

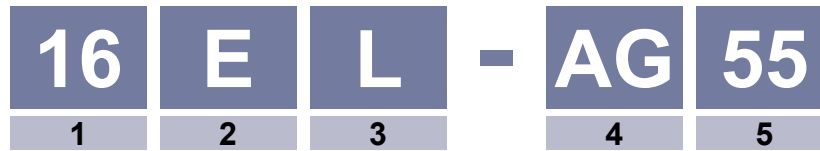


# THREADING



Code system (ISO)	<b>C02</b>
Threading inserts	<b>C03-10</b>
Applications index	<b>C11</b>
External threading	<b>C12,14,16-17</b>
Internal threading	<b>C13,15,18-19</b>
Cutting data	<b>C20-21</b>
Technical information	<b>C22</b>

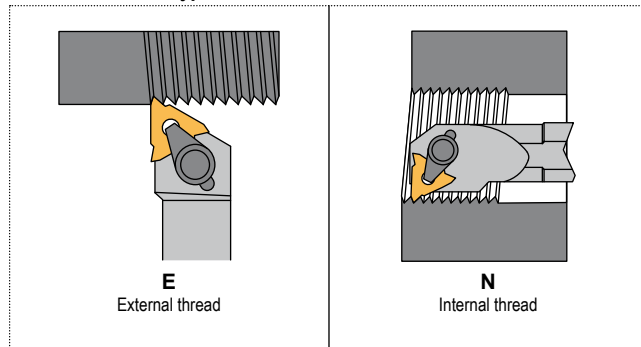
## Code system



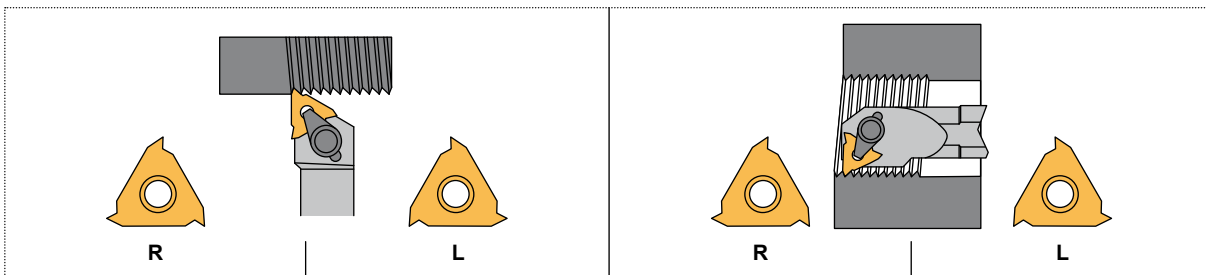
### 1 Insert size

	IC=inch	D=mm.
<b>06</b>	5/32	3,96
<b>08</b>	3/16	4,76
<b>11</b>	1/4	6,35
<b>16</b>	3/8	9,52
<b>22</b>	1/2	12,70
<b>27</b>	5/8	15,87

### 2 Insert type



### 3 Hand of insert



### 4 Pitch

	mm.	TPI
<b>A</b>	0,5-1,5	48-16
<b>AG</b>	0,5-3,0	48-8
<b>G</b>	1,75-3,0	14-8
<b>N</b>	3,5-5,0	7-5

### 5 Standard

<b>55</b>	Partial profile 55°
<b>60</b>	Partial profile 60°
<b>ISO</b>	ISO metric
<b>W</b>	Whitworth, BSW
<b>LG</b>	Groove type LG

## Grade characteristics

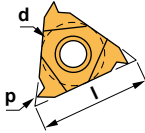
Grades	General use
<b>TL20</b>	General purpose grade with tough submicron substrate. Provides good fracture toughness in non-rigid cutting conditions. TiAlN coated.
<b>TIN25</b>	General purpose grade, excellent in steel and stainless steel, recommended for rigid cutting conditions. Ground or sintered chipbreaker styles. TiN coated.



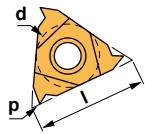
ER



ER TD



ER



EL

**ER-60°**

Partial profile thread forms - External inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
11ER-A60	0.433	0.250	60°	○	○
16ER-A60	0.629	0.374	60°	○	○
16ER-AG60	0.629	0.374	60°	●	○
16ER-G60	0.629	0.374	60°	●	○
22ER-N60	0.866	0.500	60°	●	○
27ER-S60	1.062	0.624	60°	○	○

**EL-60°**

Partial profile thread forms - External inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
11EL-A60	0.433	0.250	60°	○	○
16EL-A60	0.629	0.374	60°	○	○
16EL-AG60	0.629	0.374	60°	○	○
16EL-G60	0.629	0.374	60°	○	○
22EL-N60	0.866	0.500	60°	○	○
27EL-S60	1.062	0.624	60°	○	○

**ER-55°**

Partial profile thread forms - External inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
11ER-A55	0.433	0.250	55°	○	○
16ER-A55	0.629	0.374	55°	○	○
16ER-AG55	0.629	0.374	55°	●	○
16ER-G55	0.629	0.374	55°	○	○
22ER-N55	0.866	0.500	55°	○	○
27ER-S55	1.062	0.624	55°	○	○

**EL-55°**

Partial profile thread forms - External inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
11EL-A55	0.433	0.250	55°	○	○
16EL-A55	0.629	0.374	55°	○	○
16EL-AG55	0.629	0.374	55°	○	○
16EL-G55	0.629	0.374	55°	○	○
22EL-N55	0.866	0.500	55°	○	○
27EL-S55	1.062	0.624	55°	○	○

**ER-60° TD**

Partial profile thread forms - External inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
16ER-AG60-TD	0.629	0.374	60°	●	○

**ER-55° TD**

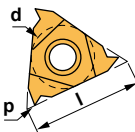
Partial profile thread forms - External inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
16ER-AG55-TD	0.629	0.374	55°	●	○

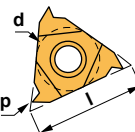




NR



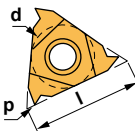
NR



NL



NR-TD



**NR-60°**

Partial profile thread forms - Internal inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
06NR-A60	0.236	0.155	60°	○	○
08NR-A60	0.314	0.187	60°	○	○
11NR-A60	0.433	0.250	60°	●	○
16NR-A60	0.629	0.374	60°	○	○
16NR-AG60	0.629	0.374	60°	●	○
16NR-G60	0.629	0.374	60°	○	○
22NR-N60	0.866	0.500	60°	●	○
27NR-S60	1.062	0.624	60°	○	○

**NL-60°**

Partial profile thread forms - Internal inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
06NL-A60	0.236	0.155	60°	○	○
08NL-A60	0.314	0.187	60°	○	○
11NL-A60	0.433	0.250	60°	○	○
16NL-A60	0.629	0.374	60°	○	○
16NL-AG60	0.629	0.374	60°	○	○
16NL-G60	0.629	0.374	60°	○	○
22NL-N60	0.866	0.500	60°	○	○
27NL-S60	1.062	0.624	60°	○	○

