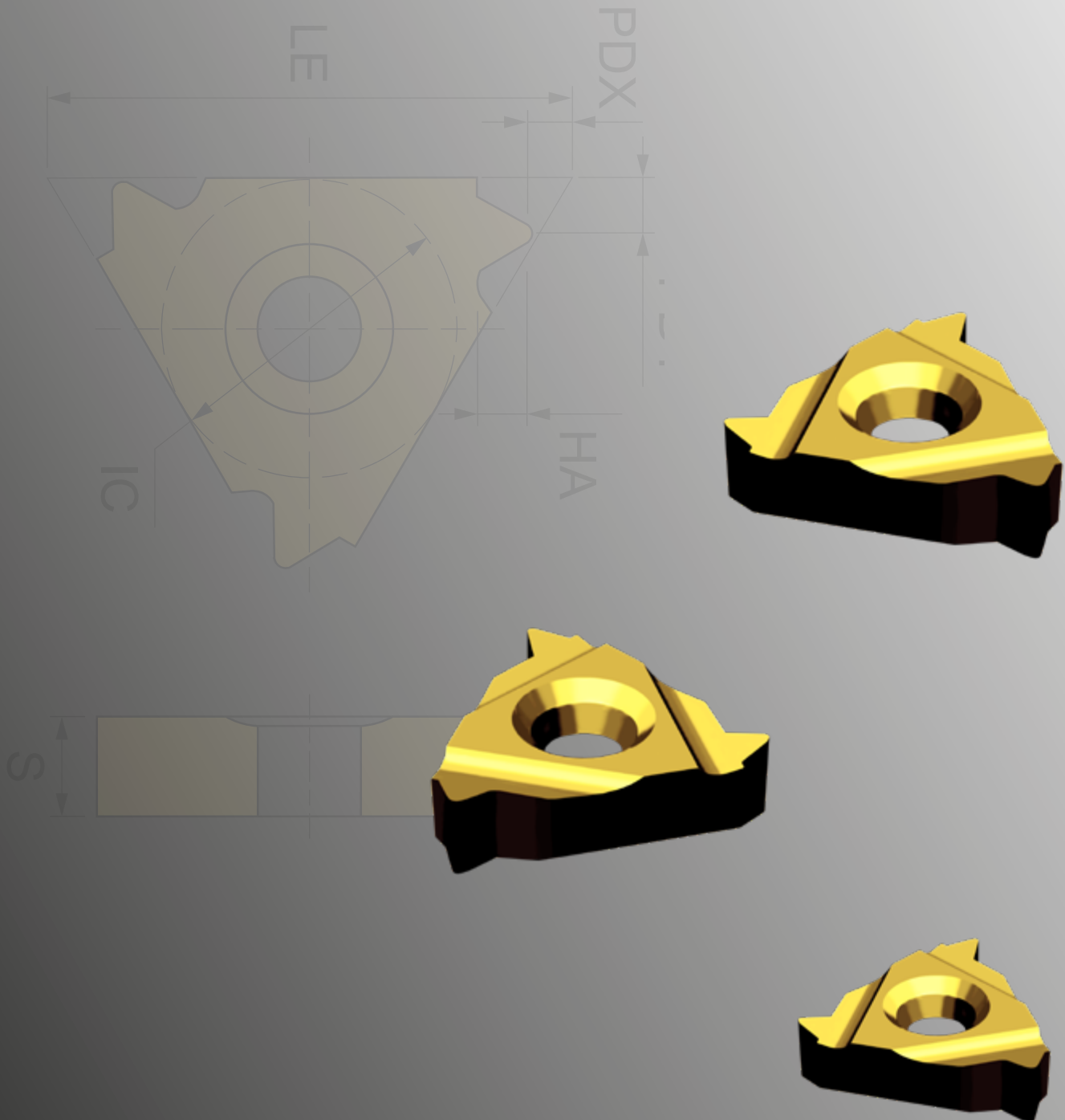


# THREADING INSERTS



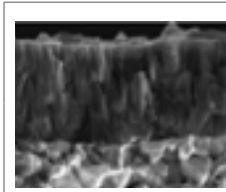
Grade & Threading guide	P.2
External inserts	P.3 - 5
Internal inserts	P.6 - 8





