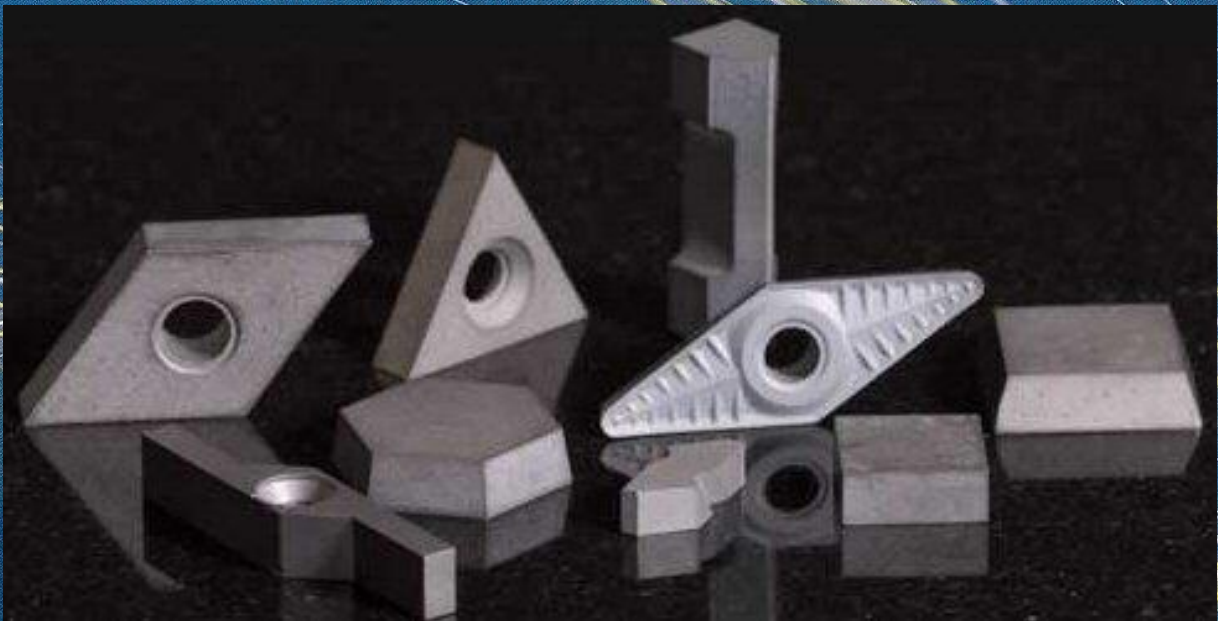


**American National Carbide**

*Delivering Carbide Value*

## **Insert Blanks**



915 South Cherry Street  
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ANC manufactures a comprehensive line of ANSI- and ISO-standard insert blanks in a wide range of grades for metalworking applications, including grades for machining materials from steels and cast irons to high temperature alloys. Insert blanks for turning, milling, boring, threading, grooving and parting operations are available with grinding stock on requested surfaces to allow customized grinding of the insert. ANC's fully integrated press tooling design and production departments allow us to produce made-to-order items with ease, and everyday value pricing makes ANC the perfect source for insert blanks.

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| Insert blanks with grind stock on periphery, top and bottom..... | 1  |
| Insert blanks with grind stock on top and bottom only.....       | 16 |
| Part number index.....   | 21 |

Where used herein, "STD" represents the dimension after grinding and "NOM" represents the dimension before grinding.

As a vertically integrated company, ANC controls each of its manufacturing processes from powder to finished product. Using advanced quality assurance methods and continuous improvement throughout the facility guarantees that each product meets a customer's exact specifications.

Short production lead times, quality-focused manufacturing processes, and flexibility in new product design and tooling production make ANC a preferred choice for strategic partnerships. With all products made to ANC's ISO-compliant quality system and offered at value pricing, ANC truly delivers carbide value.