**NR-55°**

Partial profile thread forms - Internal inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
06NR-A55	0.236	0.155	55°	○	○
08NR-A55	0.314	0.187	55°	○	○
11NR-A55	0.433	0.250	55°	○	○
16NR-A55	0.629	0.374	55°	○	○
16NR-AG55	0.629	0.374	55°	●	○
16NR-G55	0.629	0.374	55°	●	○
22NR-N55	0.866	0.500	55°	○	○
27NR-S55	1.062	0.624	55°	○	○

**NL-55°**

Partial profile thread forms - Internal inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
06NL-A55	0.236	0.155	55°	○	○
08NL-A55	0.314	0.187	55°	○	○
11NL-A55	0.433	0.250	55°	○	○
16NL-A55	0.629	0.374	55°	○	○
16NL-AG55	0.629	0.374	55°	○	○
16NL-G55	0.629	0.374	55°	○	○
22NL-N55	0.866	0.500	55°	○	○
27NL-S55	1.062	0.624	55°	○	○

**NR-60° TD**

Partial profile thread forms - Internal inserts 60°-55° (non topping)

Reference	l	d	p	TIN25	TL20
16NR-AG60-TD	0.629	0.374	60°	●	○

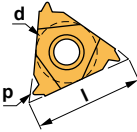
**NR-55° TD**

Partial profile thread forms - Internal inserts 60°-55° (non topping)

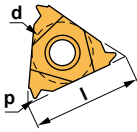
Reference	l	d	p	TIN25	TL20
16NR-AG55-TD	0.629	0.374	55°	●	○



ER



ER



EL

**ER-ISO**

Mechanical thread forms - External inserts ISO (full form) BS36

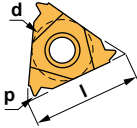
Reference	l	d	p	TIN25	TL20
11ER-030ISO	0.433	0.250	0.011	○	○
11ER-040ISO	0.433	0.250	0.015	○	○
11ER-045ISO	0.433	0.250	0.017	○	○
11ER-050ISO	0.433	0.250	0.019	○	○
11ER-060ISO	0.433	0.250	0.023	○	○
11ER-070ISO	0.433	0.250	0.027	○	○
11ER-075ISO	0.433	0.250	0.029	○	○
11ER-080ISO	0.433	0.250	0.031	○	○
11ER-100ISO	0.433	0.250	0.039	○	○
11ER-125ISO	0.433	0.250	0.049	○	○
11ER-150ISO	0.433	0.250	0.059	○	○
11ER-175ISO	0.433	0.250	0.068	○	○
16ER-075ISO	0.629	0.374	0.029	○	○
16ER-100ISO	0.629	0.374	0.039	○	○
16ER-125ISO	0.629	0.374	0.049	○	○
16ER-150ISO	0.629	0.374	0.059	○	○
16ER-175ISO	0.629	0.374	0.068	○	○
16ER-200ISO	0.629	0.374	0.078	○	○
16ER-250ISO	0.629	0.374	0.098	○	○
16ER-300ISO	0.629	0.374	0.118	○	○
22ER-350ISO	0.866	0.500	0.137	○	○
22ER-400ISO	0.866	0.500	0.157	○	○
22ER-450ISO	0.866	0.500	0.177	○	○
22ER-500ISO	0.866	0.500	0.196	○	○
27ER-500ISO	1.062	0.624	0.196	○	○
27ER-550ISO	1.062	0.624	0.216	○	○
27ER-600ISO	1.062	0.624	0.236	○	○
27ER-800ISO	1.062	0.624	0.314	○	○

**EL-ISO**

Mechanical thread forms - External inserts ISO (full form) BS36

Reference	l	d	p	TIN25	TL20
16EL-100ISO	0.629	0.374	0.039	○	○
16EL-125ISO	0.629	0.374	0.049	○	○
16EL-150ISO	0.629	0.374	0.059	○	○
16EL-175ISO	0.629	0.374	0.068	○	○
16EL-200ISO	0.629	0.374	0.078	○	○
16EL-250ISO	0.629	0.374	0.098	○	○
16EL-300ISO	0.629	0.374	0.118	○	○
22EL-400ISO	0.866	0.500	0.157	○	○





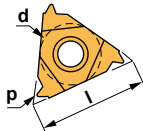
### NR-ISO

Mechanical thread forms - Internal inserts ISO (full form) BS36

Reference	l	d	p	TIN25	TL20
06NR-050ISO	0.236	0.155	0.019	○	
06NR-075ISO	0.236	0.155	0.029	○	
06NR-100ISO	0.236	0.155	0.039	○	
06NR-125ISO	0.236	0.155	0.049	○	
08NR-050ISO	0.314	0.187	0.019	○	
08NR-075ISO	0.314	0.187	0.029	○	
08NR-100ISO	0.314	0.187	0.039	○	
08NR-125ISO	0.314	0.187	0.049	○	
08NR-150ISO	0.314	0.187	0.059	○	
08NR-175ISO	0.314	0.187	0.068	○	
11NR-035ISO	0.433	0.250	0.013	○	
11NR-040ISO	0.433	0.250	0.015	○	
11NR-045ISO	0.433	0.250	0.017	○	
11NR-050ISO	0.433	0.250	0.019	○	
11NR-060ISO	0.433	0.250	0.023	○	
11NR-070ISO	0.433	0.250	0.027	○	
11NR-075ISO	0.433	0.250	0.029	○	
11NR-080ISO	0.433	0.250	0.031	○	
11NR-100ISO	0.433	0.250	0.039	○	
11NR-125ISO	0.433	0.250	0.049	○	
11NR-150ISO	0.433	0.250	0.059	○	
11NR-175ISO	0.433	0.250	0.068	○	
11NR-200ISO	0.433	0.250	0.078	○	
11NR-250ISO	0.433	0.250	0.098	○	
16NR-075ISO	0.629	0.374	0.029	○	
16NR-100ISO	0.629	0.374	0.039	○	
16NR-125ISO	0.629	0.374	0.049	○	
16NR-150ISO	0.629	0.374	0.059	○	
16NR-175ISO	0.629	0.374	0.068	○	
16NR-200ISO	0.629	0.374	0.078	○	
16NR-250ISO	0.629	0.374	0.098	○	
16NR-300ISO	0.629	0.374	0.118	○	
22NR-350ISO	0.866	0.500	0.137	○	
22NR-400ISO	0.866	0.500	0.157	○	
22NR-450ISO	0.866	0.500	0.177	○	
22NR-500ISO	0.866	0.500	0.196	○	
27NR-500ISO	1.062	0.624	0.196	○	
27NR-550ISO	1.062	0.624	0.216	○	
27NR-600ISO	1.062	0.624	0.236	○	
27NR-800ISO	1.062	0.624	0.314	○	



