> </ul>
 <p><b>Poor Surface Finish</b></p>	<ul style="list-style-type: none"> <li>• Wrong cutting speed</li> <li>• Excessive heat in cutting zone</li> <li>• Poor chip control</li> <li>• Inadequate coolant supply</li> <li>• Wrong inclination anvil</li> <li>• Tool overhang too long</li> <li>• Center height incorrect</li> </ul>	<ul style="list-style-type: none"> <li>• Increase RPM</li> <li>• Reduce RPM</li> <li>• Reduce depth of cut</li> <li>• Modify flank infeed</li> <li>• Apply coolant</li> <li>• Reselect anvil</li> <li>• Reduce tool overhang</li> <li>• Check center height</li> </ul>
 <p><b>Poor Chip Control</b></p>	<ul style="list-style-type: none"> <li>• Excessive heat in cutting zone</li> <li>• Wrong grade</li> <li>• Inadequate coolant supply</li> <li>• Wrong turned dia. prior to threading</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce RPM</li> <li>• Change depth of cut</li> <li>• Check turned dia.</li> <li>• Use coated grade</li> <li>• Check turned dia.</li> <li>• Use M-type insert</li> <li>• Apply coolant</li> <li>• Check turned dia.</li> </ul>

# THREAD MILLING TOOLS



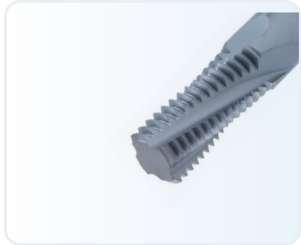
# THREAD MILLING

## SAMTEC Thread

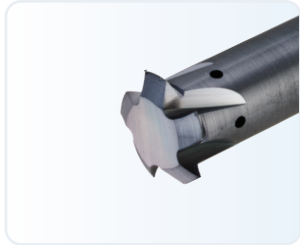
PICTORIAL TOOL REFERENCE



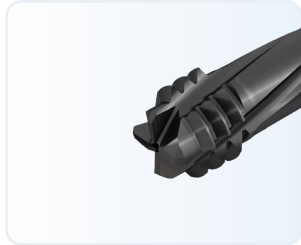
MTECS, MTECSH



MTEC, MTECB,  
MTECZ, MTECQ



MTECI



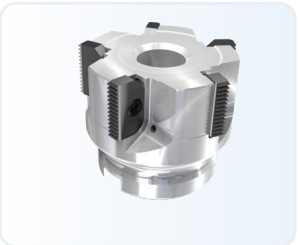
MTECD



MTE



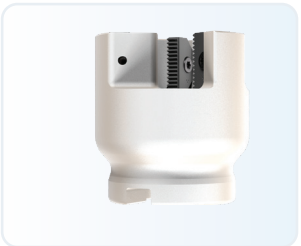
MTSRH



MTF-MULTI



MTSRH



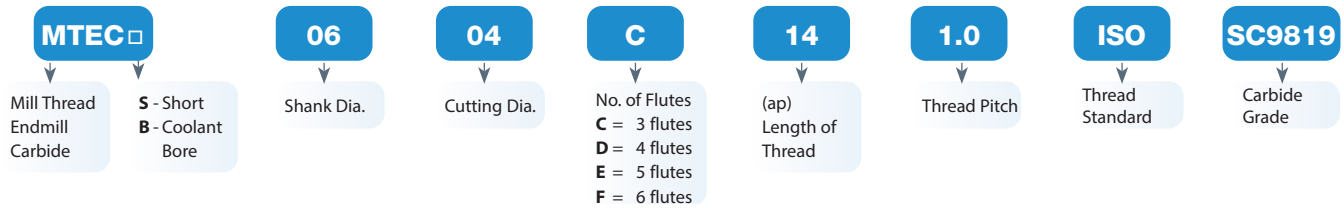
MTFLE

# THREAD MILLING

## Thread Milling Grades

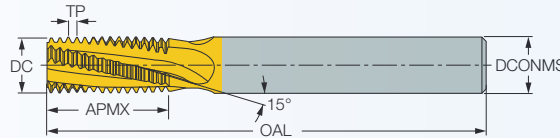
S	C	9			8	9	
		Thread Milling			Constant	Coating	Constant
Coating		Material Group					
1	TiAlN	P15-P30	M20-M30	K20-K40	S15-S30	H20-H30	
2	AlTiN	P05-P15	M10-M15	K05-K15	S05-S10	H05-H15	Al-Tec
3	AlTiN	P10-P20	M15-M25	K10-K20	S10-S20	H10-H20	Al-Tec

### SAMTEC THREAD - Solid Carbide Endmills Designation Code Key



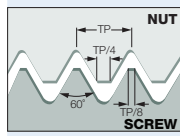
### MTEC-ISO

Solid Carbide Internal Threading Endmills for ISO Thread Profile



### INTERNAL ISO

Application: General engineering



### Dimensions

Designation	TP <sup>(1)</sup>	M Coarse	M Fine	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTEC 06022C5 0.5ISO	0.500	M3	≥4	6.00	2.20	3	5.30	58.00	C	•
MTEC 06038C10 0.5ISO	0.500	-	≥5	6.00	3.80	3	10.30	58.00	C	•
MTEC 06031C7 0.7ISO	0.700	M4	≥5	6.00	3.10	3	7.40	58.00	C	•
MTEC 06045C10 0.75ISO	0.750	-	≥6	6.00	4.50	3	10.00	58.00	C	•
MTEC 06036C9 0.8ISO	0.800	M5	≥6	6.00	3.60	3	9.20	58.00	C	•
MTEC 0604C10 1.0ISO	1.000	M6	≥7	6.00	4.00	3	10.50	58.00	C	•
MTEC 0604C14 1.0ISO	1.000	M6	≥7	6.00	4.00	3	14.50	58.00	C	•
MTEC 0606C12 1.0ISO	1.000	-	≥9	6.00	6.00	3	12.50	58.00	C	•
MTEC 0808D16 1.0ISO	1.000	-	≥10	8.00	8.00	4	16.50	64.00	C	•
MTEC 0605C14 1.25ISO	1.250	M8	≥10	6.00	5.00	3	14.40	58.00	C	•
MTEC 0605C19 1.25ISO	1.250	M8	≥10	6.00	5.00	3	19.40	58.00	C	•
MTEC 0807C17 1.5ISO	1.500	M10	≥12	8.00	7.00	3	17.30	64.00	C	•
MTEC 0807C24 1.5ISO	1.500	M10	≥12	8.00	7.00	3	24.80	76.00	C	•
MTEC 1010D21 1.5ISO	1.500	-	≥14	10.00	10.00	4	21.80	73.00	C	•
MTEC 1616F33 1.5ISO	1.500	-	≥20	16.00	16.00	6	33.80	100.00	C	•
MTEC 0808C20 1.75ISO	1.750	M12	≥14	8.00	8.00	3	20.10	64.00	C	•
MTEC 0808C28 1.75ISO	1.750	M12	≥14	8.00	8.00	3	28.90	76.00	C	•
MTEC 1010C27 2.0ISO	2.000	M14	≥15	10.00	10.00	3	27.00	73.00	C	•
MTEC 1010C39 2.0ISO	2.000	M14	≥15	10.00	10.00	3	39.00	100.00	C	•
MTEC 1212D27 2.0ISO	2.000	-	≥18	12.00	12.00	4	27.00	84.00	C	•
MTEC 2020F41 2.0ISO	2.000	-	≥26	20.00	20.00	6	41.00	105.00	C	•
MTEC 1414D33 2.5ISO	2.500	M20	≥22	14.00	14.00	4	33.80	84.00	C	•
MTEC 1414D48 2.5ISO	2.500	M20	≥22	14.00	14.00	4	48.80	107.00	C	•
MTEC 1616C40 3.0ISO	3.000	M24	≥25	16.00	16.00	3	40.50	100.00	C	•
MTEC 1616C58 3.0ISO	3.000	M24	≥25	16.00	16.00	3	58.50	120.00	C	•

(1) Thread pitch (2) Number of flutes (3) C-Cylindrical

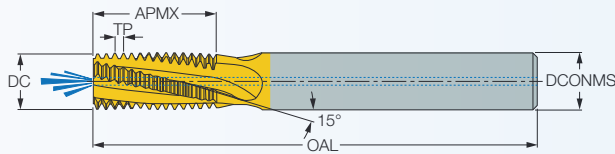


# THREAD MILLING

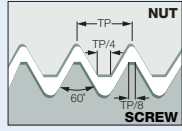
## INTERNAL ISO

### MTECB-ISO

Solid Carbide Internal Threading Endmills with Coolant Holes for ISO Thread Profile



Application: General engineering



### Dimensions

Designation	TP <sup>(1)</sup>	M Coarse	M Fine	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTECB 06038C10 0.5ISO	0.500	-	≥5	6.00	3.80	3	10.30	58.00	C	•
MTECB 06031C7 0.7ISO	0.700	M4	≥5	6.00	3.10	3	7.40	58.00	C	•
MTECB 06045C10 0.75ISO	0.750	-	≥6	6.00	4.50	3	10.10	58.00	C	•
MTECB 1010D24 0.75ISO	0.750	-	≥12	10.00	10.00	4	24.40	73.00	C	•
MTECB 06038C9 0.8ISO	0.800	M5	≥6	6.00	3.80	3	9.20	58.00	C	•
MTECB 06046C10 1.0ISO	1.000	M6	≥7	6.00	4.60	3	10.50	58.00	C	•
MTECB 06046C14 1.0ISO	1.000	M6	≥6	6.00	4.60	3	14.50	58.00	C	•
MTECB 0606C12 1.0ISO	1.000	-	≥9	6.00	6.00	3	12.50	58.00	C	•
MTECB 0808D16 1.0ISO	1.000	-	≥10	8.00	8.00	4	16.50	64.00	C	•
MTECB 1010D24 1.0ISO	1.000	-	≥12	10.00	10.00	4	24.50	73.00	C	•
MTECB 0606C14 1.25ISO	1.250	M8	≥10	6.00	6.00	3	14.40	58.00	C	•
MTECB 0606C19 1.25ISO	1.250	M8	≥10	6.00	6.00	3	19.40	58.00	C	•
MTECB 1212D26 1.5ISO	1.500	-	≥16	12.00	12.00	4	26.30	84.00	C	•
MTECB 08078C17 1.5ISO	1.500	M10	≥12	8.00	7.80	3	17.00	64.00	C	•
MTECB 08078C24 1.5ISO	1.500	M10	≥12	8.00	7.80	3	24.80	76.00	C	•
MTECB 1010D21 1.5ISO	1.500	-	≥14	10.00	10.00	4	21.80	73.00	C	•
MTECB 1616F33 1.5ISO	1.500	-	≥20	16.00	16.00	6	33.80	105.00	C	•
MTECB 1009C20 1.75ISO	1.750	M12	≥12	10.00	9.00	3	20.10	73.00	C	•
MTECB 1009C28 1.75ISO	1.750	M12	≥12	10.00	9.00	3	28.90	73.00	C	•
MTECB 1010C27 2.0ISO	2.000	M14	≥15	10.00	10.00	3	27.00	73.00	C	•
MTECB 12118D27 2.0ISO	2.000	M16	≥17	12.00	11.80	4	27.00	84.00	C	•
MTECB 12118D39 2.0ISO	2.000	M16	≥17	12.00	11.80	4	39.00	105.00	C	•
MTECB 1615E33 2.5ISO	2.500	M20	≥22	16.00	15.00	5	33.80	105.00	C	•
MTECB 1615E48 2.5ISO	2.500	M20	≥22	16.00	15.00	5	48.80	105.00	C	•
MTECB 2018D58 3.0ISO	3.000	M24	≥25	20.00	18.00	4	58.50	120.00	C	•

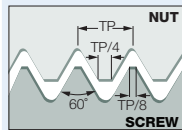
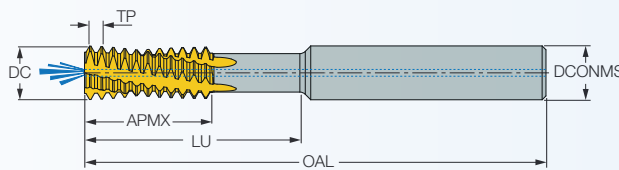
• With internal coolant hole

(1) Thread pitch (2) Number of flutes (3) C-Cylindrical

## INTERNAL ISO

### MTECQ-ISO

Solid Carbide Threading Endmills with Internal Coolant Holes and a Reduced Diameter Neck for Deep Internal ISO Profile



### Dimensions

Designation	TP <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	APMX	LU	OAL	Shank <sup>(3)</sup>	SC9819
MTECQ 1010D32 1.0ISO	1.000	≥12	10.00	10.00	4	18.00	32.0	73.00	C	•
MTECQ 1212D38 1.0ISO	1.000	≥14	12.00	12.00	4	21.00	38.0	84.00	C	•
MTECQ 1010D30 1.5ISO	1.500	≥13	10.00	10.00	4	18.00	30.0	73.00	C	•
MTECQ 2020F60 1.5ISO	1.500	≥24	20.00	20.00	6	36.00	60.0	105.00	C	•
MTECQ 1212D42 2.0ISO	2.000	≥16	12.00	12.00	4	24.00	42.0	84.00	C	•
MTECQ 2020F56 2.0ISO	2.000	≥24	20.00	20.00	6	34.00	56.0	105.00	C	•
MTECQ 2020D45 3.5ISO	3.500	≥26	20.00	20.00	4	28.00	45.5	105.00	C	•

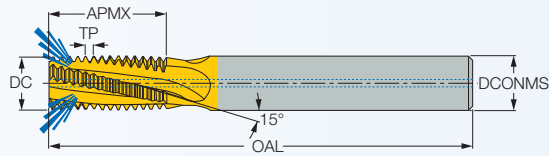
(1) Thread pitch (2) Number of flutes (3) C-Cylindrical

# THREAD MILLING

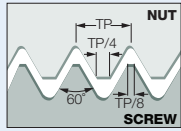
## INTERNAL ISO

### MTECZ-ISO

Solid Carbide Internal Threading  
Endmills with Coolant Holes  
Located in the Flutes



Application: General engineering



### Dimensions

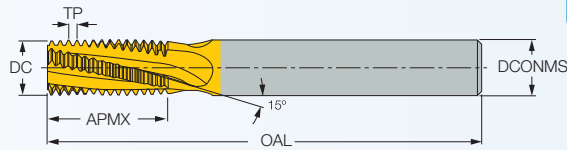
Designation	TP <sup>(1)</sup>	M Coarse	M Fine	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTECZ 06048C10 1.0ISO	1.000	M6	≥7	6.00	4.80	3	10.50	58.00	C	•
MTECZ 0808D16 1.0ISO	1.000	-	≥10	8.00	8.00	4	16.50	64.00	C	•
MTECZ 0606C14 1.25ISO	1.250	M8	≥10	6.00	6.00	3	14.40	58.00	C	•
MTECZ 0606C19 1.25ISO	1.250	M8	≥10	6.00	6.00	3	19.40	58.00	C	•
MTECZ 08078C17 1.5ISO	1.500	M10	≥12	8.00	7.80	3	17.00	64.00	C	•
MTECZ 1010D21 1.5ISO	1.500	-	≥14	10.00	10.00	4	21.80	73.00	C	•
MTECZ 1212D26 1.5ISO	1.500	-	≥16	12.00	12.00	4	26.30	84.00	C	•
MTECZ 1616E33 1.5ISO	1.500	-	≥20	16.00	16.00	5	33.80	101.00	C	•
MTECZ 1009C20 1.75ISO	1.750	M12	≥12	10.00	9.00	3	20.10	73.00	C	•
MTECZ 1009C28 1.75ISO	1.750	M12	≥12	10.00	9.00	3	28.90	73.00	C	•
MTECZ 1010C27 2.0ISO	2.000	M14	≥15	10.00	10.00	3	27.00	73.00	C	•
MTECZ 12118D27 2.0ISO	2.000	M16	≥17	12.00	11.80	4	27.00	84.00	C	•

- With internal coolant hole
- <sup>(1)</sup> Thread pitch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

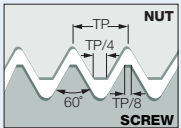
## EXTERNAL ISO

### MTEC E-ISO

Solid Carbide External Threading  
Endmills for ISO Thread Profile



Application: General engineering



### Dimensions

Designation	TP <sup>(1)</sup>	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTEC E 1010D16 1.0ISO	1.000	10.00	10.00	4	16.50	73.00	C	•
MTEC E 1010D16 1.25ISO	1.250	10.00	10.00	4	16.90	73.00	C	•
MTEC E 1010D15 1.5ISO	1.500	10.00	10.00	4	15.80	73.00	C	•
MTEC E 1212D20 1.5ISO	1.500	12.00	12.00	4	20.30	84.00	C	•
MTEC E 1212D20 1.75ISO	1.750	12.00	12.00	4	20.10	84.00	C	•
MTEC E 1010C17 2.0ISO	2.000	10.00	10.00	3	17.00	73.00	C	•
MTEC E 1212D21 2.0ISO	2.000	12.00	12.00	4	21.00	84.00	C	•

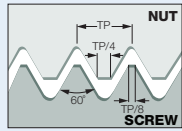
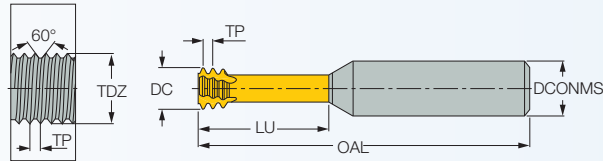
- <sup>(1)</sup> Thread pitch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

# THREAD MILLING

## INTERNAL ISO

### MTECS-ISO

Small Diameter Solid Carbide Threading Endmills for Internal ISO Profile



### Dimensions

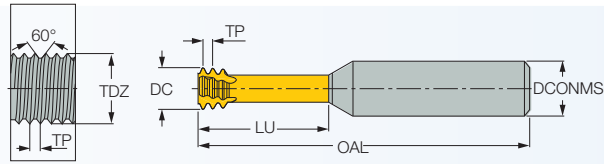
Designation	TP <sup>(2)</sup>	DC	TDZ	DCONMS	NOF <sup>(3)</sup>	LU	OAL	Shank <sup>(4)</sup>	SC9819
MTECS 03007C2 0.25ISO	0.250	0.72	M1	3.00	3	2.5	39.00	C	•
MTECS 03009C3 0.25ISO	0.250	0.90	M1.2	3.00	3	3.0	39.00	C	•
MTECS 03011C4 0.3ISO <sup>(1)</sup>	0.300	1.05	M1.4	3.00	3	4.0	39.00	C	•
MTECS 03012C5 0.35ISO <sup>(1)</sup>	0.350	1.20	M1.6	3.00	3	4.8	39.00	C	•
MTECS 03016C6 0.4ISO <sup>(1)</sup>	0.400	1.53	M2	3.00	3	6.0	39.00	C	•
MTECS 06016C4 0.4ISO	0.400	1.53	M2	6.00	3	4.5	58.00	C	•
MTECS 03017C7 0.45ISO <sup>(1)</sup>	0.450	1.65	M2.2	3.00	3	7.0	39.00	C	•
MTECS 06017C5 0.45ISO	0.450	1.65	M2.2	6.00	3	5.0	58.00	C	•
MTECS 0602C5 0.45ISO	0.450	1.95	M2.5	6.00	3	5.5	58.00	C	•
MTECS 0602C5 0.45ISO-L	0.450	1.95	M2.5	6.00	3	5.5	105.00	C	•
MTECS 0602C7 0.45ISO	0.450	1.95	M2.5	6.00	3	7.5	58.00	C	•
MTECS 06024C6 0.5ISO	0.500	2.37	M3	6.00	3	6.5	58.00	C	•
MTECS 06024C9 0.5ISO	0.500	2.37	M3	6.00	3	9.5	58.00	C	•
MTECS 06024C9 0.5ISO-L	0.500	2.37	M3	6.00	3	9.5	105.00	C	•
MTECS 03024C12 0.5ISO	0.500	2.40	M3	3.00	3	12.5	39.00	C	•
MTECS 03024C15 0.5ISO	0.500	2.40	M3	3.00	3	15.5	39.00	C	•
MTECS 06054D20 0.5ISO	0.500	5.35	M6	6.00	4	20.0	58.00	C	•
MTECS 06028C10 0.6ISO	0.600	2.75	M3.5	6.00	3	10.5	58.00	C	•
MTECS 06028C7 0.6ISO	0.600	2.75	M3.5	6.00	3	7.5	58.00	C	•
MTECS 06031C12 0.7ISO	0.700	3.10	M4	6.00	3	12.5	58.00	C	•
MTECS 06031C120.7ISO-L	0.700	3.10	M4	6.00	3	12.5	105.00	C	•
MTECS 06031C16 0.7ISO	0.700	3.10	M4	6.00	3	16.7	58.00	C	•
MTECS 06031C9 0.7ISO	0.700	3.10	M4	6.00	3	9.0	58.00	C	•
MTECS 0808D25 0.75ISO	0.750	8.00	M10	8.00	4	25.0	64.00	C	•
MTECS 06038C12 0.8ISO	0.800	3.80	M5	6.00	3	12.5	58.00	C	•
MTECS 06038C16 0.8ISO	0.800	3.80	M5	6.00	3	16.0	58.00	C	•
MTECS 06038C160.8ISO-L	0.800	3.80	M5	6.00	3	16.0	105.00	C	•
MTECS 0604C20 0.8ISO	0.800	4.00	M5	6.00	3	20.8	58.00	C	•
MTECS 06047C14 1.0ISO	1.000	4.65	M6	6.00	3	14.0	58.00	C	•
MTECS 06047C20 1.0ISO	1.000	4.65	M6	6.00	3	20.0	58.00	C	•
MTECS 06047C201.0ISO-L	1.000	4.65	M6	6.00	3	20.0	105.00	C	•
MTECS 06048C25 1.0ISO	1.000	4.80	M6	6.00	3	25.0	58.00	C	•
MTECS 0606C18 1.25ISO	1.250	6.00	M8	6.00	3	18.0	58.00	C	•
MTECS 0606C24 1.25ISO	1.250	6.00	M8	6.00	3	24.0	58.00	C	•
MTECS0606C24 1.25ISO-L	1.250	6.00	M8	6.00	3	24.6	100.00	C	•
MTECS 08078C23 1.5ISO	1.500	7.80	M10	8.00	3	23.0	64.00	C	•
MTECS 08078C31 1.5ISO	1.500	7.80	M10	8.00	3	31.5	64.00	C	•
MTECS 1009C26 1.75ISO	1.750	9.00	M12	10.00	3	26.0	73.00	C	•
MTECS 1009C37 1.75ISO	1.750	9.00	M12	10.00	3	37.8	73.00	C	•
MTECS 12118D35 2.0ISO	2.000	11.80	M16	12.00	4	35.0	84.00	C	•
MTECS 12118D50 2.0ISO	2.000	11.80	M16	12.00	4	50.0	100.00	C	•
MTECS 1615E43 2.5ISO	2.500	15.00	M20	16.00	5	43.0	100.00	C	•

<sup>(1)</sup> Specially designed for the production of dental implants <sup>(2)</sup> Thread pitch <sup>(3)</sup> Number of flutes <sup>(4)</sup> C-Cylindrical

# THREAD MILLING

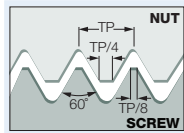
## MTECSH-ISO

Small Diameter Short Left-Hand Cut Solid Carbide Internal ISO Profile Threading Endmills for Hardened Steel



INTERNAL ISO

Left-hand tools (CNC code MD4) • Application: Hardened Material upto 62HRC use this in place of General Engineering



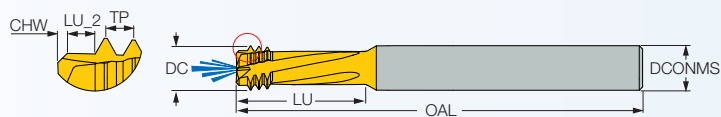
### Dimensions

Designation	TP <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	LU	OAL	Shank <sup>(3)</sup>	SC9839
MTECSH 03011C4 0.3ISO	0.300	M1.4	3.00	1.05	3	4.0	39.00	C	•
MTECSH 03012C5 0.35ISO	0.350	M1.6, M1.8	3.00	1.20	3	4.8	39.00	C	•
MTECSH 03016C6 0.4ISO	0.400	M2	3.00	1.55	3	6.0	39.00	C	•
MTECSH 06016C4 0.4ISO	0.400	M2	6.00	1.55	3	4.5	58.00	C	•
MTECSH 06017C5 0.45ISO	0.450	M2.2	6.00	1.65	3	5.0	58.00	C	•
MTECSH 0602C5 0.45ISO	0.450	M2.5	6.00	1.95	3	5.5	58.00	C	•
MTECSH 0602C7 0.45ISO	0.450	M2.5	6.00	1.95	3	7.5	58.00	C	•
MTECSH 06024C6 0.5ISO	0.500	M3	6.00	2.35	3	6.5	58.00	C	•
MTECSH 06024C9 0.5ISO	0.500	M3	6.00	2.35	3	9.5	58.00	C	•
MTECSH 06028C7 0.6ISO	0.600	M3.5	6.00	2.75	3	7.5	58.00	C	•
MTECSH06028C10 0.6ISO	0.600	M3.5	6.00	2.75	3	10.0	58.00	C	•
MTECSH 06031C9 0.7ISO	0.700	M4	6.00	3.10	3	9.0	58.00	C	•
MTECSH 06031C12 0.7ISO	0.700	M4	6.00	3.10	3	12.5	58.00	C	•
MTECSH 06038C12 0.8ISO	0.800	M5	6.00	3.80	3	12.5	58.00	C	•
MTECSH 06038C16 0.8ISO	0.800	M5	6.00	3.80	3	16.0	58.00	C	•
MTECSH 06047C14 1.0ISO	1.000	M6	6.00	4.65	3	14.0	58.00	C	•
MTECSH 06047C20 1.0ISO	1.000	M6	6.00	4.65	3	20.0	58.00	C	•
MTECSH 0606C18 1.25ISO	1.250	M8	6.00	5.95	3	18.0	58.00	C	•
MTECSH 0606C24 1.25ISO	1.250	M8	6.00	5.95	3	24.0	58.00	C	•
MTECSH 08078C23 1.5ISO	1.500	M10	8.00	7.80	3	23.0	64.00	C	•
MTECSH 1009C26 1.75ISO	1.750	M12	10.00	9.00	3	26.0	73.00	C	•
MTECSH 12118D35 2.0ISO	2.000	M16	12.00	11.80	4	35.0	84.00	C	•

<sup>(1)</sup> Thread pitch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

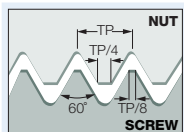
## MTECD-ISO

Small Diameter Short Left-Hand Cut Solid Carbide Endmills for Internal ISO Profile Drilling, Threading and Chamfering



INTERNAL ISO

Left-hand tools (CNC code MD4) • Application: General engineering • Coolant holes only in 1.0-2.0 pitch tools



### Dimensions

Designation	TP <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	LU	OAL	CHW	LU_2	Shank <sup>(3)</sup>	CSP <sup>(4)</sup>	SC9819
MTECD 06032C11 0.7ISO	0.700	M4	6.00	3.15	3	11.6	58.00	0.2	0.7	C	0	•
MTECD 0604C14 0.8ISO	0.800	M5	6.00	4.00	3	14.4	58.00	0.3	0.8	C	0	•
MTECD 08047C14 1.0ISO	1.000	M6-M9	8.00	4.70	3	14.0	64.00	0.4	1.0	C	1	•
MTECD 08061D18 1.25ISO	1.250	M8-M12	8.00	6.10	4	18.0	64.00	0.5	1.3	C	1	•
MTECD 08078D23 1.5ISO	1.500	M10-M15	8.00	7.80	4	23.0	64.00	0.6	1.5	C	1	•
MTECD 1009D26 1.75ISO	1.750	M12	10.00	9.00	4	26.0	73.00	0.6	1.8	C	1	•
MTECD 12118D35 2.0ISO	2.000	M16-M23	12.00	11.80	4	35.0	84.00	0.6	2.0	C	1	•

