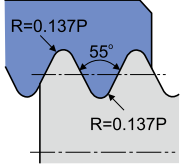
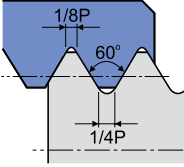
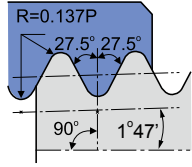
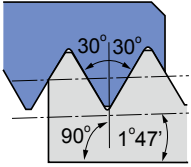


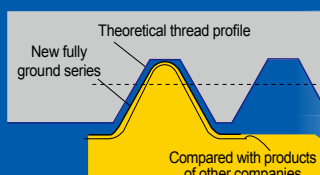


Applications			For general use		
Legend					
Thread name			ISO metric thread With end	General pitch thread Without end	General pitch thread Without end
Profil			GM	60	55
Shape of insert (length: 11, 16, 22mm)			R style shown A290-291	R style shown A292	R style shown A292
Tool holder	Pitch	Dimensions (mm) (H×W×L) (Dia×L×Min. dia)	Pitch/mm	Pitch/mm (pitch/Inch)	Pitch/mm (pitch/Inch)
External thread	 R-type shown A298	16×16×100 20×20×125 25×25×150 32×25×170 32×32×170 40×40×250	0.5~6.0	0.5~5.0 (5~48)	0.5~5.0 (5~48)
Internal thread	 R-type shown A299	16×125×12 16×150×16 16×150×20 20×150×25 20×180×25 25×150×32 32×200×40 32×250×40 40×300×50 50×350×63	0.5~6.0	0.5~5.0 (5~48)	0.5~5.0 (5~48)

For general use	For aerospace industry	Heater, gas and water pipe thread	For gas and water faucet and pipe connection
			
Whitworth thread	Unified thread (American standard threads)	British standard taper pipe threads	American standard taper pipe threads
W	UN	BSPT	NPT
R style shown	R style shown	R style shown	R style shown
 A293	 A294	 A295	 A296
Pitch/mm (pitch/Inch)	Pitch/mm (pitch/Inch)	Pitch/mm (pitch/Inch)	Pitch/mm (pitch/Inch)
8~19	8~24	11~28	8~27
8~19	8~24	11~28	8~27

suitable for threading in a variety of materials New nano coating grade YBG203

- Specially treated edge for superior surface quality
- Sharp nose with small cutting resistance and superior performance
- Full ground inserts with high dimensional precision for high quality threading



Thread type	Grade of tolerance
ISO metric thread	6g/6H
Whitworth thread W	Medium Class A
British standard pipe thread	Standard BSPT
Unified thread	2A/2B
American standard pipe thread	Standard NPT

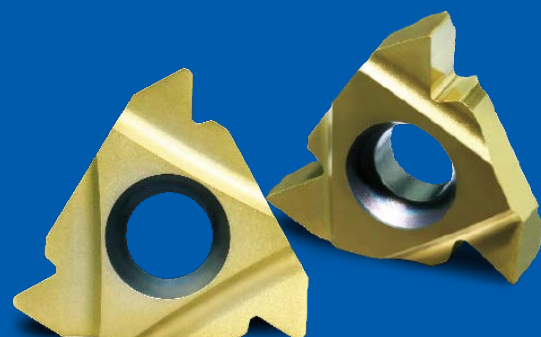
- New nano coating grade specially designed for threading with longer insert life



Advanced surface treatment techniques effectively reduce friction and allows for better wear observation.

Advanced TiAlN substrate nano coating, in combination with proper coating ingredients, improves the mechanical and thermal properties of coating.

Further optimizing coating structure, improving coating stress, enhancing bond strength of coating and substrate.



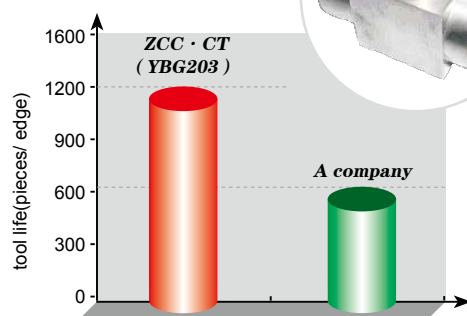
Case:

workpiece material: 42CrMo(HB260)

insert: Z16ER2.0ISO/YBG203

thread pitch: $p=2.0\text{mm}$

cutting data: $V_c=120\text{ m/min}$



84% tool life improvement of ZCC·CT product than that of company A under the same cutting condition.