*Call our Customer Service and Support line today to see how ANC can improve your bottom line.*

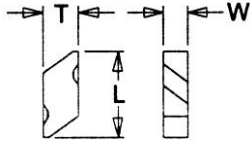


## Insert Blanks – Grind Stock on Periphery, Top and Bottom

**Insert blanks with grind stock on periphery, top, and bottom**

### A-TNB-L

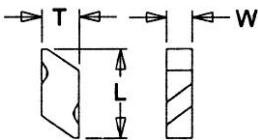
ANC Notch™ threading and grooving, left-hand



| Part Number | Dimensions (inches) |       |               |       |            |       |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |  |            |          |
| A-TNB-2L    | 0.219               | 0.239 | 0.150         | 0.167 | 0.528      | 0.570 |  |            |          |
| A-TNB-3L    | 0.344               | 0.344 | 0.195         | 0.195 | 0.930      | 0.930 |  |            |          |
| A-TNB-4L    | 0.452               | 0.452 | 0.255         | 0.255 | 1.156      | 1.156 |  |            |          |

### A-TNB-R

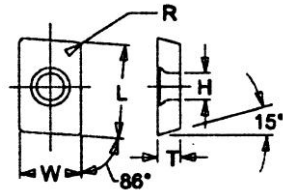
ANC Notch™ threading and grooving, right-hand



| Part Number | Dimensions (inches) |       |               |       |            |       |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |  |            |          |
| A-TNB-2R    | 0.219               | 0.239 | 0.150         | 0.167 | 0.528      | 0.570 |  |            |          |
| A-TNB-3R    | 0.344               | 0.344 | 0.195         | 0.195 | 0.930      | 0.930 |  |            |          |
| A-TNB-4R    | 0.452               | 0.452 | 0.255         | 0.255 | 1.156      | 1.156 |  |            |          |

### ADRA

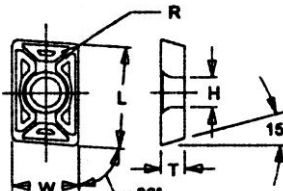
86° parallelogram end mill insert



| Part Number | Dimensions (inches) |       |               |       |            |       |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |      |            |          |
| ADRA-150308 | 3/8                 | 0.391 | 0.125         | 0.141 | 0.588      | 0.604 | 1/32 | 0.177      |          |

### ADRM

86° parallelogram end mill insert

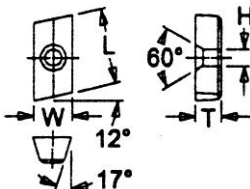


NO GRIND STOCK ON TOP

| Part Number | Dimensions (inches) |       |               |       |            |       |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |      |            |          |
| ADRM-150308 | 3/8                 | 0.391 | 0.125         | 0.133 | 0.588      | 0.604 | 1/32 | 0.177      |          |

### CDR

80° parallelogram milling insert



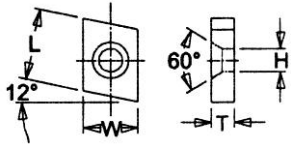
| Part Number | Dimensions (inches) |       |               |       |            |       |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |  |            |          |
| CDR-334     | 0.375               | 0.390 | 0.250         | 0.266 | 0.750      | 0.765 |  | 0.168      |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### CDR-L

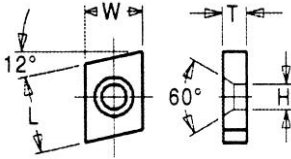
80° parallelogram milling insert



| Part Number | Dimensions (inches) |       |               |       |            |       |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |  |            |          |
| CDR-320L    | 0.375               | 0.390 | 0.150         | 0.166 | 0.500      | 0.514 |  | 0.168      |          |
| CDR-323L    | 0.375               | 0.390 | 0.188         | 0.204 | 0.500      | 0.514 |  | 0.168      |          |
| CDR-324L    | 0.375               | 0.390 | 0.250         | 0.266 | 0.500      | 0.514 |  | 0.168      |          |

### CDR-R

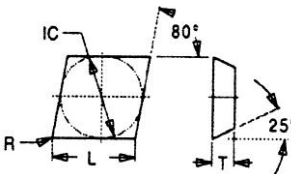
80° parallelogram milling insert



| Part Number | Dimensions (inches) |       |               |       |            |       |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |  |            |          |
| CDR-320R    | 0.375               | 0.390 | 0.150         | 0.166 | 0.500      | 0.514 |  | 0.168      |          |
| CDR-323R    | 0.375               | 0.390 | 0.188         | 0.204 | 0.500      | 0.514 |  | 0.168      |          |
| CDR-324R    | 0.375               | 0.390 | 0.250         | 0.266 | 0.500      | 0.514 |  | 0.168      |          |

### CFR

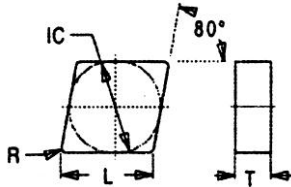
80° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| CFR-4620    | 0.464               | 0.480 | 1/8           | 0.141 |            |     | 0.004 |            |          |