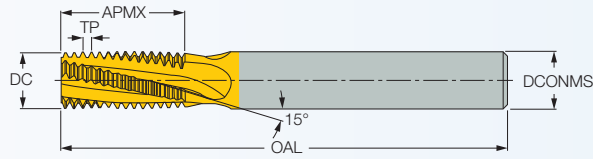
<sup>(1)</sup> Thread pitch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical <sup>(4)</sup> 0 - Without coolant supply, 1 - With coolant supply

# THREAD MILLING

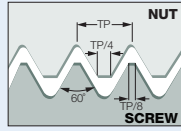
## INTERNAL UN

### MTEC-UN

Solid Carbide Threading Endmills for Internal UN Thread Profile



Application: General engineering



### Dimensions

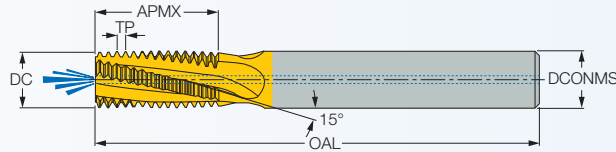
Designation	TPI <sup>(1)</sup>	UNC	UNF	UNEF	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	TP <sup>(4)</sup>	SC9819
MTEC 06025C6 40UN	40.0	5	-	-	6.00	2.50	3	6.00	58.00	C	0.635	●
MTEC 06032C6 32UN	32.0	8	10	12	6.00	3.20	3	6.80	58.00	C	0.794	●
MTEC 0604C11 28UN	28.0	-	7/16,1/2	-	6.00	4.00	3	11.30	58.00	C	0.907	●
MTEC 0606C14 28UN	28.0	-	-	7/16,1/2	6.00	6.00	3	14.50	58.00	C	0.907	●
MTEC 0605C14 24UN	24.0	-	5/16	-	6.00	5.00	3	14.30	58.00	C	1.058	●
MTEC 0807C21 24UN	24.0	-	3/8	9/16,5/8	8.00	7.00	3	20.00	64.00	C	1.058	●
MTEC 06045C12 20UN	20.0	1/4	-	-	6.00	4.50	3	12.10	58.00	C	1.270	●
MTEC 0807C21 20UN	20.0	-	7/16,1/2	-	8.00	7.00	3	20.00	64.00	C	1.270	●
MTEC 1212E27 20UN	20.0	-	-	3/4,1	12.00	12.00	5	27.30	84.00	C	1.270	●
MTEC 0605C14 18UN	18.0	5/16	-	-	6.00	5.00	3	14.80	58.00	C	1.411	●
MTEC 1010D26 18UN	18.0	-	9/16,5/8	1-1/8,1-5/8	10.00	10.00	4	26.10	73.00	C	1.411	●
MTEC 0606C16 16UN	16.0	3/8	-	-	6.00	6.00	3	16.70	58.00	C	1.588	●
MTEC 1212D31 16UN	16.0	-	3/4	-	12.00	12.00	4	30.00	84.00	C	1.588	●
MTEC 1615E37 14UN	14.0	-	7/8	-	16.00	15.00	5	37.20	100.00	C	1.814	●
MTEC 0808C22 13UN	13.0	1/2	-	-	8.00	8.00	3	22.50	64.00	C	1.954	●
MTEC 1010C26 12UN	12.0	9/16	-	-	10.00	10.00	3	26.50	73.00	C	2.117	●
MTEC 1616E41 12UN	12.0	-	1,1-1/2	-	16.00	16.00	5	41.30	100.00	C	2.117	●
MTEC 1010C28 11UN	11.0	5/8	-	-	10.00	10.00	3	28.90	73.00	C	2.309	●
MTEC 1212C34 10UN	10.0	3/4	-	-	12.00	12.00	3	34.30	84.00	C	2.540	●
MTEC 1615C38 9UN	9.0	7/8	-	-	16.00	15.00	3	38.10	100.00	C	2.822	●
MTEC 1616C42 8UN	8.0	1.0	-	-	16.00	16.00	3	42.90	100.00	C	3.175	●

(1) Threads per inch (2) Number of flutes (3) C-Cylindrical (4) Thread pitch

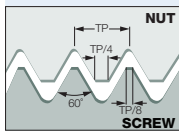
## INTERNAL UN

### MTECB-UN

Solid Carbide Threading Endmills with Coolant Holes for Internal UN Thread Profile



Application: General engineering



### Dimensions

Designation	TPI <sup>(1)</sup>	UNC	UNF	UNEF	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	TP <sup>(4)</sup>	SC9819
MTECB 06032C6 32UN	32.0	8	10	12	6.00	3.20	3	6.80	58.00	C	0.794	●
MTECB 0606C14 32UN	32.0	-	-	7/16-1/2	6.00	6.00	3	16.00	58.00	C	0.794	●
MTECB 0808D18 32UN	32.0	-	-	3/8	8.00	8.00	4	18.70	64.00	C	0.794	●
MTECB 0605C11 28UN	28.0	-	1/4	-	6.00	5.00	3	11.30	58.00	C	0.907	●
MTECB 08066C14 24UN	24.0	-	5/16	-	8.00	6.60	3	14.30	64.00	C	1.058	●
MTECB 0808D21 24UN	24.0	-	-	9/16-5/8	8.00	8.00	4	20.60	64.00	C	1.058	●
MTECB 0808C21 20UN	20.0	-	7/16	-	8.00	8.00	3	21.00	64.00	C	1.270	●
MTECB 1010D22 20UN	20.0	-	1/2	-	10.00	10.00	4	22.30	73.00	C	1.270	●
MTECB 06056C14 18UN	18.0	5/16	-	-	6.00	5.60	3	14.80	58.00	C	1.411	●
MTECB 12113D26 18UN	18.0	-	9/16-5/8	1-1/8_1-5/8	12.00	11.30	4	26.10	84.00	C	1.411	●
MTECB 08067C16 16UN	16.0	3/8	-	-	8.00	6.70	3	16.70	64.00	C	1.588	●
MTECB 1212D31 16UN	16.0	-	3/4	-	12.00	12.00	4	31.00	84.00	C	1.588	●
MTECB 1616E37 14UN	14.0	-	7/8	-	16.00	16.00	5	37.20	105.00	C	1.814	●
MTECB 10092C22 13UN	13.0	1/2	-	-	10.00	9.20	3	22.50	73.00	C	1.954	●
MTECB 12114C28 11UN	11.0	5/8	-	-	12.00	11.40	3	28.90	84.00	C	2.309	●
MTECB 16144D34 10UN	10.0	3/4	-	-	16.00	14.40	4	34.30	105.00	C	2.540	●
MTECB 20195D42 8UN	8.0	1	-	-	20.00	19.50	4	42.90	105.00	C	3.175	●

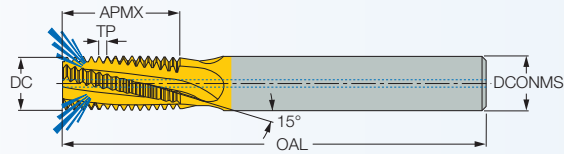
(1) Threads per inch (2) Number of flutes (3) C-Cylindrical (4) Thread pitch

# THREAD MILLING

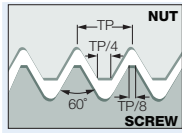
## INTERNAL UN

### MTECZ-UN

Solid Carbide Threading Endmills with Coolant Holes Located in the Flutes for Internal UN Thread Profile



Application: General engineering



### Dimensions

Designation	TPI <sup>(1)</sup>	UNC	UNF	UNEF	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	TP <sup>(4)</sup>	SC9819
MTECZ 1010D22 20UN	20.0	-	1/2	-	10.00	10.00	4	22.30	73.00	C	1.270	•
MTECZ 12113D26 18UN	18.0	-	9/16-5/8	1_1/8-1_5/8	12.00	11.30	4	26.10	84.00	C	1.411	•
MTECZ 08067C16 16UN	16.0	3/8	-	-	8.00	6.70	3	16.70	64.00	C	1.588	•
MTECZ 10092C22 13UN	13.0	1/2	-	-	10.00	9.20	3	22.50	73.00	C	1.954	•
MTECZ 16144D34 10UN	10.0	3/4	-	-	16.00	14.40	4	34.30	101.00	C	2.540	•

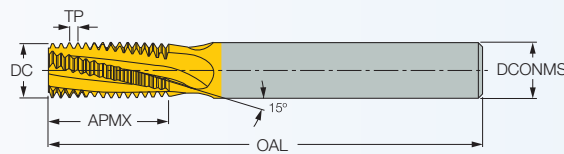
• With internal coolant hole

(1) Threads per inch (2) Number of flutes (3) C-Cylindrical (4) Thread pitch

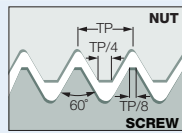
## EXTERNAL UN

### MTEC E-UN

Solid Carbide Threading Endmills with UN Form for External Threading



Application: General engineering



### Dimensions

Designation	TPI <sup>(1)</sup>	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTEC E 1010D16 24UN	24.0	10.00	10.00	4	16.40	73.00	C	•
MTEC E 1212E21 20UN	20.0	12.00	12.00	5	21.00	84.00	C	•
MTEC E 1212D20 12UN	12.0	12.00	12.00	4	20.10	84.00	C	•

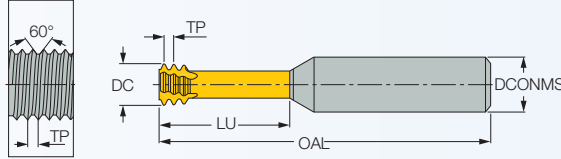
(1) Threads per inch (2) Number of flutes (3) C-Cylindrical

# THREAD MILLING

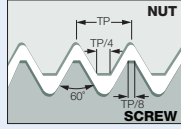
## UN PROFILE THREADING

### MTECS-UN

Small Diameter Solid Carbide UN Profile Threading Endmills for Steel



Application: General engineering



### Dimensions

Designation	TPI <sup>(2)</sup>	UNC	UNF	DCONMS	DC	NOF <sup>(3)</sup>	LU	OAL	Shank <sup>(4)</sup>	TP <sup>(5)</sup>	SC9819
MTECS 03012C8 80UN	80.0	-	0	3.00	1.15	3	8.0	39.00	C	0.318	•
MTECS 03015C6 72UN <sup>(1)</sup>	72.0	-	1	3.00	1.45	3	6.0	39.00	C	0.353	•
MTECS 03016C6 56UN	56.0	2	3	3.00	1.65	3	6.6	39.00	C	0.454	•
MTECS 03016C9 56UN	56.0	2	3	3.00	1.65	3	9.2	39.00	C	0.454	•
MTECS 03016C11 56UN	56.0	2	3	3.00	1.65	3	11.4	39.00	C	0.454	•
MTECS 06016C4 56UN	56.0	2	3	6.00	1.65	3	4.4	58.00	C	0.454	•
MTECS 06016C6 56UN	56.0	2	3	6.00	1.65	3	6.6	58.00	C	0.454	•
MTECS 06019C5 48UN	48.0	3	4	6.00	1.90	3	5.2	58.00	C	0.529	•
MTECS 03021C8 40UN	40.0	4	-	3.00	2.10	3	8.0	39.00	C	0.635	•
MTECS 03021C12 40UN	40.0	4	-	3.00	2.10	3	12.0	39.00	C	0.635	•
MTECS 06021C8 40UN	40.0	4	-	6.00	2.10	3	8.0	58.00	C	0.635	•
MTECS 06024C9 40UN	40.0	5	6	6.00	2.45	3	9.6	58.00	C	0.635	•
MTECS 06021C6 40UN	40.0	4	-	6.00	2.10	3	6.3	58.00	C	0.635	•
MTECS 06033C9 36UN	36.0	-	8	6.00	3.30	3	9.0	58.00	C	0.706	•
MTECS 06025C7 32UN	32.0	6	-	6.00	2.55	3	7.1	58.00	C	0.794	•
MTECS 06025C10 32UN	32.0	6	-	6.00	2.55	3	10.5	58.00	C	0.794	•
MTECS 06025C10 32UN-L	32.0	6	-	6.00	2.55	3	10.5	105.00	C	0.794	•
MTECS 06032C9 32UN	32.0	8	10	6.00	3.20	3	9.5	58.00	C	0.794	•
MTECS 06032C12 32UN	32.0	8	10	6.00	3.20	3	12.5	58.00	C	0.794	•
MTECS 06037C10 32UN	32.0	-	10	6.00	3.70	3	10.5	58.00	C	0.794	•
MTECS 06037C15 32UN	32.0	-	10	6.00	3.70	3	15.0	58.00	C	0.794	•
MTECS 06037C15 32UN-L	32.0	-	10	6.00	3.70	3	15.0	101.00	C	0.794	•
MTECS 06042C11 28UN	28.0	-	12	6.00	4.20	3	11.0	58.00	C	0.907	•
MTECS 0605C14 28UN	28.0	-	1/4	6.00	5.00	3	14.5	58.00	C	0.907	•
MTECS 0605C19 28UN	28.0	-	1/4	6.00	5.00	3	19.0	58.00	C	0.907	•
MTECS 06035C10 24UN	24.0	10,12	-	6.00	3.50	3	10.6	58.00	C	1.058	•
MTECS 06035C15 24UN	24.0	10,12	-	6.00	3.50	3	15.5	58.00	C	1.058	•
MTECS 08066C17 24UN	24.0	-	5/16	8.00	6.60	3	17.0	64.00	C	1.058	•
MTECS 08066C24 24UN	24.0	-	5/16	8.00	6.60	3	24.0	64.00	C	1.058	•
MTECS 06047C14 20UN	20.0	1/4	-	6.00	4.75	3	14.0	58.00	C	1.270	•
MTECS 06047C19 20UN	20.0	1/4	-	6.00	4.75	3	19.0	58.00	C	1.270	•
MTECS 06047C19 20UN-L	20.0	1/4	-	6.00	4.75	3	19.0	100.00	C	1.270	•
MTECS 0808C25 20UN	20.0	-	7/16	8.00	8.00	3	25.0	64.00	C	1.270	•
MTECS 0808C34 20UN	20.0	-	7/16	8.00	8.00	3	34.6	64.00	C	1.270	•
MTECS 0606C17 18UN	18.0	5/16	-	6.00	6.00	3	17.0	58.00	C	1.411	•
MTECS 0606C23 18UN	18.0	5/16	-	6.00	6.00	3	23.0	58.00	C	1.411	•
MTECS 1212D35 18UN	18.0	-	5/8	12.00	12.00	4	35.0	84.00	C	1.411	•
MTECS 08067C22 16UN	16.0	3/8	-	8.00	6.70	3	22.0	64.00	C	1.588	•
MTECS 08067C30 16UN	16.0	3/8	-	8.00	6.70	3	30.2	64.00	C	1.588	•
MTECS 08077C25 14UN	14.0	7/16	-	8.00	7.70	3	25.0	64.00	C	1.814	•
MTECS 08077C35 14UN	14.0	7/16	-	8.00	7.70	3	35.2	64.00	C	1.814	•
MTECS 10092C27 13UN	13.0	1/2	-	10.00	9.20	3	27.5	73.00	C	1.954	•
MTECS 12114C34 11UN	11.0	5/8	-	12.00	11.40	3	34.5	84.00	C	2.309	•
MTECS 12114C50 11UN	11.0	5/8	-	12.00	11.40	3	50.0	101.00	C	2.309	•

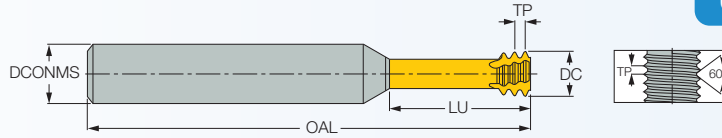
<sup>(1)</sup> Specially designed for the production of dental implants <sup>(2)</sup> Threads per inch <sup>(3)</sup> Number of flutes <sup>(4)</sup> C-Cylindrical <sup>(5)</sup> Thread pitch

# THREAD MILLING

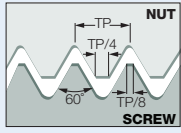
## UN PROFILE THREADING

### MTECSH-UN

Small Diameter Short Left-Hand Cut Solid Carbide UN Profile Threading Endmills for Hardened Steel



Left-hand tools (CNC code M04) • Application: Hardened Material upto 62Hrc use this in place of General Engineering



### Dimensions

Designation	TPI <sup>(1)</sup>	UNC	UNF	DCONMS	DC	NOF <sup>(2)</sup>	OAL	LU	Shank <sup>(3)</sup>	TP <sup>(4)</sup>	SC9839
MTECSH 03015C6 72UN	72.0	-	1	3.00	1.45	3	39.00	6.0	C	0.353	•
MTECSH 06012C4 80UN	80.0	-	0	6.00	1.15	3	58.00	4.0	C	0.318	•
MTECSH 06016C6 56UN	56.0	2	3	6.00	1.65	3	58.00	6.6	C	0.454	•
MTECSH 06019C5 48UN	48.0	3	4	6.00	1.90	3	58.00	5.2	C	0.529	•
MTECSH 06021C6 40UN	40.0	4	-	6.00	2.10	3	58.00	6.3	C	0.635	•
MTECSH 06024C7 40UN	40.0	5	6	6.00	2.45	3	58.00	7.0	C	0.635	•
MTECSH 06021C8 40UN	40.0	4	-	6.00	2.10	3	58.00	8.0	C	0.635	•
MTECSH 06024C9 40UN	40.0	5	6	6.00	2.45	3	58.00	9.6	C	0.635	•
MTECSH 06025C10 32UN	32.0	6	-	6.00	2.55	3	58.00	10.5	C	0.794	•
MTECSH 06032C9 32UN	32.0	8	-	6.00	3.20	3	58.00	9.5	C	0.794	•
MTECSH 06037C10 32UN	32.0	-	10	6.00	3.70	3	58.00	10.5	C	0.794	•
MTECSH 06032C12 32UN	32.0	8	-	6.00	3.20	3	58.00	12.5	C	0.794	•
MTECSH 06037C15 32UN	32.0	-	10	6.00	3.70	3	58.00	15.0	C	0.794	•
MTECSH 06042C11 28UN	28.0	-	12	6.00	4.20	3	58.00	11.0	C	0.907	•
MTECSH 0605C14 28UN	28.0	-	1/4	6.00	5.00	3	58.00	14.5	C	0.907	•
MTECSH 0605C19 28UN	28.0	-	1/4	6.00	5.00	3	58.00	19.0	C	0.907	•
MTECSH 06035C10 24UN	24.0	10,12	-	6.00	3.50	3	58.00	10.6	C	1.058	•
MTECSH 08066C17 24UN	24.0	-	5/16	8.00	6.60	3	64.00	17.0	C	1.058	•
MTECSH 08066C24 24UN	24.0	-	5/16	8.00	6.60	3	64.00	24.0	C	1.058	•
MTECSH 06047C14 20UN	20.0	1/4	-	6.00	4.75	3	58.00	14.0	C	1.270	•
MTECSH 06047C19 20UN	20.0	1/4	-	6.00	4.75	3	58.00	19.0	C	1.270	•
MTECSH 0808C25 20UN	20.0	-	7/16	8.00	8.00	3	64.00	25.0	C	1.270	•
MTECSH 0606C17 18UN	18.0	5/16	-	6.00	6.00	3	58.00	17.0	C	1.411	•
MTECSH 0606C23 18UN	18.0	5/16	-	6.00	6.00	3	58.00	23.0	C	1.411	•
MTECSH 08067C22 16UN	16.0	3/8	-	8.00	6.70	3	64.00	22.0	C	1.588	•
MTECSH 08077C25 14UN	14.0	7/16	-	8.00	7.70	3	64.00	25.0	C	1.814	•
MTECSH 10092C27 13UN	13.0	1/2	-	10.00	9.20	3	73.00	27.5	C	1.954	•
MTECSH 12114C34 11UN	11.0	5/8	-	12.00	11.40	3	84.00	34.5	C	2.309	•

(1) Threads per inch (2) Number of flutes (3) C-Cylindrical (4) Thread pitch

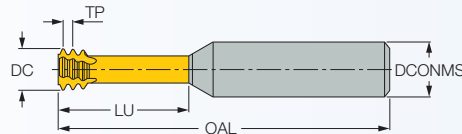
## Cutting Data for Hardened Steel

ISO	Material	Hardness HRC	Cutting Speed m/min	Feed (mm/tooth) for Cutting Diameter (mm)								
				1.5	2	3	4	5	6	7	8	9
H	Hardened Steels	45-50	60-70	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08
		51-55	50-60	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07
		56-62	40-50	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06

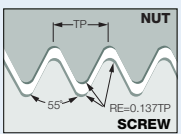
## EXTERNAL/INTERNAL BSP/BSF

### MTECS-W

Short Solid Carbide Threading Endmills for Internal or External BSP and BSF Thread Profiles



Application: General engineering fittings and pipe couplings



### Dimensions

Designation	TPI <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	OAL	Shank <sup>(3)</sup>	LU	SC9819
MTECS 08078C19 28W	28.0	G 1/8	8.00	7.80	3	64.00	C	19.5	•
MTECS 1010D30 19W	19.0	G 1/4-3/8	10.00	10.00	4	73.00	C	30.0	•
MTECS 1212D37 14W	14.0	G 1/2-7/8	12.00	12.00	4	84.00	C	37.0	•
MTECS 1616D44 11W	11.0	G>1	16.00	16.00	4	105.00	C	44.0	•

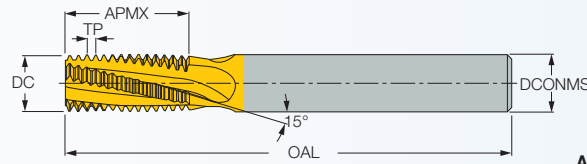
(1) Threads per inch (2) Number of flutes (3) C-Cylindrical



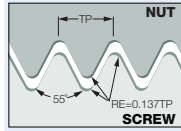
# THREAD MILLING

## EXTERNAL/INTERNAL BSP/BSF

**MTEC-W**  
Solid Carbide Threading  
Endmills for Internal or  
External BSP Thread Profile



**Application:** General engineering fittings and pipe couplings



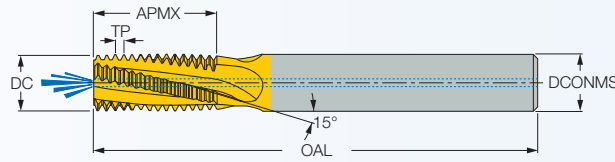
### Dimensions

Designation	TPI <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTEC 0606C9 28W	28.0	G1/8	6.00	6.00	3	9.50	58.00	C	•
MTEC 0808C14 19W	19.0	G1/4,G3/8	8.00	8.00	3	14.00	64.00	C	•
MTEC 1212D19 14W	14.0	G1/2,G7/8	12.00	12.00	4	19.30	84.00	C	•
MTEC 1212D26 14W	14.0	G1/2,G7/8	12.00	12.00	4	26.30	84.00	C	•
MTEC 1212C24 11W	11.0	G1,-G1-1/2	12.00	12.00	3	24.20	84.00	C	•
MTEC 1616D38 11W	11.0	G1,G3	16.00	16.00	4	38.10	101.00	C	•

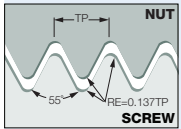
<sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

## EXTERNAL BSP

**MTECB-W**  
Solid Carbide Internal or External  
Threading Endmills with Coolant  
Holes for BSP Thread Profile



**Application:** General engineering fittings and pipe couplings



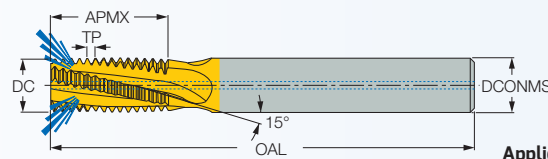
### Dimensions

Designation	TPI <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTECB 08078C14 28W	28.0	G1/8	8.00	7.80	3	14.10	64.00	C	•
MTECB 1010D16 19W	19.0	G1/4-3/8	10.00	10.00	4	16.70	73.00	C	•
MTECB 1616E26 14W	14.0	G1/2-7/8	16.00	16.00	5	26.30	105.00	C	•
MTECB 1616D38 11W	11.0	G≥1	16.00	16.00	4	38.10	105.00	C	•
MTECB 2020E47 11W	11.0	G≥1	20.00	20.00	5	47.30	105.00	C	•

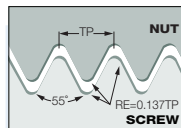
<sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

## EXTERNAL BSF/BSF

**MTECZ-BSF/BSF**  
Solid Carbide Threading Endmills  
with Coolant Holes Located  
in the Flutes for Internal or  
External BSF/BSF Thread



**Application:** General engineering fittings and pipe couplings



### Dimensions

Designation	TPI <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTECZ 08078C14 28W	28.0	G1/8	8.00	7.80	3	14.10	64.00	C	•
MTECZ 1010D16 19W	19.0	G1/4-3/8	10.00	10.00	4	16.70	73.00	C	•
MTECZ 1616E26 14W	14.0	G1/2-7/8	16.00	16.00	5	26.30	101.00	C	•
MTECZ 1616D38 11W	11.0	G>1	16.00	16.00	4	38.10	101.00	C	•

• With internal coolant hole

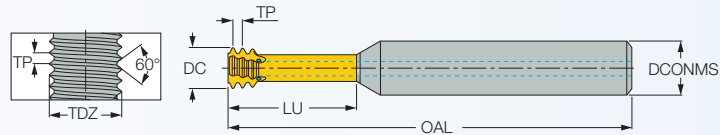
<sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

# THREAD MILLING

## MJ THREADING

### MTECS-MJ

Small Diameter Short Solid Carbide  
MJ-Type Profile Threading Endmills



Aerospace and automotive industries, for applications requiring high fatigue strength

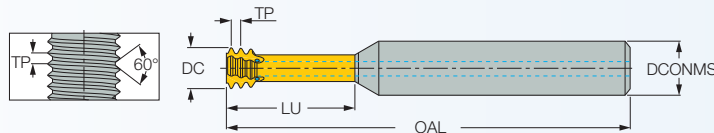
Designation	Dimensions									SC9819
	TP <sup>(2)</sup>	TDZ	DCONMS	DC	NOF <sup>(3)</sup>	LU	OAL	Shank <sup>(4)</sup>	CSP <sup>(5)</sup>	
MTECS 06032C10 0.7MJ <sup>(1)</sup>	0.700	MJ4	6.00	3.20	3	10.0	58.00	C	0	●
MTECS 06039C12 0.8MJ <sup>(1)</sup>	0.800	MJ5	6.00	3.90	3	12.5	58.00	C	0	●
MTECS 06048C15 1.0MJ <sup>(1)</sup>	1.000	MJ6	6.00	4.80	3	15.0	58.00	C	0	●
MTECS 08061C20 1.25MJ	1.250	MJ8	8.00	6.10	3	20.0	64.00	C	1	●
MTECS 0808C25 1.5MJ	1.500	MJ10	8.00	8.00	3	25.0	64.00	C	1	●
MTECS 10092C30 1.75MJ	1.750	MJ12	10.00	9.20	3	30.0	73.00	C	1	●
MTECS 1010C35 2.0MJ	2.000	MJ14, MJ16	10.00	10.00	3	35.0	73.00	C	1	●

<sup>(1)</sup> Without coolant holes <sup>(2)</sup> Thread pitch <sup>(3)</sup> Number of flutes <sup>(4)</sup> C-Cylindrical <sup>(5)</sup> 0 - Without coolant supply, 1 - With coolant supply

## UNJ THREADING

### MTECS-UNJ

Small Diameter Short Solid Carbide  
UNJ-Type Profile Threading Endmills



Aerospace and automotive industries, for applications requiring high fatigue strength