Threading inserts code key

Insert size

Code	Diameter of IC(mm)
Z11	ø6.35
Z16	ø9.525
Z22	ø12.7

Cutting style

E -External threading inserts
I -Internal threading inserts

Cutting direction

R-Righ
L-Left

Z16 E R 2.0 ISO (P)

Screw pitch

Full profile (Range of screw pitch is indicated by numbers).

mm	TPI
0.5-6.0	48-5

V profile (Range of screw pitch is indicated by letters).

	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

Thread specification	Range of thread pitch
ISO metric thread	0.5-6.0
General pitch thread	0.5-5.0
Whitworth thread W	8-19
British standard pipe thread	11-28
Unified thread	8-24
American standard pipe thread	8-27

Profile

ISO—ISO metric 60° thread
60—60° general pitch thread
55—55° general pitch thread
W—Whitworth thread
UN—Unified thread(American standard threads)
BSPT—British standard taper piper thread
NPT—American standard taper piper thread

chip breaker

□ -fully ground edge insert
P -3-Dimensional chip-breaking insert

General turning

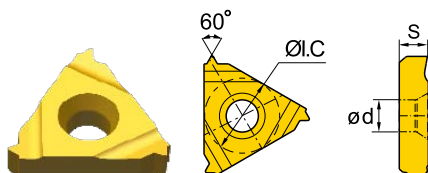
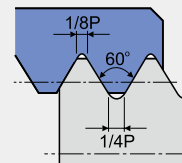
Parting and grooving

Threading

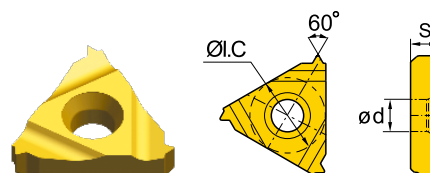
Threading insert

ISO metric thread (with end)

ISO 965-1980 DIN 13
GB/T 197-2003 Tolerance class: 6g/6H



R type



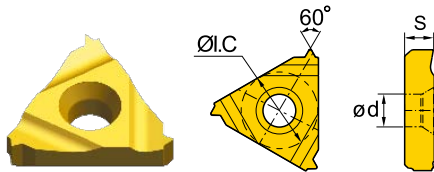
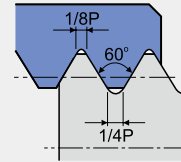
L type

	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch	S	ØI.C	ød	YBG203	YBG205
External thread	Z16ER0.5ISO	Z16EL0.5ISO	0.50	3.52	9.525	4.0	★	○
	Z16ER0.75ISO	Z16EL0.75ISO	0.75	3.52	9.525	4.0	★	○
	Z16ER1.0ISO	Z16EL1.0ISO	1.00	3.52	9.525	4.0	★	○
	Z16ER1.25ISO	Z16EL1.25ISO	1.25	3.52	9.525	4.0	★	○
	Z16ER1.5ISO	Z16EL1.5ISO	1.50	3.52	9.525	4.0	★	○
	Z16ER1.75ISO	Z16EL1.75ISO	1.75	3.52	9.525	4.0	★	○
	Z16ER2.0ISO	Z16EL2.0ISO	2.00	3.52	9.525	4.0	★	○
	Z16ER2.5ISO	Z16EL2.5ISO	2.50	3.52	9.525	4.0	★	○
	Z16ER3.0ISO	Z16EL3.0ISO	3.00	3.52	9.525	4.0	★	○
	Z22ER3.5ISO	Z22EL3.5ISO	3.50	4.65	12.7	5.0	★	○
	Z22ER4.0ISO	Z22EL4.0ISO	4.00	4.65	12.7	5.0	★	○
	Z22ER4.5ISO	Z22EL4.5ISO	4.50	4.65	12.7	5.0	★	○
	Z22ER5.0ISO	Z22EL5.0ISO	5.00	4.65	12.7	5.0	★	○
	Z22ER5.5ISO	Z22EL5.5ISO	5.50	4.65	12.7	5.0	★	○
	Z22ER6.0ISO	Z22EL6.0ISO	6.00	4.65	12.7	5.0	★	○

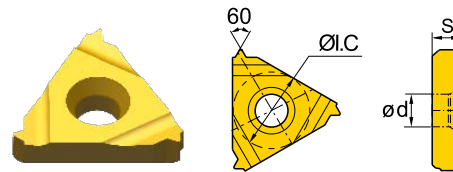
★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