NL ISO



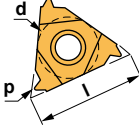
NL

**NL-ISO**

Mechanical thread forms - Internal inserts ISO (full form) BS36

Reference	l	d	p	TIN25	TL20
06NL-050ISO	0.236	0.155	0.019	○	○
06NL-075ISO	0.236	0.155	0.029	○	○
06NL-100ISO	0.236	0.155	0.039	○	○
06NL-125ISO	0.236	0.155	0.049	○	○
08NL-050ISO	0.314	0.187	0.019	○	○
08NL-075ISO	0.314	0.187	0.029	○	○
08NL-100ISO	0.314	0.187	0.039	○	○
08NL-125ISO	0.314	0.187	0.049	○	○
08NL-150ISO	0.314	0.187	0.059	○	○
08NL-175ISO	0.314	0.187	0.068	○	○
11NL-100ISO	0.433	0.250	0.039	○	○
11NL-150ISO	0.433	0.250	0.059	○	○
16NL-100ISO	0.629	0.374	0.039	○	○
16NL-125ISO	0.629	0.374	0.049	○	○
16NL-150ISO	0.629	0.374	0.059	○	○
16NL-175ISO	0.629	0.374	0.068	○	○
16NL-200ISO	0.629	0.374	0.078	○	○
16NL-250ISO	0.629	0.374	0.098	○	○
16NL-300ISO	0.629	0.374	0.118	○	○
22NL-400ISO	0.866	0.500	0.157	○	○





ER

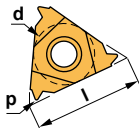
**ER-W**

Mechanical thread forms - External and internal inserts WHITWORTH (full form) BS84

Reference	l	d	p	TIN25	TL20
11ER-14W	0.433	0.250	0.551	○	
11ER-16W	0.433	0.250	0.629	○	
11ER-18W	0.433	0.250	0.708	○	
11ER-19W	0.433	0.250	0.748	○	
11ER-22W	0.433	0.250	0.866	○	
11ER-24W	0.433	0.250	0.944	○	
11ER-26W	0.433	0.250	1.023	○	
11ER-28W	0.433	0.250	1.102	○	
11ER-40W	0.433	0.250	1.574	○	
11ER-50W	0.433	0.250	1.968	○	
11ER-56W	0.433	0.250	2.204	○	
16ER-8W	0.629	0.374	0.314	○	
16ER-9W	0.629	0.374	0.354	○	
16ER-10W	0.629	0.374	0.393	○	
16ER-11W	0.629	0.374	0.433	○	
16ER-12W	0.629	0.374	0.472	○	
16ER-14W	0.629	0.374	0.551	○	
16ER-16W	0.629	0.374	0.629	○	
16ER-18W	0.629	0.374	0.708	○	
16ER-19W	0.629	0.374	0.748	○	
16ER-20W	0.629	0.374	0.787	○	
16ER-22W	0.629	0.374	0.866	○	
16ER-24W	0.629	0.374	0.944	○	
16ER-26W	0.629	0.374	1.023	○	
16ER-28W	0.629	0.374	1.102	○	
22ER-4W	0.866	0.500	0.157	○	
22ER-4.5W	0.866	0.500	0.177	○	
22ER-5W	0.866	0.500	0.196	○	
22ER-6W	0.866	0.500	0.236	○	
22ER-7W	0.866	0.500	0.275	○	
22ER-8W	0.866	0.500	0.314	○	
27ER-4W	1.062	0.624	0.157	○	
27ER-4.5W	1.062	0.624	0.177	○	



EL-W



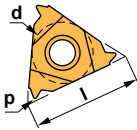
EL

**EL-W**

Mechanical thread forms - External and internal inserts WHITWORTH (full form) BS84

Reference	l	d	p	TIN25	TL20
16EL-11W	0.629	0.374	0.433	○	
16EL-14W	0.629	0.374	0.551	○	
16EL-20W	0.629	0.374	0.787	○	





NR

**NR-W**

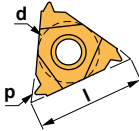
Mechanical thread forms - Internal inserts WHITWORTH (full form) BS84

Reference	l	d	p	TIN25	TL20
06NR-18W	0.236	0.155	0.708	○	○
06NR-19W	0.236	0.155	0.748	○	○
06NR-20W	0.236	0.155	0.787	○	○
06NR-22W	0.236	0.155	0.866	○	○
06NR-26W	0.236	0.155	1.023	○	○
08NR-16W	0.314	0.187	0.629	○	○
08NR-18W	0.314	0.187	0.708	○	○
08NR-19W	0.314	0.187	0.748	○	○
08NR-20W	0.314	0.187	0.787	○	○
08NR-24W	0.314	0.187	0.944	○	○
08NR-28W	0.314	0.187	1.102	○	○
11NR-11W	0.433	0.250	0.433	○	○
11NR-12W	0.433	0.250	0.472	○	○
11NR-14W	0.433	0.250	0.551	○	○
11NR-16W	0.433	0.250	0.629	○	○
11NR-18W	0.433	0.250	0.708	○	○
11NR-19W	0.433	0.250	0.748	○	○
11NR-20W	0.433	0.250	0.787	○	○
11NR-22W	0.433	0.250	0.866	○	○
11NR-24W	0.433	0.250	0.944	○	○
11NR-26W	0.433	0.250	1.023	○	○
11NR-28W	0.433	0.250	1.102	○	○
11NR-32W	0.433	0.250	1.259	○	○
11NR-36W	0.433	0.250	1.417	○	○
11NR-40W	0.433	0.250	1.574	○	○
11NR-48W	0.433	0.250	1.889	○	○
16NR-8W	0.629	0.374	0.314	○	○
16NR-9W	0.629	0.374	0.354	○	○
16NR-10W	0.629	0.374	0.393	○	○
16NR-11W	0.629	0.374	0.433	○	○
16NR-12W	0.629	0.374	0.472	○	○
16NR-14W	0.629	0.374	0.551	○	○
16NR-16W	0.629	0.374	0.629	○	○
16NR-18W	0.629	0.374	0.708	○	○
16NR-19W	0.629	0.374	0.748	○	○
16NR-20W	0.629	0.374	0.787	○	○
16NR-22W	0.629	0.374	0.866	○	○
16NR-24W	0.629	0.374	0.944	○	○
16NR-26W	0.629	0.374	1.023	○	○
16NR-28W	0.629	0.374	1.102	○	○
22NR-4W	0.866	0.500	0.157	○	○
22NR-4.5W	0.866	0.500	0.177	○	○
22NR-5W	0.866	0.500	0.196	○	○
22NR-6W	0.866	0.500	0.236	○	○
22NR-7W	0.866	0.500	0.275	○	○





NL-W



NL

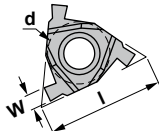
**NL-W**

Mechanical thread forms - Internal inserts WHITWORTH (full form) BS84

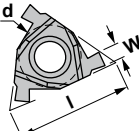
Reference	l	d	p	TIN25	TL20
06NL-18W	0.629	0.155	0.708	○	○
06NL-20W	0.629	0.155	0.787	○	○
06NL-22W	0.629	0.155	0.866	○	○
06NL-26W	0.629	0.155	1.023	○	○
08NL-16W	0.314	0.187	0.629	○	○
08NL-18W	0.314	0.187	0.708	○	○
08NL-19W	0.314	0.187	0.748	○	○
08NL-20W	0.314	0.187	0.787	○	○
08NL-24W	0.314	0.187	0.944	○	○
08NL-28W	0.314	0.187	1.102	○	○
16NL-11W	0.629	0.374	0.433	○	○
16NL-14W	0.629	0.374	0.551	○	○
16NL-16W	0.629	0.374	0.629	○	○