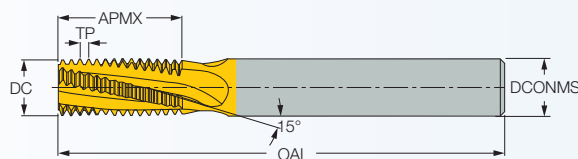
Designation	Dimensions									SC9819
	TPI <sup>(2)</sup>	UNJC	UNJF	DCONMS	DC	NOF <sup>(3)</sup>	LU	OAL	Shank <sup>(4)</sup>	
MTECS 06033C10 32UNJ <sup>(1)</sup>	32.0	8	10	6.00	3.30	3	10.5	58.00	C	●
MTECS 08051C16 28UNJ	28.0	-	1/4	8.00	5.10	3	16.0	64.00	C	●
MTECS 08067C20 24UNJ	24.0	-	5/16, 3/8	8.00	6.70	3	20.0	64.00	C	●
MTECS 06049C16 20UNJ <sup>(1)</sup>	20.0	1/4	-	6.00	4.90	3	16.0	58.00	C	●
MTECS 0808C28 20UNJ	20.0	-	7/16	8.00	8.00	3	28.0	64.00	C	●
MTECS 08061C20 18UNJ	18.0	5/16	9/16	8.00	6.15	3	20.0	64.00	C	●
MTECS 08069C24 16UNJ	16.0	3/8	-	8.00	6.90	3	24.0	64.00	C	●
MTECS 10094C27 13UNJ	13.0	1/2	-	10.00	9.40	3	27.5	73.00	C	●

<sup>(1)</sup> Without coolant holes <sup>(2)</sup> Threads per inch <sup>(3)</sup> Number of flutes <sup>(4)</sup> C-Cylindrical

## EXTERNAL / INTERNAL BSPT

### MTEC-BSPT

Solid Carbide Threading  
Endmills for External or  
Internal BSPT Thread Profile



Application: General engineering fittings and pipe couplings

Designation	Dimensions								SC9819
	TPI <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	
MTEC 0606C9 28BSPT	28.0	RC1/8	6.00	5.40	3	8.16	57.00	C	●
MTEC 0808C14 19BSPT	19.0	RC1/4, RC3/8	8.00	7.16	3	12.03	64.00	C	●
MTEC 1212D19 14BSPT	14.0	RC1/2, RC7/8	12.00	10.88	4	16.33	84.00	C	●
MTEC 1616D28 11BSPT	11.0	RC1, RC2	16.00	14.17	4	25.40	101.00	C	●

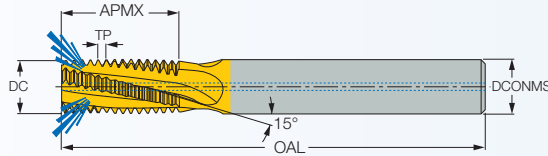
<sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

# THREAD MILLING

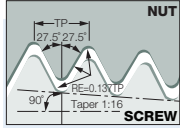
## EXTERNAL/INTERNAL BSPT

### MTECZ-BSPT

Solid Carbide Threading Endmills with Coolant Holes Located in the Flutes, for Internal or External BSPT Thread Profile



Application: General engineering fittings and pipe couplings



### Dimensions

Designation	TPI <sup>(1)</sup>	BSPT	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	TP <sup>(4)</sup>	SC9819
MTECZ 08078C14 28BSPT	28.0	RC1/8	8.00	7.80	3	14.10	64.00	C	0.907	•
MTECZ 1010D16 19BSPT	19.0	RC1/4-3/8	10.00	10.00	4	16.70	73.00	C	1.337	•
MTECZ 1616D28 11BSPT	11.0	RC1-2	16.00	16.00	4	28.90	101.00	C	2.309	•

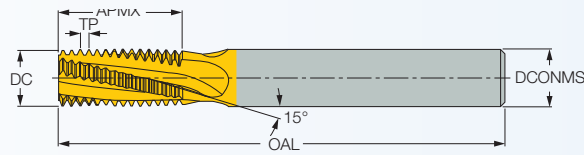
• With internal coolant hole

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical <sup>(4)</sup> Thread pitch

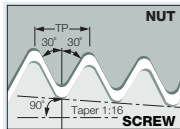
## EXTERNAL/INTERNAL NPT

### MTEC-NPT

Solid Carbide Threading Endmills for External or Internal NPT Thread Profile



Application: Steam, gas and water pipes



### Dimensions

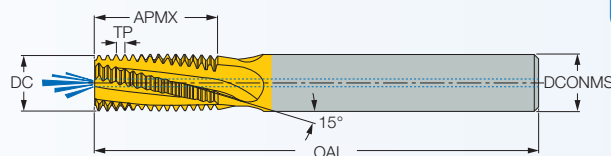
Designation	TPI <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTEC 0606C9 27NPT	27.0	1/16, 1/8	6.00	5.36	3	9.90	58.00	C	•
MTEC 0808C14 18NPT	18.0	1/4, 3/8	8.00	7.12	3	14.80	64.00	C	•
MTEC 1212D20 14NPT	14.0	1/2, 3/4	12.00	10.77	4	20.90	84.00	C	•
MTEC 1616D27 11.5NPT	11.5	1, 2	16.00	14.24	4	27.60	101.00	C	•
MTEC 2020D39 8NPT	8.0	≥2-1/2	20.00	20.00	4	39.70	105.00	C	•

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

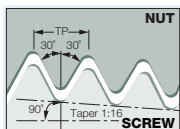
## EXTERNAL/INTERNAL NPT

### MTECB-NPT

Solid Carbide Threading Endmills with Coolant Holes for External or Internal NPT Thread Profile



Application: Steam, gas and water pipes



### Dimensions

Designation	TPI <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTECB 08076C10 27NPT	27.0	1/8	8.00	7.60	3	10.80	64.00	C	•
MTECB 1010D16 18NPT	18.0	1/4, 3/8	10.00	10.00	4	16.20	73.00	C	•
MTECB 16155D22 14NPT	14.0	1/2, 3/4	16.00	15.50	4	22.70	105.00	C	•

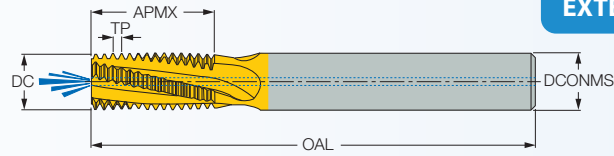
<sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

# THREAD MILLING

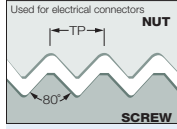
## EXTERNAL/ INTERNAL PG FULL PROFILE

### MTECB-PG

Solid Carbide Threading Endmills with Coolant Holes, for External and Internal PG Full Profile (DIN 40430)



Application: Electrical connectors



### Dimensions

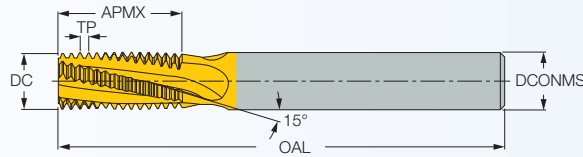
Designation	TPI <sup>(1)</sup>	THOD	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	TP <sup>(4)</sup>	SC9819
MTECB 1212D20 18PG	18.0	Pg 9, 11, 13.5, 16	12.00	12.00	4	20.50	84.00	C	1.411	•
MTECB 1212D23 16PG	16.0	Pg 21, 29,36, 42, 48	12.00	12.00	4	23.00	84.00	C	1.588	•

- With internal coolant hole
- <sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical <sup>(4)</sup> Thread pitch

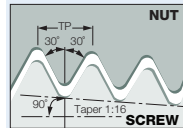
## EXTERNAL/ INTERNAL NPTF

### MTEC-NPTF

Solid Carbide Threading Endmills for External or Internal NPTF Thread Profile



Application: Steam, gas and water pipes



### Dimensions

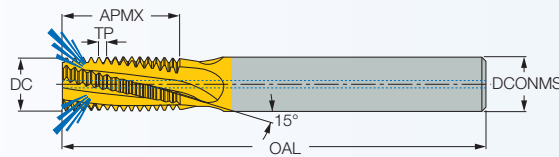
Designation	TPI <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTEC 0606C9 27NPTF	27.0	1/16,1/8	6.00	6.00	3	9.90	58.00	C	•
MTEC 0808C14 18NPTF	18.0	1/4,3/8	8.00	8.00	3	14.80	64.00	C	•
MTEC 1212D20 14NPTF	14.0	1/2,3/4	12.00	12.00	4	20.90	84.00	C	•

- <sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

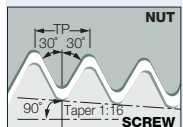
## EXTERNAL/ INTERNAL NPTF

### MTECZ-NPTF

Solid Carbide Threading Endmills with Coolant Holes Located in the Flutes for Internal or External NPTF Thread Profile



Application: General engineering fittings and pipe couplings



### Dimensions

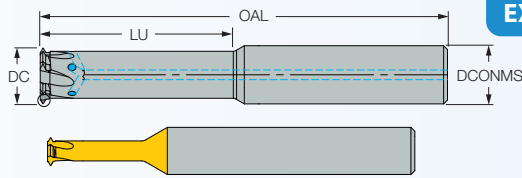
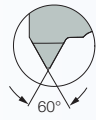
Designation	TPI <sup>(1)</sup>	TDZ	DCONMS	DC	NOF <sup>(2)</sup>	APMX	OAL	Shank <sup>(3)</sup>	SC9819
MTECZ 08076C10 27NPTF	27.0	1/8	8.00	7.60	3	10.80	64.00	C	•
MTECZ 1010D16 18NPTF	18.0	1/4-3/8	10.00	10.00	4	16.20	73.00	C	•

- <sup>(1)</sup> Threads per inch <sup>(2)</sup> Number of flutes <sup>(3)</sup> C-Cylindrical

# THREAD MILLING

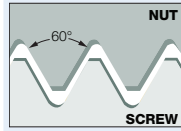
## MTECI-A60

60° Partial Profile Solid Carbide Thread Mills for Internal and External Threads



### EXTERNAL / INTERNAL 60° PARTIAL

Application: General engineering



#### Dimensions

Designation	TPN <sup>(1)</sup>	TPX <sup>(2)</sup>	TPN <sub>DF2</sub> <sup>(3)</sup>	TPX <sub>DF2</sub> <sup>(4)</sup>	TPIN <sup>(5)</sup>	TPIX <sup>(6)</sup>	TPIN <sub>DF2</sub> <sup>(7)</sup>	TPIX <sub>DF2</sub> <sup>(8)</sup>	Th	DCONMS	DC	NOF <sup>(9)</sup>	LU	OAL	Shank <sup>(10)</sup>	CSP <sup>(11)</sup>	SC9819
MTECI 03024C7 A60	0.500	0.800	0.500	0.800	32.00	48.00	32.00	48.00	(a)	3.00	2.40	3	7.1	38.00	C	0	•
MTECI 06032C9 A60	0.500	1.000	0.500	1.000	24.00	48.00	24.00	48.00	(a)	6.00	3.20	3	9.5	57.00	C	0	•
MTECI 0604C12 A60	0.500	1.000	0.500	1.000	24.00	48.00	24.00	48.00	(a)	6.00	4.00	3	12.5	58.00	C	0	•
MTECI 0605D20 A60	0.500	0.800	0.400	0.800	28.00	56.00	32.00	64.00	≥6	6.00	5.00	4	20.0	58.00	C	1	•
MTECI 0808D28 A60	0.500	0.800	0.400	0.800	28.00	56.00	32.00	64.00	≥9	8.00	8.00	4	28.0	64.00	C	1	•
MTECI 0808D30 A60	1.000	1.750	0.800	1.500	14.00	28.00	16.00	32.00	≥10	8.00	8.00	4	30.0	64.00	C	1	•
MTECI 1010D35 A60	1.000	1.750	0.800	1.500	14.00	28.00	16.00	32.00	≥12	10.00	10.00	4	35.0	73.00	C	1	•
MTECI 1212E39 A60	1.000	1.750	0.800	1.500	14.00	28.00	16.00	32.00	≥14	12.00	12.00	5	39.0	84.00	C	1	•
MTECI 1212E40 A60	2.000	3.000	1.750	2.500	8.00	13.00	10.00	15.00	≥16	12.00	12.00	5	40.0	84.00	C	1	•
MTECI 1614E45 A60	2.000	3.000	1.750	2.500	8.00	13.00	10.00	15.00	≥18	16.00	14.00	5	45.0	101.00	C	1	•
MTECI 1616E50 A60	2.000	3.000	1.750	2.500	8.00	13.00	10.00	15.00	≥20	16.00	16.00	5	50.0	101.00	C	1	•

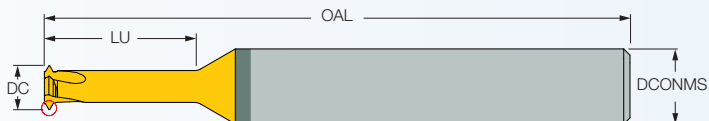
• (a) See table below (1) Internal thread pitch minimum (2) Internal thread pitch maximum (3) External thread pitch minimum (4) External thread pitch maximum (5) Internal threads per inch minimum (6) Internal threads per inch maximum (7) External threads per inch minimum (8) External threads per inch maximum (9) Number of flutes (10) C-Cylindrical (11) 0 - Without coolant supply, 1 - With coolant supply

#### Possible Thread Sizes

Designation	M Coarse	M Fine	UN, UNC, UNS, UNF, UNEF
MTECI 03019C5 A60	M2.5x0.45	M2.5x0.35, M3x0.35,	3-48UNC, 3-56UNF, 4-40UNC, 4-48UNF
MTECI 06032C9 A60	M4x0.7 M4.5x0.75	M4x0.5	8-32UNC, 8-36UNF, 10-24UNC, 10-28UNS, 10-32UNF
MTECI 0604C12 A60	M5x0.8 M6x1.0	M5x0.5, M5.5x0.5, M5x0.75	10-36UNS, 10-40UNS, 10-48UNS, 12-24UNC, 12-28UNF

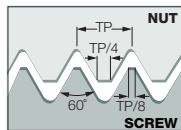
## MTECI-ISO

Small Diameter Single Point Internal ISO Profile Solid Carbide Thread Mills



### INTERNAL ISO

Application: General engineering

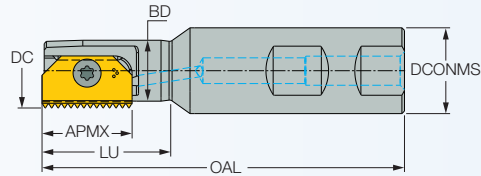


#### Dimensions

Designation	TP <sup>(1)</sup>	M Coarse	M Fine	DCONMS	DC	NOF <sup>(2)</sup>	LU	OAL	Shank <sup>(3)</sup>	SC9829
MTECI 03009C4 0.25ISO	0.250	M1.2X0.25	M1.4X0.25, M1.6X0.25	3.00	0.90	3	4.3	39.00	C	•
MTECI 03007C3 0.25ISO	0.250	M1X0.25	-	3.00	0.72	3	3.6	39.00	C	•
MTECI 03011C5 0.3ISO	0.300	M1.4X0.3	-	3.00	1.05	3	5.0	39.00	C	•
MTECI 03012C6 0.35ISO	0.350	M1.6X0.35	M2X0.35, M2.2X0.35	3.00	1.20	3	5.7	39.00	C	•
MTECI 03016C7 0.4ISO	0.400	M2X0.4	-	3.00	1.55	3	7.1	39.00	C	•
MTECI 03024C10 0.5ISO	0.500	M3X0.5	M3.5X0.5, M4X0.5	3.00	2.37	3	10.6	39.00	C	•

(1) Thread pitch (2) Number of flutes (3) C-Cylindrical

# THREAD MILLING



## MTE D

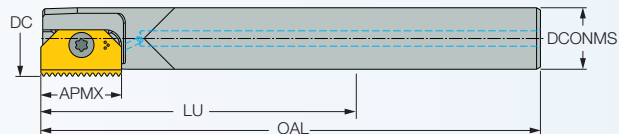
Indexable Threading Endmills

Designation	APMX	DC	NOF <sup>(4)</sup>	DCONMS	BD	LU	OAL	Shank <sup>(5)</sup>	TQ <sup>(6)</sup>				
MTE D09.5-1-W20-12 <sup>(1)</sup>	12.00	9.50	1	20.00	7.50	15.5	85.00	W	1.2	0.16	SR M2.5-T8-MT	BLD T08/M7	SW4-SD
MTE D09.9-1-W20-12	12.00	9.90	1	20.00	7.50	16.0	85.00	W	1.2	0.16	SR M2.5-T8-MT	BLD T08/M7	SW4-SD
MTE D12.2-1-W20-14	14.00	12.20	1	20.00	8.75	20.0	75.00	W	1.2	0.15	SR M2.6-L6.7-S11	BLD T08/M7	SW4-SD
MTE D14.5-1-W20-14	14.00	14.50	1	20.00	10.80	27.1	85.00	W	1.2	0.16	SR M2.6-L6.7-S11	BLD T08/M7	SW4-SD
MTE D17.0-1-W20-14	14.00	17.00	1	20.00	12.80	30.0	85.00	W	1.2	0.23	SR M2.6-L6.7-S11	BLD T08/M7	SW4-SD
MTE D18-1-W20-21 <sup>(2)</sup>	21.00	18.50	1	20.00	14.20	30.0	85.00	W	4.8	0.20	SR M4-IP15-MT	BLD IP15/S7	SW6-SD
MTE D21-1-W20-21	21.00	21.00	1	20.00	15.90	40.0	94.00	W	4.8	0.23	SR M4-IP15-MT	BLD IP15/S7	SW6-SD
MTE D25-1-W20-21	21.00	25.00	1	20.00	20.00	63.0	115.00	W	4.8	0.24	SR M4-IP15-MT	BLD IP15/S7	SW6-SD
MTE D29-1-W25-30 <sup>(3)</sup>	30.00	29.00	1	25.00	22.20	50.0	110.00	W	9.0	0.32	SR M5-IP25-MT	BLD IP25/S7	SW6-T
MTE D31-1-W25-30	30.00	31.00	1	25.00	25.00	92.0	150.00	W	9.0	0.60	SR M5-IP25-MT	BLD IP25/S7	SW6-T
MTE D38-1-W32-30	30.00	38.00	1	32.00	32.00	88.0	150.00	W	9.0	0.90	SR M5-IP25-MT	BLD IP25/S7	SW6-T
MTE D48-1-W40-40	40.00	48.00	1	40.00	35.00	78.0	153.00	W	9.0	1.30	SR M5-IP25-MT	BLD IP25/S7	SW6-T
MTE D48-1-W40-40-B	40.00	48.00	1	40.00	36.50	138.0	210.00	W	9.0	1.50	SR M5-IP25-MT	BLD IP25/S7	SW6-T

- Minimum bore should be one-third larger than D
- All endmills are equipped with a bore for internal coolant
- <sup>(1)</sup> Not suitable for inserts: SM-MT 1202 18NPTF, SM-MT 1202 18NPT, SM-MT 1202 19BSPT, SM-MT 1202 11.75ISO
- <sup>(2)</sup> Not suitable for inserts: SM-MT 2104 11.5NPT, 11.5NPTF, 8ABUT and SM-MU 2104 I3.50ISO, I7UN
- <sup>(3)</sup> Not suitable for SM-MT 3005 4ABUT inserts
- <sup>(4)</sup> Number of flutes
- <sup>(5)</sup> W-Weldon
- <sup>(6)</sup> Recommended clamping torque

## MTE D-C

Indexable Threading Endmills with Cylindrical Carbide Shanks

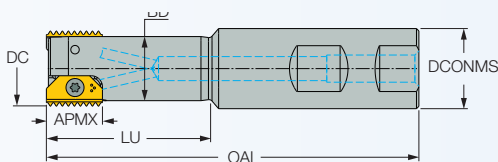


Designation	APMX	DC	DCONMS	OAL	Shank <sup>(1)</sup>	TQ <sup>(2)</sup>				
MTE D09.9-1-C08C-12	12.00	9.90	8.00	127.00	C	1.2	0.10	SR M2.5-T8-MT	BLD T08/M7	SW4-SD
MTE D13.7-1-C10C-14	14.00	13.70	10.00	110.00	C	1.2	0.10	SR M2.6-L6.7-S11	BLD T08/M7	SW4-SD
MTE D13.7-1-C10C-14-B	14.00	13.70	10.00	153.50	C	1.2	0.12	SR M2.6-L6.7-S11	BLD T08/M7	SW4-SD
MTE D15.2-1-C12C-14	14.00	15.20	12.00	182.30	C	1.2	0.12	SR M2.6-L6.7-S11	BLD T08/M7	SW4-SD
MTE D21-1-C16C-21	21.00	21.00	16.00	130.00	C	4.8	0.01	SR M4-IP15-MT	BLD IP15/S7	SW6-SD
MTE D21-1-C16C-21-B	21.00	21.00	16.00	206.30	C	4.8	0.60	SR M4-IP15-MT	BLD IP15/S7	SW6-SD
MTE D27-1-C20C-30	30.00	27.00	20.00	263.00	C	9.0	1.09	SR M5-IP25-MT-S	BLD IP25/S7	SW6-T

- For holders with long overhang, reduce the cutting speed and feed rate, between 20 to 40% (depending on workpiece, material, pitch and overhang)
- <sup>(1)</sup> C-Cylindrical
- <sup>(2)</sup> Recommended clamping torque

## MTE D(Double Insert)

Double Insert Threading Endmills with Weldon Shanks

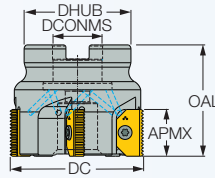


Designation	APMX	DC	DCONMS	BD	LU	OAL	Shank <sup>(1)</sup>	TQ <sup>(2)</sup>				
MTE D20.0-2-W20-14	14.00	20.00	20.00	16.00	41.0	93.00	W	1.2	0.20	SR M2.6-L6.7-S11	BLD T08/M7	SW4-SD
MTE D30-2-W25-21	21.00	30.00	25.00	-	-	108.00	W	4.8	0.40	SR M4-IP15-MT	BLD IP15/S7	SW6-SD
MTE D40-2-W32-30	30.00	40.00	32.00	30.00	70.0	130.00	W	9.0	0.70	SR M5-IP25-MT	BLD IP25/S7	SW6-T
MTE D50-2-W40-40	40.00	50.00	40.00	38.00	78.0	153.00	W	9.0	0.80	SR M5-IP25-MT	BLD IP25/S7	SW6-T

- Minimum bore should be one-third larger than D
- All endmills are equipped with a bore for internal coolant
- <sup>(1)</sup> W-Weldon
- <sup>(2)</sup> Recommended clamping torque

# THREAD MILLING

## MTF D(Shell Mill) Thread Milling Multi-Insert Shell Mills



Designation	DC	APMX	CICT <sup>(1)</sup>	DF	DCONMS	OAL	TQ <sup>(2)</sup>	
MTF D063-5-22-21	63.00	21.00	5	40.00	22.00	50.00	4.8	0.70
MTF D063-4-22-30	63.00	30.00	4	48.00	22.00	50.00	9.0	0.56
MTF D080-4-27-30	80.00	30.00	4	60.00	27.00	50.00	9.0	0.10
MTF D080-4-27-40	80.00	40.00	4	60.00	27.00	65.00	9.0	1.04
MTF D100-4-32-30	100.00	30.00	4	78.00	32.00	50.00	9.0	1.89
MTF D100-8-32-30	100.00	30.00	8	78.00	32.00	50.00	9.0	0.15
MTF D100-4-32-40	100.00	40.00	4	78.00	32.00	65.00	9.0	0.20

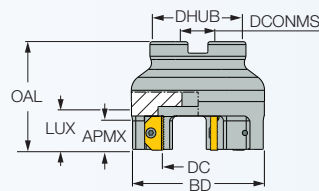
<sup>(1)</sup> Number of inserts <sup>(2)</sup> Recommended clamping torque

## Spare Parts

Designation				
MTF D063-5-22-21	SR M4-IP15-MT	SR M10X25 DIN912	BLD IP15/S7	SW6-SD
MTF D063-4-22-30	SR M5-IP25-MT	SR M10X25 DIN912	BLD IP25/S7	SW6-T
MTF D080-4-27-30	SR M5-IP25-MT	SR DIN 912 M12X25	BLD IP25/S7	SW6-T
MTF D080-4-27-40	SR M5-IP25-MT	SR DIN 912 M12X25	BLD IP25/S7	SW6-T
MTF D100-4-32-30	SR M5-IP25-MT	SR M16X30 DIN912	BLD IP25/S7	SW6-T
MTF D100-8-32-30	SR M5-IP25-MT	SR M16X30 DIN912	BLD IP25/S7	SW6-T
MTF D100-4-32-40	SR M5-IP25-MT	SR M16X30 DIN912	BLD IP25/S7	SW6-T

## EXTERNAL MULTI INSERTS THREADING SHELL MILL

External Multi-Tooth  
Threading Shell Mills



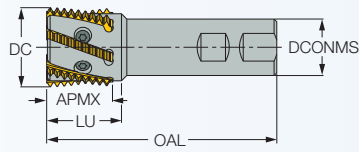
Designation	DC	BD	DHUB	DCONMS	OAL	LUX	APMX	CICT <sup>(1)</sup>	TQ <sup>(2)</sup>	
MTFLE D20-3-22-21	20.00	58.20	48.00	22.00	63.00	27.0	21.00	3	4.8	0.70
MTFLE D20-4-22-21	20.00	58.20	48.00	22.00	63.00	27.0	21.00	4	4.8	0.70
MTFLE D30-3-22-21	30.00	68.20	48.00	22.00	63.00	27.0	21.00	3	4.8	0.90
MTFLE D45-4-27-21	45.00	83.20	60.00	27.00	67.00	27.0	21.00	4	4.8	1.40

<sup>(1)</sup> Number of inserts <sup>(2)</sup> Recommended clamping torque

## Spare Parts

Designation				
MTFLE D20-3-22-21	SR M10X25 DIN912	BLD IP15/S7	SW6-SD	SR M4-IP15-MT
MTFLE D20-4-22-21	SR M10X25 DIN912	BLD IP15/S7	SW6-SD	SR M4-IP15-MT
MTFLE D30-3-22-21	SR M10X25 DIN912	BLD IP15/S7	SW6-SD	SR M4-IP15-MT
MTFLE D45-4-27-21	SR DIN 912 M12X25	BLD IP15/S7	SW6-SD	SR M4-IP15-MT

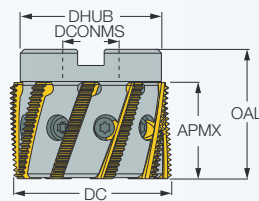
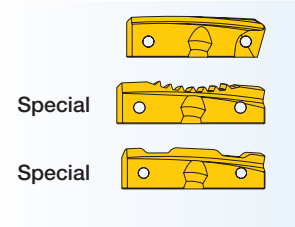
# THREAD MILLING



**MTSRH (endmills)**  
Endmills with Coolant Holes  
for Helical Threading Inserts

Designation	DC	APMX	DCONMS	OAL	LU	NOF <sup>(1)</sup>	Shank <sup>(2)</sup>		MIID <sup>(3)</sup>		
MTSRH 23-2	23.00	27.00	25.00	110.00	50.0	2	W	0.30	SMH-MT 23 E 1.0 ISO	S23	K21
MTSRH 32-5	32.00	32.00	32.00	130.00	60.0	5	W	0.65	SMH-MT 32 E 1.5 ISO	S32	K22
MTSRH 45-6	45.00	37.00	32.00	130.00	-	6	W	0.88	SMH-MT 45 E 1.5 ISO	S45X	K40

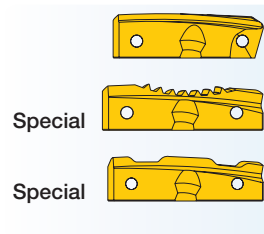
• Note: SAMTEC can provide special contour inserts on request  
(<sup>1</sup>) Number of flutes (<sup>2</sup>) W-Weldon (<sup>3</sup>) Master insert identification



