- Multitooth thread inserts for mass production.

► **the TOOTOOL Multitooth Thread Turning program offers a wide range of grades for threading any type of material.**

TTIP30	TTIM45
TiN coated, yellow color, the universal grade for general steel, recommended for rigid cutting conditional.	TiALN coated, black color; Multi-layer PVD coated for stainless steel & steel medium machining

TOOTOOL MACHINERY

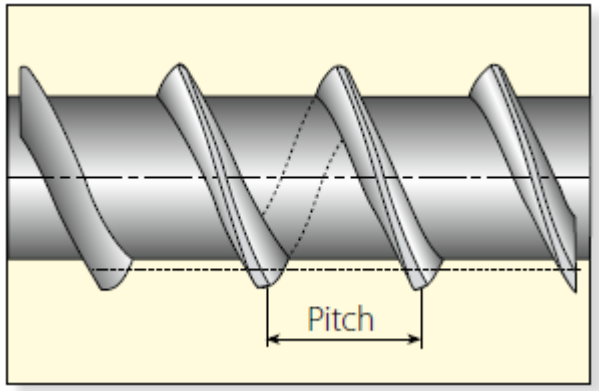
► Machining a Multi-Start Thread

A thread in which the lead is an integral multiple, greater than one, of the pitch.

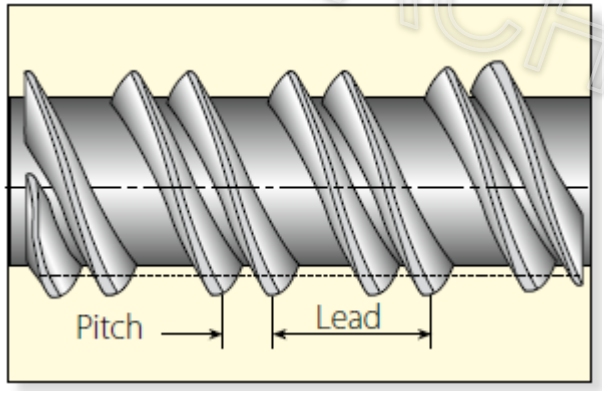
A multi-start thread permits a more rapid advance without a coarser (larger) thread form.

TOOTOOL MACHINERY

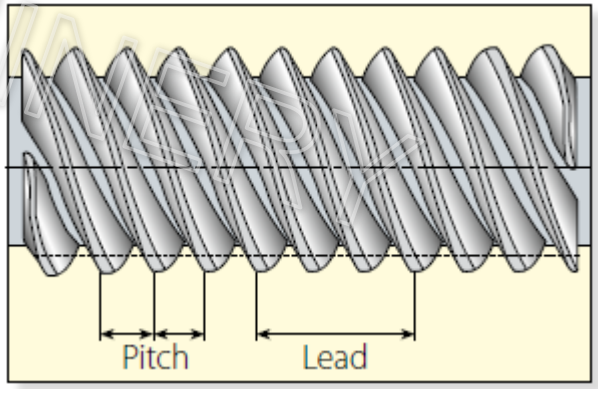
First Start Machined



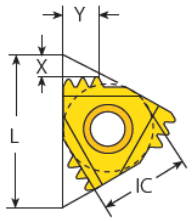
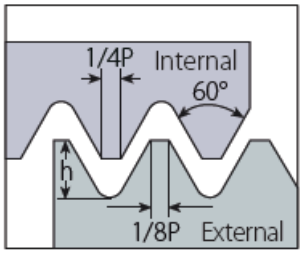
Second Start Machined

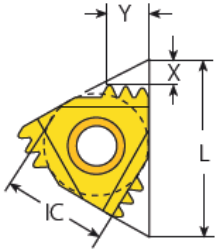
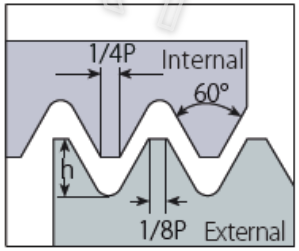


Third Start Machined
(Final, 3 Starts Thread)