ER-LG



ER



EL

**ER-LG**

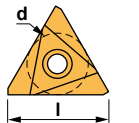
External lock ring grooving inserts - Type LG

Reference	l	d	w	TIN25	TL20
16ER-100LG	0.629	0.374	0.045	○	●
16ER-120LG	0.629	0.374	0.053	○	●
16ER-150LG	0.629	0.374	0.064	○	●
16ER-175LG	0.629	0.374	0.074	○	●
16ER-200LG	0.629	0.374	0.084	○	●
16ER-250LG	0.629	0.374	0.104	○	●

**EL-LG**

External lock ring grooving inserts - Type LG

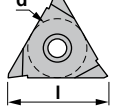
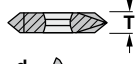
Reference	l	d	w	TIN25	TL20
16EL-100LG	0.629	0.374	0.045	○	●
16EL-120LG	0.629	0.374	0.053	○	●
16EL-150LG	0.629	0.374	0.064	○	●
16EL-175LG	0.629	0.374	0.074	○	●
16EL-200LG	0.629	0.374	0.084	○	●



**TNMC**

Triangular negative insert for threading.

Reference	l	T	d	PM25	TN15
TNMC-32XX	0.649	0.125	0.374	○	○
TNMC-43XX	0.866	0.187	0.500	●	○

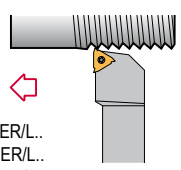
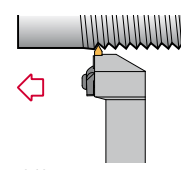
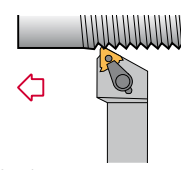
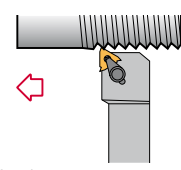


**TPMC**

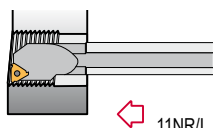
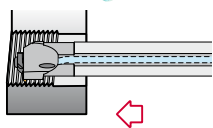
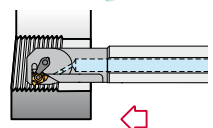
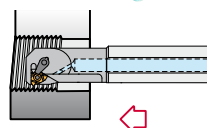
Triangular positive insert for threading.

Reference	l	T	d	PM25	TN15
TPMC-32XX	0.649	0.125	0.374	○	○
TPMC-43XX	0.866	0.187	0.500	○	○

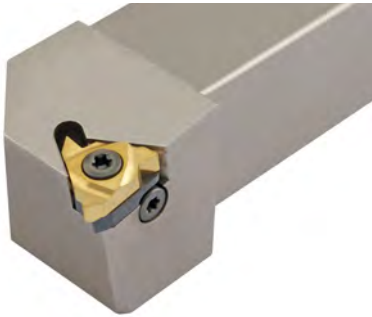
**External threading**

<p><b>SE</b></p>  <p>11ER/L.. 16ER/L.. 22ER/L.. 27ER/L..</p> <p>Page C12</p>	<p><b>STCN 90°</b></p>  <p>T..MC43.. T..MC54..</p> <p>Page C14</p>	<p><b>MXGNR</b></p>  <p>22ER/L.. 27ER/L..</p> <p>Page C16</p>	<p><b>MTGNR</b></p>  <p>22ER/L.. 27ER/L..</p> <p>Page C17</p>	
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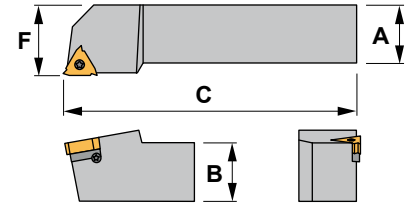
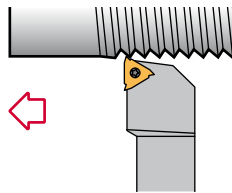
**Internal threading**

<p><b>SI</b></p>  <p>11NR/L.. 16NR/L.. 22NR/L.. 27NR/L..</p> <p>Page C13</p>	<p><b>STCNR</b></p>  <p>TNMC-32.. TNMC-43.. TNMC-54..</p> <p>Page C15</p>	<p><b>MXFNR</b></p>  <p>22NR/L.. 27NR/L..</p> <p>Page C18</p>	<p><b>MXFNR-C</b></p>  <p>27NR/L..</p> <p>Page C19</p>	
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Characteristics:  
Multipurpose threading toolholder for negative lay down inserts.



# SE

Reference	A=B	C	F	Insert size	
SER/L0310H11	0.312	4.00	0.430	11ER/L..	0.154
SER/L0375H11	0.375	4.00	0.430	11ER/L..	0.220
SER/L0375D16	0.375	2.50	0.630	16ER/L..	0.220
SER/L0500F16	0.500	3.25	0.630	16ER/L..	0.308
SER/L0625H16	0.625	4.00	0.630	16ER/L..	0.440
SER/L0750K16	0.750	5.00	0.750	16ER/L..	0.880
SER/L1000M16	1.000	6.00	1.000	16ER/L..	1.540
SER/L1250P16	1.250	7.00	1.250	16ER/L..	2.860
SER/L1000M22	1.000	6.00	1.000	22ER/L..	1.540
SER/L1250P22	1.250	7.00	1.250	22ER/L..	2.860
SER/L1500R22	1.500	8.00	1.500	22ER/L..	3.740
SER/L1000M27	1.000	6.00	1.250	27ER/L..	1.540
SER/L1250P27	1.250	7.00	1.250	27ER/L..	2.860
SER/L1500R27	1.500	8.00	1.500	27ER/L..	3.740

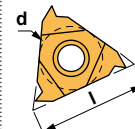
**WARNING!!** Because of large thread profile, modification may have to be made to the toolholder to achieve full depth of thread.

Reference						Nm
SER/L0310H11	1225	5507	-	-	-	0.9
SER/L0375H11	1225	5507	-	-	-	0.9
SER/L0375D16	SN3	5510	YE3	YI3	SY3	2.0
SER/L0500F16	SA3	5510	YE3	YI3	SY3	2.0
SER/L0625H16	SA3	5510	YE3	YI3	SY3	2.0
SER/L0750K16	SA3	5510	YE3	YI3	SY3	2.0
SER/L1000M16	SA3	5510	YE3	YI3	SY3	2.0
SER/L1250P16	SA3	5510	YE3	YI3	SY3	2.0
SER/L1000M22	SA4	5520	YE4	YI4	SY4	4.0
SER/L1250P22	SA4	5520	YE4	YI4	SY4	4.0
SER/L1500R22	SA4	5520	YE4	YI4	SY4	4.0
SER/L1000M27	SA5	5525	YE5	YI5	SY5	5.0
SER/L1250P27	SA5	5525	YE5	YI5	SY5	5.0
SER/L1500R27	SA5	5525	YE5	YI5	SY5	5.0

## ER/L

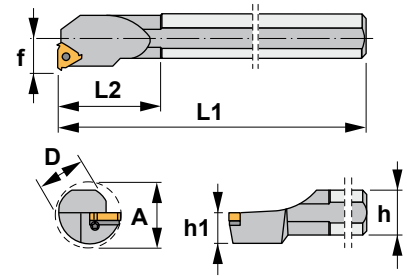
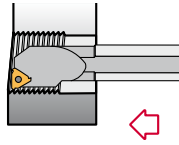
Triangular negative inserts for external threading.  C03,05,08,10

Reference	l	d
11ER/L..	0.433	0.250
16ER/L..	0.629	0.374
22ER/L..	0.866	0.500
27ER/L..	1.062	0.624





Characteristics:  
Multipurpose threading boring bar for negative lay down inserts.