**MTSRH (helical shell mill)**  
Shell Mills with Coolant Holes  
for Helical Threading Inserts

Designation	DC	APMX	DHUB	DCONMS	OAL	NOF <sup>(1)</sup>		MIID <sup>(2)</sup>		
MTSRH 32-5M	32.00	32.00	26.00	16.00	52.00	5	0.15	SMH-MT 32 E 1.5 ISO	S32S	K22
MTSRH 45-6M	45.00	37.00	38.00	22.00	60.00	6	0.30	SMH-MT 45 E 1.5 ISO	S45S	K40
MTSRH 63-9	63.00	38.00	51.70	22.00	50.00	9	0.66	SMH-MT 63 11 W	S63	K40

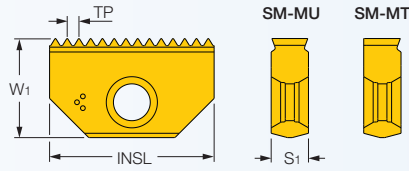
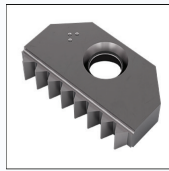
• Note: SAMTEC can provide special contour inserts on request  
(<sup>1</sup>) Number of flutes (<sup>2</sup>) Master insert identification



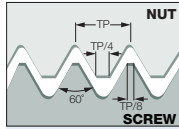


# THREAD MILLING

**SM-MU/T (Internal)**  
Thread Milling Inserts for  
Internal ISO Metric Profile



**INTERNAL ISO**



## Dimensions

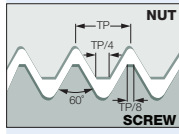
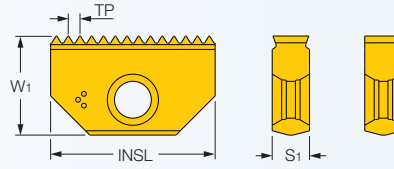
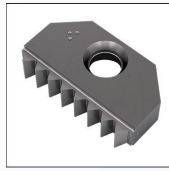
Designation	TP <sup>(1)</sup>	INSL	W1	S1	SC9819
<a href="#">SM-MT 1202 I0.50ISO</a>	0.500	12.00	6.50	2.90	•
<a href="#">SM-MT 1202 I0.75ISO</a>	0.750	12.00	6.50	2.90	•
<a href="#">SM-MU 1403 I0.75ISO</a>	0.750	14.00	7.90	3.20	•
<a href="#">SM-MT 1202 I1.00ISO</a>	1.000	12.00	6.50	2.90	•
<a href="#">SM-MU 1403 I1.00ISO</a>	1.000	14.00	7.90	3.20	•
<a href="#">SM-MU 2104 I1.00ISO</a>	1.000	21.00	12.60	4.80	•
<a href="#">SM-MT 1202 I1.25ISO</a>	1.250	12.00	6.50	2.90	•
<a href="#">SM-MU 1403 I1.25ISO</a>	1.250	14.00	7.90	3.20	•
<a href="#">SM-MT 1202 I1.50ISO</a>	1.500	12.00	6.50	2.90	•
<a href="#">SM-MU 1403 I1.50ISO</a>	1.500	14.00	7.90	3.20	•
<a href="#">SM-MU 2104 I1.50ISO</a>	1.500	21.00	12.60	4.80	•
<a href="#">SM-MU 3005 I1.50ISO</a>	1.500	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 I1.50ISO</a>	1.500	40.00	20.80	6.40	•
<a href="#">SM-MT 1202 I1.75ISO</a>	1.750	12.00	6.50	2.90	•
<a href="#">SM-MU 1403 I1.75ISO</a>	1.750	14.00	7.90	3.20	•
<a href="#">SM-MU 2104 I1.75ISO</a>	1.750	21.00	12.60	4.80	•
<a href="#">SM-MU 1403 I2.00ISO</a>	2.000	14.00	7.90	3.20	•
<a href="#">SM-MU 2104 I2.00ISO</a>	2.000	21.00	12.60	4.80	•
<a href="#">SM-MU 3005 I2.00ISO</a>	2.000	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 I2.00ISO</a>	2.000	40.00	20.80	6.40	•
<a href="#">SM-MU 1403 I2.50ISO</a>	2.500	14.00	7.90	3.20	•
<a href="#">SM-MU 2104 I2.50ISO</a>	2.500	21.00	12.60	4.80	•
<a href="#">SM-MU 2104 I3.00ISO</a>	3.000	21.00	12.60	4.80	•
<a href="#">SM-MU 3005 I3.00ISO</a>	3.000	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 I3.00ISO</a>	3.000	40.00	20.80	6.40	•
<a href="#">SM-MU 2104 I3.50ISO</a>	3.500	21.00	12.60	4.80	•
<a href="#">SM-MU 3005 I3.50ISO</a>	3.500	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 I3.50ISO</a>	3.500	40.00	20.80	6.40	•
<a href="#">SM-MU 3005 I4.00ISO</a>	4.000	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 I4.00ISO</a>	4.000	40.00	20.80	6.40	•
<a href="#">SM-MU 3005 I4.50ISO</a>	4.500	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 I4.50ISO</a>	4.500	40.00	20.80	6.40	•
<a href="#">SM-MU 3005 I5.00ISO</a>	5.000	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 I5.00ISO</a>	5.000	40.00	20.80	6.40	•
<a href="#">SM-MU 4006 I5.50ISO</a>	5.500	40.00	20.80	6.40	•
<a href="#">SM-MU 4006 I6.00ISO</a>	6.000	40.00	20.80	6.40	•

<sup>(1)</sup> Thread pitch

# THREAD MILLING

EXTERNAL ISO

**SM-MU/T (External)**  
Thread Milling Inserts for  
External ISO Metric Profile



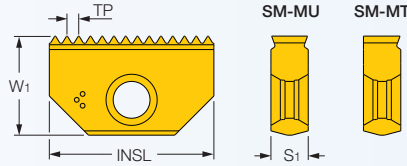
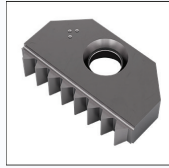
## Dimensions

Designation	TP <sup>(1)</sup>	INSL	W1	S1	SC9819
<a href="#">SM-MU 1403 E0.75ISO</a>	0.750	14.00	7.90	3.20	•
<a href="#">SM-MU 1403 E1.00ISO</a>	1.000	14.00	7.90	3.20	•
<a href="#">SM-MU 2104 E1.00ISO</a>	1.000	21.00	12.60	4.80	•
<a href="#">SM-MU 1403 E1.25ISO</a>	1.250	14.00	7.90	3.20	•
<a href="#">SM-MU 1403 E1.50ISO</a>	1.500	14.00	7.90	3.20	•
<a href="#">SM-MU 2104 E1.50ISO</a>	1.500	21.00	12.60	4.80	•
<a href="#">SM-MU 3005 E1.50ISO</a>	1.500	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 E1.50ISO</a>	1.500	40.00	20.80	6.40	•
<a href="#">SM-MU 1403 E1.75ISO</a>	1.750	14.00	7.90	3.20	•
<a href="#">SM-MU 1403 E2.00ISO</a>	2.000	14.00	7.90	3.20	•
<a href="#">SM-MU 2104 E2.00ISO</a>	2.000	21.00	12.60	4.80	•
<a href="#">SM-MU 3005 E2.00ISO</a>	2.000	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 E2.00ISO</a>	2.000	40.00	20.80	6.40	•
<a href="#">SM-MU 1403 E2.50ISO</a>	2.500	14.00	7.90	3.20	•
<a href="#">SM-MU 2104 E2.50ISO</a>	2.500	21.00	12.80	4.80	•
<a href="#">SM-MU 2104 E3.00ISO</a>	3.000	21.00	12.80	4.80	•
<a href="#">SM-MU 3005 E3.00ISO</a>	3.000	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 E3.00ISO</a>	3.000	40.00	20.80	6.40	•
<a href="#">SM-MU 3005 E3.50ISO</a>	3.500	30.00	16.70	5.60	•
<a href="#">SM-MU 3005 E4.00ISO</a>	4.000	30.00	16.70	5.60	•
<a href="#">SM-MU 4006 E4.00ISO</a>	4.000	40.00	20.80	6.40	•
<a href="#">SM-MU 4006 E5.00ISO</a>	5.000	40.00	20.80	6.40	•
<a href="#">SM-MU 4006 E6.00ISO</a>	6.000	40.00	20.80	6.40	•

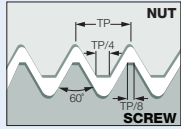
<sup>(1)</sup> Thread pitch

# THREAD MILLING

**SM-MU/T (Internal)**  
Thread Milling Inserts for American (UN, UNC, UNF, UNEF, UNS) Full Profile Threads for General Applications



INTERNAL UN



## Dimensions

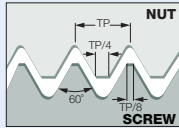
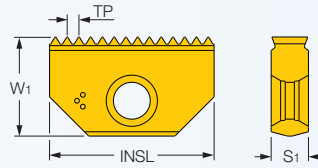
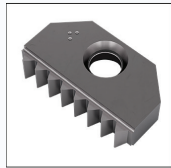
Designation	TPI <sup>(1)</sup>	INSL	W1	S1	TP <sup>(2)</sup>	SC9819
SM-MT 1202 I32UN	32.0	12.00	6.50	2.90	0.794	•
SM-MT 1202 I28UN	28.0	12.00	6.50	2.90	0.907	•
SM-MT 1202 I24UN	24.0	12.00	6.50	2.90	1.058	•
SM-MT 1202 I20UN	20.0	12.00	6.50	2.90	1.270	•
SM-MT 1202 I18UN	18.0	12.00	6.50	2.90	1.411	•
SM-MT 1202 I16UN	16.0	12.00	6.50	2.90	1.588	•
SM-MU 1403 I32UN	32.0	14.00	7.90	3.20	0.794	•
SM-MU 1403 I28UN	28.0	14.00	7.90	3.20	0.907	•
SM-MU 1403 I27UN	27.0	14.00	7.90	3.20	0.941	•
SM-MU 1403 I24UN	24.0	14.00	7.90	3.20	1.058	•
SM-MU 1403 I20UN	20.0	14.00	7.90	3.20	1.270	•
SM-MU 1403 I18UN	18.0	14.00	7.90	3.20	1.411	•
SM-MU 1403 I16UN	16.0	14.00	7.90	3.20	1.588	•
SM-MU 1403 I14UN	14.0	14.00	7.90	3.20	1.814	•
SM-MU 1403 I12UN	12.0	14.00	7.90	3.20	2.117	•
SM-MU 1403 I11UN	11.0	14.00	7.90	3.20	2.309	•
SM-MU 1403 I10UN	10.0	14.00	7.90	3.20	2.540	•
SM-MU 2104 I24UN	24.0	21.00	12.60	4.80	1.058	•
SM-MU 2104 I20UN	20.0	21.00	12.60	4.80	1.270	•
SM-MU 2104 I18UN	18.0	21.00	12.60	4.80	1.411	•
SM-MU 2104 I16UN	16.0	21.00	12.60	4.80	1.588	•
SM-MU 2104 I14UN	14.0	21.00	12.60	4.80	1.814	•
SM-MU 2104 I12UN	12.0	21.00	12.60	4.80	2.117	•
SM-MU 2104 I10UN	10.0	21.00	12.60	4.80	2.540	•
SM-MU 2104 I8UN	8.0	21.00	12.60	4.80	3.175	•
SM-MU 2104 I7UN	7.0	21.00	12.60	4.80	3.629	•
SM-MU 3005 I20UN	20.0	30.00	16.70	5.60	1.270	•
SM-MU 3005 I18UN	18.0	30.00	16.70	5.60	1.411	•
SM-MU 3005 I16UN	16.0	30.00	16.70	5.60	1.588	•
SM-MU 3005 I14UN	14.0	30.00	16.70	5.60	1.814	•
SM-MU 3005 I12UN	12.0	30.00	16.70	5.60	2.117	•
SM-MU 3005 I10UN	10.0	30.00	16.70	5.60	2.540	•
SM-MU 3005 I8UN	8.0	30.00	16.70	5.60	3.175	•
SM-MU 3005 I6UN	6.0	30.00	16.70	5.60	4.233	•
SM-MU 3005 I5UN	5.0	30.00	16.70	5.60	5.080	•
SM-MU 4006 I16UN	16.0	40.00	20.80	6.40	1.588	•
SM-MU 4006 I14UN	14.0	40.00	20.80	6.40	1.814	•
SM-MU 4006 I12UN	12.0	40.00	20.80	6.40	2.117	•
SM-MU 4006 I8UN	8.0	40.00	20.80	6.40	3.175	•
SM-MU 4006 I6UN	6.0	40.00	20.80	6.40	4.233	•
SM-MU 4006 I4.5UN	4.5	40.00	20.80	6.40	5.644	•
SM-MU 4006 I4UN	4.0	40.00	20.80	6.40	6.350	•

<sup>(1)</sup> Threads per inch  
<sup>(2)</sup> Thread pitch

# THREAD MILLING

EXTERNAL UN

**SM-MU/T (External)**  
External (UN, UNC, UNF, UNEF, UNS) Full Profile Thread Milling Inserts for General Industries



## Dimensions

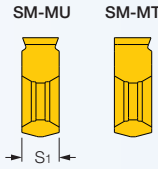
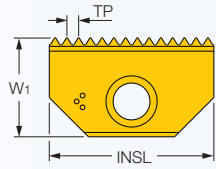
Designation	TPI <sup>(1)</sup>	INSL	W1	S1	SC9819
SM-MU 1403 E32UN	32.0	14.00	7.90	3.20	•
SM-MU 1403 E28UN	28.0	14.00	7.90	3.20	•
SM-MU 1403 E24UN	24.0	14.00	7.90	3.20	•
SM-MU 1403 E20UN	20.0	14.00	7.90	3.20	•
SM-MU 1403 E18UN	18.0	14.00	7.90	3.20	•
SM-MU 1403 E16UN	16.0	14.00	7.90	3.20	•
SM-MU 1403 E14UN	14.0	14.00	7.90	3.20	•
SM-MU 1403 E12UN	12.0	14.00	7.90	3.20	•
SM-MU 2104 E24UN	24.0	21.00	12.60	4.80	•
SM-MU 2104 E20UN	20.0	21.00	12.60	4.80	•
SM-MU 2104 E18UN	18.0	21.00	12.60	4.80	•
SM-MU 2104 E16UN	16.0	21.00	12.60	4.80	•
SM-MU 2104 E14UN	14.0	21.00	12.60	4.80	•
SM-MU 2104 E12UN	12.0	21.00	12.60	4.80	•
SM-MU 2104 E10UN	10.0	21.00	12.60	4.80	•
SM-MU 3005 E20UN	20.0	30.00	16.70	5.60	•
SM-MU 3005 E18UN	18.0	30.00	16.70	5.60	•
SM-MU 3005 E16UN	16.0	30.00	16.70	5.60	•
SM-MU 3005 E14UN	14.0	30.00	16.70	5.60	•
SM-MU 3005 E12UN	12.0	30.00	16.70	5.60	•
SM-MU 3005 E10UN	10.0	30.00	16.70	5.60	•
SM-MU 3005 E8UN	8.0	30.00	16.70	5.60	•
SM-MU 3005 E6UN	6.0	30.00	16.70	5.60	•
SM-MU 4006 E16UN	16.0	40.00	20.80	6.40	•
SM-MU 4006 E14UN	14.0	40.00	20.80	6.40	•
SM-MU 4006 E12UN	12.0	40.00	20.80	6.40	•
SM-MU 4006 E10UN	10.0	40.00	20.80	6.40	•
SM-MU 4006 E8UN	8.0	40.00	20.80	6.40	•
SM-MU 4006 E6UN	6.0	40.00	20.80	6.40	•

<sup>(1)</sup> Threads per inch

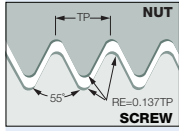
# THREAD MILLING

## SM-MU/T

External & Internal Whitworth (BSW, BSF, BSP) Full Profile Thread Milling Inserts for Fittings and Pipe Couplings



## EXTERNAL/INTERNAL WHITWORTH

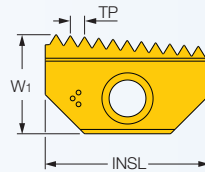
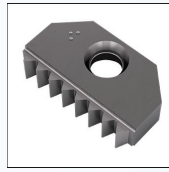


### Dimensions

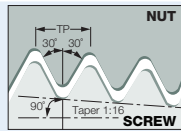
Designation	TPI <sup>(1)</sup>	INSL	W1	S1	TP <sup>(2)</sup>	SC9819
SM-MT 1202 19W	19.0	12.00	6.50	2.90	1.337	•
SM-MU 1403 24W	24.0	14.00	7.90	3.20	1.058	•
SM-MU 1403 20W	20.0	14.00	7.90	3.20	1.270	•
SM-MU 1403 19W	19.0	14.00	7.90	3.20	1.337	•
SM-MU 1403 16W	16.0	14.00	7.90	3.20	1.588	•
SM-MU 1403 14W	14.0	14.00	7.90	3.20	1.814	•
SM-MU 2104 20W	20.0	21.00	12.60	4.80	1.270	•
SM-MU 2104 19W	19.0	21.00	12.60	4.80	1.337	•
SM-MU 2104 16W	16.0	21.00	12.60	4.80	1.588	•
SM-MU 2104 14W	14.0	21.00	12.60	4.80	1.814	•
SM-MU 2104 11W	11.0	21.00	12.60	4.80	2.309	•
SM-MU 3005 16W	16.0	30.00	16.70	5.60	1.588	•
SM-MU 3005 14W	14.0	30.00	16.70	5.60	1.814	•
SM-MU 3005 11W	11.0	30.00	16.70	5.60	2.309	•
SM-MU 4006 11W	11.0	40.00	20.80	6.40	2.309	•
SM-MU 4006 8W	8.0	40.00	20.80	6.40	3.175	•

## SM-MU/T

External and Internal NPT Full Profile Thread Milling Inserts for Steam, Gas and Water Pipes



## EXTERNAL/INTERNAL NPT



### Dimensions

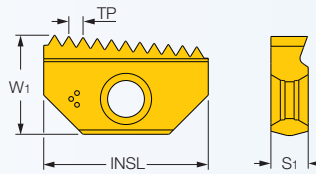
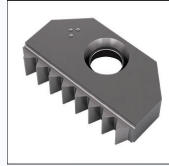
Designation	TPI <sup>(1)</sup>	INSL	W1	S1	TP <sup>(2)</sup>	SC9819
SM-MT 1202 18NPT	18.0	12.00	6.50	2.90	1.411	•
SM-MT 1403 18NPT	18.0	14.00	7.90	3.20	1.411	•
SM-MT 1403 14NPT	14.0	14.00	7.90	3.20	1.814	•
SM-MT 2104 14NPT	14.0	21.00	12.60	4.80	1.814	•
SM-MT 2104 11.5NPT	11.5	21.00	12.60	4.80	2.209	•
SM-MT 3005 11.5NPT	11.5	30.00	16.70	5.60	2.209	•
SM-MT 3005 8NPT	8.0	30.00	16.70	5.60	3.175	•
SM-MT 4006 11.5NPT	11.5	40.00	20.80	6.40	2.209	•
SM-MT 4006 8NPT	8.0	40.00	20.80	6.40	3.175	•

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

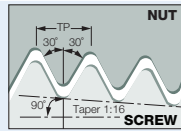
# THREAD MILLING

## SM-MU/T

External and Internal NPTF Full Profile Thread Milling Inserts for Steam, Gas and Water Pipes



### EXTERNAL/INTERNAL NPTF



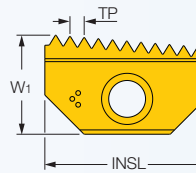
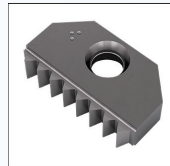
#### Dimensions

Designation	TPI <sup>(1)</sup>	INSL	W1	S1	TP <sup>(2)</sup>	SC9819
SM-MT 1202 18NPTF	18.0	12.00	6.50	2.90	1.411	•
SM-MT 1403 18NPTF	18.0	14.00	7.90	3.20	1.411	•
SM-MT 1403 14NPTF	14.0	14.00	7.90	3.20	1.814	•
SM-MT 2104 14NPTF	14.0	21.00	12.60	4.80	1.814	•
SM-MT 2104 11.5NPTF	11.5	21.00	12.60	4.80	2.209	•
SM-MT 3005 11.5NPTF	11.5	30.00	16.70	5.60	2.209	•
SM-MT 3005 8NPTF	8.0	30.00	16.70	5.60	3.175	•
SM-MT 4006 11.5NPTF	11.5	40.00	20.80	6.40	2.209	•
SM-MT 4006 8NPTF	8.0	40.00	20.80	6.40	3.175	•

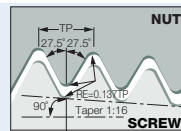
<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

## SM-MU/T

External and Internal Thread Milling Inserts for BSPT Full Profile



### EXTERNAL/INTERNAL BSPT



#### Dimensions

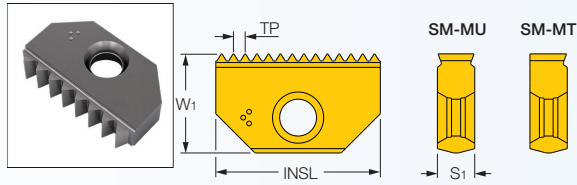
Designation	TPI <sup>(1)</sup>	INSL	W1	S1	TP <sup>(2)</sup>	SC9819
SM-MT 1202 19BSPT	19.0	12.00	6.50	2.90	1.337	•
SM-MT 1403 19BSPT	19.0	14.00	7.90	3.20	1.337	•
SM-MT 1403 14BSPT	14.0	14.00	7.90	3.20	1.814	•
SM-MT 2104 14BSPT	14.0	21.00	12.60	4.80	1.814	•
SM-MT 2104 11BSPT	11.0	21.00	12.60	4.80	2.309	•
SM-MT 3005 11BSPT	11.0	30.00	16.70	5.60	2.309	•
SM-MT 4006 11BSPT	11.0	40.00	20.80	6.40	2.309	•

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

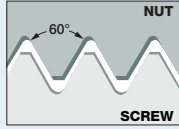
# THREAD MILLING

## SM-MU/T

External and Internal NPS  
Full Profile Thread Milling  
Inserts for Mechanical  
Joining and Pipe Fittings



### EXTERNAL/INTERNAL NPS



#### Dimensions

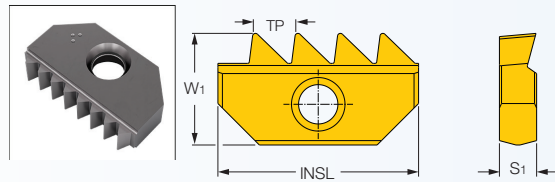
Designation	TPI <sup>(1)</sup>	INSL	W1	S1	TP <sup>(2)</sup>	SC9819
SM-MT 1202 18NPS	18.0	12.00	6.30	2.90	1.411	•
SM-MU 1403 18NPS	18.0	14.00	7.50	3.10	1.411	•
SM-MU 1403 14NPS	14.0	14.00	7.50	3.10	1.814	•
SM-MU 2104 14NPS	14.0	21.00	12.00	4.70	1.814	•
SM-MU 2104 11.5NPS	11.5	21.00	12.00	4.70	2.209	•
SM-MU 3005 11.5NPS	11.5	30.00	16.70	5.60	2.209	•
SM-MU 3005 8NPS	8.0	30.00	16.70	5.60	3.175	•
SM-MU 4006 11.5NPS	11.5	40.00	20.00	6.30	2.209	•
SM-MU 4006 8NPS	8.0	40.00	20.00	6.30	3.175	•

• The same insert for external & internal thread.

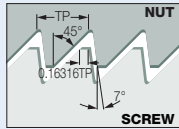
<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

## SM-MT

External & Internal Single-  
Sided American Buttress  
Thread Milling Inserts



### EXTERNAL/INTERNAL ABUT



#### Dimensions

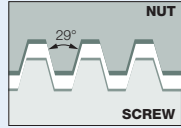
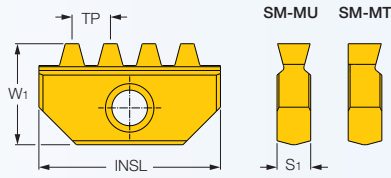
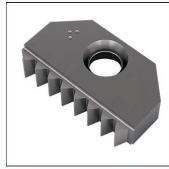
Designation	TPI <sup>(2)</sup>	INSL	W1	S1	TP <sup>(3)</sup>	SC9819
SM-MT 2104 16ABUT	16.0	21.00	12.00	4.70	1.588	•
SM-MT 2104 12ABUT	12.0	21.00	12.00	4.70	2.117	•
SM-MT 2104 10ABUT	10.0	21.00	12.00	4.70	2.540	•
SM-MT 2104 8ABUT	8.0	21.00	12.00	4.70	3.175	•
SM-MT 3005 16ABUT	16.0	30.00	16.70	5.60	1.588	•
SM-MT 3005 12ABUT	12.0	30.00	16.70	5.60	2.117	•
SM-MT 3005 10ABUT	10.0	30.00	16.70	5.60	2.540	•
SM-MT 3005 8ABUT	8.0	30.00	16.70	5.60	3.175	•
SM-MT 3005 6ABUT	6.0	30.00	16.70	5.60	4.233	•
SM-MT 3005 4ABUT <sup>(1)</sup>	4.0	30.00	16.70	5.60	6.350	•
SM-MT 4006 4ABUT	4.0	40.00	20.00	6.30	6.350	•

<sup>(1)</sup> Due to deep thread profile, the tool should be modified <sup>(2)</sup> Threads per inch <sup>(3)</sup> Thread pitch

# THREAD MILLING

## INTERNAL ACME

**SM-MU/T (Internal)**  
Internal ACME Profile Thread  
Milling Inserts for Feed Screws



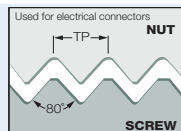
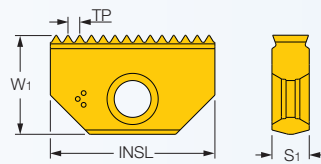
### Dimensions

Designation	TPI <sup>(1)</sup>	INSL	W1	S1	TP <sup>(2)</sup>	SC9819
SM-MU 2104 I12ACME	12.0	21.00	12.00	4.70	2.117	•
SM-MU 2104 I10ACME	10.0	21.00	12.00	4.70	2.540	•
SM-MU 3005 I12ACME	12.0	30.00	16.70	5.60	2.117	•
SM-MU 3005 I10ACME	10.0	30.00	16.70	5.60	2.540	•
SM-MU 3005 I8ACME	8.0	30.00	16.70	5.60	3.175	•
SM-MU 3005 I6ACME	6.0	30.00	16.70	5.60	4.233	•
SM-MU 3005 I5ACME	5.0	30.00	16.70	5.60	5.080	•
SM-MU 3005 I4ACME	4.0	30.00	16.70	5.60	6.350	•
SM-MU 4006 I4ACME	4.0	40.00	20.00	6.30	6.350	•
SM-MT 4006 I3.5ACME	3.5	40.00	20.00	6.30	7.257	•
SM-MT 4006 I3ACME	3.0	40.00	20.00	6.30	8.467	•

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

## EXTERNAL/INTERNAL PG

**SM-MU**  
External and Internal PG Full  
Profile Thread Milling Inserts (DIN  
40430) for Electrical Connectors



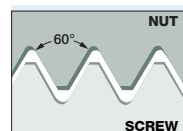
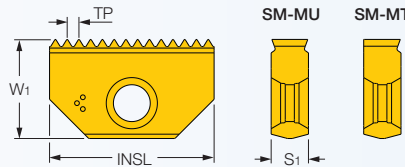
### Dimensions

Designation	TPI <sup>(1)</sup>	INSL	W1	S1	PG	TP <sup>(2)</sup>	SC9819
SM-MU 1403 18PG	18.0	14.00	7.90	3.20	PG9,11,13.5,16	1.411	•
SM-MU 2104 18PG	18.0	21.00	12.60	4.80	PG16	1.411	•
SM-MU 2104 16PG	16.0	21.00	12.60	4.80	PG21,29,36,42,48	1.588	•
SM-MU 3005 16PG	16.0	30.00	16.70	5.60	PG36,42,48	1.588	•

