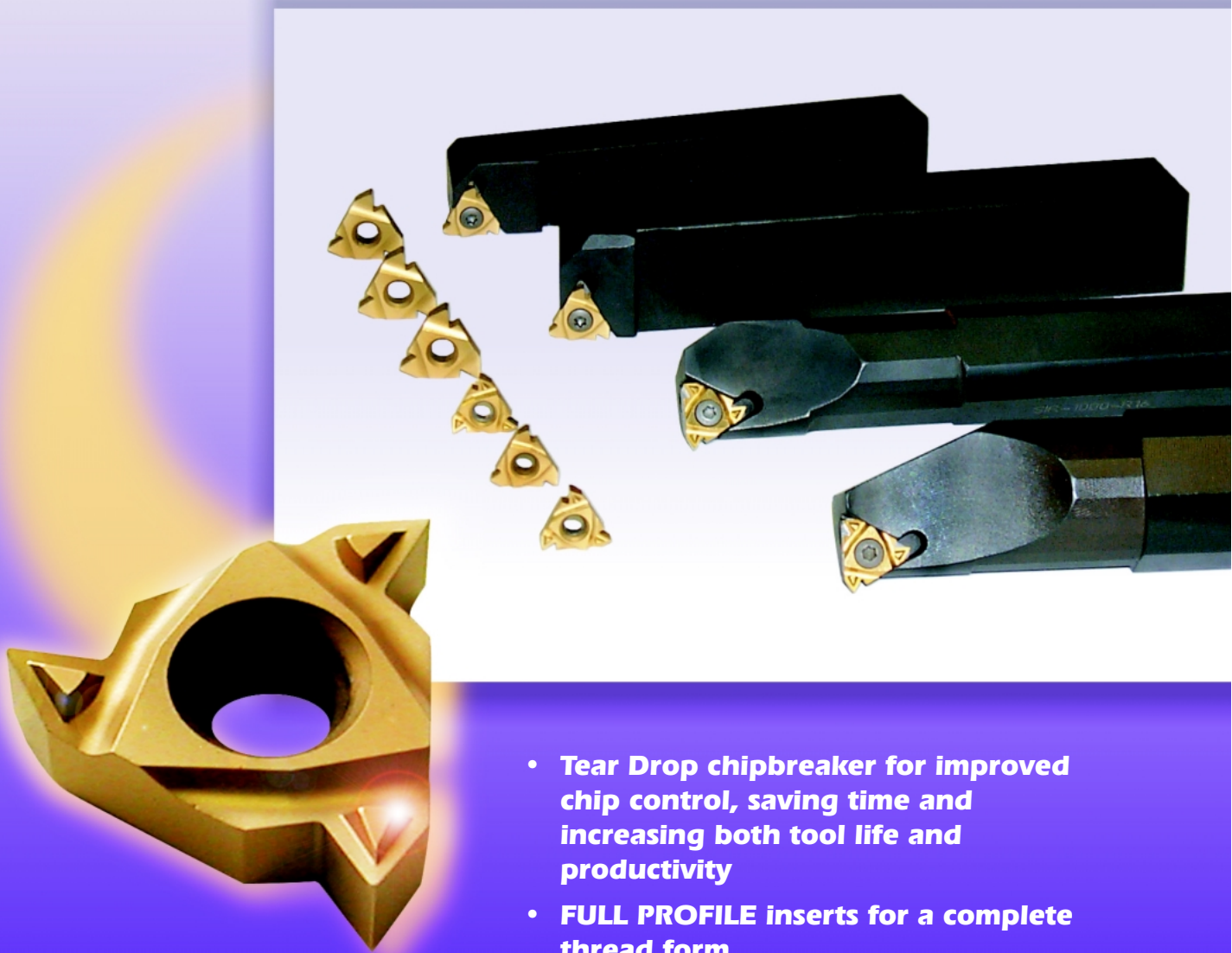


# Laydown Thread Turning System



- **Tear Drop chipbreaker** for improved chip control, saving time and increasing both tool life and productivity
- **FULL PROFILE** inserts for a complete thread form
- **PARTIAL PROFILE** inserts to cover a variety of threads
- **PVD coatings** for increased tool life over a wide range of speeds, while resisting edge build-up