## INSERT GRADE GUIDE

		<b>P</b> STEEL				<b>M</b> STAINLESS STEEL				<b>K</b> CAST IRON			
		05	15	25	35	05	15	25	35	05	15	25	35
PVD	<b>ET300</b>	300				300				300			
		HARDER ← → TOUGHER				HARDER ← → TOUGHER				HARDER ← → TOUGHER			
		<b>N</b> NON-FERROUS				<b>S</b> HRSA				<b>H</b> HARDENED STEEL			
		05	15	25	35	05	15	25	35	05	15	25	35
PVD	<b>ET300</b>	300				300				300			
		HARDER ← → TOUGHER				HARDER ← → TOUGHER				HARDER ← → TOUGHER			



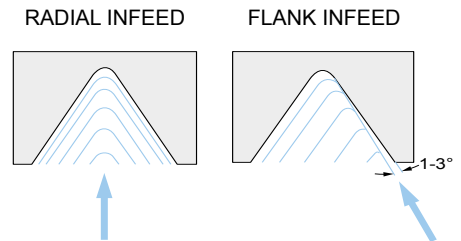
- P20 - P35** **ET300**
- M20 - M30** Ultra dense PVD coating optimised for threading applications. Universal grade for most materials
- K20 - K35**
- N05 - N35**
- S15 - S25**
- H20 - H30** PVD - TiN

## THREAD CUTTING GUIDE

The simplest method of producing a thread is to use radial infeed. This will provide uniform cutting edge wear for threadforms with pitch smaller than 1.5mm or 16TPI. For threadforms with pitch sizes larger than this it is recommended to use the flank infeed method. This will keep wear patterns even and reduce vibration.

Surface speed shown is intended as a guide only and will be limited by the acceleration/deceleration rate of the lathe being used.

The depth of cut per pass should be reduced as the threadform nears full depth, with the final pass being a spring cut to maintain full form and improve thread surface finish.



		NUMBER OF PASSES													
Pitch	mm	0.5	0.75	1.0	1.25	1.5	1.75	2.0	2.5	3.0	3.5	4.0	4.5	5.0	
	TPI	48	32	24	20	16	14	12	10	8	7	6	5.5	5	
No. of passes		4-6	4-7	4-8	5-9	6-10	7-12	7-12	8-14	9-16	10-18	11-18	11-19	12-20	