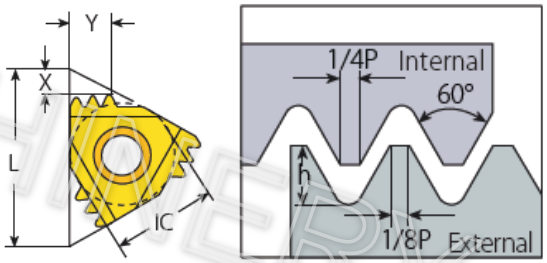
ISO Metric

Type	Designation	Pitch	Dimensions (mm)					Tooth	Picture
		mm	IC	L	hmin	X	Y		
External	16ER1.00ISO 3M	1.0	9.525	16	0.61	1.8	2.6	3	 
	16ER1.50ISO 2M	1.5	9.525	16	0.92	1.6	2.4	2	
	16ER2.00ISO 2M	2.0	9.525	16	1.23	2.1	3.1	2	
	22ER1.50ISO 3M	1.5	12.7	22	0.92	2.5	3.8	3	
	22ER2.00ISO 2M	2.0	12.7	22	1.23	2.1	3.1	2	
	22ER2.00ISO 3M	2.0	12.7	22	1.23	3.2	5.1	3	
	22ER2.50ISO 2M	2.5	12.7	22	1.53	2.5	3.9	2	
	27ER3.00ISO 2M	3.0	15.875	27	1.84	3.0	4.7	2	

Type	Designation	Pitch	Dimensions (mm)					Tooth	Picture
		mm	IC	L	hmin	X	Y		
Internal	16IR1.00ISO 3M	1.0	9.525	16	0.58	1.7	2.6	3	 
	16IR1.50ISO 2M	1.5	9.525	16	0.87	1.6	2.4	2	
	16IR2.00ISO 2M	2.0	9.525	16	1.15	2.0	3.1	2	
	22IR1.50ISO 3M	1.5	12.7	22	0.87	2.5	3.8	3	
	22IR2.00ISO 2M	2.0	12.7	22	1.15	2.0	3.1	2	
	22IR2.00ISO 3M	2.0	12.7	22	1.15	3.2	5.1	3	
	27IR3.00ISO 2M	3.0	15.875	27	1.73	3.0	4.7	2	

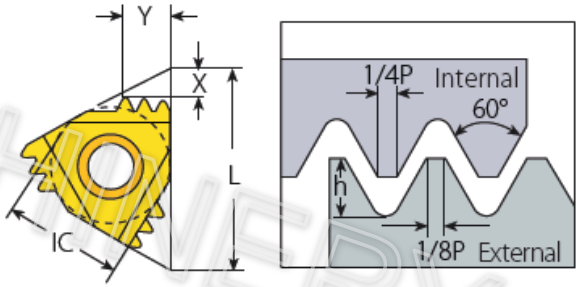
TOOTOOL MACHINERY

American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
External	16ER20UN 3M	20	9.525	16	0.78	2.2	3.3	3	
	16ER18UN 2M	18	9.525	16	0.87	1.5	2.2	2	
	16ER18UN 3M	18	9.525	16	0.87	2.3	3.6	3	
	16ER16UN 2M	16	9.525	16	0.97	1.7	2.5	2	
	16ER14UN 2M	14	9.525	16	1.11	1.9	2.8	2	
	16ER12UN 2M	12	9.525	16	1.30	2.2	3.3	2	
	22ER16UN 3M	16	12.7	22	0.97	2.6	4.1	3	
	22ER14UN 2M	14	12.7	22	1.11	1.9	2.8	2	
	22ER12UN 2M	12	12.7	22	1.30	2.2	3.3	2	
	22ER12UN 3M	12	12.7	22	1.30	3.4	5.4	3	
	22ER11UN 2M	11	12.7	22	1.42	2.3	3.6	2	
	22ER10UN 2M	10	12.7	22	1.56	2.5	3.9	2	
	27ER8UN 2M	8	15.875	27	1.95	3.1	4.9	2	