ISO metric thread (with end)

ISO 965-1980 DIN 13
GB/T 197-2003 Tolerance class: 6g/6H



R type



L type

General turning

Parting and grooving

Threading

Threading insert

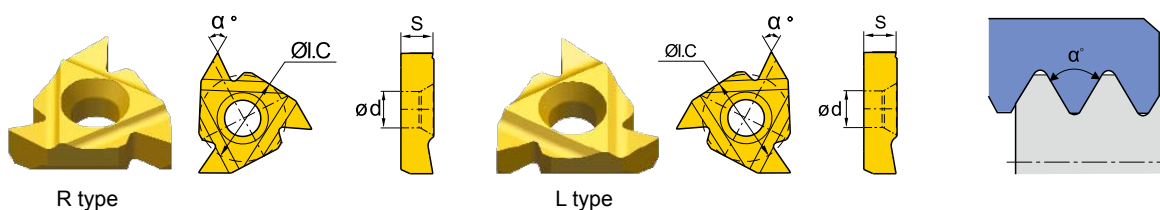
	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch	S	ØI.C	ød	YBG203	YBG205
Internal thread	Z11IR0.5ISO	Z11IL0.5ISO	0.50	3.05	6.35	3.2	★	○
	Z11IR0.75ISO	Z11IL0.75ISO	0.75	3.05	6.35	3.2	★	○
	Z11IR1.0ISO	Z11IL1.0ISO	1.00	3.05	6.35	3.2	★	○
	Z11IR1.25ISO	Z11IL1.25ISO	1.25	3.05	6.35	3.2	★	○
	Z11IR1.5ISO	Z11IL1.5ISO	1.50	3.05	6.35	3.2	★	○
	Z11IR1.75ISO	Z11IL1.75ISO	1.75	3.05	6.35	3.2	★	○
	Z11IR2.0ISO	Z11IL2.0ISO	2.00	3.05	6.35	3.2	★	○
	Z16IR0.5ISO	Z16IL0.5ISO	0.50	3.52	9.525	4.0	★	○
	Z16IR0.75ISO	Z16IL0.75ISO	0.75	3.52	9.525	4.0	★	○
	Z16IR1.0ISO	Z16IL1.0ISO	1.00	3.52	9.525	4.0	★	○
	Z16IR1.25ISO	Z16IL1.25ISO	1.25	3.52	9.525	4.0	★	○
	Z16IR1.5ISO	Z16IL1.5ISO	1.50	3.52	9.525	4.0	★	○
	Z16IR1.75ISO	Z16IL1.75ISO	1.75	3.52	9.525	4.0	★	○
	Z16IR2.0ISO	Z16IL2.0ISO	2.00	3.52	9.525	4.0	★	○
	Z16IR2.5ISO	Z16IL2.5ISO	2.50	3.52	9.525	4.0	★	○
	Z16IR3.0ISO	Z16IL3.0ISO	3.00	3.52	9.525	4.0	★	○
	Z22IR3.5ISO	Z22IL3.5ISO	3.50	4.65	12.7	5.0	★	○
	Z22IR4.0ISO	Z22IL4.0ISO	4.00	4.65	12.7	5.0	★	○
	Z22IR4.5ISO	Z22IL4.5ISO	4.50	4.65	12.7	5.0	★	○
	Z22IR5.0ISO	Z22IL5.0ISO	5.00	4.65	12.7	5.0	★	○
	Z22IR5.5ISO	Z22IL5.5ISO	5.50	4.65	12.7	5.0	★	○
	Z22IR6.0ISO	Z22IL6.0ISO	6.00	4.65	12.7	5.0	★	○

★ Recommended grade (always stock available)

● Available grade (always stock available)

○ Make-to-order

General pitch thread (without end)



		Type		Basic dimensions(mm)					Recommended coating grade	
		The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	ød	α°	YBG203	YBG205
External thread	55°	Z16ERA55	Z16ELA55	0.5-1.5(48-16)	3.52	9.525	4.0	55°	★	○
		Z16ERG55	Z16ELG55	1.75-3.0(14-8)	3.52	9.525	4.0	55°	★	○
		Z16ERAG55	Z16ELAG55	0.5-3.0(48-8)	3.52	9.525	4.0	55°	★	○
		Z22ERN55	Z22ELN55	3.5-5.0(7-5)	4.65	12.7	5.0	55°	★	○
	60°	Z16ERA60	Z16ELA60	0.5-1.5(48-16)	3.52	9.525	4.0	60°	★	○
		Z16ERG60	Z16ELG60	1.75-3.0(14-8)	3.52	9.525	4.0	60°	★	○
		Z16ERAG60	Z16ELAG60	0.5-3.0(48-8)	3.52	9.525	4.0	60°	★	○
		Z22ERN60	Z22ELN60	3.5-5.0(7-5)	4.65	12.7	5.0	60°	★	○