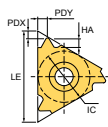


# THREADING INSERTS



## EXTERNAL, METRIC

▶ EDP Code TH..... Example: 11ER 0.5ISO ET300 = TH00080



INSERT	LE	IC	S
11ER/L	11	6.35 - 1/4	3.04
16ER/L	16	9.53 - 3/8	3.44
22ER/L	22	12.7 - 1/2	4.64

P	●
M	●
K	●
N	○
S	○
H	○

METRIC FULL FORM	EXTERNAL	TP	PDX	PDY	HA (min)	ET300
	11ER 0.5ISO	0.5	0.6	0.4	0.31	● 00080
	11ER 1.0ISO	1.0	0.7	0.7	0.61	● 00085
	11ER 1.25ISO	1.25	0.8	0.9	0.77	● 00086
	11ER 1.5ISO	1.5	0.8	1.0	0.92	● 00087
	16ER 0.5ISO	0.5	0.6	0.4	0.31	● 00023
	16ER 0.75ISO	0.75	0.6	0.6	0.46	● 00025
	16ER 1.0ISO	1.0	0.7	0.7	1.61	● 00001
	16ER 1.25ISO	1.25	0.8	0.9	1.88	● 00002
	16ER 1.5ISO	1.5	0.8	1.0	1.92	● 00003
	16ER 1.75ISO	1.75	0.9	1.2	1.07	● 00027
	16ER 2.0ISO	2.0	1.0	1.3	1.23	● 00004
	16ER 2.5ISO	2.5	1.1	1.5	1.53	● 00019
	16ER 3.0ISO	3.0	1.2	1.6	1.84	● 00005
	16ER 3.5ISO	3.5	1.6	1.9	2.15	● 00020
	22ER 3.5ISO	3.5	1.6	2.3	2.15	● 00028
	22ER 4.0ISO	4.0	1.6	2.3	2.45	● 00029
22ER 4.5ISO	4.5	1.7	2.4	2.76	● 00030	
22ER 5.0ISO	5.0	1.7	2.5	3.07	● 00031	

Left handed inserts available on request

ISO		P			M		K		N	S	H
MATERIAL		Non-alloy steel <25 HRC	Low alloy steel 25-35 HRC	High alloy steel, Tool steel 35-45 HRC	Ferritic / Martensitic Stainless steel	Austenitic Stainless steel	Grey Cast iron	Nodular Cast iron	Aluminium & Non-ferrous material	Heat Resistant and Super Alloys	Hardened steel <55 HRC
VDI GROUP		1-5	6-9	10-11	12-13	14	15-16	17-20	21-30	31-37	38-41
Vc (m/min)	ET300	90 - 190	70 - 180	50 - 120	50 - 130	40 - 140	60 - 145	90 - 160	60 - 400	15 - 50	40-50



## EXTERNAL, UN & WHIT FORM

► EDP Code TH..... Example: 16ER 32UN ET300 = TH00050

	INSERT	LE	IC	S	P	M	K	N	S	H
	16ER/L	16	9.53 - 3/8	3.44						
	22ER/L	22	12.7 - 1/2	4.64						
UN FULL FORM	EXTERNAL	TP	PDX	PDY	HA (min)	ET300				
	16ER 24UN	24	0.7	0.8	0.65	● 00052				
	16ER 20UN	20	0.8	0.9	0.78	● 00053				
	16ER 18UN	18	0.8	1.0	0.87	● 00054				
	16ER 16UN	16	0.9	1.1	0.97	● 00055				
	16ER 14UN	14	1.0	1.2	1.11	● 00056				
	16ER 12UN	12	1.1	1.4	1.30	● 00057				
BSW FULL FORM	EXTERNAL	TP	PDX	PDY	HA (min)					
	16ER 19W	19	0.8	1.0	0.86	● 00071				
	16ER 14W	14	1.0	1.2	1.16	● 00072				
	16ER 11W	11	1.1	1.5	1.48	● 00073				

Left handed inserts available on request

ISO	P			M		K		N	S	H	
MATERIAL	Non-alloy steel <25 HRC	Low alloy steel 25-35 HRC	High alloy steel, Tool steel 35-45 HRC	Ferritic / Martensitic Stainless steel	Austenitic Stainless steel	Grey Cast iron	Nodular Cast iron	Aluminium & Non-ferrous material	Heat Resistant and Super Alloys	Hardened steel <55 HRC	
VDI GROUP	1-5	6-9	10-11	12-13	14	15-16	17-20	21-30	31-37	38-41	
Vc (m/min)	ET300	90 - 190	70 - 180	50 - 120	50 - 130	40 - 140	60 - 145	90 - 160	60 - 400	15 - 50	40-50