### CNR

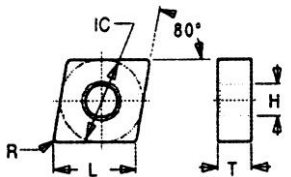
80° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| CNR-422     | 1/2                 | 0.516 | 1/8           | 0.141 | 0.508      |     | 1/32  |            |          |
| CNR-432     | 1/2                 | 0.516 | 3/16          | 0.204 | 0.508      |     | 1/32  |            |          |
| CNR-532     | 5/8                 | 0.641 | 3/16          | 0.204 | 0.635      |     | 1/32  |            |          |
| CNR-543     | 5/8                 | 0.641 | 1/4           | 0.266 | 0.635      |     | 3/64  |            |          |
| CNR-630     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.762      |     | 0.004 |            |          |
| CNR-631     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.762      |     | 1/64  |            |          |
| CNR-632     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.762      |     | 1/32  |            |          |
| CNR-633     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.762      |     | 3/64  |            |          |
| CNR-634     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.762      |     | 1/16  |            |          |
| CNR-636     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.762      |     | 3/32  |            |          |
| CNR-638     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.762      |     | 1/8   |            |          |

### CNRA

80° diamond



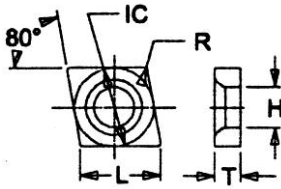
| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| CNRA-436    | 1/2                 | 0.516 | 3/16          | 0.204 | 0.508      |     | 3/32 | 0.203      |          |
| CNRA-542    | 5/8                 | 0.641 | 1/4           | 0.266 | 0.635      |     | 1/32 | 0.250      |          |
| CNRA-648    | 3/4                 | 0.766 | 1/4           | 0.266 | 0.762      |     | 1/8  | 0.312      |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### CNRD

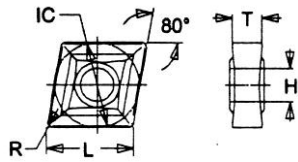
80° diamond, miniature boring insert



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| CNRD-170055 | 0.156               | 0.172 | 0.040         | 0.057 | 0.159      |     | 0.006      | 0.088    |

### CNRP

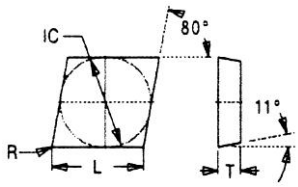
80° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| CNRP-432    | 1/2                 | 0.516 | 3/16          | 0.204 | 0.500      |     | 1/32       | 0.023    |

### CPR

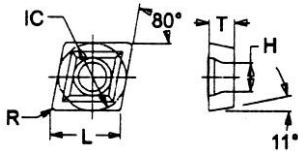
80° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| CPR-420     | 1/2                 | 0.516 | 1/8           | 0.204 | 0.508      |     | 0.004      |          |

### CPRH

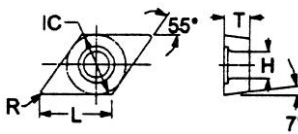
80° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| CPRH-21.50  | 1/4                 | 0.268 | 3/32          | 0.102 | 0.250      |     | 0.004      | 0.112    |
| CPRH-32.50  | 3/8                 | 0.392 | 5/32          | 0.170 | 0.381      |     | 0.004      | 0.179    |

### DCRW

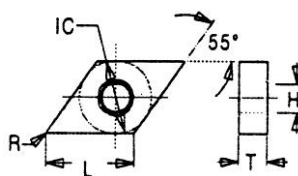
55° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| DCRW-32.51  | 3/8                 | 0.392 | 5/32          | 0.173 | 0.458      |     | 1/64       | 0.173    |

### DNRA

55° diamond



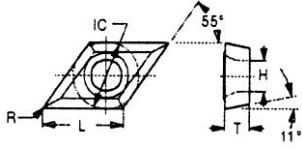
| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| DNRA-430    | 1/2                 | 0.516 | 3/16          | 0.204 | 0.540      |     | 0.004      | 0.203    |
| DNRA-530    | 5/8                 | 0.641 | 3/16          | 0.204 | 0.670      |     | 0.004      | 0.250    |
| DNRA-540    | 5/8                 | 0.641 | 1/4           | 0.266 | 0.670      |     | 0.004      | 0.250    |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### DPRH