# SI

Reference	D	h	L1	L2	f	A	Insert size	$\Delta$ lbs
SIR/L0375H11	0.375	0.380	4.00	1.000	0.290	0.470	11NR/L..	0.112
SIR/L0375K11	0.375	0.380	5.00	1.250	0.260	0.470	11NR/L..	0.139
SIR/L0500L11	0.625	0.500	5.50	1.250	0.320	0.630	11NR/L..	0.485
SIR/L0500M16	0.620	0.500	6.00	1.250	0.390	0.640	16NR/L..	0.525
SIR/L0625P16	0.625	0.620	7.00	1.500	0.460	0.750	16NR/L..	0.613
SIR/L0750P16	0.750	0.750	7.00	1.500	0.510	1.000	16NR/L..	0.863
SIR/L1000R16	1.000	1.000	8.00	1.500	0.650	1.200	16NR/L..	1.715
SIR/L1250S16	1.250	1.250	10.00	1.500	0.700	1.420	16NR/L..	3.516
SIR/L1500T16	1.500	1.500	12.00	1.500	0.900	1.650	16NR/L..	5.935
SIR/L0750P22	0.750	0.750	7.00	1.500	0.510	0.950	22NR/L..	0.863
SIR/L1000R22	1.000	1.000	8.00	1.500	0.710	1.200	22NR/L..	1.715
SIR/L1250S22	1.250	1.250	10.00	1.500	0.850	1.500	22NR/L..	3.516
SIR/L1500T22	1.500	1.500	12.00	1.500	0.980	1.750	22NR/L..	5.935
SIR/L1250S27	1.250	1.250	10.00	1.500	0.880	1.560	27NR/L..	1.715
SIR/L1500T27	1.500	1.500	12.00	1.500	1.000	1.800	27NR/L..	5.935
SIR/L2000U27	2.000	2.000	14.00	1.500	1.250	2.300	27NR/L..	10.010
SIR/L2500V27	2.500	2.500	16.00	1.500	1.500	2.700	27NR/L..	21.240

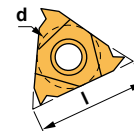
**WARNING!!** Because of large thread profile, modification may have to be made to the boring bar to achieve full depth of thread.

Reference						Nm
SIR/L0375H11	1225	5507	-	-	-	0.9
SIR/L0375K11	1225	5507	-	-	-	0.9
SIR/L0500L11	1225	5507	-	-	-	0.9
SIR/L0500M16	SN3	5510	-	-	-	2.0
SIR/L0625P16	SN3	5510	-	-	-	2.0
SIR/L0750P16	SA3T	5510	YI3	YE3	SY3	2.0
SIR/L1000R16	SA3	5510	YI3	YE3	SY3	2.0
SIR/L1250S16	SA3	5510	YI3	YE3	SY3	2.0
SIR/L1500T16	SA3	5510	YI3	YE3	SY3	2.0
SIR/L0750P22	SA4	5520	-	-	-	4.0
SIR/L1000R22	SA4	5520	YI4	YE4	SY4	4.0
SIR/L1250S22	SA4	5520	YI4	YE4	SY4	4.0
SIR/L1500T22	SA4	5520	YI4	YE4	SY4	4.0
SIR/L1250S27	SA5	5525	YI5	YE5	SY5	5.0
SIR/L1500T27	SA5	5525	YI5	YE5	SY5	5.0
SIR/L2000U27	SA5	5525	YI5	YE5	SY5	5.0
SIR/L2500V27	SA5	5525	YI5	YE5	SY5	5.0

## NR/L

Triangular negative inserts for internal threading. ⓘ C04,06,07,09,10

Reference	l	d
11NR/L..	0.433	0.250
16NR/L..	0.629	0.374
22NR/L..	0.866	0.500
27NR/L..	1.062	0.624



### N R/L

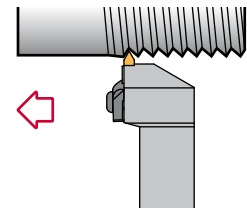
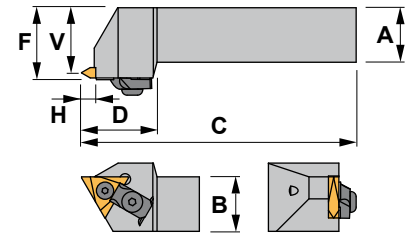


### N R/L TD





Characteristics:  
Vertical on edge threading toolholder.



## STCN 90°

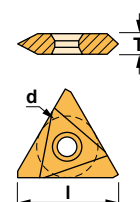
Reference	A	B	C	D	F	H	V	Insert size	lbs
STCNR/L1243	0.75	0.75	6.00	1.25	1.00	0.23	0.906	TNMC/TPMC-43..	0.880
STCNR/L1643	1.00	1.00	6.00	1.25	1.25	0.23	1.156	TNMC/TPMC-43..	1.540
STCNR/L2043	1.25	1.25	6.00	1.25	1.50	0.23	1.406	TNMC/TPMC-43..	2.310
STCNR/L1654	1.00	1.00	6.00	1.34	1.25	0.30	1.125	TNMC/TPMC-54..	1.540
STCNR/L2054	1.25	1.25	7.00	1.34	1.50	0.30	1.375	TNMC/TPMC-54..	2.310

Reference						Nm <sup>1</sup>	Nm <sup>2</sup>
STCNR/L1243	1936	2101	1801	5124	5103	3.5	3.0
STCNR/L1643	1936	2101	1801	5124	5103	3.5	3.0
STCNR/L2043	1936	2101	1801	5124	5103	3.5	3.0
STCNR/L1654	1937	2101	1801	5124	5103	3.5	3.0
STCNR/L2054	1937	2101	1801	5124	5103	3.5	3.0

### TNMC/TPMC

Triangular negative and positive inserts for external threading. C10

Reference	l	T	d
T..MC-43..	0.866	0.187	0.500
T..MC-54..	1.062	0.187	0.625



TNMC

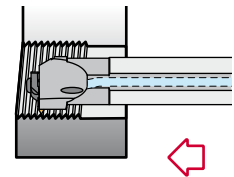
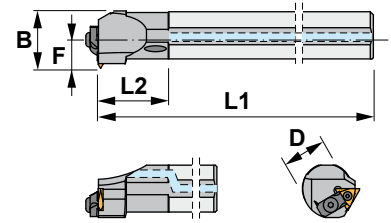


TPMC





Characteristics:  
Vertical on edge threading boring bar.