## EXTERNAL, PARTIAL PROFILE, 55° & 60°

▶ EDP Code TH..... Example: 16ER AG55 ET300 = TH00012

PARTIAL PROFILE	EXTERNAL	TP	PDX	PDY	RE	Material	
						Color	Symbol
	<b>11ER A55</b>	48-8	0.8	0.9	0.05	●	00088
	<b>11ER A60</b>	0.5-1.5 / 48-16	0.8	0.9	0.05	●	00089
	<b>16ER AG55</b>	48-8	0.8	0.9	0.05	●	00012
	<b>16ER AG60</b>	0.5-3.0 / 48-8	1.2	1.7	0.08	●	00013
	<b>16ER G60</b>	1.75-3.0 / 14-8	1.2	1.7	0.27	●	00014
	<b>22ER N60</b>	3.5-5.0 / 7-5	1.7	2.5	0.53	●	00077

Left handed inserts available on request

ISO		P			M		K		N	S	H
MATERIAL		Non-alloy steel <25 HRC	Low alloy steel 25-35 HRC	High alloy steel, Tool steel 35-45 HRC	Ferritic / Martensitic Stainless steel	Austenitic Stainless steel	Grey Cast iron	Nodular Cast iron	Aluminium & Non-ferrous material	Heat Resistant and Super Alloys	Hardened steel <55 HRC
VDI GROUP		1-5	6-9	10-11	12-13	14	15-16	17-20	21-30	31-37	38-41
Vc (m/min)	ET300	90 - 190	70 - 180	50 - 120	50 - 130	40 - 140	60 - 145	90 - 160	60 - 400	15 - 50	40-50



## INTERNAL, METRIC

▶ EDP Code TH..... Example: 11IR 0.5ISO ET300 = TH00032

METRIC FULL FORM	INTERNAL	TP	PDX	PDY	HA (min)	Material		
						P	M	
	11IR/L	11	6.35 - 1/4	3.04		P	●	
	16IR/L	16	9.53 - 3/8	3.44		K	●	
	22IR/L	22	12.7 - 1/2	4.64		N	○	
						S	○	
						H	○	
	11IR 0.5ISO		0.5	0.6	0.4	0.29	●	00032
	11IR 0.75ISO		0.75	0.6	0.6	0.43	●	00034
	11IR 1.0ISO		1.0	0.6	0.7	0.58	●	00036
	11IR 1.25ISO		1.25	0.8	0.9	0.72	●	00037
	11IR 1.5ISO		1.5	0.8	1.0	0.87	●	00038
	11IR 1.75ISO		1.75	0.9	1.1	1.01	●	00039
	11IR 2.0ISO		2.0	0.9	1.1	1.15	●	00040
	16IR 0.5ISO		0.5	0.6	0.4	0.31	●	00041
	16IR 0.75ISO		0.75	0.6	0.6	0.46	●	00043
	16IR 1.0ISO		1.0	0.7	0.7	1.61	●	00006
	16IR 1.25ISO		1.25	0.8	0.9	1.88	●	00007
	16IR 1.5ISO		1.5	0.8	1.0	1.92	●	00008
	16IR 1.75ISO		1.75	0.9	1.2	1.07	●	00045
	16IR 2.0ISO		2.0	1.0	1.3	1.23	●	00009
	16IR 2.5ISO		2.5	1.1	1.5	1.53	●	00021
16IR 3.0ISO		3.0	1.2	1.6	1.84	●	00010	
16IR 3.5ISO		3.5	1.6	1.9	2.15	●	00022	
22IR 3.5ISO		3.5	1.6	2.3	2.15	●	00046	
22IR 4.0ISO		4.0	1.6	2.3	2.45	●	00047	
22IR 4.5ISO		4.5	1.7	2.4	2.76	●	00048	
22IR 5.0ISO		5.0	1.7	2.5	3.07	●	00049	

Left handed inserts available on request

ISO		P			M		K		N	S	H
MATERIAL		Non-alloy steel <25 HRC	Low alloy steel 25-35 HRC	High alloy steel, Tool steel 35-45 HRC	Ferritic / Martensitic Stainless steel	Austenitic Stainless steel	Grey Cast iron	Nodular Cast iron	Aluminium & Non-ferrous material	Heat Resistant and Super Alloys	Hardened steel <55 HRC
VDI GROUP		1-5	6-9	10-11	12-13	14	15-16	17-20	21-30	31-37	38-41
Vc (m/min)	ET300	90 - 190	70 - 180	50 - 120	50 - 130	40 - 140	60 - 145	90 - 160	60 - 400	15 - 50	40-50