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

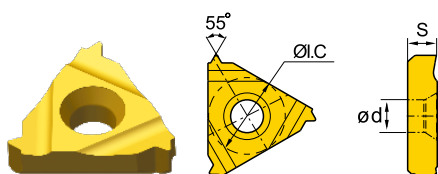
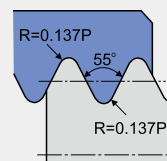


		Type		Basic dimensions(mm)					Recommended coating grade	
		The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	ød	α°	YBG203	YBG205
Internal thread	55°	Z111RA55	Z111LA55	0.5-1.5(48-16)	3.05	6.35	3.2	55°	★	○
		Z16IRA55	Z16ILA55	0.5-1.5(48-16)	3.52	9.525	4.0	55°	★	○
		Z16IRG55	Z16ILG55	1.75-3.0(14-8)	3.52	9.525	4.0	55°	★	○
		Z16IRAG55	Z16ILAG55	0.5-3.0(48-8)	3.52	9.525	4.0	55°	★	○
		Z22IRN55	Z22ILN55	3.5-5.0(7-5)	4.65	12.7	5.0	55°	★	○
	60°	Z111RA60	Z111LA60	0.5-1.5(48-16)	3.05	6.35	3.2	60°	★	○
		Z16IRA60	Z16ILA60	0.5-1.5(48-16)	3.52	9.525	4.0	60°	★	○
		Z16IRG60	Z16ILG60	1.75-3.0(14-8)	3.52	9.525	4.0	60°	★	○
		Z16IRAG60	Z16ILAG60	0.5-3.0(48-8)	3.52	9.525	4.0	60°	★	○
		Z22IRN60	Z22ILN60	3.5-5.0(7-5)	4.65	12.7	5.0	60°	★	○

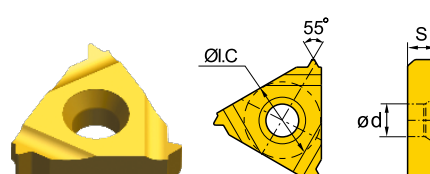
★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Whitworth thread (with end)

ISO 228/1:1982,
DIN 259, B.S.84:1956
Tolerance class: Medium class A



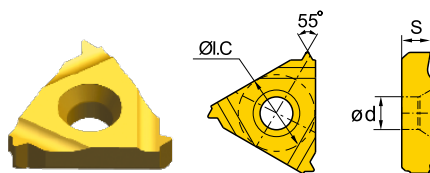
R type



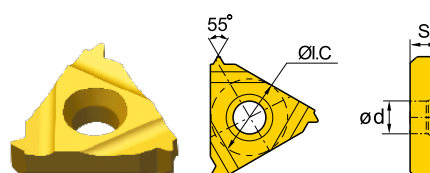
L type

	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	ød	YBG203	YBG205
External thread	Z16ER8W	Z16EL8W	8	3.52	9.525	4.0	★	○
	Z16ER9W	Z16EL9W	9	3.52	9.525	4.0	★	○
	Z16ER10W	Z16EL10W	10	3.52	9.525	4.0	★	○
	Z16ER11W	Z16EL11W	11	3.52	9.525	4.0	★	○
	Z16ER12W	Z16EL12W	12	3.52	9.525	4.0	★	○
	Z16ER14W	Z16EL14W	14	3.52	9.525	4.0	★	○
	Z16ER16W	Z16EL16W	16	3.52	9.525	4.0	★	○
	Z16ER18W	Z16EL18W	18	3.52	9.525	4.0	★	○
	Z16ER19W	Z16EL19W	19	3.52	9.525	4.0	★	○