## STCNR

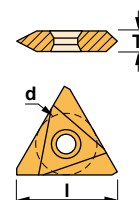
Reference	D	B	F	L1	L2	Insert size	
A20U-STCNR4	1.25	1.500	0.875	14.00	1.12	TNMC-43..	4.620
A24U-STCNR4	1.50	1.734	0.984	14.00	1.12	TNMC-43..	8.030
A28V-STCNR4	1.75	2.063	1.188	16.00	1.12	TNMC-32..	9.000
A32V-STCNR4	2.00	2.260	1.260	16.00	1.12	TNMC-43..	14.740
A40V-STCNR4	2.50	2.750	1.500	16.00	1.12	TNMC-43..	21.500
A28V-STCNR5	1.75	2.375	1.500	16.00	1.88	TNMC-43..	9.000
A32V-STCNR5	2.00	2.375	1.375	16.00	1.88	TNMC-54..	14.740
A40V-STCNR5	2.50	2.875	1.625	16.00	1.88	TNMC-54..	21.500

Reference						Nm <sup>1</sup>	Nm <sup>2</sup>
A20U-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A24U-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A28V-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A32V-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A40V-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A28V-STCNR5	1937	2101	1801	5124	5103	3.5	3.0
A32V-STCNR5	1937	2101	1801	5124	5103	3.5	3.0
A40V-STCNR5	1937	2101	1801	5124	5103	3.5	3.0

### TNMC

Triangular negative insert for internal threading. C10

Reference	l	T	d
TNMC-32..	0.649	0.125	0.374
TNMC-43..	0.866	0.187	0.500
TNMC-54..	1.062	0.187	0.625

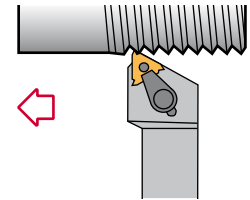
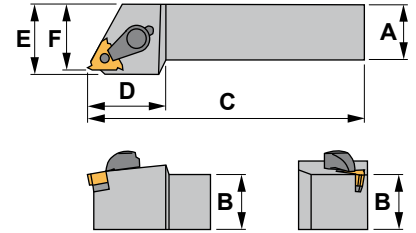


### TNMC





Characteristics:  
Multipurpose threading toolholder for negative lay down inserts.



## MXGNR

Reference	A	B	C	D	E	F	Insert size	lbs
MXGNR164API	1.00	1.00	6.00	1.25	1.38	1.25	22ER/L..	1.540
MXGNR204API	1.25	1.25	7.00	1.25	1.62	1.50	22ER/L..	2.310
MXGNR244API	1.50	1.50	8.00	1.25	2.12	2.00	22ER/L..	3.750
MXGNR165API	1.00	1.00	6.00	1.25	1.38	1.25	27ER/L..	1.540
MXGNR205API	1.25	1.25	7.00	1.25	1.62	1.50	27ER/L..	2.310
MXGNR245API	1.50	1.50	8.00	1.25	2.12	2.00	27ER/L..	3.750

Reference							Nm <sup>1</sup>	Nm <sup>2</sup>
MXGNR164API	2722	1466	5124	3420	1678	5126	3.5	
MXGNR204API	2722	1466	5124	3420	1678	5126	3.5	
MXGNR244API	2722	1466	5124	3420	1678	5126	3.5	
MXGNR165API	2727	1488	5103	3421	1679	5004	3.0	3.5
MXGNR205API	2727	1488	5103	3421	1679	5004	3.0	3.5
MXGNR245API	2727	1488	5103	3421	1679	5004	3.0	3.5

### ER/L

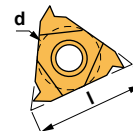
Triangular negative inserts for external threading. C03,05,08,10

Reference

l

d

22ER/L..	0.866	0.500
27ER/L..	1.062	0.624



ER/L

ER/L TD



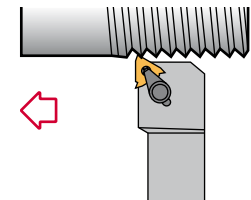
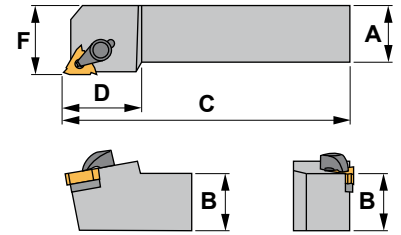
ER/L-LG














Characteristics:  
Multipurpose threading toolholder for negative lay down inserts.



## MTGNR

Reference	A	B	C	D	F	Insert size	
MTGNR164API	1.00	1.00	6.00	1.25	1.25	22ER/L..	1.540
MTGNR204API	1.25	1.25	7.00	1.25	1.50	22ER/L..	2.310
MTGNR165API	1.00	1.00	6.00	1.25	1.25	27ER/L..	1.540
MTGNR205API	1.25	1.25	7.00	1.25	1.50	27ER/L..	2.860

Reference							Nm <sup>1</sup>	Nm <sup>2</sup>
MTGNR164API	2722	1466	5124	3420	1678	5126	3.5	
MTGNR204API	2722	1466	5124	3420	1678	5126	3.5	
MTGNR165API	2727	1488	5103	3421	1679	5004	3.0	3.5
MTGNR205API	2727	1488	5103	3421	1679	5004	3.0	3.5

### ER/L

Triangular negative inserts for external threading.  C03,05,08,10

Reference

l

d

22ER/L..

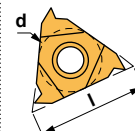
0.866

0.500

27ER/L..

1.062

0.624



E R/L

E R/L TD

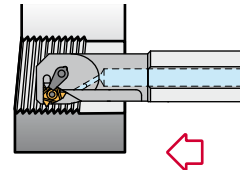
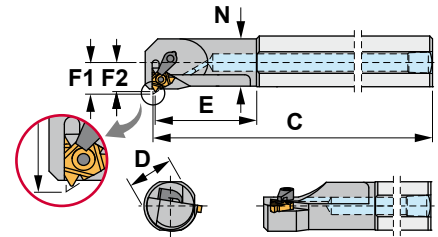


ER/L-LG





Characteristics:  
Multipurpose threading boring bar for negative lay down inserts.



## MXFNR

Reference	D	F1	F2	C	E	N	Insert size	
A24U-MXFNR4	1.50	0.891	0.812	14.00	3.00	1.34	22NR..	8.250
A28V-MXFNR4	1.75	1.079	1.000	16.00	4.00	1.50	22NR..	9.300
A32V-MXFNR4	2.00	1.329	1.250	16.00	4.00	1.75	22NR..	13.750
A40V-MXFNR4	2.50	1.579	1.500	16.00	4.00	2.12	22NR..	21.800
A24U-MXFNR5	1.50	1.208	1.125	14.00	3.00	1.52	27NR..	8.250
A28V-MXFNR5	1.75	1.208	1.125	16.00	4.00	1.50	27NR..	9.300
A32V-MXFNR5	2.00	1.333	1.250	16.00	4.00	1.75	27NR..	13.750
A40V-MXFNR5	2.50	1.583	1.500	16.00	4.00	2.12	27NR..	21.800

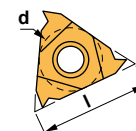
(F1) dimension shown is over a 0.0312 radius industry standard 22 NR.. insert and over a 0.0468 radius industry standard 27NR.. insert.