**STANDARD INSERTS:**  
for use in most  
laydown threading  
applications

## Partial Profile 60°

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED		
		t.p.i.	mm	d	l	x	y	PTC2	STC2E		K20	P30	HSS
	11ERA60	48-16	0.5-1.5	1/4	.43	.028	.031	●	●		●	●	
	16ERA60	48-16	0.5-1.5	3/8	.63	.028	.031	●	●		●	●	
	16ERAG60	48-8	0.5-3.0			.051	.059	●	●		●	●	●
	16ERM60	24-11	1.0-2.5			.051	.059	●	●		●	●	
	16ERG60	14-8	1.75-3.0			.051	.059	●	●		●	●	
	22ERN60	7-5	3.5-5.0	1/2	.87	.071	.098	●	●		●	●	
	27ERS60	4.5-4	5.5-8.0	5/8	1.06	.098	.157	●	●		●	●	

## Full Profile UN 60°

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED		
		t.p.i.		d	l	x	y	PTC2	STC2E		K20	P30	HSS
	16ER24UN	24		3/8	.63	.028	.031	●	●		●	●	
	16ER20UN	20				.028	.031	●	●		●	●	
	16ER18UN	18				.028	.031	●	●		●	●	
	16ER14UN	14				.051	.059	●	●		●	●	
	16ER12UN	12				.051	.059	●	●		●	●	
	16ER10UN	10				.051	.059	●	●		●	●	
	16ER8UN	8				.051	.063	●	●		●	●	

Complete range of full profile inserts are available, please call for further information.

## Full Profile ISO 60°

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED		
		mm		d	l	x	y	PTC2	STC2E		K20	P30	HSS
	16ER1.0ISO	1.00		3/8	.63	.028	.031	●	●		●	●	
	16ER1.25ISO	1.25				.028	.031	●	●		●	●	
	16ER1.5ISO	1.50				.028	.031	●	●		●	●	
	16ER2.0ISO	2.00				.051	.059	●	●		●	●	
	16ER2.5ISO	2.50				.051	.059	●	●		●	●	
	16ER3.0ISO	3.00				.051	.063	●	●		●	●	

Complete range of full profile inserts are available, please call for further information.

### STANDARD INSERTS:

for use in most  
laydown threading  
applications



## Partial Profile 60°

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED			
		t.p.i.	mm	d	l	x	y	PTC2	STC2E			K20	P30	HSS
	11NRA60	48-16	0.5-1.5	1/4	.43	.028	.031	●	●			●	●	
	16NRA60	48-16	0.5-1.5	3/8	.63	.028	.031	●	●			●	●	
	16NRAG60	48-8	0.5-3.0			.051	.059	●	●			●	●	●
	16NRM60	24-11	1.0-2.5			.051	.059	●	●			●	●	
	16NRG60	14-8	1.75-3.0			.051	.059	●	●			●	●	●
	22NRN60	7-5	3.5-5.0	1/2	.87	.071	.098	●	●			●	●	
27NRS60	4.5-4	5.50-8.0	5/8	1.06	.098	.157	●	●			●	●		

## Full Profile UN 60°

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED			
		t.p.i.		d	l	x	y	PTC2	STC2E			K20	P30	HSS
	16NR24UN	24		3/8	.63	.028	.031	●	●			●	●	
	16NR20UN	20				.028	.031	●	●			●	●	
	16NR18UN	18				.028	.031	●	●			●	●	
	16NR14UN	14				.051	.059	●	●			●	●	
	16NR12UN	12				.051	.059	●	●			●	●	
	16NR10UN	10				.051	.059	●	●			●	●	

Complete range of full profile inserts are available, please call for further information.