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order



R type



L type

	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	ød	YBG203	YBG205
Internal thread	Z16IR8W	Z16IL8W	8	3.52	9.525	4.0	★	○
	Z16IR9W	Z16IL9W	9	3.52	9.525	4.0	★	○
	Z16IR10W	Z16IL10W	10	3.52	9.525	4.0	★	○
	Z16IR11W	Z16IL11W	11	3.52	9.525	4.0	★	○
	Z16IR12W	Z16IL12W	12	3.52	9.525	4.0	★	○
	Z16IR14W	Z16IL14W	14	3.52	9.525	4.0	★	○
	Z16IR16W	Z16IL16W	16	3.52	9.525	4.0	★	○
	Z16IR18W	Z16IL18W	18	3.52	9.525	4.0	★	○
	Z16IR19W	Z16IL19W	19	3.52	9.525	4.0	★	○

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

General turning

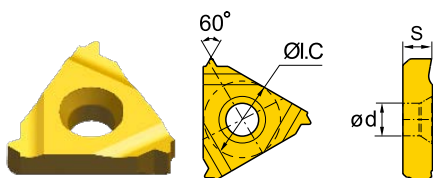
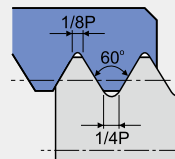
Parting and grooving

Threading

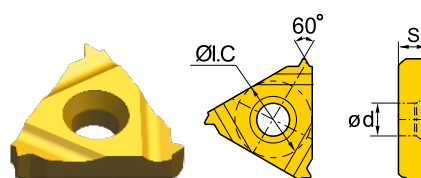
Threading insert

Unified thread (with end)

ASME B1.1-1989
Tolerance class: 2A/2B



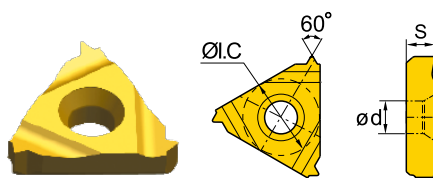
R type



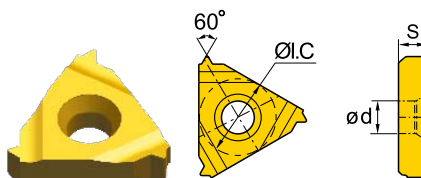
L type

	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	Ød	YBG203	YBG205
External thread	Z16ER8UN	Z16EL8UN	8	3.52	9.525	4.0	★	○
	Z16ER10UN	Z16EL10UN	10	3.52	9.525	4.0	★	○
	Z16ER12UN	Z16EL12UN	12	3.52	9.525	4.0	★	○
	Z16ER14UN	Z16EL14UN	14	3.52	9.525	4.0	★	○
	Z16ER16UN	Z16EL16UN	16	3.52	9.525	4.0	★	○
	Z16ER18UN	Z16EL18UN	18	3.52	9.525	4.0	★	○
	Z16ER20UN	Z16EL20UN	20	3.52	9.525	4.0	★	○
	Z16ER24UN	Z16EL24UN	24	3.52	9.525	4.0	★	○

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order



R type



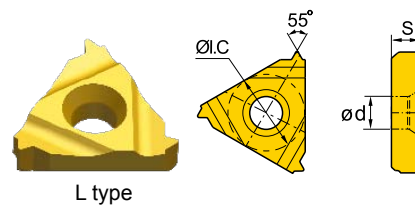
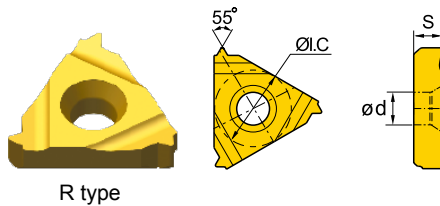
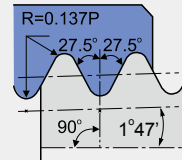
L type

	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	Ød	YBG203	YBG205
Internal thread	Z16IR8UN	Z16IL8UN	8	3.52	9.525	4.0	★	○
	Z16IR10UN	Z16IL10UN	10	3.52	9.525	4.0	★	○
	Z16IR12UN	Z16IL12UN	12	3.52	9.525	4.0	★	○
	Z16IR14UN	Z16IL14UN	14	3.52	9.525	4.0	★	○
	Z16IR16UN	Z16IL16UN	16	3.52	9.525	4.0	★	○
	Z16IR18UN	Z16IL18UN	18	3.52	9.525	4.0	★	○
	Z16IR20UN	Z16IL20UN	20	3.52	9.525	4.0	★	○
	Z16IR24UN	Z16IL24UN	24	3.52	9.525	4.0	★	○