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

## EXTERNAL/INTERNAL NPS PROFILE

**SM-MU/T**  
External and Internal NPSF Full  
Profile Thread Milling Inserts



### Dimensions

Designation	TPI <sup>(1)</sup>	INSL	W1	S1	TP <sup>(2)</sup>	SC9819
SM-MT 1202 18NPSF	18.0	12.00	6.50	2.90	1.411	•
SM-MU 1403 18NPSF	18.0	14.00	7.90	3.20	1.411	•
SM-MU 1403 14NPSF	14.0	14.00	7.90	3.20	1.814	•
SM-MU 2104 14NPSF	14.0	21.00	12.60	4.75	1.814	•
SM-MU 2104 11.5NPSF	11.5	21.00	12.60	4.75	2.209	•
SM-MU 3005 11.5NPSF	11.5	30.00	16.70	5.60	2.209	•
SM-MU 3005 8NPSF	8.0	30.00	16.70	5.60	3.175	•
SM-MU 4006 11.5NPSF	11.5	40.00	20.80	6.35	2.209	•
SM-MU 4006 8NPSF	8.0	40.00	20.80	6.35	3.175	•

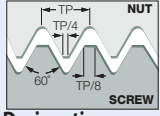
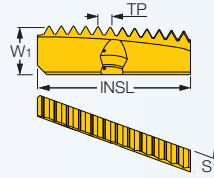
<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch



# THREAD MILLING

## INTERNAL ISO

**SMH-MT (internal)**  
Helical Thread Milling Inserts for  
ISO Metric Internal Threads

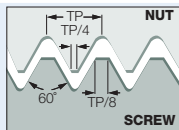
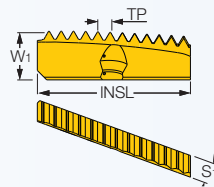


Designation	Dimensions					SC9819
	TP <sup>(1)</sup>	INSL	W1	S1	THID	
SMH-MT 23 I 1.0 ISO	1.000	27.00	8.00	3.50	≥M26	•
SMH-MT 32 I 1.0 ISO	1.000	32.00	9.00	4.00	≥M34	•
SMH-MT 23 I 1.5 ISO	1.500	27.00	8.00	3.50	≥M27	•
SMH-MT 32 I 1.5 ISO	1.500	32.00	9.00	4.00	≥M35	•
SMH-MT 45 I 1.5 ISO	1.500	37.00	11.90	5.00	≥M50	•
SMH-MT 63 I 1.5 ISO	1.500	38.00	11.90	5.00	≥M70	•
SMH-MT 23 I 2.0 ISO	2.000	27.00	8.00	3.50	≥M28	•
SMH-MT 32 I 2.0 ISO	2.000	32.00	9.00	4.00	≥M36	•
SMH-MT 45 I 2.0 ISO	2.000	37.00	11.90	5.00	≥M50	•
SMH-MT 63 I 2.0 ISO	2.000	38.00	11.90	5.00	≥M70	•
SMH-MT 23 I 3.0 ISO	3.000	27.00	8.00	3.50	≥M30	•
SMH-MT 32 I 3.0 ISO	3.000	32.00	9.00	4.00	≥M38	•
SMH-MT 45 I 3.0 ISO	3.000	37.00	11.90	5.00	≥M56	•
SMH-MT 63 I 3.0 ISO	3.000	38.00	11.90	5.00	≥M75	•
SMH-MT 23 I 3.5 ISO	3.500	27.00	8.00	3.50	≥M33	•
SMH-MT 32 I 3.5 ISO	3.500	32.00	9.00	4.00	-	•
SMH-MT 45 I 3.5 ISO	3.500	37.00	11.90	5.00	-	•
SMH-MT 23 I 4.0 ISO	4.000	27.00	8.00	3.50	≥M36	•
SMH-MT 32 I 4.0 ISO	4.000	32.00	9.00	4.00	≥M40	•
SMH-MT 45 I 4.0 ISO	4.000	37.00	11.90	5.00	≥M56	•
SMH-MT 63 I 4.0 ISO	4.000	38.00	11.90	5.00	≥M75	•
SMH-MT 32 I 4.5 ISO	4.500	32.00	9.00	4.00	≥M44	•
SMH-MT 45 I 4.5 ISO	4.500	37.00	11.90	5.00	-	•
SMH-MT 32 I 5.0 ISO	5.000	32.00	9.00	4.00	≥M48	•
SMH-MT 45 I 5.0 ISO	5.000	37.00	11.90	5.00	-	•
SMH-MT 45 I 5.5 ISO	5.500	37.00	11.90	5.00	≥M56	•
SMH-MT 45 I 6.0 ISO	6.000	37.00	11.90	5.00	≥M64	•
SMH-MT 63 I 6.0 ISO	6.000	38.00	11.90	5.00	≥M78	•

<sup>(1)</sup> Thread pitch

## EXTERNAL ISO

**SMH-MT (external)**  
Helical Thread Milling Inserts for  
ISO Metric External Threads



Designation	Dimensions				SC9819
	TP <sup>(1)</sup>	INSL	W1	S1	
SMH-MT 23 E 1.0 ISO	1.000	27.00	8.00	3.50	•
SMH-MT 23 E 1.5 ISO	1.500	27.00	8.00	3.50	•
SMH-MT 32 E 1.5 ISO	1.500	32.00	9.00	4.00	•
SMH-MT 45 E 1.5 ISO	1.500	37.00	11.90	5.00	•
SMH-MT 23 E 2.0 ISO	2.000	27.00	8.00	3.50	•
SMH-MT 32 E 2.0 ISO	2.000	32.00	9.00	4.00	•
SMH-MT 45 E 2.0 ISO	2.000	37.00	11.90	5.00	•
SMH-MT 23 E 3.0 ISO	3.000	27.00	8.00	3.50	•
SMH-MT 32 E 3.0 ISO	3.000	32.00	9.00	4.00	•
SMH-MT 32 E 4.0 ISO	4.000	32.00	9.00	4.00	•

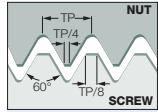
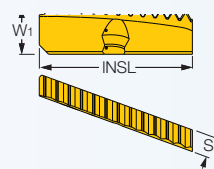
<sup>(1)</sup> Thread pitch

# THREAD MILLING

## EXTERNAL UN

### SMH-MT (external) (continued)

Helical Thread Milling Inserts for American Full Profile External Threads for General Applications



### Dimensions

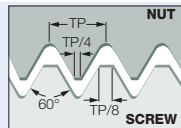
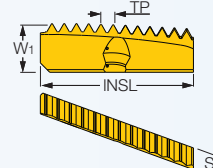
Designation	TPI <sup>(1)</sup>	INSL	W1	S1	SC9819
SMH-MT 32 E 18 UN	18.0	32.00	9.00	4.00	•
SMH-MT 32 E 16 UN	16.0	32.00	9.00	4.00	•
SMH-MT 32 E 12 UN	12.0	32.00	9.00	4.00	•
SMH-MT 32 E 8 UN	8.0	32.00	9.00	4.00	•
SMH-MT 32 E 6 UN	6.0	32.00	9.00	4.00	•

• Used for UN, UNC, UNF, UNEF and UNS thread profiles <sup>(1)</sup> Threads per inch

## INTERNAL UN

### SMH-MT (internal)

Helical Thread Milling Inserts for American Full Profile Internal Threads for General Applications



### Dimensions

Designation	TPI <sup>(1)</sup>	INSL	W1	S1	THID	TP <sup>(2)</sup>	SC9819
SMH-MT 23 I 32 UN	32.0	27.00	8.00	3.50	≥1"	0.794	•
SMH-MT 23 I 24 UN	24.0	27.00	8.00	3.50	≥1"	1.058	•
SMH-MT 23 I 20 UN	20.0	27.00	8.00	3.50	≥1"	1.270	•
SMH-MT 23 I 18 UN	18.0	27.00	8.00	3.50	≥1_1/16"	1.411	•
SMH-MT 23 I 16 UN	16.0	27.00	8.00	3.50	≥1_1/16"	1.588	•
SMH-MT 23 I 14 UN	14.0	27.00	8.00	3.50	≥1_1/8"	1.814	•
SMH-MT 23 I 12 UN	12.0	27.00	8.00	3.50	≥1_1/8"	2.117	•
SMH-MT 23 I 10 UN	10.0	27.00	8.00	3.50	≥1_1/8"	2.540	•
SMH-MT 23 I 8 UN	8.0	27.00	8.00	3.50	≥1_3/16"	3.175	•
SMH-MT 23 I 7 UN	7.0	27.00	8.00	3.50	≥1_1/4"	3.629	•
SMH-MT 32 I 20 UN	20.0	32.00	9.00	4.00	≥1_3/8"	1.270	•
SMH-MT 32 I 18 UN	18.0	32.00	9.00	4.00	≥1_3/8"	1.411	•
SMH-MT 32 I 16 UN	16.0	32.00	9.00	4.00	≥1_3/8"	1.588	•
SMH-MT 32 I 12 UN	12.0	32.00	9.00	4.00	≥1_7/16"	2.117	•
SMH-MT 32 I 8 UN	8.0	32.00	9.00	4.00	≥1_1/2"	3.175	•
SMH-MT 32 I 6 UN	6.0	32.00	9.00	4.00	≥1_5/8"	4.233	•
SMH-MT 32 I 5 UN	5.0	32.00	9.00	4.00	≥1_3/4"	5.080	•
SMH-MT 45 I 16 UN	16.0	37.00	11.90	5.00	≥2"	1.588	•
SMH-MT 45 I 12 UN	12.0	37.00	11.90	5.00	≥2"	2.117	•
SMH-MT 45 I 8 UN	8.0	37.00	11.90	5.00	≥2_1/4"	3.175	•
SMH-MT 45 I 6 UN	6.0	37.00	11.90	5.00	≥2_1/4"	4.233	•
SMH-MT 45 I 4.5 UN	4.5	37.00	11.90	5.00	≥2_1/4"	5.644	•
SMH-MT 45 I 4 UN	4.0	37.00	11.90	5.00	≥2_1/2"	6.350	•
SMH-MT 63 I 16 UN	16.0	38.00	11.90	5.00	≥2_3/4"	1.588	•
SMH-MT 63 I 12 UN	12.0	38.00	11.90	5.00	≥2_3/4"	2.117	•
SMH-MT 63 I 8 UN	8.0	38.00	11.90	5.00	≥3"	3.175	•
SMH-MT 63 I 6 UN	6.0	38.00	11.90	5.00	≥3"	4.233	•
SMH-MT 63 I 4 UN	4.0	38.00	11.90	5.00	≥3"	6.350	•

• Used for UN, UNC, UNF, UNEF and UNS thread profiles

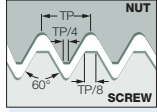
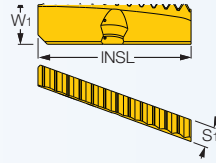
<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

# THREAD MILLING

## EXTERNAL UN

### SMH-MT (external)

Helical Thread Milling Inserts for American Full Profile External Threads for General Applications



### Dimensions

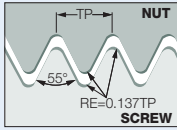
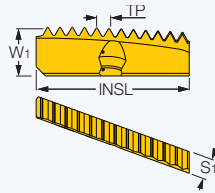
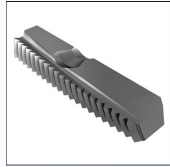
Designation	TPI <sup>(1)</sup>	INSL	W1	S1	SC9819
SMH-MT 23 E 20 UN	20.0	27.00	8.00	3.50	•
SMH-MT 23 E 18 UN	18.0	27.00	8.00	3.50	•
SMH-MT 23 E 16 UN	16.0	27.00	8.00	3.50	•
SMH-MT 23 E 14 UN	14.0	27.00	8.00	3.50	•
SMH-MT 23 E 12 UN	12.0	27.00	8.00	3.50	•
SMH-MT 23 E 10 UN	10.0	27.00	8.00	3.50	•
SMH-MT 23 E 8 UN	8.0	27.00	8.00	3.50	•
SMH-MT 23 E 7 UN	7.0	27.00	8.00	3.50	•
SMH-MT 32 E 24 UN	24.0	32.00	9.00	4.00	•
SMH-MT 32 E 20 UN	20.0	32.00	9.00	4.00	•

• Used for UN, UNC, UNF, UNEF and UNS thread profiles <sup>(1)</sup> Threads per inch

## EXTERNAL/INTERNAL WHITWORTH

### SMH-MT (int. & ext.)

External & Internal Whitworth (BSW, BSF, BSP) Helical Thread Milling Inserts for Fittings and Pipe Couplings



### Dimensions

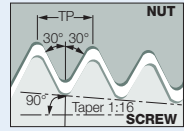
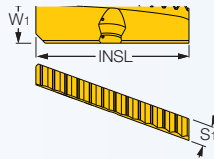
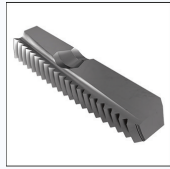
Designation	TPI <sup>(1)</sup>	INSL	W1	S1	THID	THOD	TP <sup>(2)</sup>	SC9819
SMH-MT 23 14 W	14.0	27.00	8.00	3.50	≥G7/8"	>G1/2"	1.814	•
SMH-MT 23 11 W	11.0	27.00	8.00	3.50	≥G1"	>G1"	2.309	•
SMH-MT 32 14 W	14.0	32.00	9.00	4.00	-	≥G1/2"	1.814	•
SMH-MT 32 11 W	11.0	32.00	9.00	4.00	≥G1_1/8"	>G1"	2.309	•
SMH-MT 45 11 W	11.0	37.00	11.90	5.00	≥G1_3/4"	>G1"	2.309	•
SMH-MT 63 11 W	11.0	38.00	11.90	5.00	≥G2_1/2"	>G1"	2.309	•

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

# THREAD MILLING

## EXTERNAL/INTERNAL NPT

**SMH-MT (int. & ext.)**  
External & Internal NPT Helical  
Thread Milling Inserts for  
Steam, Gas and Water Pipes

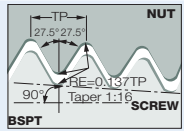
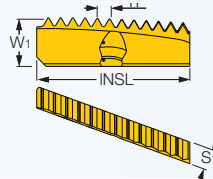


Designation	Dimensions							SC9819
	TPI <sup>(1)</sup>	INSL	W1	S1	THID	THOD	TP <sup>(2)</sup>	
SMH-MT 23 11.5 NPT	11.5	27.00	8.00	3.50	1-2" NPT	1-2" NPT	2.209	•
SMH-MT 32 11.5 NPT	11.5	32.00	9.00	4.00	1_1/4"-2" NPT	1-2" NPT	2.209	•
SMH-MT 45 11.5 NPT	11.5	37.00	11.90	5.00	2" NPT	1-2" NPT	2.209	•
SMH-MT 45 8 NPT	8.0	37.00	11.90	5.00	2_1/2"-3" NPT	-	3.175	•
SMH-MT 63 11.5 NPT	11.5	38.00	11.90	5.00	-	1-2" NPT	2.209	•
SMH-MT 63 8 NPT	8.0	38.00	11.90	5.00	2_1/2"-3" NPT	-	3.175	•

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

## EXTERNAL/INTERNAL THREAD BSPT

**SMH-MT (int. & ext.)**  
Helical External & Internal Thread  
Milling Inserts for BSPT Thread  
for Steam, Gas and Water Pipes

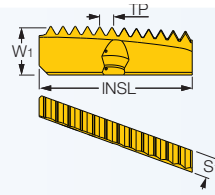


Designation	Dimensions							SC9819
	TPI <sup>(1)</sup>	INSL	W1	S1	THID	THOD	TP <sup>(2)</sup>	
SMH-MT 23 11 BSPT	11.0	27.00	8.00	3.50	>1" BSPT	>1" BSPT	2.309	•
SMH-MT 32 11 BSPT	11.0	32.00	9.00	4.00	>1_1/8" BSPT	>1" BSPT	2.309	•
SMH-MT 45 11 BSPT	11.0	37.00	11.90	5.00	>1_3/4" BSPT	>1" BSPT	2.309	•
SMH-MT 63 11 BSPT	11.0	38.00	11.90	5.00	>2_1/2" BSPT	>1" BSPT	2.309	•

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

# THREAD MILLING

**SMH-MT (int. & ext.)**  
External & Internal NPTF Helical  
Thread Milling Inserts for  
Steam, Gas and Water Pipes



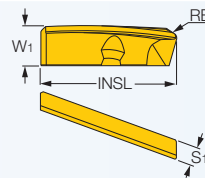
## EXTERNAL/INTERNAL NPTF

### Dimensions

Designation	TPI <sup>(1)</sup>	INSL	W1	S1	THID	THOD	TP <sup>(2)</sup>	SC9819
SMH-MT 23 11.5 NPTF	11.5	27.00	8.00	3.50	1"-2" NPTF	1"-2" NPTF	2.209	•
SMH-MT 32 11.5 NPTF	11.5	32.00	9.00	4.00	1_1/4"-2" NPTF	1"-2" NPTF	2.209	•

<sup>(1)</sup> Threads per inch <sup>(2)</sup> Thread pitch

**SMH-MT**  
Helical Long Edge Finishing Inserts



## FINISHING INSERTS

### Dimensions

Designation	L	CW	S	RE	SC9819
SMH-MT 23F R0.2	27.00	8.00	3.50	0.20	•
SMH-MT 23F R0.5	27.00	8.00	3.50	0.50	•
SMH-MT 23F R1.0	27.00	8.00	3.50	1.00	•
SMH-MT 32F R0.2	32.00	9.00	4.00	0.20	•
SMH-MT 32F R0.5	32.00	9.00	4.00	0.50	•
SMH-MT 32F R1.0	32.00	9.00	4.00	1.00	•
SMH-MT 45F R0.2	37.00	11.90	5.00	0.20	•
SMH-MT 45F R0.5	37.00	11.90	5.00	0.50	•
SMH-MT 45F R1.0	37.00	11.90	5.00	1.00	•
SMH-MT 45F R1.5	37.00	11.90	5.00	1.50	•
SMH-MT 45F R2.0	37.00	11.90	5.00	2.00	•
SMH-MT 63F R0.2	38.00	11.90	5.00	0.20	•
SMH-MT 63F R0.5	38.00	11.90	5.00	0.50	•
SMH-MT 63F R1.0	38.00	11.90	5.00	1.00	•
SMH-MT 63F R1.5	38.00	11.90	5.00	1.50	•
SMH-MT 63F R2.0	38.00	11.90	5.00	2.00	•

### Machining Data for Thread milling Tools

ISO	Material	Condition	Tensile Strength [N/mm <sup>2</sup> ]	Hardness HB	Material No.	
<b>P</b>	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1
		≥ 0.25 %C	Annealed	650	190	2
		< 0.55 %C	Quenched and tempered	850	250	3
		≥ 0.55 %C	Annealed	750	220	4
		Quenched and tempered	1000	300	5	
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6	
		Quenched and tempered	930	275	7	
			1000	300	8	
			1200	350	9	
	High alloyed steel, cast steel, and tool steel	Annealed	680	200	10	
		Quenched and tempered	1100	325	11	
	Stainless steel and cast steel	Ferritic/martensitic	680	200	12	
		Martensitic	820	240	13	
<b>M</b>	Stainless steel	Austenitic	600	180	14	
<b>K</b>	Grey cast iron (GG)	Ferritic		160	17	
		Pearlitic		250	18	
	Cast iron nodular (GGG)	Ferritic/pearlitic		180	15	
		Pearlitic		260	16	
	Malleable cast iron	Ferritic		130	19	
		Pearlitic		230	20	
<b>N</b>	Aluminum-wrought alloy	Not cureable		60	21	
		Cured		100	22	
	Aluminum-cast, alloyed	=<12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temperature		130	25
		>1% Pb	Free cutting		110	26
	Copper alloys	Brass		90	27	
		Electrolitic copper		100	28	
	Non-metallic	Duroplastics, fiber plastics			29	
		Hard rubber			30	
<b>S</b>	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium Ti alloys			RM 400		36
		Alpha+beta alloys cured		RM 1050		37
<b>H</b>	Hardened steel	Hardened		55 HRC	38	
		Hardened		60 HRC	39	
	Chilled cast iron	Cast		400	40	
	Cast iron	Hardened		55 HRC	41	

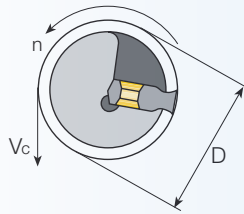
**Indexable Cutting Speed  
m/min SC9819**

1	100-200
2	95-190
3	90-180
4	90-170
5	80-150
6	120-170
7	115-160
8	105-150
9	90-140
10	90-170
11	75-145
12	110-170
13	100-160
14	90-145
15	65-135
16	65-110
17	65-135
18	60-100
19	65-135
20	60-120
21	110-260
22	110-200
23	145-350
24	145-275
25	95-225
26	145-350
27	145-350
28	145-350
29	90-370
30	80-330
31	20-60
32	20-50
33	20-30
34	10-20
35	15-25
36	30-90
37	20-70
38	25-60
39	20-40
40	25-60
41	20-50

**Calculating RPM:**

Example: V=120 m/min  
D=30mm

$$n = \frac{V_c \times 1000}{\pi \times D} = \frac{120 \times 1000}{3.14 \times 30} = 1274 \text{ RPM}$$



**Feed Rate: 0.05-0.15 mm/t**

## Machining Data for Solid Carbide Threading Endmills

ISO	Material	Condition	Tensile Strength [N/mm <sup>2</sup> ]	Hardness HB	Material No.	
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1
		≥ 0.25 %C	Annealed	650	190	2
		< 0.55 %C	Quenched and tempered	850	250	3
		≥ 0.55 %C	Annealed	750	220	4
		Quenched and tempered	1000	300	5	
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6	
		Quenched and tempered	930	275	7	
			1000	300	8	
	High alloyed steel, cast steel, and tool steel	Annealed	680	200	10	
		Quenched and tempered	1100	325	11	
	Stainless steel and cast steel	Ferritic/martensitic	680	200	12	
		Martensitic	820	240	13	
	M	Stainless steel	Austenitic	600	180	14
K	Grey cast iron (GG)	Ferritic		160	17	
		Pearlitic		250	18	
	Cast iron nodular (GGG)	Ferritic/pearlitic		180	15	
		Pearlitic		260	16	
	Malleable cast iron	Ferritic		130	19	
		Pearlitic		230	20	
N	Aluminum-wrought alloy	Not cureable		60	21	
		Cured		100	22	
	Aluminum-cast, alloyed	=<12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temperature		130	25
	Copper alloys	>1% Pb	Free cutting		110	26
			Brass		90	27
		Electrolitic copper		100	28	
	Non-metallic	Duroplastics, fiber plastics				29
		Hard rubber				30
S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium Ti alloys		RM 400		36	
		Alpha+beta alloys cured	RM 1050		37	
H	Hardened steel	Hardened		55 HRC	38	
		Hardened		60 HRC	39	
	Chilled cast iron	Cast		400	40	
	Cast iron	Hardened		55 HRC	41	

\* For cutters with long cutting flute, reduce feed rate by 40%.



Material No.	Cutting Speed (m/min)	Cutting Diameter											
		Feed (mm/tooth)											
	SC9819	2	3	4	6	8	10	12	14	16	20	25	30
1	100-250	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
2	80-210	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
3	65-170												
4	110-180	0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
5	95-160	0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
6	90-160	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
7	65-200	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
8	70-210	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
9	95-160	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
10	130-170	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
11	75-100	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
12	110-170	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
13	70-155	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
14	85-100	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
15	120-160	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
16	75-160	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
17	70-150	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
18	110-140	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
19	120-160	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
20	110-140	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.21	0.15	0.18	0.21
21	160-300	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
22													
23	150-350	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
24													
25	100-250	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10	0.12
26													
27													
28													
29	100-400	0.05	0.06	0.07	0.09	0.1	0.11	0.12	0.13	0.15	0.18	0.22	0.25
30													
31													
32													
33	20-80	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05
34													
35													
36													
37	20-80	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05
38	55-65												
39	45-55												
40	90-105												
41	55-65												

## Thread Milling CNC Program for Internal Thread

Right-hand thread (climb milling) from bottom up.  
Program is based on tool center.  
This method of programming needs no tool radius  
compensation value, other than an offset for wear.

$$A = \frac{D_o - D}{2}$$

A = Radius of tool path  
D<sub>o</sub> = Major thread diameter  
D = Cutting diameter

### General Program

```
G90 G00 G54 G43 H1X0 Y0 Z10 S...
G00 Z-(to thread depth)
G01 G91 G41 D1 X(A/2) Y-(A/2) Z0 F...
G03 X(A/2) Y(A/2) R(A/2) Z(1/8 pitch)
G03 X0 Y0 I-(A) J0 Z(pitch)
G03 X-(A/2) Y(A/2) R(A/2) Z(1/8 pitch)
G01 G40 X-(A/2) Y-(A/2) Z0
G90 X0 Y0 Z0
```

### Internal Thread

Example: M 48x2.0 IN-RH (Thread depth 25 mm)

Toolholder: **MTSR0029 J30**

(Cutting dia. 29 mm)