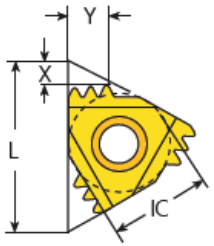
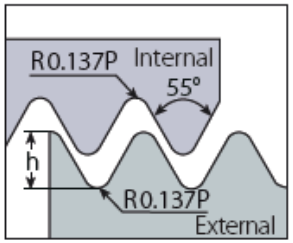
TOOTOOL MACHINERY

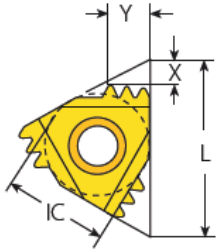
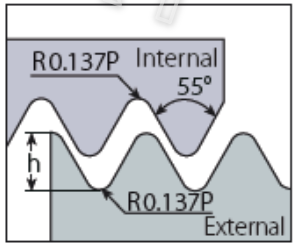
American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
Internal	16IR12UN 2M	12	9.525	16	1.22	2.2	3.3	2	
	16IR14UN 2M	14	9.525	16	1.05	1.9	2.8	2	
	16IR16UN 2M	16	9.525	16	0.92	1.7	2.5	2	
	22IR16UN 3M	16	12.7	22	0.92	2.6	4.1	3	
	22IR14UN 2M	14	12.7	22	1.05	1.9	2.8	2	
	22IR12UN 2M	12	12.7	22	1.22	2.2	3.3	2	
	22IR12UN 3M	12	12.7	22	1.22	3.4	5.4	3	
	27IR8UN 2M	8	15.875	27	1.83	3.1	4.9	2	

TOOTOOL MACHINERY

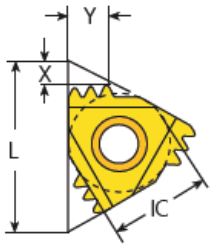
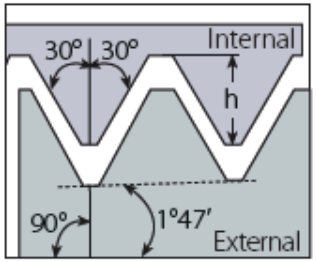
Whitworth (BSW, BSF, BSP, BSB)

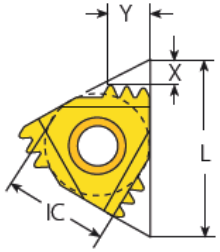
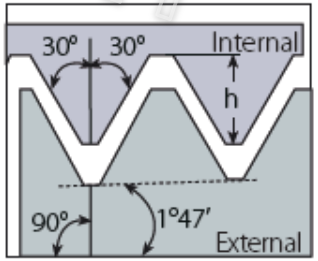
Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
External	16ER28W 2M	28	9.525	16	0.58	1.2	1.6	2	 
	16ER19W 2M	19	9.525	16	0.86	1.6	2.3	2	
	16ER19W 3M	19	9.525	16	0.86	2.2	3.4	3	
	16ER14W 2M	14	9.525	16	1.16	2.0	3.0	2	
	22ER14W 3M	14	12.7	22	1.16	2.9	4.6	3	
	22ER11W 2M	11	12.7	22	1.48	2.3	3.5	2	

Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
Internal	16IR14W 2M	14	9.525	16	1.16	2.0	3.0	2	 
	22IR11W 2M	11	12.7	22	1.48	2.3	3.5	2	

FOOTOOL MACHINERY

National Pipe Thread (NPT)

Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
External	16ER14NPT 2M	14	9.525	16	1.33	2.0	3.0	2	 
	22ER11.5NPT 2M	11.5	12.7	22	1.64	2.2	3.4	2	
	27ER11.5NPT 3M	11.5	15.875	27	1.64	3.5	5.6	3	
	27ER8NPT 2M	8	15.875	27	2.42	3.1	4.9	2	

Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
Internal	16IR14NPT 2M	14	9.525	16	1.33	2.0	3.0	2	 
	22IR11.5NPT 2M	11.5	12.7	22	1.64	2.2	3.4	2	
	27IR11.5NPT 3M	11.5	15.875	27	1.64	3.5	3.6	3	
	27IR8NPT 2M	8	15.875	27	2.42	3.1	4.9	2	

FOOTOOL MACHINERY