## Full Profile ISO 60°

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED			
		mm		d	l	x	y	PTC2	STC2E			K20	P30	HSS
	16NR1.0ISO	1.00		3/8	.63	.031	.031	●	●			●	●	
	16NR1.25ISO	1.25				.028	.031	●	●			●	●	
	16NR1.5ISO	1.50				.028	.031	●	●			●	●	
	16NR2.0ISO	2.00				.051	.059	●	●			●	●	
	16NR2.5ISO	2.50				.051	.059	●	●			●	●	
	16NR3.0ISO	3.00				.051	.063	●	●			●	●	

Complete range of full profile inserts are available, please call for further information.



**TEAR DROP (TD):**  
chipbreaker for  
improved chip  
control

## Partial Profile 60° TD

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED			
		t.p.i.	mm	d	l	x	y	PTC2	STC2E		K20	P30	HSS	
	16ERA60TD	48-16	0.5-1.5	3/8	.63	.028	.031	●						
	16ERAG60TD	48-8	0.5-3.0			.051	.059	●	●					
	16ERG60TD	14-8	1.75-3.0			.051	.059	●						

## Full Profile UN 60° TD

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED			
		t.p.i.		d	l	x	y	PTC2	STC2E		K20	P30	HSS	
	16ER24UNTD	24		3/8	.63	.028	.031	●						
	16ER20UNTD	20				.028	.031	●						
	16ER18UNTD	18				.028	.031	●						
	16ER14UNTD	14				.051	.059	●						
	16ER12UNTD	12				.051	.059	●						
	16ER10UNTD	10				.051	.059	●						

Complete range of full profile inserts are available, please call for further information.

## Full Profile ISO 60° TD

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED			
		mm		d	l	x	y	PTC2	STC2E		K20	P30	HSS	
	16ER1.0ISOTD	1.00		3/8	.63	.028	.031	●						
	16ER1.25ISOTD	1.25				.028	.031	●	●					
	16ER1.5ISOTD	1.50				.028	.031	●	●					
	16ER2.0ISOTD	2.00				.051	.059	●	●					
	16ER2.5ISOTD	2.50				.051	.059	●	●					
	16ER3.0ISOTD	3.00				.051	.059	●	●					

Complete range of full profile inserts are available, please call for further information.



**TEAR DROP (TD):**  
chipbreaker for  
improved chip  
control

## Partial Profile 60° TD

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED			
		t.p.i.	mm	d	l	x	y	PTC2	STC2E		K20	P30	HSS	
	16NRA60TD	48-16	0.5-1.5	3/8	.63	.028	.031	●						
	16NRAG60TD	48-8	0.5-3.0			.051	.059	●	●					
	16NRG60TD	14-8	1.75-3.0			.051	.059	●						

## Full Profile UN 60° TD

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED			
		t.p.i.		d	l	x	y	PTC2	STC2E		K20	P30	HSS	
	16NR24UNTD	24		3/8	.63	.028	.031	●						
	16NR20UNTD	20				.028	.031	●						
	16NR18UNTD	18				.028	.031	●						
	16NR14UNTD	14					.051	.059	●					
	16NR12UNTD	12					.051	.059	●					
	16NR10UNTD	10					.051	.059	●					

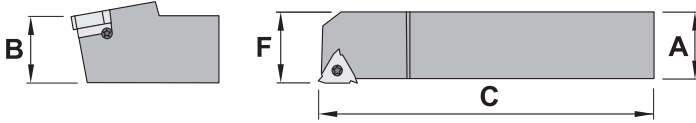
Complete range of full profile inserts are available, please call for further information.

## Full Profile ISO 60° TD

INSERT	DESIGNATION	PITCH		DIMENSIONS				COATED			UNCOATED			
		mm		d	l	x	y	PTC2	STC2E		K20	P30	HSS	
	16NR1.0ISOTD	1.00		3/8	.63	.028	.031	●						
	16NR1.25ISOTD	1.25				.028	.031	●						
	16NR1.5ISOTD	1.50				.028	.031	●	●					
	16NR2.0ISOTD	2.00					.051	.059	●	●				
	16NR2.5ISOTD	2.50					.051	.059	●			●		
	16NR3.0ISOTD	3.00					.051	.059	●	●				

Complete range of full profile inserts are available, please call for further information.