Reference						Nm <sup>1</sup>	Nm <sup>2</sup>
A24U-MXFNR4	2722	1676	1466	5124	5126	3.5	
A28V-MXFNR4	2722	1676	1466	5124	5126	3.5	
A32V-MXFNR4	2722	1676	1466	5124	5126	3.5	
A40V-MXFNR4	2722	1676	1466	5124	5126	3.5	
A24U-MXFNR5	2727	1677	1488	5103	5004	3.0	3.5
A28V-MXFNR5	2727	1677	1488	5103	5004	3.0	3.5
A32V-MXFNR5	2727	1677	1488	5103	5004	3.0	3.5
A40V-MXFNR5	2727	1677	1488	5103	5004	3.0	3.5

### NR/L

Triangular negative inserts for internal threading. C04,06,07,09,10

Reference	l	d
22NR/L..	0.866	0.500
27NR/L..	1.062	0.624



N R/L

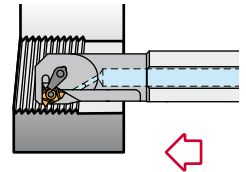
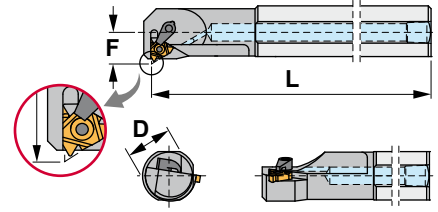


N R/L TD





Characteristics:  
Multipurpose threading boring bar for negative lay down inserts.



## MXFNR-C

Reference	D	F	L	Insert size	
A28V-MXFNR5C	1.75	0.950	0.629	27NR..	9.300
A32V-MXFNR5C	2.00	0.950	0.629	27NR..	13.750

(F) dimension shown is over a 0.0468 radius industry standard 27NR.. insert.

Reference						Nm <sup>1</sup>	Nm <sup>2</sup>
A28V-MXFNR5C	2727	1677	1488	5103	5004	3.0	3.5
A32V-MXFNR5C	2727	1677	1488	5103	5004	3.0	3.5

NR/L		Triangular negative inserts for internal threading.  C04,06,07,09,10			N R/L
Reference	l	d			
27NR/L..	1.062	0.624			

## Cutting data

Material	Cutting speed m/min. (Ft/min) Insert grade			N° of passes		
	PM25	KM15	TIN25	P inch	TPI	N° of passes
Low and medium carbon steel	120-80 (390-260)		250-210 (820-690)	0.022 0.029 0.039	48.0 32.0 24.0	4 - 6 4 - 7 4 - 8
High carbon steel	110-70 (360-230)		210-150 (690-490)	0.049 0.059 0.068	20.0 16.0 14.0	5 - 9 6 - 10 7 - 12
Alloyed tool steel and heat-treated steels	100-70 (360-230)		180-140 (590-460)	0.078 0.098 0.118	12.0 10.0 8.0	7 - 12 8 - 14 10 - 18
Stainless steels	100-70 (360-230)	90-70 (295-230)	140-110 (460-360)	0.137 0.157 0.177	7.0 6.0 5.5	11 - 18 11 - 18 11 - 19
Cast-iron HB 180-250		90-70 (295-230)		0.196 0.216 0.236	5.0 4.5 4.0	12 - 20 12 - 20 12 - 20
Non-ferrous metals		180-120 (590-390)		0.314	3.0	15 - 24

### General recommendations:

- Threading speeds should normally be a minimum of 80% to 90% of turning speeds being used to machine the same component (assuming grades are compatible).
- Check helix angle and number of passes shown in charts before starting.
- Ensure centre height is correct.
- When there is a problem consult the following recommendations and change only one variable at a time. This will help to be sure of the original problem.
- Do not use flank infeed on work hardening materials.

## Component problems

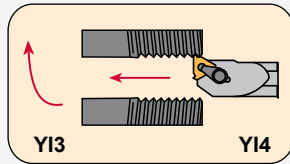
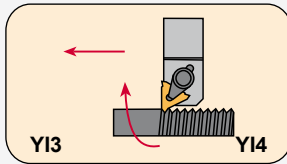
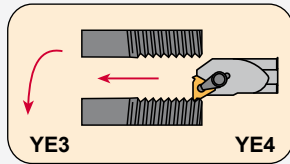
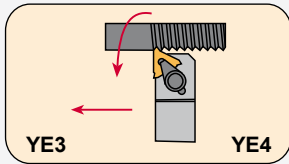
	Problem	Remedy
<b>Pitch error (on CNC machines)</b>	<ul style="list-style-type: none"> <li>▼ Starting too close to workpiece.</li> <li>▼ Saddle speed towards chuck is excessive.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Start cycle further back from workpiece.</li> <li>▲ Reduce speed by 10% until correct.</li> </ul>
<b>Thread torn on one side only</b>	<ul style="list-style-type: none"> <li>▼ Incorrect helix angle in toolholder.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Check helix chart.</li> <li>▲ Reassemble with correct anvil.</li> <li>▲ Check centre height.</li> </ul>
<b>Thread torn on both sides</b>	<ul style="list-style-type: none"> <li>▼ Running too slow.</li> <li>▼ Built up edge.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Increase cutting speed.</li> <li>▲ Check center height.</li> <li>▲ Use coated grade.</li> <li>▲ Compare thread speed with turning speed.</li> </ul>
<b>Long dangerous swarf</b>	<ul style="list-style-type: none"> <li>▼ Incorrect chipbreaker geometry.</li> <li>▼ Incorrect method of infeed.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Use Canela (TD) chipbreaker.</li> <li>▲ Use different infeed method.</li> </ul>
<b>Vibration chatter marks on both flanks</b>	<ul style="list-style-type: none"> <li>▼ Poor stability.</li> <li>▼ Excessive overhang.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Renew anvil to support insert.</li> <li>▲ Check tool clamping.</li> <li>▲ Reduce tool overhang.</li> <li>▲ Check rigidity of setup.</li> </ul>
<b>Shallow threads Problem with gauging</b>	<ul style="list-style-type: none"> <li>▼ Insert not cresting.</li> <li>▼ Incorrect effective diameter.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Check machined diameters.</li> <li>▲ Excessive tool wear or chipped on nose see remedies above.</li> </ul>