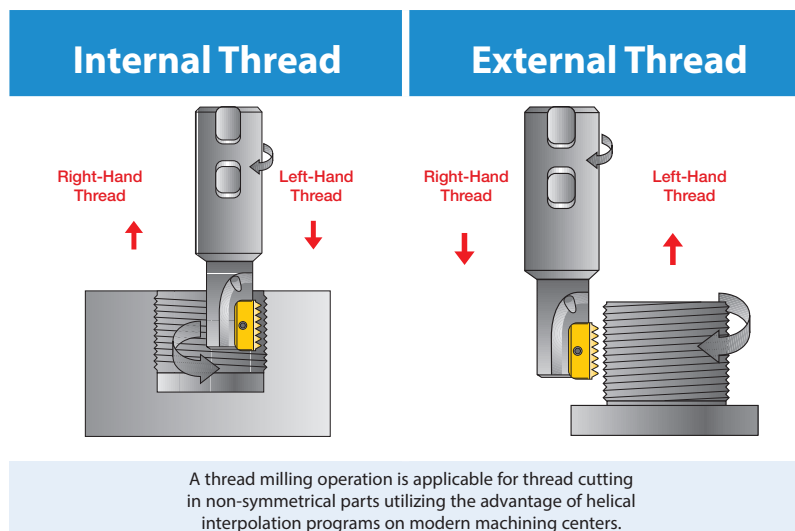
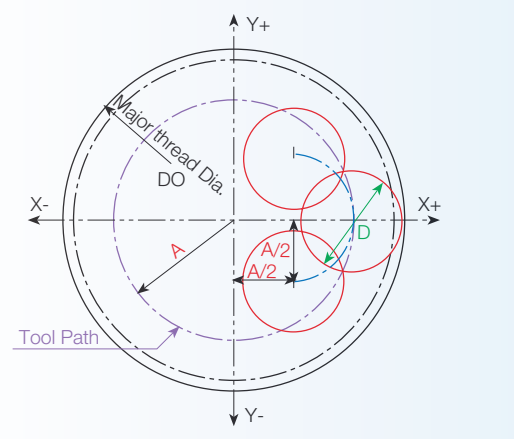
Insert: **MT30 I2.0ISO**

$$A = (D_o - D) / 2 = (48 - 29) / 2 = 9.5$$

$$A/2 = 4.75$$

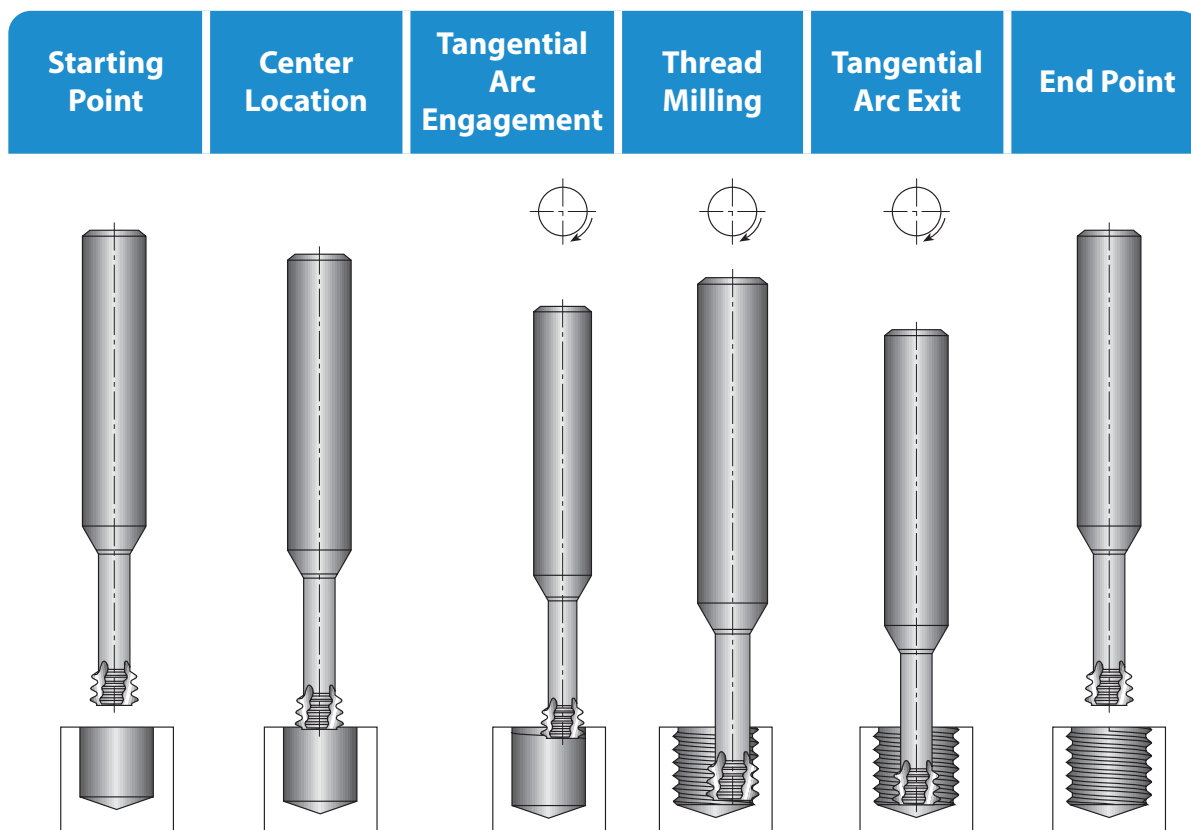
(Tool compensation of radius=0)

```
G90 G0 G54 G43 G17 H1X0 Y0 Z10 S1320
G0 Z-25
G01 G91 G41 D1X 4.75 Y-4.75 Z0 F41
G03 X4.75 Y4.75 R4.75 Z0.25
G03 X0 Y0 I-9.5 J0 Z2.0
G03 X-4.75 Y4.75 R4.75 Z0.25
G01 G40 X-4.75 Y-4.75 Z0
G90 G0 X0 Y0 Z0
M30
%
```



## MTECS Small Diameter, Short Solid Carbide Thread Mills

### Thread Milling - Recommended Procedure



### Cutting Data

ISO	Materials	Cutting Speed, m/min	Feed (mm/tooth) for Diameter (mm)												
			Ø1.5	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12	Ø14	Ø15
<b>P</b>	Low & medium carbon steels	60-120	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
	High carbon steels	60-90	0.04	0.05	0.06	0.08	0.09	0.1	0.12	0.13	0.14	0.14	0.16	0.17	0.18
	Alloy steels, treated steels	50-80	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14
	Cast steels	70-90	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14
<b>M</b>	Stainless steels	60-90	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.1	0.11	0.12	0.13
<b>S</b>	Nickel alloys, titanium alloys	20-40	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08
<b>K</b>	Cast iron	40-80	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
<b>N</b>	Aluminum	80-150	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
	Synthetics, duroplastics, thermoplastics	50-200	0.1	0.11	0.12	0.14	0.16	0.18	0.19	0.19	0.19	0.19	0.19	0.2	0.2

## MTECS Small Diameter, Short Solid Carbide Thread Mills

The **MTECS** (Mill Thread Endmills Carbide Short) solid carbide thread mills are used for the production of small internal threads. These thread mills feature a short 3-tooth cutting zone with 3 flutes and a released neck between the cutting zone and the shank.

This unique tool design offers very precise profiles and a high performance **SC9819** submicron carbide grade with **PVD** titanium aluminum nitride coating. The very short profile exerts a low force which minimizes tool bending. This facilitates parallel and high thread precision for the entire length.



Compared to taps, the **SOLIDTHREAD** is more accurate, thread machining is substantially faster and there is no danger of a broken tap being stuck in the hole.

Features	Solid Carbide Thread Mills	Taps
Thread surface quality	High	Medium
Thread geometry	Very accurate	Medium
Thread tolerance	4H, 5H, 6H with std. cutter	6H with standard tap, 4H with special tap
Machining time	Shorter or same as tap	Short
Machining load	Very low	High
Range of thread diameters	Wide range of diameters	Specific tap for each thread size
Right-/Left-hand threading	Same cutter	Specific tap for right- and left-hand
Geometric shape	Full profile	Partial profile

### Features

- Minimum thread size: M1.4x0.3 (1.1 mm bore diameter) up to M20x2.50
- 2xD and 3xD threading lengths
- High cutting speeds
- Short cycle time
- Low cutting forces due to the short contact profile resulting in accurate and parallel thread
- Prevents oval threads near thin walls
- No more dealing with broken taps
- Reliable threading in blind holes
- Excellent performance on hardened steel, high temperature alloys and titanium



# SWISSTEC

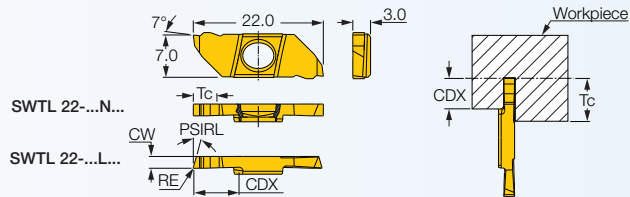
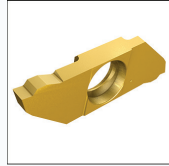


## SwissTec Grades

S	C	4	8	Coating	9
		SwissTec	Constant		Constant

Coating		Material Group					
4	TiAlN+TiN	P20-P50	M20-M40	K15-K40	S15-S25	H20-H30	N05-N25

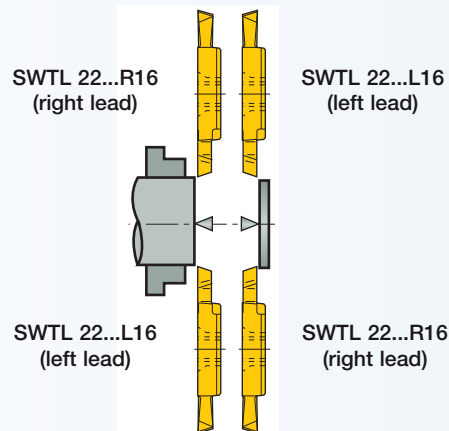
**SWTR/L-22-N/R/L**  
Grooving and Parting Inserts



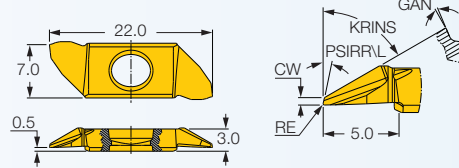
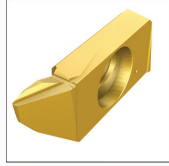
Left-hand shown

Designation	Dimensions								Recommended Machining Data	
	CW	CWTOL <sup>(1)</sup>	PSIRL	PSIRR	RE	RETOL <sup>(2)</sup>	CDX	Tc	SC4849	f groove (mm/rev)
SWTL 22-050N-00	0.50	0.02	-	-	0.00	0.030	1.80	5.5	●	0.02-0.04
SWTR 22-050N-00	0.50	0.02	-	-	0.00	0.030	1.80	5.5	●	0.02-0.04
SWTL 22-100N-00	1.00	0.02	-	-	0.00	0.030	4.00	5.5	●	0.03-0.05
SWTR 22-100N-00	1.00	0.02	-	-	0.00	0.030	4.00	5.5	●	0.03-0.05
SWTL 22-150N-00	1.50	0.02	-	-	0.00	0.030	5.50	8.0	●	0.03-0.07
SWTR 22-150N-00	1.50	0.02	-	-	0.00	0.030	5.50	8.0	●	0.03-0.07
SWTL 22-200N-10	2.00	0.02	-	-	0.10	0.030	7.00	8.0	●	0.03-0.09
SWTR 22-200N-10	2.00	0.02	-	-	0.10	0.030	7.00	8.0	●	0.03-0.09
SWTL 22-050L12-00	0.50	0.02	12.0	-	0.00	0.030	2.00	5.5	●	0.01-0.03
SWTR 22-050R12-00	0.50	0.02	-	12.0	0.00	0.030	2.00	5.5	●	0.01-0.03
SWTL 22-050L12-00	0.50	0.02	12.0	-	0.00	0.030	2.00	5.5	●	0.01-0.03
SWTR 22-050R12-00	0.50	0.02	-	12.0	0.00	0.030	2.00	5.5	●	0.01-0.03
SWTL 22-100L16-00	1.00	0.02	16.0	-	0.00	0.030	4.00	5.5	●	0.02-0.04
SWTR 22-100R16-00	1.00	0.02	-	16.0	0.00	0.030	4.00	5.5	●	0.02-0.04
SWTL 22-100L16-00	1.00	0.02	16.0	-	0.00	0.030	4.00	5.5	●	0.02-0.04
SWTR 22-100R16-00	1.00	0.02	-	16.0	0.00	0.030	4.00	5.5	●	0.02-0.04
SWTL 22-150L16-00	1.50	0.02	16.0	-	0.00	0.030	5.50	8.0	●	0.03-0.06
SWTR 22-150R16-00	1.50	0.02	-	16.0	0.00	0.030	5.50	8.0	●	0.03-0.06
SWTL 22-150L16-00	1.50	0.02	16.0	-	0.00	0.030	5.50	8.0	●	0.03-0.06
SWTR 22-150R16-00	1.50	0.02	-	16.0	0.00	0.030	5.50	8.0	●	0.03-0.06
SWTL 22-200L16-00	2.00	0.02	16.0	-	0.00	0.030	7.00	8.0	●	0.03-0.07
SWTR 22-200R16-00	2.00	0.02	-	16.0	0.00	0.030	7.00	8.0	●	0.03-0.07
SWTL 22-200L16-00	2.00	0.02	16.0	-	0.00	0.030	7.00	8.0	●	0.03-0.07
SWTR 22-200R16-00	2.00	0.02	-	16.0	0.00	0.030	7.00	8.0	●	0.03-0.07

<sup>(1)</sup> Cutting width tolerance (+/-) <sup>(2)</sup> Corner radius tolerance (+/-)



## SWTR/L-22-BR/BL/BRA/BLA Back Turning Inserts



Left-hand shown

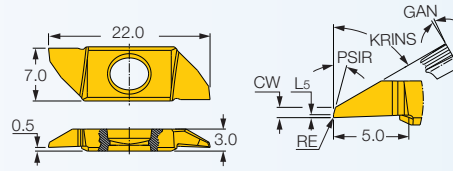
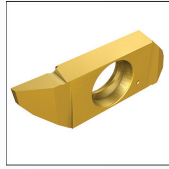
Designation	Dimensions						SC4849	Recommended Machining Data	
	CW	GAN	RE	PSIRL	PSIRR	KRINS <sup>(1)</sup>		a <sub>p</sub> (mm)	f turn (mm/rev)
SWTL 22-BL00-05K7	0.50	7.0	0.00	12.0	-	60.0	●	0.05-3.00	0.01-0.15
SWTL 22-BL10-05K7	0.50	7.0	0.10	12.0	-	60.0	●	0.12-3.00	0.01-0.15
SWTR 22-BR00-05K7	0.50	7.0	0.00	-	12.0	60.0	●	0.05-3.00	0.01-0.15
SWTR 22-BR10-05K15	0.50	15.0	0.10	-	12.0	60.0	●	0.12-3.00	0.01-0.15
SWTR 22-BR10-05K7	0.50	7.0	0.10	-	12.0	60.0	●	0.12-3.00	0.01-0.15
SWTL 22-BL08-10K7	1.00	7.0	0.08	12.0	-	60.0	●	0.10-3.00	0.01-0.15
SWTR 22-BR08-10K15	1.00	15.0	0.08	-	12.0	60.0	●	0.10-3.00	0.01-0.15
SWTR 22-BR08-10K7	1.00	7.0	0.08	-	12.0	60.0	●	0.10-3.00	0.01-0.15

• For cutting speed recommendations and user guide, <sup>(1)</sup> Edge angle related to the wiper



## SWTR/L-22-ER/EL

Back Turning Inserts for Short Chipping Materials



Left-hand shown

Designation	Dimensions								Recommended Machining Data	
	RE	CW	L5	GAN	KRINS <sup>(1)</sup>	PSIRL	PSIRR	SC4849	ap (mm)	f turn (mm/rev)
SWTL 22-EL00-03K0	0.00	0.30	0.20	0.0	60.0	6.0	-	•	0.05-2.50	0.01-0.15
SWTR 22-ER00-03K0	0.00	0.30	0.20	0.0	60.0	-	6.0	•	0.05-2.50	0.01-0.15
SWTL 22-EL00-07K0	0.00	0.70	0.20	0.0	60.0	15.0	-	•	0.05-2.50	0.01-0.15
SWTR 22-EL00-07K0	0.00	0.70	0.20	0.0	60.0	15.0	-	•	0.05-2.50	0.01-0.15
SWTR 22-ER00-07K0	0.00	0.70	0.20	0.0	60.0	-	15.0	•	0.05-2.50	0.01-0.15
SWTR 22-ER00-07K10	0.00	0.70	0.20	10.0	60.0	-	3.0	•	0.05-2.50	0.01-0.15

1) Edge angle related to the wiper

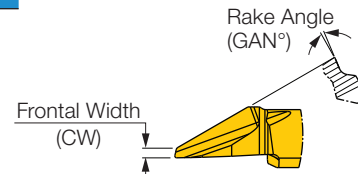
### Rake Angle (GAN°) Selection Guide

	Brass	Ledloy	Steel	St. Steel	Titanium	Aluminum
0°						
8°						
15°						

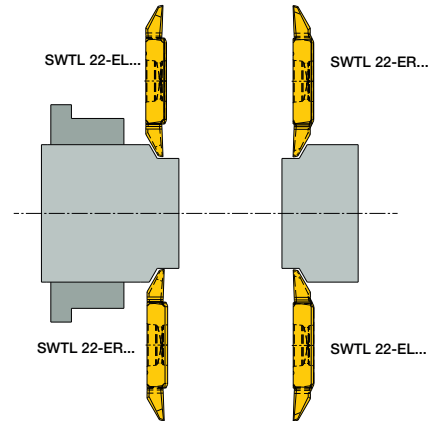
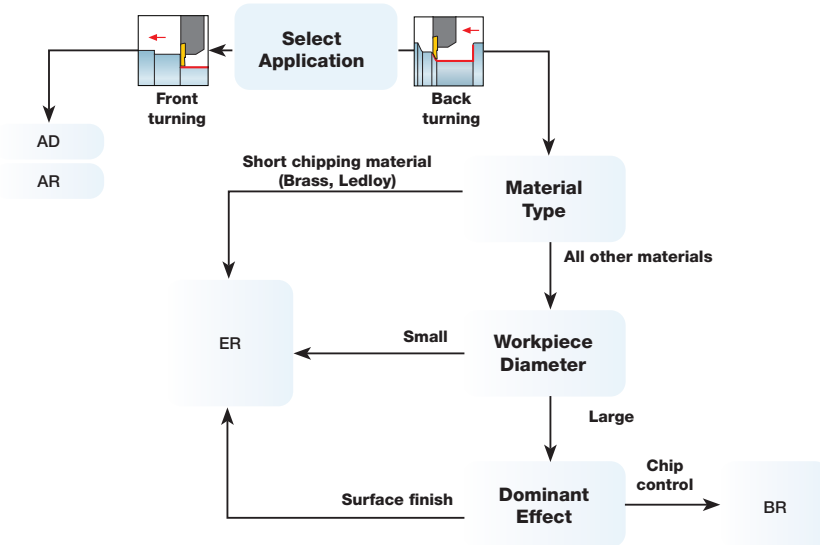
For brittle workpieces and small diameters always prefer GAN=0°

### Frontal Width Selection Guide

- Small diameters and brittle workpiece: small CW (less radial force)
- Large diameters: larger CW (stronger cutting edge)

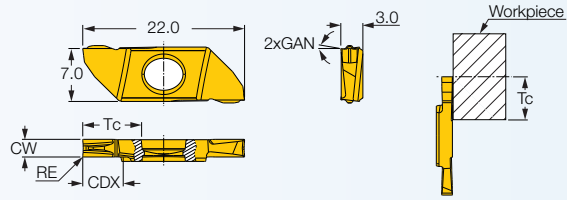
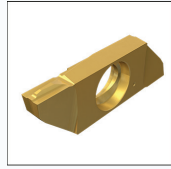


### Turning Insert Selection Process



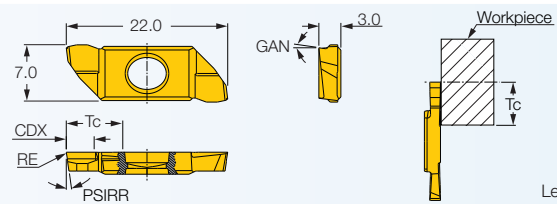
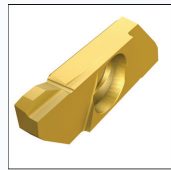


**SWTR/L-22-AD**  
Turning Inserts with a Frontal Relief Angle



Designation	Dimensions					SC4849	Recommended Machining Data		
	CW	RE	Tc	GAN	CDX		ap (mm)	f turn (mm/rev)	f groove (mm/rev)
SWTR/L 22-AD08-24K8	2.40	0.08	8.0	8.0	5.50	•	0.12-3.80	0.01-0.15	0.01-0.06

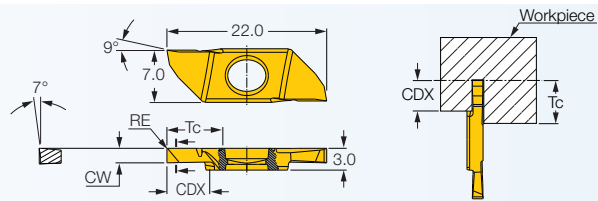
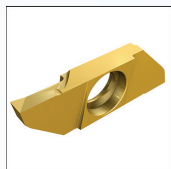
**SWTR/L-22-AR/AL**  
Turning Inserts with a Frontal Relief Angle



Designation	Dimensions						SC4849	Recommended Machining Data	
	RE	Tc	PSIRL	PSIRR	GAN	CDX <sup>(1)</sup>		ap (mm)	f turn (mm/rev)
SWTL 22-AL00-25K16	0.00	8.0	8.0	-	16.0	3.80	•	0.05-3.80	0.01-0.15
SWTR 22-AR00-25K16	0.00	8.0	-	8.0	16.0	3.80	•	0.05-3.80	0.01-0.15
SWTL 22-AL10-25K8	0.10	8.0	12.0	-	8.0	3.80	•	0.12-3.80	0.01-0.15
SWTR 22-AR10-25K8	0.10	8.0	-	12.0	8.0	3.80	•	0.12-3.80	0.01-0.15

<sup>(1)</sup> Cutting depth maximum

**SWTR/L-22-NP**  
Grooving, Turning and Parting Inserts

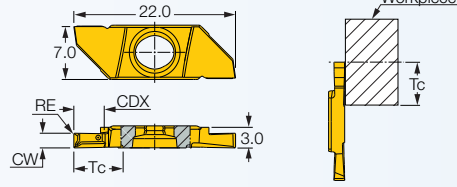
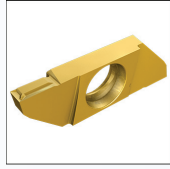


Designation	Dimensions						SC4849	Recommended Machining Data		
	CW	RE	CWTOL <sup>(1)</sup>	RETOL <sup>(2)</sup>	CDX	Tc		ap (mm)	f turn (mm/rev)	f groove (mm/rev)
SWTR/L 22-080NP00	0.80	0.00	0.02	0.020	2.50	8.0	•	0.05-0.70	0.02-0.06	0.02-0.05
SWTR/L 22-100NP08	1.00	0.08	0.02	0.020	3.00	8.0	•	0.05-0.80	0.02-0.08	0.02-0.06
SWTR/L 22-150NP05	1.50	0.05	0.02	0.020	6.00	8.0	•	0.05-1.80	0.02-0.11	0.02-0.07
SWTR/L 22-200NP05	2.00	0.05	0.02	0.020	6.00	8.0	•	0.05-2.50	0.03-0.15	0.03-0.09
SWTR/L 22-250NP05	2.50	0.05	0.02	0.020	6.00	8.0	•	0.05-3.10	0.03-0.19	0.03-0.11

<sup>(1)</sup> Cutting width tolerance (+/-) <sup>(2)</sup> Corner radius tolerance (+/-)

## SWTR/L-22-NX

Grooving and Turning Inserts with a Chipformer



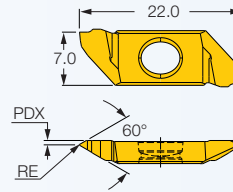
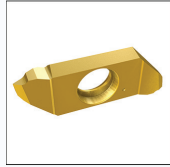
Right-hand shown

Designation	Dimensions						SC4849	Recommended Machining Data		
	CW	CWTOL <sup>(1)</sup>	RE	RETOL <sup>(2)</sup>	CDX <sup>(3)</sup>	Tc <sup>(4)</sup>		ap (mm)	f turn (mm/rev)	f groove (mm/rev)
SWTR/L 22-150NX080	1.50	0.02	0.08	0.020	4.30	6.8	●	0.05-1.80	0.02-0.11	0.02-0.07
SWTR/L 22-200NX080	2.00	0.02	0.08	0.020	4.30	6.8	●	0.05-2.50	0.03-0.15	0.03-0.09
SWTR/L 22-250NX080	2.50	0.02	0.08	0.020	4.30	6.8	●	0.05-3.10	0.03-0.19	0.03-0.11

<sup>(1)</sup> Cutting width tolerance (+/-) <sup>(2)</sup> Corner radius tolerance (+/-) <sup>(3)</sup> Cutting depth maximum <sup>(4)</sup> Maximum 32 mm diameter for face turning

## SWTR/L-22-MTR/MTL

Threading Inserts with a 60° Partial Profile



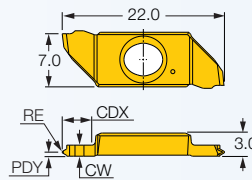
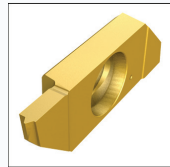
Left-hand shown

Designation	Dimensions						SC4849
	RE	PDX	TPN <sup>(1)</sup>	TPX <sup>(2)</sup>	TPIX <sup>(3)</sup>	TPIN <sup>(4)</sup>	
SWTL 22-MTL003	0.03	0.4	0.300	0.900	83.00	28	●
SWTR 22-MTR003	0.03	0.4	0.300	0.900	83.00	28	●
SWTL 22-MTR/L007	0.07	0.5	0.700	1.100	36.00	23	●
SWTR 22-MTR/L007	0.07	0.5	0.700	1.100	36.00	23	●
SWTL 22-MTL010	0.10	0.8	0.900	1.700	28.00	15	●
SWTR 22-MTR010	0.10	0.8	0.900	1.700	28.00	15	●

<sup>(1)</sup> Thread pitch minimum (mm) <sup>(2)</sup> Thread pitch maximum (mm) <sup>(3)</sup> Threads per inch maximum <sup>(4)</sup> Threads per inch minimum

## SWTR-22-MTR-ISO

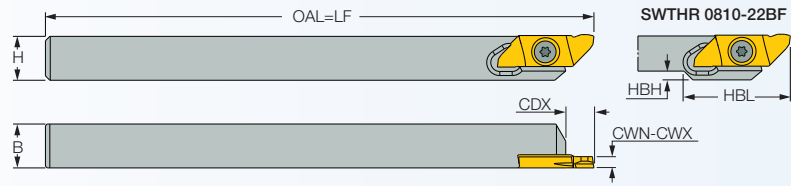
Precision Ground ISO Metric Full Profile Threading Inserts



Designation	Dimensions						SC4849
	TP	CW	CDX	RE	PDY		
SWTR 22-MTR-0.3ISO	0.300	1.00	3.00	0.03	0.2	●	
SWTR 22-MTR-0.4ISO	0.400	1.00	3.00	0.04	0.2	●	
SWTR 22-MTR-0.5ISO	0.500	1.00	3.00	0.06	0.3	●	
SWTR 22-MTR-0.75ISO	0.750	1.00	3.00	0.10	0.4	●	
SWTR 22-MTR-1.0ISO	1.000	1.50	4.00	0.14	0.6	●	
SWTR 22-MTR-1.5ISO	1.500	2.00	4.00	0.20	0.8	●	

## SWTHR/L-22BF

Grooving and Turning Tools with Back and Front Clamping for Swiss-Type and Automatic Machines



Designation	H	B	OAL	HBH	HBL	CDX <sup>(1)</sup>	CWN <sup>(2)</sup>	CWX <sup>(3)</sup>	Insert Screw	TORX key
SWTHR/L 0810-22BF	8.0	10.0	125.00	2.0	24.0	8.00	0.50	2.50	SR M4X0.7-19425	T-8/5
SWTHR/L 10-22BF	10.0	10.0	125.00	-	-	8.00	0.50	2.50	SR M4X0.7-19425	T-8/5
SWTHR/L 12-22BF	12.0	12.0	125.00	-	-	8.00	0.50	2.50	SR M4X0.7-19425	T-8/5
SWTHR/L 16-22BF	16.0	16.0	125.00	-	-	8.00	0.50	2.50	SR M4X0.7-19425	T-8/5

<sup>(1)</sup> See insert dimensions <sup>(2)</sup> Minimum cutting width <sup>(3)</sup> Maximum cutting width

# MICROTEC

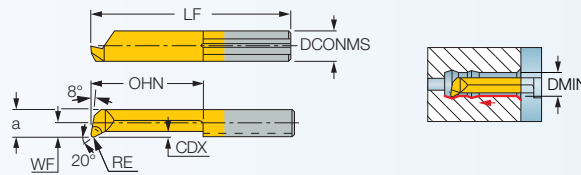
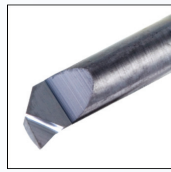


## MicroTec Grades

S	C	5	8	Coating	9
		MicroTec	Constant		Constant

Coating	Material Group						
1 TiAlN	P15-P30	M20-M30	K20-K40	S15-S30	H20-H30		
3 TiCN+TiN	P30-P45	M25-M45					
4 TiAlN+TiN	P20-P50	M25-M40	K15-K40	S15-S25	H20-H30	N05-N25	

**MITEC R/L 050, 053, 055**  
Inserts for Internal Turning  
and Chamfering



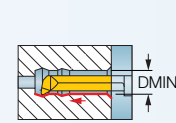
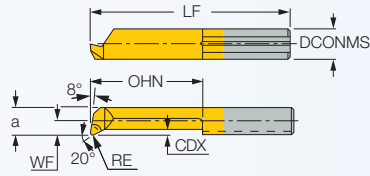
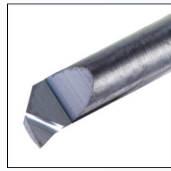
Right-hand shown

Designation	Dimensions								Tough ↔ Hard	
	DCONMS	WF	a	LF	OHN	RE	CDX	DMIN	SC5839	SC5819
									•	•
MITEC R 050.06-2 <sup>(1)</sup>	4.00	-	0.50	20.00	2.0	0.04	0.08	0.60	•	•
MITEC R 050.06-3 <sup>(1)</sup>	4.00	-	0.50	20.00	3.0	0.04	0.08	0.60	•	•
MITEC R 050.08-4	4.00	-	0.70	20.00	4.0	0.04	0.08	0.80		
MITEC R 050.1-5	4.00	-	0.90	20.00	4.5	0.05	0.10	1.00	•	•
MITEC R/L 050.1-7	4.00	-	0.90	22.00	6.5	0.05	0.10	1.00	•	•
MITEC R 050.15-5	4.00	-	1.30	19.00	5.0	0.05	0.10	1.50		•
MITEC R 050.15-10	4.00	-	1.30	24.00	10.0	0.05	0.10	1.50		•
MITEC R/L 050.2-5	4.00	-	1.70	19.00	4.0	0.05	0.10	2.00	•	•
MITEC R 055.2-5	4.00	-	1.70	19.00	5.0	0.05	0.10	2.00		•
MITEC R/L 050.2-10	4.00	-	1.70	24.00	9.0	0.05	0.10	2.00	•	•
MITEC R 055.2-10	4.00	-	1.70	24.00	10.0	0.05	0.10	2.00		•
MITEC R 055.2-15	4.00	-	1.70	29.00	15.0	0.05	0.10	2.00		•
MITEC R 050.25-5	4.00	0.20	2.20	19.00	5.0	0.05	0.15	2.50		•
MITEC R 050.25-10	4.00	0.20	2.20	24.00	10.0	0.05	0.15	2.50		•
MITEC R 050.25-16	4.00	0.20	2.20	30.00	16.0	0.05	0.15	2.50		•
MITEC R 053.3-10	4.00	0.60	2.60	24.00	9.0	0.03	0.20	2.80		•
MITEC R 055.3-10	4.00	0.60	2.60	24.00	10.0	0.05	0.20	2.80		•
MITEC R/L 050.3-10	4.00	0.60	2.60	24.00	9.0	0.10	0.20	2.80	•	•
MITEC R 053.3-16	4.00	0.60	2.60	30.00	15.0	0.03	0.20	2.80		•
MITEC R 055.3-16	4.00	0.60	2.60	30.00	16.0	0.05	0.20	2.80		•
MITEC R 050.3-16	4.00	0.60	2.60	30.00	15.0	0.10	0.20	2.80	•	•
MITEC R 053.3-20	4.00	0.60	2.60	34.00	19.0	0.03	0.20	2.80		•
MITEC R/L 050.3-20	4.00	0.60	2.60	34.00	19.0	0.10	0.20	2.80	•	•
MITEC R 050.35-10	4.00	1.10	3.10	24.00	10.0	0.10	0.25	3.50		•
MITEC R 050.35-20	4.00	1.10	3.10	34.00	20.0	0.10	0.25	3.50		•
MITEC R 050.35-24	4.00	1.10	3.10	38.00	24.0	0.10	0.25	3.50		•
MITEC R 053.4-10	4.00	1.50	3.50	24.00	9.0	0.03	0.30	4.00		•
MITEC R 055.4-10	4.00	1.50	3.50	24.00	10.0	0.05	0.30	4.00		•
MITEC R/L 050.4-10	4.00	1.50	3.50	24.00	9.0	0.10	0.30	4.00	•	•
MITEC R 053.4-16	4.00	1.50	3.50	30.00	15.0	0.03	0.30	4.00		•
MITEC R 055.4-16	4.00	1.50	3.50	30.00	16.0	0.05	0.30	4.00		•
MITEC R 050.4-16	4.00	1.50	3.50	30.00	15.0	0.10	0.30	4.00	•	•

• Specify right- or left-hand bars <sup>(1)</sup> Maximum D.O.C.=0.01-0.03 mm, maximum feed=0.01 mm/rev.