# THREADING INSERTS



## INTERNAL, UN & WHIT FORM

► EDP Code TH..... Example: 11IR 28UN ET300 = TH00062

		INSERT	LE	IC	S		
		11IR/L	11	6.35 - 1/4	3.04	<b>P</b>	●
		16IR/L	16	9.53 - 3/8	3.44	<b>M</b>	●
						<b>K</b>	●
						<b>N</b>	○
						<b>S</b>	○
						<b>H</b>	○
<b>UN FULL FORM</b>	INTERNAL	TP	PDX	PDY	HA (min)	ET300	
	<b>11IR 24UN</b>	24	0.7	0.8	0.61	●	00063
	<b>11IR 20UN</b>	20	0.8	0.9	0.73	●	00064
	<b>11IR 18UN</b>	18	0.8	1.0	0.81	●	00065
	<b>16IR 12UN</b>	12	1.1	1.4	1.22	●	00067
<b>BSW FULL FORM</b>	INTERNAL	TP	PDX	PDY	HA (min)		
	<b>16IR 19W</b>	19	0.8	1.0	0.86	●	00074
	<b>16IR 14W</b>	14	1.0	1.2	1.16	●	00075
	<b>16IR 11W</b>	11	1.1	1.5	1.48	●	00076

Left handed inserts available on request

ISO		P			M		K		N	S	H
MATERIAL		Non-alloy steel <25 HRC	Low alloy steel 25-35 HRC	High alloy steel, Tool steel 35-45 HRC	Ferritic / Martensitic Stainless steel	Austenitic Stainless steel	Grey Cast iron	Nodular Cast iron	Aluminium & Non-ferrous material	Heat Resistant and Super Alloys	Hardened steel <55 HRC
VDI GROUP		1-5	6-9	10-11	12-13	14	15-16	17-20	21-30	31-37	38-41
Vc (m/min)	ET300	90 - 190	70 - 180	50 - 120	50 - 130	40 - 140	60 - 145	90 - 160	60 - 400	15 - 50	40-50



## INTERNAL, PARTIAL PROFILE, 55° & 60°

► EDP Code TH..... Example: 11IR A55 ET300 = TH00090

PARTIAL PROFILE	INTERNAL	TP	PDX	PDY	RE	Material	
						Color	Symbol
	<b>11IR A55</b>	48-8	0.8	0.9	0.05	●	00090
	<b>11IR A60</b>	0.5-1.5 / 48-16	0.8	0.9	0.05	●	00078
	<b>16IR AG55</b>	48-8	1.2	1.7	0.07	●	00016
	<b>16IR AG60</b>	0.5-3.0 / 48-8	1.2	1.7	0.08	●	00017
	<b>16IR G60</b>	1.75-3.0 / 14-8	1.2	1.7	0.16	●	00018
	<b>22IR N60</b>	3.5-5.0 / 7-5	1.7	2.5	0.30	●	00079

Left handed inserts available on request

ISO		P			M		K		N	S	H
MATERIAL		Non-alloy steel <25 HRC	Low alloy steel 25-35 HRC	High alloy steel, Tool steel 35-45 HRC	Ferritic / Martensitic Stainless steel	Austenitic Stainless steel	Grey Cast iron	Nodular Cast iron	Aluminium & Non-ferrous material	Heat Resistant and Super Alloys	Hardened steel <55 HRC
VDI GROUP		1-5	6-9	10-11	12-13	14	15-16	17-20	21-30	31-37	38-41
Vc (m/min)	ET300	90 - 190	70 - 180	50 - 120	50 - 130	40 - 140	60 - 145	90 - 160	60 - 400	15 - 50	40-50