**Helix chart**

**Feed direction towards the chuck**

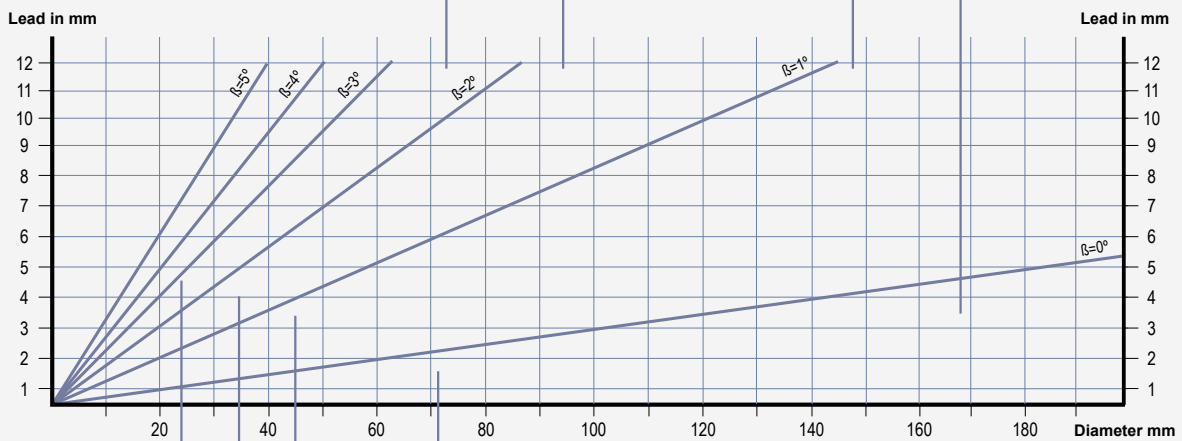
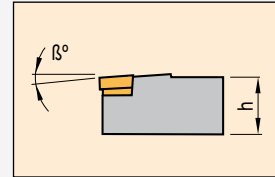
RH Thread - RH Tool

LH Thread - LH Tool



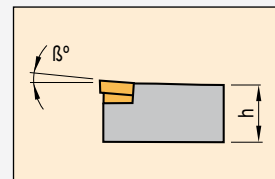
Anvil to give correct helix

Insert size	+3°	+2°	+1°	0°
16R	3424+3	3424+2	3424+1	YE3
16L	3425+3	3425+2	3425+1	YI3
22R	3430+3	3430+2	3430+1	YE4
22L	3431+3	3431+2	3431+1	YI4



Anvil to give correct helix

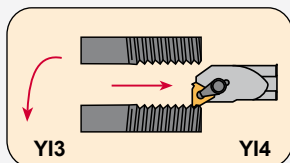
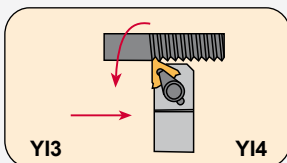
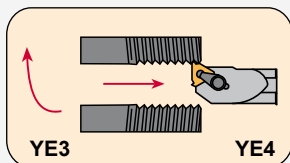
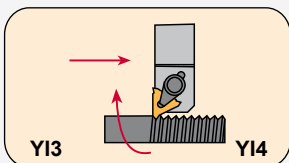
Insert size	-3°	-2°	-1°	0°
16R	3424-3	3424-2	3424-1	YE3
16L	3425-3	3425-2	3425-1	YI3
22R	3430-3	3430-2	3430-1	YE4
22L	3431-3	3431-2	3431-1	YI4



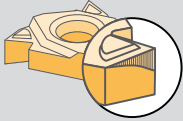
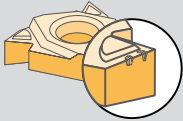
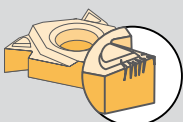
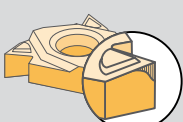
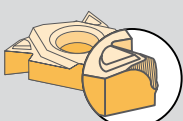
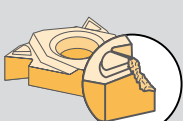
**Feed direction away from the chuck**

RH Thread - RH chuck

LH Thread - LH Tool



## Threading insert wear and tool life

	Problem	Remedy
<p><b>Rapid flank wear</b></p> 	<ul style="list-style-type: none"> <li>▼ Cutting speed too high.</li> <li>▼ Lack of coolant.</li> <li>▼ Infeed per pass too small - too many passes.</li> <li>▼ Incorrect grade.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Reduce the cutting speed.</li> <li>▲ Increase the coolant supply.</li> <li>▲ Increase the depth of infeed for the smallest infeed depths - reduce the number of passes.</li> <li>▲ Select a more wear resistant grade.</li> </ul>
<p><b>Edge frittering</b></p> 	<ul style="list-style-type: none"> <li>▼ Instability of workholding and/or tool set-up.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Check rigidity of operation.</li> <li>▲ Select a tougher grade.</li> </ul>
<p><b>Edge spalling</b></p> 	<ul style="list-style-type: none"> <li>▼ Intermittent coolant supply.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Position coolant flow and/or increase coolant supply.</li> </ul>
<p><b>Uneven flank wear</b></p> 	<ul style="list-style-type: none"> <li>▼ Incorrect method of infeed.</li> <li>▼ Incorrect angle of inclination.</li> </ul>	<ul style="list-style-type: none"> <li>▲ In case of flank infeed use modified flank infeed. Decrease infeed angle 3-5°.</li> <li>▲ Correct the angle on inclination according to the diagram.</li> </ul>
<p><b>Excessive plastic deformation</b></p> 	<ul style="list-style-type: none"> <li>▼ Infeed per pass too big - too few passes.</li> <li>▼ Lack of coolant.</li> <li>▼ Cutting speed too high.</li> <li>▼ Incorrect grade.</li> <li>▼ Excessive stock removal from crest.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Decrease the depth of infeed for the biggest depths. - Increase the number of passes.</li> <li>▲ Increase coolant supply.</li> <li>▲ Reduce the cutting speed.</li> <li>▲ Select a harder grade.</li> <li>▲ Check the volume of the material above the crest.</li> </ul>
<p><b>Insert breakage</b></p> 	<ul style="list-style-type: none"> <li>▼ Instability.</li> <li>▼ Lack of chip control.</li> <li>▼ Excessive plastic deformation.</li> <li>▼ Intermittent or inadequate coolant supply.</li> <li>▼ Incorrect preparation of the operation.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Check rigidity of operation.</li> <li>▲ Select a tougher grade. Select modified flank infeed.</li> <li>▲ Machine with same infeed per pass.</li> <li>▲ Direct coolant flow and/or increase coolant supply.</li> <li>▲ Check dimension of blank.</li> </ul>
<p><b>Shallow thread profile</b></p>	<ul style="list-style-type: none"> <li>▼ Wrong centre height.</li> <li>▼ Insert not cresting.</li> <li>▼ Excessive tool wear.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Adjust cutting edge height.</li> <li>▲ Check dimension of blank.</li> <li>▲ Change insert earlier.</li> </ul>
<p><b>Incorrect thread profile</b></p>	<ul style="list-style-type: none"> <li>▼ Incorrect tool setting.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Correct tool setting.</li> </ul>
<p><b>Lack of chip control</b></p>	<ul style="list-style-type: none"> <li>▼ Incorrect depth of infeed per pass.</li> <li>▼ Radial infeed.</li> </ul>	<ul style="list-style-type: none"> <li>▲ For modified flank infeed use 3-5°.</li> <li>▲ Use geometry with modified flank infeed 1°.</li> </ul>
<p><b>Bad surface finish</b></p>	<ul style="list-style-type: none"> <li>▼ Cutting speed too low.</li> <li>▼ Incorrect angle of inclination.</li> <li>▼ Flank infeed.</li> </ul>	<ul style="list-style-type: none"> <li>▲ Increase the cutting speed.</li> <li>▲ Correct the angle of inclination according to diagram.</li> <li>▲ Use modified flank infeed or radial infeed.</li> </ul>