## MITEC R/L 050, 053, 055 (continued)

Inserts for Internal Turning  
and Chamfering

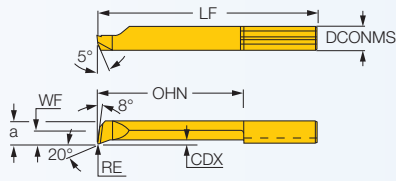
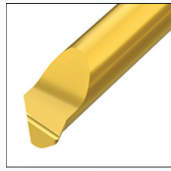


Right-hand shown

Designation	Dimensions									Tough ↔ Hard	
	DCONMS	WF	a	LF	OHN	RE	CDX	DMIN	SC5839	SC5819	
									•	•	
MITEC R 053.4-20	4.00	1.50	3.50	34.00	19.0	0.03	0.30	4.00		•	
MITEC R 055.4-20	4.00	1.50	3.50	34.00	20.0	0.05	0.30	4.00		•	
MITEC R/L 050.4-20	4.00	1.50	3.50	34.00	19.0	0.10	0.30	4.00	•	•	
MITEC R/L 050.4-24	4.00	1.50	3.50	38.00	23.0	0.10	0.30	4.00	•	•	
MITEC R/L 050.4-28	4.00	1.50	3.50	42.00	27.0	0.10	0.30	4.00	•	•	
MITEC R 055.4-28	4.00	1.50	3.50	42.00	28.0	0.05	0.50	4.00		•	
MITEC R 055.5-10	5.00	1.90	4.40	25.00	9.0	0.05	0.50	5.00		•	
MITEC R/L 050.5-10	5.00	1.90	4.40	25.00	9.0	0.15	0.50	5.00	•	•	
MITEC R 055.5-15	5.00	1.90	4.40	30.00	14.0	0.05	0.50	5.00		•	
MITEC R/L 050.5-15	5.00	1.90	4.40	30.00	14.0	0.15	0.50	5.00	•	•	
MITEC R 055.5-20	5.00	1.90	4.40	35.00	19.0	0.05	0.50	5.00		•	
MITEC R/L 050.5-20	5.00	1.90	4.40	35.00	19.0	0.15	0.50	5.00	•	•	
MITEC R 055.5-25	5.00	1.90	4.40	40.00	24.0	0.05	0.50	5.00		•	
MITEC R/L 050.5-25	5.00	1.90	4.40	40.00	24.0	0.15	0.50	5.00	•	•	
MITEC R 055.5-30	5.00	1.90	4.40	45.00	29.0	0.05	0.50	5.00		•	
MITEC R/L 050.5-30	5.00	1.90	4.40	45.00	29.0	0.15	0.50	5.00	•	•	
MITEC R/L 050.5-35	5.00	1.90	4.40	50.00	34.0	0.15	0.50	5.00	•	•	
MITEC R 055.6-15	6.00	2.30	5.30	30.00	14.0	0.05	0.50	6.00		•	
MITEC R 050.6-15	6.00	2.30	5.30	30.00	14.0	0.15	0.50	6.00	•	•	
MITEC R 055.6-22	6.00	2.30	5.30	37.00	21.0	0.05	0.50	6.00		•	
MITEC R/L 050.6-22	6.00	2.30	5.30	37.00	21.0	0.15	0.50	6.00	•	•	
MITEC R 055.6-25	6.00	2.30	5.30	40.00	24.0	0.05	0.50	6.00		•	
MITEC R/L 050.6-25	6.00	2.30	5.30	40.00	24.0	0.15	0.50	6.00	•	•	
MITEC R 055.6-30	6.00	2.30	5.30	45.00	29.0	0.05	0.50	6.00		•	
MITEC R/L 050.6-30	6.00	2.30	5.30	45.00	29.0	0.15	0.50	6.00	•	•	
MITEC R/L 050.6-35	6.00	2.30	5.30	50.00	34.0	0.15	0.50	6.00	•	•	
MITEC R/L 050.6-42	6.00	2.30	5.30	57.00	41.0	0.15	0.50	6.00	•	•	
MITEC R/L 050.7-20	7.00	2.80	6.30	35.00	19.0	0.15	0.60	6.80	•	•	
MITEC R/L 050.7-25	7.00	2.80	6.30	40.00	24.0	0.15	0.60	6.80	•	•	
MITEC R/L 050.7-30	7.00	2.80	6.30	45.00	29.0	0.15	0.60	6.80	•	•	
MITEC R/L 050.7-35	7.00	2.80	6.30	50.00	34.0	0.15	0.60	6.80	•	•	
MITEC R/L 050.7-40	7.00	2.80	6.30	55.00	39.0	0.15	0.60	6.80	•	•	
MITEC R/L 050.7-45	7.00	2.80	6.30	60.00	44.0	0.15	0.60	6.80	•	•	
MITEC R/L 050.7-50	7.00	2.80	6.30	65.00	49.0	0.15	0.60	6.80	•	•	

• Specify right- or left-hand bars <sup>(1)</sup> Maximum D.O.C.=0.01-0.03 mm, maximum feed=0.01 mm/rev.

**MITEC R/L 050-C**  
Inserts with Chipformers for  
Internal Boring and Profiling



Right-hand shown

### Dimensions

Designation	DCONMS	WF	a	LF	OHN	CDX	DMIN	RE	SC5819
MITEC R/L 050.4-10C	4.00	1.50	3.50	24.00	10.0	0.30	4.00	0.20	•
MITEC R 050.4-20C	4.00	1.50	3.50	34.00	20.0	0.30	4.00	0.20	•
MITEC R 050.4-28C	4.00	1.50	3.50	42.00	28.0	0.30	4.00	0.20	•
MITEC R 050.4-16C	4.00	1.50	3.50	30.00	16.0	0.30	4.00	0.20	•
MITEC R 050.5-10C	5.00	1.90	4.40	25.00	10.0	0.50	5.00	0.20	•
MITEC R/L 050.5-15C	5.00	1.90	4.40	30.00	15.0	0.50	5.00	0.20	•
MITEC R/L 050.5-20C	5.00	1.90	4.40	35.00	20.0	0.50	5.00	0.20	•
MITEC R 050.5-25C	5.00	1.90	4.40	40.00	25.0	0.50	5.00	0.20	•
MITEC R 050.5-30C	5.00	1.90	4.40	45.00	30.0	0.50	5.00	0.20	•
MITEC R 050.5-35C	5.00	1.90	4.40	50.00	35.0	0.50	5.00	0.20	•
MITEC R/L 050.6-15C	6.00	2.30	5.30	30.00	15.0	0.50	6.00	0.20	•
MITEC R 050.6-22C	6.00	2.30	5.30	37.00	22.0	0.50	6.00	0.20	•
MITEC R/L 050.6-25C	6.00	2.30	5.30	40.00	25.0	0.50	6.00	0.20	•
MITEC R/L 050.6-35C	6.00	2.30	5.30	50.00	35.0	0.50	6.00	0.20	•
MITEC R 050.6-42C	6.00	2.30	5.30	57.00	42.0	0.50	6.00	0.20	•
MITEC R 050.7-20C	7.00	2.80	6.30	35.00	20.0	0.60	6.80	0.20	•
MITEC R 050.7-25C	7.00	2.80	6.30	40.00	25.0	0.60	6.80	0.20	•
MITEC R/L 050.7-30C	7.00	2.80	6.30	45.00	30.0	0.60	6.80	0.20	•
MITEC R 050.7-40C	7.00	2.80	6.30	55.00	40.0	0.60	6.80	0.20	•
MITEC L 050.7-50C	7.00	2.80	6.30	65.00	50.0	0.60	6.80	0.20	•

• All left-hand inserts on request

#### Stainless Steel 316L

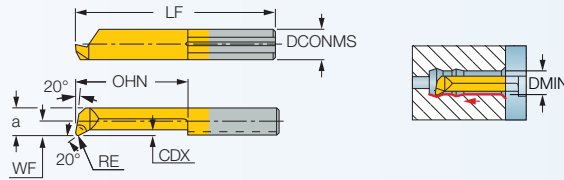
**MITEC R 050.6-35C with Chipbreaker**  
f= 0.05 mm/rev



**MITEC R 050.6-35 Standard**  
f= 0.05 mm/rev



**MITEC R 050.20**  
Inserts for Internal Turning and Chamfering Next to the Bottom of Blind Holes



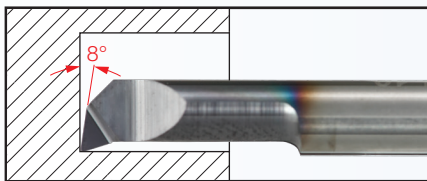
Right-hand shown

### Dimensions

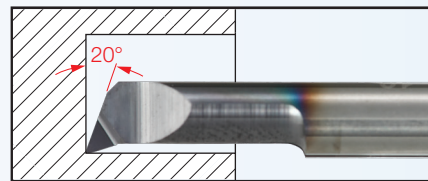
Designation	DCONMS	WF	a	LF	OHN	RE	CDX	DMIN	SC5819
MITEC R 050.20.2-10	4.00	-	1.70	24.00	10.0	0.05	0.10	2.00	•
MITEC R 050.20.3-10	4.00	0.60	2.60	24.00	10.0	0.10	0.20	2.80	•
MITEC R 050.20.4-16	4.00	1.50	3.50	30.00	16.0	0.10	0.30	4.00	•
MITEC R 050.20.5-20	5.00	1.90	4.40	35.00	19.0	0.15	0.50	5.00	•

• Specify right- or left-hand bars

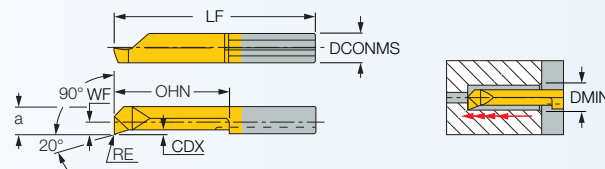
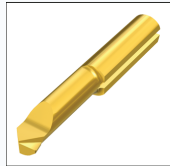
### MITEC 050...



### MITEC 050.20...



**MITEC R/L 090**  
Inserts for Internal Turning and Profiling



Right-hand shown

### Dimensions

Designation	DCONMS	WF	a	LF	OHN	RE	CDX	DMIN	SC5839
MITEC R 090.3-10	4.00	0.60	2.60	24.00	9.0	0.10	0.20	2.80	•
MITEC R/L 090.3-16	4.00	0.60	2.60	30.00	15.0	0.10	0.20	2.80	•
MITEC R/L 090.4-10	4.00	1.50	3.50	24.00	9.0	0.10	0.30	4.00	•
MITEC R 090.4-16	4.00	1.50	3.50	30.00	15.0	0.10	0.30	4.00	•
MITEC R090.5-10	5.00	1.90	4.40	25.00	9.0	0.15	0.50	5.00	•
MITEC R 090.5-15	5.00	1.90	4.40	30.00	14.0	0.15	0.50	5.00	•
MITEC R/L 090.5-20	5.00	1.90	4.40	35.00	19.0	0.15	0.50	5.00	•

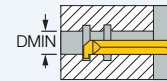
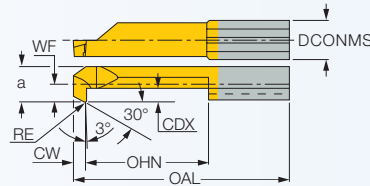
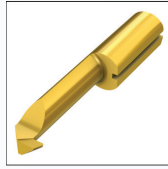
• Specify right- or left-hand bars



# MICROTEC

## MITEC R/L 080

Inserts for Internal Back Turning



Right-hand shown

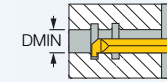
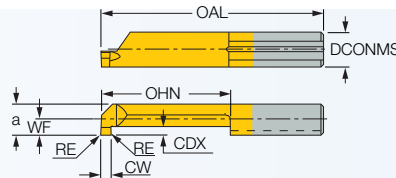
### Dimensions

Designation	DCONMS	WF	a	CW	OAL	OHN <sup>(1)</sup>	RE	CDX	DMIN	SC5839	
										•	•
MITEC R 080.0003-15	4.00	0.60	2.60	1.50	29.00	14.0	0.10	0.50	3.00	•	•
MITEC R 080.0003-20	4.00	0.60	2.60	1.50	34.00	19.0	0.10	0.50	3.00	•	•
MITEC R 080.0004-15	4.00	1.50	3.50	1.50	29.00	14.0	0.15	0.80	4.00	•	•
MITEC R 080.0004-25	4.00	1.50	3.50	1.50	39.00	24.0	0.15	0.80	4.00	•	•
MITEC R 080.0005-20	5.00	1.90	4.40	1.50	35.00	19.0	0.20	1.00	5.00	•	•
MITEC R 080.0005-30	5.00	1.90	4.40	1.50	45.00	29.0	0.20	1.00	5.00	•	•
MITEC R/L 080.0006-20	6.00	2.30	5.30	1.50	35.00	19.0	0.20	1.80	6.00	•	•
MITEC R 080.0006-30	6.00	2.30	5.30	1.50	45.00	29.0	0.20	1.80	6.00	•	•
MITEC R 080.0007-20	7.00	2.80	6.30	1.50	35.00	19.0	0.20	2.50	7.00	•	•
MITEC R 080.0007-30	7.00	2.80	6.30	1.50	45.00	29.0	0.20	2.50	7.00	•	•

• Specify right- or left-hand bars <sup>(1)</sup> Minimum overhang

## MITEC R/L 002-007

Inserts for Internal Grooving and Turning



Right-hand shown

### Dimensions

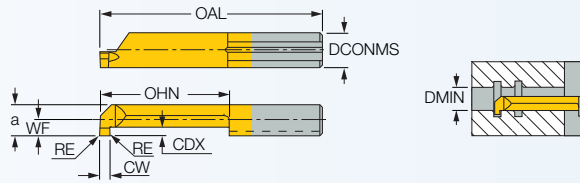
Designation	DCONMS	CW	WF	a	RE	OAL	OHN	CDX	DMIN	Tough ← Hard	
										SC5839	SC5819
MITEC R 002.0050-5	4.00	0.50	0.20	1.80	0.00	19.00	5.0	0.40	2.00		•
MITEC R 002.0050-10	4.00	0.50	0.20	1.80	0.00	24.00	10.0	0.40	2.00		•
MITEC R 002.0050-15	4.00	0.50	0.20	1.80	0.00	29.00	15.0	0.40	2.00		•
MITEC R 003.0070-5	4.00	0.70	0.70	2.70	0.00	19.00	5.0	0.60	3.00		•
MITEC R 003.0070-10	4.00	0.70	0.70	2.70	0.00	24.00	10.0	0.60	3.00		•
MITEC R 003.0070-16	4.00	0.70	0.70	2.70	0.00	29.00	15.0	0.60	3.00		•
MITEC R/L 004.0100-10	4.00	1.00	1.50	3.50	0.00	24.00	9.0	0.80	4.00	•	
MITEC R/L 004.0100-16	4.00	1.00	1.50	3.50	0.00	30.00	15.0	0.80	4.00	•	
MITEC R/L 004.0100-20	4.00	1.00	1.50	3.50	0.00	34.00	19.0	0.80	4.00	•	
MITEC R/L 005.0100-10	5.00	1.00	1.90	4.40	0.00	25.00	9.0	1.00	5.00	•	
MITEC R/L 005.0100-15	5.00	1.00	1.90	4.40	0.00	30.00	14.0	1.00	5.00	•	
MITEC R/L 005.0100-20	5.00	1.00	1.90	4.40	0.00	35.00	19.0	1.00	5.00	•	
MITEC R/L 005.0100-25	5.00	1.00	1.90	4.40	0.00	40.00	24.0	1.00	5.00	•	
MITEC R 005.0100-30	5.00	1.00	1.90	4.40	0.00	45.00	29.0	1.00	5.00	•	
MITEC R/L 005.0150-10	5.00	1.50	1.90	4.40	0.00	25.00	9.0	1.00	5.00	•	
MITEC R 005.0150-15	5.00	1.50	1.90	4.40	0.00	30.00	14.0	1.00	5.00	•	
MITEC R 005M0150-15	5.00	1.50	1.90	4.00	0.10	30.00	14.0	1.00	5.00		•
MITEC R 005.0150-20	5.00	1.50	1.90	4.40	0.00	35.00	19.0	1.00	5.00	•	
MITEC R 005.0150-25	5.00	1.50	1.90	4.40	0.00	40.00	24.0	1.00	5.00	•	
MITEC R/L 005.0150-30	5.00	1.50	1.90	4.40	0.00	45.00	29.0	1.00	5.00	•	
MITEC R/L 005.0200-10	5.00	2.00	1.90	4.40	0.00	25.00	9.0	1.00	5.00	•	
MITEC R 005.0200-15	5.00	2.00	1.90	4.40	0.00	30.00	14.0	1.00	5.00	•	
MITEC R/L 005.0200-20	5.00	2.00	1.90	4.40	0.00	35.00	19.0	1.00	5.00	•	
MITEC R 005.0200-25	5.00	2.00	1.90	4.40	0.00	40.00	24.0	1.00	5.00	•	
MITEC R 005.0200-30	5.00	2.00	1.90	4.40	0.00	45.00	29.0	1.00	5.00	•	
MITEC R 006.0100-10	6.00	1.00	2.30	5.30	0.00	25.00	9.0	1.80	6.00	•	

• All carbide bars with sharp corners • Specify right- or left-hand bars

# MICROTEC

## MITEC R/L 002-007 (continued)

Inserts for Internal Grooving and Turning

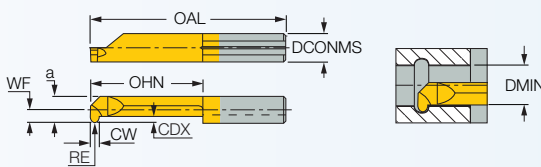


Right-hand shown

MITEC R/L 006.0100-15	6.00	1.00	2.30	5.30	0.00	30.00	14.0	1.80	6.00	•	
MITEC R/L 006.0100-22	6.00	1.00	2.30	5.30	0.00	37.00	21.0	1.80	6.00	•	
MITEC R 006.0100-25	6.00	1.00	2.30	5.30	0.00	40.00	24.0	1.80	6.00	•	
MITEC R/L 006.0100-30	6.00	1.00	2.30	5.30	0.00	45.00	29.0	1.80	6.00	•	
MITEC R/L 006.0150-10	6.00	1.50	2.30	5.30	0.00	25.00	9.0	1.80	6.00	•	
MITEC R/L 006.0150-15	6.00	1.50	2.30	5.30	0.00	30.00	14.0	1.80	6.00	•	
MITEC R/L 006.0150-22	6.00	1.50	2.30	5.30	0.00	37.00	21.0	1.80	6.00	•	
MITEC R 006.0150-25	6.00	1.50	2.30	5.30	0.00	40.00	24.0	1.80	6.00	•	
MITEC R 006.0150-30	6.00	1.50	2.30	5.30	0.00	45.00	29.0	1.80	6.00	•	
MITEC R/L 006.0200-10	6.00	2.00	2.30	5.30	0.00	25.00	9.0	1.80	6.00	•	
MITEC R/L 006.0200-15	6.00	2.00	2.30	5.30	0.00	30.00	14.0	1.80	6.00	•	
MITEC R 006M0200-15	6.00	2.00	2.30	5.30	0.10	30.00	14.0	1.80	6.00		•
MITEC R/L 006.0200-22	6.00	2.00	2.30	5.30	0.00	37.00	21.0	1.80	6.00	•	
MITEC R/L 006.0200-25	6.00	2.00	2.30	5.30	0.00	40.00	24.0	1.80	6.00	•	
MITEC R/L 006.0200-30	6.00	2.00	2.30	5.30	0.00	45.00	29.0	1.80	6.00	•	
MITEC R/L 007.0100-10	7.00	1.00	2.80	6.30	0.00	25.00	9.0	2.50	6.80	•	
MITEC R/L 007.0100-15	7.00	1.00	2.80	6.30	0.00	30.00	14.0	2.50	6.80	•	
MITEC R/L 007.0100-22	7.00	1.00	2.80	6.30	0.00	37.00	21.0	2.50	6.80	•	
MITEC R/L 007.0100-25	7.00	1.00	2.80	6.30	0.00	40.00	24.0	2.50	6.80	•	
MITEC R/L 007.0100-30	7.00	1.00	2.80	6.30	0.00	45.00	29.0	2.50	6.80	•	
MITEC R/L 007.0150-10	7.00	1.50	2.80	6.30	0.00	25.00	9.0	2.50	6.80	•	
MITEC R/L 007.0150-15	7.00	1.50	2.80	6.30	0.00	30.00	14.0	2.50	6.80	•	
MITEC R/L 007.0150-22	7.00	1.50	2.80	6.30	0.00	37.00	21.0	2.50	6.80	•	
MITEC R/L 007.0150-25	7.00	1.50	2.80	6.30	0.00	40.00	24.0	2.50	6.80	•	
MITEC R/L 007.0150-30	7.00	1.50	2.80	6.30	0.00	45.00	29.0	2.50	6.80	•	
MITEC R/L 007.0200-10	7.00	2.00	2.80	6.30	0.00	25.00	9.0	2.50	6.80	•	
MITEC R/L 007.0200-15	7.00	2.00	2.80	6.30	0.00	30.00	14.0	2.50	6.80	•	
MITEC R 007M0200-15	7.00	2.00	2.80	6.30	0.10	30.00	14.0	2.50	6.80		•
MITEC R/L 007.0200-22	7.00	2.00	2.80	6.30	0.00	37.00	21.0	2.50	6.80	•	
MITEC R/L 007.0200-25	7.00	2.00	2.80	6.30	0.00	40.00	24.0	2.50	6.80	•	
MITEC R/L 007.0200-30	7.00	2.00	2.80	6.30	0.00	45.00	29.0	2.50	6.80	•	

## MITEC R/L 004-007 (radius)

Full Radius Inserts for Internal Profiling



Right-hand shown

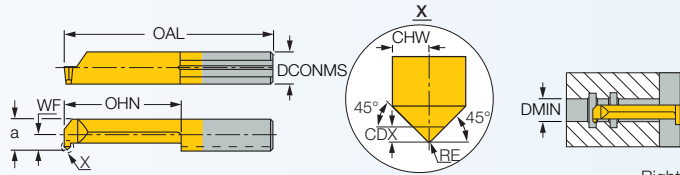
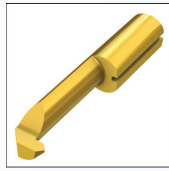
Dimensions											SC5839
Designation	DCONMS	CW	WF	a	RE	OAL	OHN <sup>(1)</sup>	CDX	DMIN		
MITEC R 004.0.50-16	4.00	1.00	1.50	3.50	0.50	30.00	15.0	0.80	4.00	•	
MITEC R 005.0.50-20	5.00	1.00	1.90	4.40	0.50	35.00	19.0	1.00	5.00	•	
MITEC R 005.0.75-20	5.00	1.50	1.90	4.40	0.75	35.00	19.0	1.00	5.00	•	
MITEC R 005.1.00-20	5.00	2.00	1.90	4.40	1.00	35.00	19.0	1.00	5.00	•	
MITEC R/L 006.0.50-25	6.00	1.00	2.30	5.30	0.50	40.00	24.0	1.80	6.00	•	
MITEC R/L 006.0.75-25	6.00	1.50	2.30	5.30	0.75	40.00	24.0	1.80	6.00	•	
MITEC R 006.1.00-25	6.00	2.00	2.30	5.30	1.00	40.00	24.0	1.80	6.00	•	
MITEC R 007.0.50-30	7.00	1.00	2.80	6.30	0.50	45.00	29.0	2.50	6.80	•	
MITEC R 007.0.75-30	7.00	1.50	2.80	6.30	0.75	45.00	29.0	2.50	6.80	•	
MITEC R/L 007.1.00-30	7.00	2.00	2.80	6.30	1.00	45.00	29.0	2.50	6.80	•	