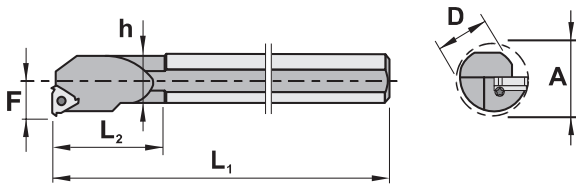
### SER External Toolholders



DESIGNATION	A	B	C	F	INSERT	INSERT SCREW	ANVIL	SIDE SCREW	TORX KEY	
SER-0310-H11	.310	.310	4.00	.430	11ER_ (1/4" I.C.)	SA11	---	---	SF8	
SER-0375-H11	.375	.375	4.00	.430		16ER_ (3/8" I.C.)	SA16	---	---	SF10
SER-0375-D16	.375	.375	2.50	.630	SA16L		SE16	SY16		
SER-0500-F16	.500	.500	3.25	.630			SER-0625-H16	SER-0750-K16	SER-1000-M16	
SER-0625-H16	.630	.630	4.00	.630						
SER-0750-K16	.750	.750	5.00	.750						
SER-1000-M16	1.000	1.000	6.00	1.000						
SER-1250-P16	1.250	1.250	7.00	1.250	22ER_ (1/2" I.C.)	SA22	SE22	SY22	SF20	
SER-1000-M22	1.000	1.000	6.00	1.000						
SER-1250-P22	1.250	1.250	7.00	1.250						
SER-1500-R22	1.500	1.500	8.00	1.500	27ER_ (5/8" I.C.)	SA27	SE27	SY27	SF25	
SER-1000-M27	1.000	1.000	6.00	1.250						
SER-1250-P27	1.250	1.250	7.00	1.250						
SER-1500-R27	1.500	1.500	8.00	1.500						