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

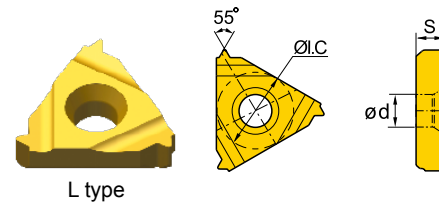
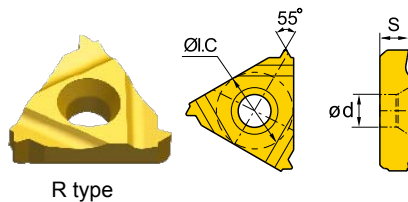
British standard taper pipe thread (with end)

ISO 7/1:1994
B.S.21:1985
Standard BSPT



	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	ød	YBG203	YBG205
External thread	Z16ER11BSPT	Z16EL11BSPT	11	3.52	9.525	4.0	★	○
	Z16ER14BSPT	Z16EL14BSPT	14	3.52	9.525	4.0	★	○
	Z16ER19BSPT	Z16EL19BSPT	19	3.52	9.525	4.0	★	○
	Z16ER28BSPT	Z16EL28BSPT	28	3.52	9.525	4.0	★	○

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order



	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	ød	YBG203	YBG205
Internal thread	Z16IR11BSPT	Z16IL11BSPT	11	3.52	9.525	4.0	★	○
	Z16IR14BSPT	Z16IL14BSPT	14	3.52	9.525	4.0	★	○
	Z16IR19BSPT	Z16IL19BSPT	19	3.52	9.525	4.0	★	○
	Z16IR28BSPT	Z16IL28BSPT	28	3.52	9.525	4.0	★	○

★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

General turning

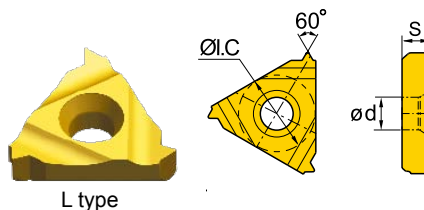
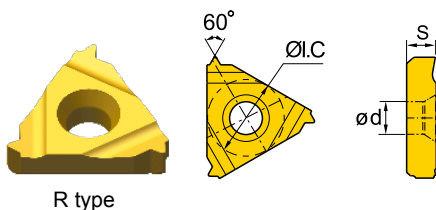
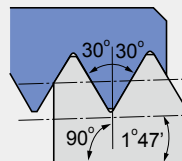
Parting and grooving

Threading

Threading insert

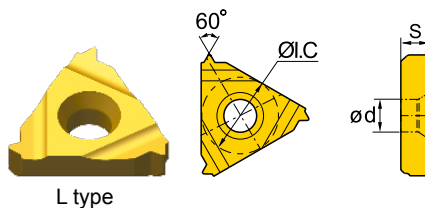
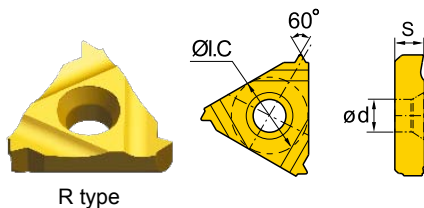
American standard taper pipe thread (with end)

ASME B1.20.1-1983
Standard NPT



	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	ød	YBG203	YBG205
External thread	Z16ER8NPT	Z16EL8NPT	8	3.52	9.525	4.0	★	○
	Z16ER11.5NPT	Z16EL11.5NPT	11.5	3.52	9.525	4.0	★	○
	Z16ER14NPT	Z16EL14NPT	14	3.52	9.525	4.0	★	○
	Z16ER18NPT	Z16EL18NPT	18	3.52	9.525	4.0	★	○
	Z16ER27NPT	Z16EL27NPT	27	3.52	9.525	4.0	★	○

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order



	Type		Basic dimensions(mm)				Recommended coating grade	
	The right hand tools	The left hand tools	Pitch/mm (pitch/Inch)	S	ØI.C	ød	YBG203	YBG205
Internal thread	Z16IR8NPT	Z16IL8NPT	8	3.52	9.525	4.0	★	○
	Z16IR11.5NPT	Z16IL11.5NPT	11.5	3.52	9.525	4.0	★	○
	Z16IR14NPT	Z16IL14NPT	14	3.52	9.525	4.0	★	○
	Z16IR18NPT	Z16IL18NPT	18	3.52	9.525	4.0	★	○
	Z16IR27NPT	Z16IL27NPT	27	3.52	9.525	4.0	★	○

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