• Specify right- or left-hand bars <sup>(1)</sup> Minimum overhang

# MICROTEC

## MITEC R/L 060

Inserts for Internal Turning and 45° Chamfering



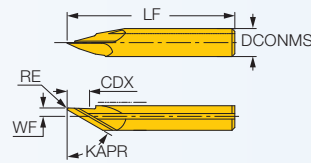
Right-hand shown

Designation	DCONMS	RE	CHW	WF	a	OHN <sup>(1)</sup>	OAL	CDX	DMIN	Tough ↔ Hard	
										SC5839	SC5819
MITEC R 060.5-15	5.00	0.20	1.0	1.90	4.40	14.0	30.00	0.70	5.00	•	
MITEC R/L 060.5-20	5.00	0.20	1.0	1.90	4.40	19.0	35.00	0.70	5.00	•	
MITEC R 060.6-20	6.00	0.20	1.0	2.30	5.30	20.0	35.00	0.70	6.00		•
MITEC R 060.6-25	6.00	0.20	1.0	2.30	5.30	25.0	40.00	0.70	6.00		•
MITEC R/L 060.7-20	7.00	0.20	1.0	2.80	6.30	19.0	35.00	0.70	6.80	•	
MITEC R 060.7-40	7.00	0.20	1.0	2.80	6.30	40.0	55.00	0.70	6.80		•

• Specify right- or left-hand bars <sup>(1)</sup> Minimum overhang

## MITEC R/L 520

Inserts for Internal Chamfering



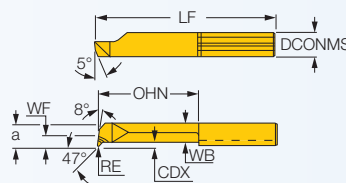
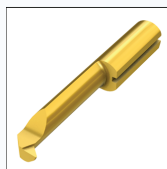
Right-hand shown

Designation	DCONMS	WF	KAPR	LF	RE	CDX	DMIN	SC5819
								•
MITEC R/L 520.0045-15	5.00	1.50	45.0	30.00	0.20	3.50	1.00	•
MITEC R/L 520.0060-15	5.00	1.50	60.0	30.00	0.20	4.00	1.00	•

• Left hand inserts on request

## MITEC R/L 047

Inserts for Internal Deep Profiling



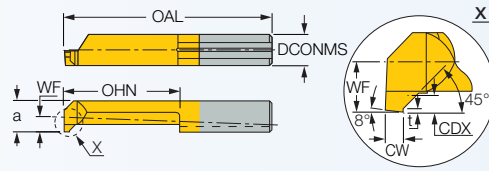
Right-hand shown

Designation	DCONMS	WF	a	LF	OHN	WB	CDX	DMIN	RE	SC5819
										•
MITEC R 047.4-20	4.00	1.50	3.50	34.00	20.0	3.00	0.30	4.00	0.15	•
MITEC R 047.5-25	5.00	1.90	4.40	40.00	25.0	3.80	0.50	5.00	0.15	•
MITEC R/L 047.6-30	6.00	2.30	5.30	45.00	30.0	4.50	0.50	6.00	0.15	•
MITEC R 047.T6-22	6.00	2.30	5.30	37.00	22.0	3.40	1.80	6.00	0.15	•
MITEC R 047.T6-30	6.00	2.30	5.30	45.00	30.0	3.40	1.80	6.00	0.15	•

• Left hand inserts on request

## MITEC R/L 070

Back Chamfering Inserts for Pre-Parting Operations



Right-hand shown

### Dimensions

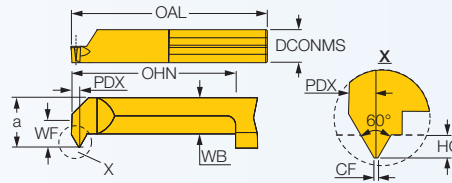
Designation	DCONMS	CW	WF	a	OHN <sup>(1)</sup>	OAL	t	CDX	DMIN	SC5839
MITEC R/L 070.5-15	5.00	1.00	1.90	4.40	15.0	30.00	0.20	1.00	5.00	•
MITEC R/L 070.5-20	5.00	1.00	1.90	4.40	20.0	35.00	0.20	1.00	5.00	•

• All carbide bars with sharp corners • Specify right- or left-hand bars

<sup>(1)</sup> Minimum overhang

## MITEC ISO Full Profile

Inserts for ISO Standard Full Profile Thread



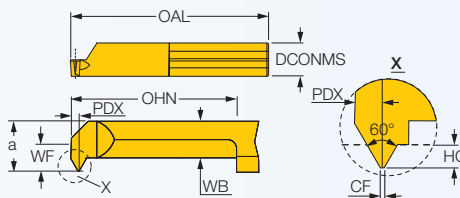
Right-hand shown

### Dimensions

Designation	TP	DCONMS	WF	a	OAL	OHN	WB	PDX	HC	CF	DMIN	SC5819
MITEC R/L 105.0510-15	1.000	5.00	1.90	4.40	30.00	15.0	3.30	0.6	0.54	0.12	4.80	•
MITEC R 106.0612-15	1.250	6.00	2.30	5.30	30.00	15.0	3.40	0.7	0.67	0.15	6.00	•
MITEC R 106.0815-15	1.500	6.00	2.30	5.30	30.00	15.0	3.40	0.8	0.81	0.18	6.00	•
MITEC R107.0815-15	1.500	7.00	2.80	6.30	30.00	15.0	3.80	0.8	0.81	0.18	7.00	•

## MITEC ISO Full Profile Fine

Inserts for ISO Fine Pitch Full Profile Thread



Right-hand shown

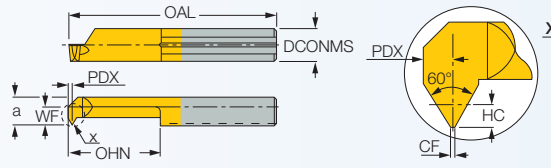
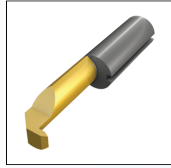
### Dimensions

Designation	TP	DCONMS	WF	a	OAL	OHN	WB	PDX	HC	CF	DMIN	SC5819
MITEC R 104.0205-15	0.500	5.00	1.50	3.50	30.00	15.0	2.40	0.4	0.27	0.06	4.00	•
MITEC R 105.0205-15	0.500	5.00	1.90	4.40	30.00	15.0	3.30	0.4	0.27	0.06	5.00	•
MITEC R105.0407-15	0.750	5.00	1.90	4.40	30.00	15.0	3.30	0.5	0.40	0.09	5.00	•
MITEC R 106.0510-15	1.000	6.00	2.30	5.30	30.00	15.0	3.40	0.6	0.54	0.12	6.00	•

# MICROTEC

## MITEC R/L-60°-Thread

Inserts with a 60° Internal Thread Profile for 2.4 mm Min. Bore Diameter



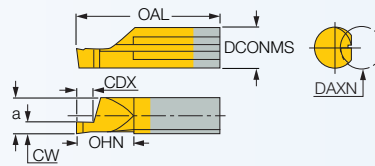
Right-hand shown

Designation	TP	HC	CF	PDX	WF	a	OHN <sup>(1)</sup>	OAL	DMIN	Dimensions		Tough ↔ Hard	
										SC5839	SC5819		
MITEC R 003.0105-8	0.50-0.70	4.00	0.27	0.04	0.3	0.30	2.30	8.0	22.00	2.40		•	
MITEC R 004.0105-10	0.50-0.75	4.00	0.27	0.09	0.4	1.00	3.00	10.0	24.00	3.20		•	
MITEC R/L 004.0205-15	0.50-0.75	4.00	0.27	0.06	0.4	1.50	3.50	15.0	30.00	4.00	•		
MITEC R 005.0205-15	0.50-0.75	5.00	0.27	0.06	0.4	1.90	4.40	15.0	30.00	5.00	•		
MITEC R/L 005.0407-15	0.75-1.00	5.00	0.40	0.09	0.5	1.90	4.40	15.0	30.00	5.00	•	•	
MITEC R 005.0407-20	0.75-1.00	5.00	0.40	0.09	0.5	1.90	4.40	20.0	35.00	5.00		•	
MITEC R/L 005.0510-15	1.00-1.25	5.00	0.55	0.12	0.6	1.90	4.40	15.0	30.00	4.80	•		
MITEC R 005.0510-20	1.00-1.25	5.00	0.55	0.12	0.6	1.90	4.40	20.0	35.00	4.80		•	
MITEC R/L 006.0510-15	1.00-1.25	6.00	0.55	0.12	0.6	2.30	5.30	15.0	30.00	6.00	•		
MITEC R 006.0510-22	1.00-1.25	6.00	0.55	0.12	0.6	2.30	5.30	22.0	37.00	6.00		•	
MITEC R/L 006.0612-15	1.25-1.50	6.00	0.68	0.15	0.7	2.30	5.30	15.0	30.00	6.00	•		
MITEC R 006.0612-22	1.25-1.50	6.00	0.68	0.15	0.7	2.30	5.30	22.0	37.00	6.00		•	
MITEC R/L 006.0815-15	1.50-1.75	6.00	0.81	0.18	0.8	2.30	5.30	15.0	30.00	6.00	•		
MITEC R 006.0815-22	1.50-1.75	6.00	0.81	0.18	0.8	2.30	5.30	22.0	37.00	6.00		•	
MITEC R/L 007.0815-15	1.50-1.75	7.00	0.81	0.18	0.8	2.70	6.30	15.0	30.00	7.00	•		

<sup>(1)</sup> Thread pitch

## MITEC-620 (groove along shaft)

Inserts for Grooving Along a Shaft DAXN 6 mm

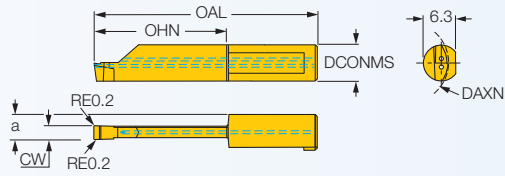


Right-hand shown

Designation	DAXN <sup>(1)</sup>	CW	CDX	DCONMS	a	OHN <sup>(2)</sup>	OAL	Recommended Machining Data	
								SC5849	f face-groove (mm/rev)
MITEC R 620.1006-20	6.0	1.00	2.00	6.00	5.20	20.0	35.00	•	0.01-0.04
MITEC R 620.1506-20	6.0	1.50	3.00	6.00	5.20	20.0	35.00	•	0.01-0.05
MITEC R 620.2006-20	6.0	2.00	4.00	6.00	5.20	20.0	35.00	•	0.02-0.06
MITEC R 620.2506-20	6.0	2.50	5.00	6.00	5.20	20.0	35.00	•	0.02-0.06
MITEC R 620.3006-20	6.0	3.00	6.00	6.00	5.20	20.0	35.00	•	0.02-0.06

• Only right-hand inserts are available as standard, left-hand inserts on request • All carbide inserts are with sharp corners <sup>(1)</sup> Minimum axial grooving diameter <sup>(2)</sup> Minimum overhang

**MITEC-016/020**  
**(face grooving)**  
 Inserts with Coolant Holes  
 for Deep Face Grooving

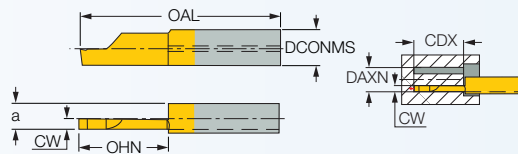


Right-hand shown

Dimensions							SC5849	Recommended Machining Data
Designation	DAXN <sup>(1)</sup>	CW	OHN <sup>(2)</sup>	DCONMS	a	OAL		f face-groove (mm/rev)
MITEC R 016.0300-10	16.0	3.00	10.00	8.00	5.50	30.00	●	0.01-0.05
MITEC R 016.0300-20	16.0	3.00	20.00	8.00	5.50	40.00	●	0.01-0.05
MITEC R 016.0400-10	16.0	4.00	10.00	8.00	6.00	30.00	●	0.01-0.05
MITEC R 016.0400-20	16.0	4.00	20.00	8.00	6.00	40.00	●	0.01-0.05
MITEC R 020.0300-25	20.0	3.00	25.00	8.00	5.50	45.00	●	0.01-0.05
MITEC R 020.0300-30	20.0	3.00	30.00	8.00	5.50	50.00	●	0.01-0.04
MITEC R 020.0300-35	20.0	3.00	35.00	8.00	5.50	55.00	●	0.01-0.04
MITEC R 020.0300-40	20.0	3.00	40.00	8.00	5.50	60.00	●	0.01-0.04
MITEC R 020.0400-25	20.0	4.00	25.00	8.00	6.00	45.00	●	0.01-0.06
MITEC R 020.0400-30	20.0	4.00	30.00	8.00	6.00	50.00	●	0.01-0.06
MITEC R 020.0400-35	20.0	4.00	35.00	8.00	6.00	55.00	●	0.01-0.05
MITEC R 020.0400-40	20.0	4.00	40.00	8.00	6.00	60.00	●	0.01-0.05
MITEC R 020.0500-20	20.0	5.00	20.00	8.00	6.50	40.00	●	0.02-0.06
MITEC R 020.0500-25	20.0	5.00	25.00	8.00	6.50	45.00	●	0.02-0.06
MITEC R 020.0500-30	20.0	5.00	30.00	8.00	6.50	50.00	●	0.02-0.06
MITEC R 020.0500-35	20.0	5.00	35.00	8.00	6.50	55.00	●	0.02-0.05
MITEC R 020.0500-40	20.0	5.00	40.00	8.00	6.50	60.00	●	0.02-0.05

• All inserts have two coolant holes which may be used with coolant pressure up to 100 bars (1) Minimum axial grooving diameter (2) Minimum overhang

**MITEC-015**  
**(face grooving)**  
 Inserts for Deep Face Grooving



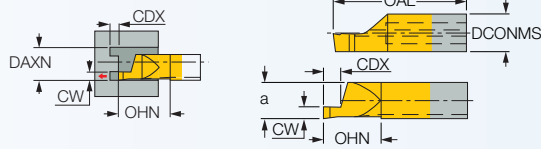
Right-hand shown

Dimensions								SC5839	Recommended Machining Data
Designation	DAXN <sup>(1)</sup>	CW	OHN <sup>(2)</sup>	DCONMS	a	OAL	CDX		f face-groove (mm/rev)
MITEC R 015.2515-20	15.0	2.50	20.00	7.00	5.90	35.00	20.00	●	0.01-0.04
MITEC R/L 015.3015-20	15.0	3.00	20.00	7.00	5.90	35.00	20.00	●	0.02-0.05
MITEC R 015.3015-30	15.0	3.00	30.00	7.00	5.90	45.00	30.00	●	0.01-0.04

• Only right-hand inserts are available as standard, left-hand inserts on request • All inserts are with sharp corners (1) Minimum axial grooving diameter (2) Minimum overhang

## MITEC-010/610 (face grooving)

Inserts for Face Grooving



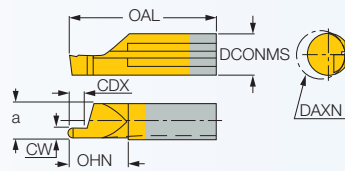
Right-hand shown

Designation	Dimensions							SC5839	Recommended Machining Data
	DAXN <sup>(1)</sup>	CW	CDX	DCONMS	a	OHN <sup>(2)</sup>	OAL		f face-groove (mm/rev)
MITEC R 010.1006-10	6.0	1.00	1.50	6.00	5.20	11.0	26.00	•	0.01-0.04
MITEC R 010.1506-10	6.0	1.50	2.00	6.00	5.20	11.0	26.00	•	0.01-0.04
MITEC R 010.1008-10	8.0	1.00	1.50	7.00	5.90	11.0	26.00	•	0.01-0.04
MITEC R 010.1008-20	8.0	1.00	1.50	7.00	5.90	21.0	35.00	•	0.01-0.04
MITEC R 010.1008-30	8.0	1.00	1.50	7.00	5.90	30.0	45.00	•	0.01-0.04
MITEC R 610.1008-10	8.0	1.00	1.50	6.00	5.20	11.0	26.00	•	0.01-0.04
MITEC R 610.1008-20	8.0	1.00	1.50	6.00	5.20	20.0	35.00	•	0.01-0.04
MITEC R/L 010.1508-20	8.0	1.50	2.50	7.00	5.90	21.0	35.00	•	0.01-0.04
MITEC R/L 010.1508-30	8.0	1.50	2.50	7.00	5.90	30.0	45.00	•	0.01-0.04
MITEC R 010.1508-10	8.0	1.50	2.50	7.00	5.90	11.0	26.00	•	0.01-0.04
MITEC R 610.1508-10	8.0	1.50	2.50	6.00	5.20	11.0	26.00	•	0.01-0.04
MITEC R 610.1508-20	8.0	1.50	2.50	6.00	5.20	20.0	35.00	•	0.01-0.04
MITEC R/L 010.2008-30	8.0	2.00	3.00	7.00	5.90	30.0	45.00	•	0.02-0.05
MITEC R 010.2008-10	8.0	2.00	3.00	7.00	5.90	11.0	26.00	•	0.02-0.05
MITEC R 010.2008-20	8.0	2.00	3.00	7.00	5.90	21.0	35.00	•	0.02-0.05
MITEC R 610.2008-10	8.0	2.00	3.00	6.00	5.20	11.0	26.00	•	0.02-0.05
MITEC R 610.2008-20	8.0	2.00	3.00	6.00	5.20	20.0	35.00	•	0.02-0.05
MITEC R 010.2508-10	8.0	2.50	3.50	7.00	5.90	11.0	26.00	•	0.02-0.05
MITEC R 010.2508-20	8.0	2.50	3.50	7.00	5.90	21.0	35.00	•	0.02-0.05
MITEC R 010.2508-30	8.0	2.50	3.50	7.00	5.90	30.0	45.00	•	0.02-0.05
MITEC R 610.2508-10	8.0	2.50	3.50	6.00	5.20	11.0	26.00	•	0.02-0.05
MITEC R 610.2508-20	8.0	2.50	3.50	6.00	5.20	20.0	35.00	•	0.02-0.05
MITEC R 010.3008-10	8.0	3.00	3.50	7.00	5.90	11.0	26.00	•	0.02-0.06
MITEC R 010.3008-20	8.0	3.00	3.50	7.00	5.90	21.0	35.00	•	0.02-0.06
MITEC R 010.3008-30	8.0	3.00	3.50	7.00	5.90	30.0	45.00	•	0.02-0.06
MITEC R 610.3008-10	8.0	3.00	3.50	6.00	5.20	11.0	26.00	•	0.02-0.06
MITEC R 610.3008-20	8.0	3.00	3.50	6.00	5.20	20.0	35.00	•	0.02-0.06

• Only right-hand inserts are available as standard • All inserts are with sharp corners <sup>(1)</sup> Minimum axial grooving diameter <sup>(2)</sup> Minimum overhang

## MITEC-010 (round face groove)

Inserts for Round Profile  
Face Grooving



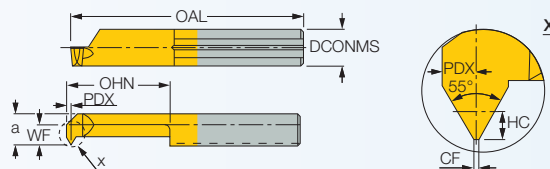
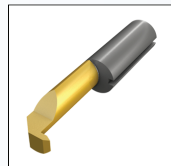
Right-hand shown

Designation	Dimensions								SC5349	Recommended Machining Data
	DAXN <sup>(1)</sup>	CW	RE	CDX	DCONMS	a	OHN <sup>(2)</sup>	OAL		f face-groove (mm/rev)
MITEC R 010.1005-10	8.0	1.00	0.50	2.00	7.00	5.90	11.0	26.00	•	0.01-0.04
MITEC R 010.1005-20	8.0	1.00	0.50	2.00	7.00	5.90	20.0	35.00	•	0.01-0.04
MITEC R 010.1608-10	8.0	1.60	0.80	3.00	7.00	5.90	11.0	26.00	•	0.01-0.05
MITEC R 010.1608-20	8.0	1.60	0.80	3.00	7.00	5.90	20.0	35.00	•	0.01-0.05
MITEC R 010.2010-10	8.0	2.00	1.00	4.00	7.00	5.90	11.0	26.00	•	0.02-0.05
MITEC R 010.2010-20	8.0	2.00	1.00	4.00	7.00	5.90	20.0	35.00	•	0.02-0.05
MITEC R 010.2512-10	8.0	2.50	1.25	5.00	7.00	5.90	11.0	26.00	•	0.02-0.05
MITEC R 010.2512-20	8.0	2.50	1.25	5.00	7.00	5.90	20.0	35.00	•	0.02-0.05
MITEC R 010.3015-10	8.0	3.00	1.50	6.00	7.00	5.90	11.0	26.00	•	0.02-0.05
MITEC R 010.3015-20	8.0	3.00	1.50	6.00	7.00	5.90	20.0	35.00	•	0.02-0.05

• Only right-hand inserts are available as standard, left-hand inserts on request <sup>(1)</sup> Minimum axial grooving diameter <sup>(2)</sup> Minimum overhang

## MITEC-55°-Thread

Inserts for 55° Internal Threading Profile



Right-hand shown

Designation	Dimensions											SC5839
	DCONMS	TPIX <sup>(1)</sup>	TPIN <sup>(2)</sup>	HC	CF	PDX	WF	a	OHN <sup>(3)</sup>	OAL	DMIN	
MITEC R 005.5548-15	5.00	48.00	24	0.40	0.06	0.5	1.90	4.40	15.0	30.00	4.80	•
MITEC R 006.5548-15	6.00	48.00	24	0.40	0.06	0.5	2.30	5.30	15.0	30.00	6.00	•
MITEC R 006.5524-15	6.00	24.00	16	0.81	0.12	0.8	2.30	5.30	15.0	30.00	6.00	•
MITEC R 007.5524-15	7.00	24.00	16	0.81	0.12	0.8	2.80	6.30	15.0	30.00	7.00	•

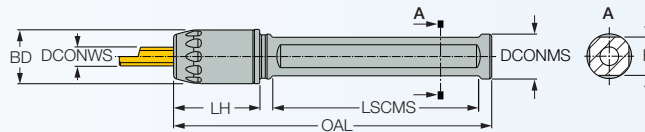
• All mini-bars have sharp corners

<sup>(1)</sup> Threads per inch maximum

<sup>(2)</sup> Threads per inch minimum


<sup>(3)</sup> Minimum overhang



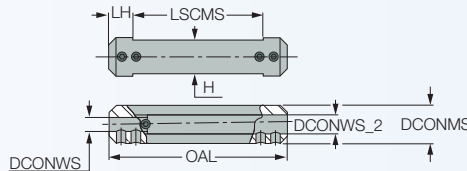


## MITECH A##

Holders for MicroTec Inserts


Designation	DCONMS	DCONWS	BD	OAL	LH	LSCMS	H		
MITECH A## 12-4	12.00	4.00	14.50	85.00	23.00	53.00	10.3	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 12-5	12.00	5.00	14.50	85.00	23.00	53.00	10.3	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 16-4	16.00	4.00	14.50	85.00	21.50	53.50	14.0	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 16-5	16.00	5.00	14.50	85.00	21.50	53.00	14.0	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 16-6	16.00	6.00	19.90	85.00	23.00	53.50	14.0	PL 16 M6-D5	WRENCH ACE 6-7
MITECH A## 16-7	16.00	7.00	19.90	85.00	23.00	53.50	14.0	PL 16 M6-D5	WRENCH ACE 6-7
MITECH A## 20-4	20.00	4.00	14.50	150.00	21.50	118.00	18.0	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 20-5	20.00	5.00	14.50	150.00	21.50	118.00	18.0	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 20-6	20.00	6.00	19.90	150.00	21.50	118.00	18.0	PL 16 M6-D5	WRENCH ACE 6-7
MITECH A## 20-7	20.00	7.00	19.90	150.00	21.50	118.00	18.0	PL 16 M6-D5	WRENCH ACE 6-7
MITECH A## 22-4	22.00	4.00	14.50	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 22-5	22.00	5.00	14.50	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 22-6	22.00	6.00	19.90	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 6-7
MITECH A## 22-7	22.00	7.00	19.90	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 6-7
MITECH A## 25-4	25.00	4.00	14.50	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 25-5	25.00	5.00	14.50	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 4-5
MITECH A## 25-6	25.00	6.00	19.90	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 6-7
MITECH A## 25-7	25.00	7.00	19.90	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 6-7

- Holders are suitable for right- and left-hand MITEC inserts



## MITECH/MITEC-MG (holder)

Holders for MITEC Inserts and Small Diameter Boring Bars

Designation	DCONMS	DCONWS	DCONWS_2	OAL	LH	LSCMS	H		
MITECH 12-4-5	12.00	4.00	5.00	75.00	10.00	55.00	10.3	SR M5X4-PF	HW 2.5
MITECH 16-4-5	16.00	4.00	5.00	75.00	10.00	55.00	14.0	SR M5X6-PF	HW 2.5
MITECH 20-4-5	20.00	4.00	5.00	90.00	10.00	70.00	18.0	SR M5X6-PF	HW 2.5
MITECH 22-4-5 <sup>(1)</sup>	22.00	4.00	5.00	90.00	10.00	70.00	20.0	SR M5X6-PF	HW 2.5
MITECH 16-6-7	16.00	6.00	7.00	75.00	10.00	55.00	14.0	SR M5X6-PF	HW 2.5
MITECH 20-6-7	20.00	6.00	7.00	90.00	10.00	70.00	18.0	SR M5X6-PF	HW 2.5
MITECH 22-6-7 <sup>(1)</sup>	22.00	6.00	7.00	90.00	10.00	70.00	20.0	SR M5X6-PF	HW 2.5

- Holders are suitable for right- and left-hand inserts, and boring bars<sup>(1)</sup> Tools for Swiss-type CNC



### Groove-Turn Cutting Speed Recommendations

ISO	Material	Condition	Tensile Strength [N/mm <sup>2</sup> ]	Hardness HB	Material				
					No.	SC5849	SC5819	SC5839	
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1	145 - 220	140-210	100 - 145
		>= 0.25 %C	Annealed	650	190	2	135 - 190	130-180	90 - 125
		< 0.55 %C	Quenched and	850	250	3	105 - 155	100-150	70 - 105
		>= 0.55 %C	Annealed	750	220	4	115 - 180	110-170	75 - 120
		Quenched and	1000	300	5	95 - 145	90-140	65 - 100	
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6	115 - 180	110-170	75 - 120	
		Quenched and tempered	930	275	7	95 - 155	90-150	65 - 105	
			1000	300	8	95 - 145	90-140	65 - 100	
			1200	350	9	85 - 135	80-130	55 - 90	
	High alloyed steel, cast steel, and tool steel	Annealed	680	200	10	135 - 190	130-180	90 - 125	
		Quenched and	1100	325	11	85 - 135	80-130	55 - 90	
P	Stainless steel and cast steel	Ferritic/martensitic	680	200	12		115 - 210	110-200	
		Martensitic	820	240	13		105 - 200	100-190	
M	Stainless steel	Austenitic	600	180	14		115 - 210	110-200	
K	Cast iron nodular (GGG)	Ferritic/pearlitic		180	15		150-270	95 - 175	
		Pearlitic		260	16		130-190	85 - 125	
	Grey cast iron (GG)	Ferritic		160	17		140-230	90 - 150	
		Pearlitic		250	18		110-180	70 - 115	
	Malleable cast iron	Ferritic		130	19		170-280	110 - 180	
		Pearlitic		230	20		140-230	90 - 150	
N	Aluminum-wrought alloy	Not cureable		60	21				
		Cured		100	22				
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23			
		Cured		90	24				
		>12% Si	High temperature		130	25			
	Copper alloys	>1% Pb	Free cutting		110	26			
		Brass		90	27				
	Non-metallic	Electrolytic copper		100	28				
Duroplastics, fiber					29				
S	High temp. alloys	Fe based	Annealed		200	31		40-65	40-70
			Cured		280	32		30-45	30-45
		Ni or Co based	Annealed		250	33		30-45	30-45
			Cured		350	34		25-40	25-40
			Cast		320	35		20-30	20-30
	Titanium Ti alloys		RM 400		36		100-170	105-180	
		Alpha+beta alloys	RM 1050		37		35-45	35-45	
H	Hardened steel	Hardened		55 HRC	38		30-40	25-35	
		Hardened		60 HRC	39		25-35	20-30	
	Chilled cast iron	Cast		400	40		40-60	30-50	
	Cast iron	Hardened		55 HRC	41		35-45	30-40	

# CHASERS



Chaser products available upon request

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