Left handed toolholders available upon request

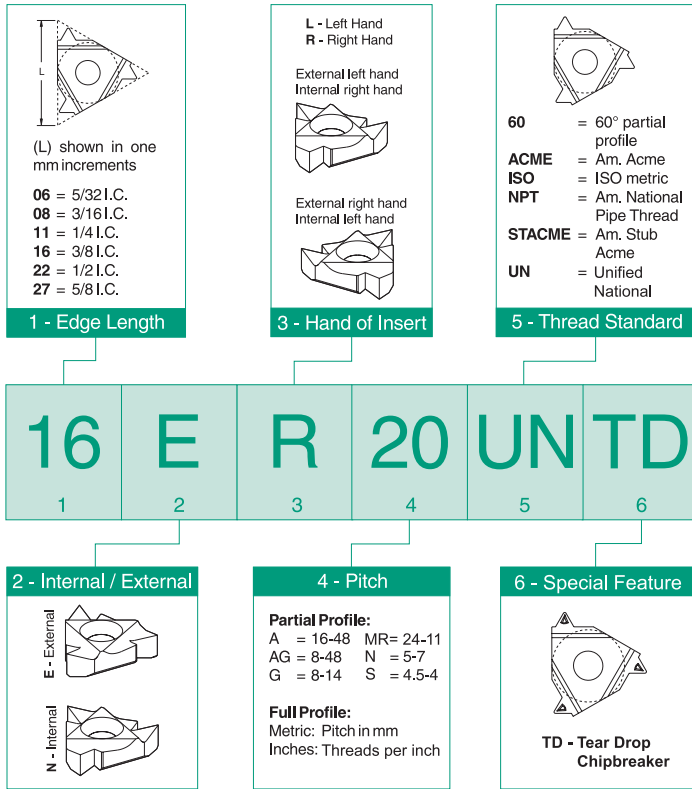
### SIR Internal Boring Bars



DESIGNATION	Min. Bore	D	L <sub>1</sub>	L <sub>2</sub>	h	F	INSERT	INSERT SCREW	ANVIL	SIDE SCREW	TORX KEY
SIR-0375-H11	.470	.375	4.00	1.00	.38	.290	11NR_ (1/4" I.C.)	SA11	---	---	SF8
SIR-0375-K11	.470	.375	5.00	1.25	.38	.260		16NR_ (3/8" I.C.)	SA16	---	---
SIR-0500-L11	.630	.625	5.50	1.25	.50	.320	SA16L		SN16	SY16	
SIR-0500-M16	.640	.625	6.00	1.25	.50	.390					
SIR-0625-P16	.750	.750	7.00	1.50	.62	.450					
SIR-0750-P16	1.000	.750	7.00	1.50	.75	.510					
SIR-1000-R16	1.200	1.000	8.00	1.50	1.00	.650					
SIR-1250-S16	1.420	1.250	10.00	1.50	1.25	.770	22NR_ (1/2" I.C.)	SA22	SN22	SY22	SF20
SIR-1500-T16	1.650	1.500	12.00	1.50	1.50	.090					
SIR-0750-P22	.950	.750	7.00	1.50	.75	.510					
SIR-1000-R22	1.200	1.000	8.00	1.50	1.00	.710	27NR_ (5/8" I.C.)	SA27	SN27	SY27	SF25
SIR-1250-S22	1.500	1.250	10.00	1.50	1.25	.850					
SIR-1500-T22	1.750	1.500	12.00	1.50	1.50	.098					
SIR-1250-S27	1.560	1.250	10.00	1.50	1.25	.880					
SIR-1500-T27	1.800	1.500	12.00	1.50	1.50	1.000					
SIR-2000-U27	2.300	2.000	14.00	1.50	2.00	1.250					
SIR-2500-V27	2.700	2.500	16.00	1.50	2.50	1.500					

Left handed boring bars available upon request

## INSERT NOMENCLATURE



## GRADE DESCRIPTION

### PTC2 (P10 - P35; M20; K10 - K20)

General purpose PVD coated grade for a wide application range offering good wear resistance at higher surface speeds, while reducing build-up on the cutting edge. Particularly successful in stainless steel.

### STC2E (P05 - P25; M10; K05 - K20)

Multilayer coated grade with extra wear resistance, which enables higher cutting speeds under good conditions. Suitable for difficult high tensile steels and aerospace type materials.

### K20 (K15 - K25)

Standard uncoated grade for threading cast iron. Combines good abrasive wear resistance and toughness. Suitable for brass, aluminum, plastics and non-ferrous metals, but also for stainless steel and aerospace materials at slower cutting speeds.

### P30 (P25 - P35)

General purpose uncoated grade for steel. A well balanced grade for a wide range of materials and medium conditions.

### HSS

General purpose high speed steel for difficult applications, slow speeds or poor conditions. Suitable for all materials.

## PROFILE TYPE

### Partial Profile



- Thread profile with universal profile shape of 55° or 60° without cutting edges for the thread crest.
- Reduced inventory.
- For various pitches within a specified range.
- Preferably one-off production.
- Outside/core diameters must be accurately pre-turned.

### Full Profile



- Thread profile with full profile shape including thread height.
- For burr-free, precise threads for a specific thread dimension.
- General application.
- Machining allowance for outside/core diameter around .004" - .006" or 0.1 - 0.15 mm/per surface.

## INFEEED METHOD

### Radial Infeed



- General, straightforward infeed in radial direction with metal removal on both tooth flanks.
- Even wear.
- Primarily for small pitches of up to approx. 8 tpi or 3 mm.
- Cast iron workpiece materials and work-hardening materials, particularly austenitic stainless steel.

### Modified Flank Infeed



- Optimized infeed at an angle of 3-5° to the thread flank.
- Good chip flow, smoother operation.
- Preferably for larger pitches from approx. 7 tpi or 4 mm and trapezoidal threads on numerically controlled machine tools.

### Alternating Flank Infeed



- Combined radial and/or alternating flank infeed.
- Results in good tool life, with wear evenly distributed over both flanks.
- Mainly for coarse threads on suitably programmed NC machine tools.