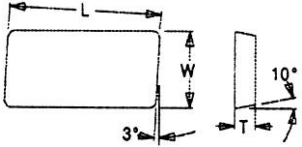
55° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| DPRH-21.50  | 1/4                 | 0.268 | 3/32          | 0.102 | 0.305      |     | 0.004 | 0.123      |          |

### EMB

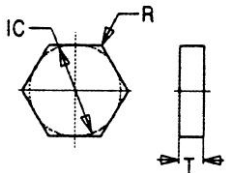
87° end mill insert



| Part Number | Dimensions (inches) |       |               |       |            |       |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |       |            |          |
| EMB-15      | 1/2                 | 0.514 | 1/8           | 0.139 | 1.000      | 1.014 | 0.047 |            |          |

### HNR

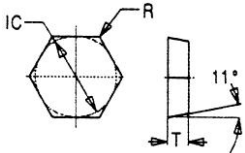
Hexagon



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| HNR-630     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.433      |     | 0.004 |            |          |

### HPR

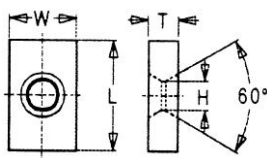
Hexagon



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| HPR-630     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.433      |     | 0.004 |            |          |

### LNR (60°)

Rectangle milling insert, 60° countersink hole



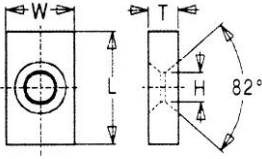
| Part Number | Dimensions (inches) |       |               |       |            |       |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |       |            |          |
| LNR-322-01  | 0.375               | 0.390 | 5/32          | 0.172 | 0.625      | 0.640 | 0.004 | 0.168      |          |
| LNR-323-01  | 0.375               | 0.390 | 3/16          | 0.196 | 0.625      | 0.640 | 0.004 | 0.168      |          |
| LNR-324-01  | 0.375               | 0.390 | 0.250         | 0.264 | 0.625      | 0.640 | 0.004 | 0.168      |          |
| LNR-324-06  | 0.438               | 0.452 | 0.250         | 0.264 | 0.625      | 0.640 | 0.004 | 0.168      |          |
| LNR-324-08  | 0.438               | 0.452 | 0.250         | 0.264 | 0.688      | 0.698 | 0.004 | 0.168      |          |
| LNR-324-09  | 0.438               | 0.452 | 0.281         | 0.293 | 0.625      | 0.640 | 0.004 | 0.168      |          |
| LNR-325-01  | 0.438               | 0.452 | 0.312         | 0.326 | 0.625      | 0.641 | 0.004 | 0.168      |          |
| LNR-433     | 0.500               | 0.516 | 0.188         | 0.204 | 0.750      | 0.766 | 0.004 | 0.168      |          |
| LNR-434     | 0.562               | 0.578 | 0.250         | 0.264 | 0.750      | 0.766 | 0.004 | 0.168      |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### LNR (82°)

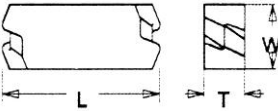
Rectangle milling insert, 82° countersink hole



| Part Number | Dimensions (inches) |       |               |       |            |       |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |            |          |
| LNR-443-01  | 0.562               | 0.578 | 0.188         | 0.204 | 1.000      | 1.017 | 0.004      | 0.212    |
| LNR-444-20  | 0.500               | 0.517 | 0.250         | 0.267 | 1.000      | 1.017 | 0.004      | 0.217    |
| LNR-446-01  | 0.562               | 0.578 | 0.375         | 0.391 | 1.125      | 1.382 | 0.004      | 0.250    |

### LNRX-L

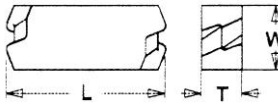
Rectangle milling insert, left hand



| Part Number     | Dimensions (inches) |       |               |       |            |       |            |          |
|-----------------|---------------------|-------|---------------|-------|------------|-------|------------|----------|
|                 | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       | Radius (R) | Hole (H) |
|                 | STD                 | NOM   | STD           | NOM   | STD        | NOM   |            |          |
| LNRX-1806AZ-L11 | 0.394               | 0.411 | 0.250         | 0.266 | 0.975      | 0.982 |            |          |

### LNRX-R

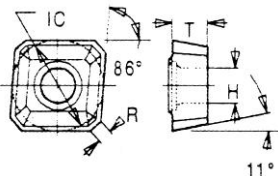
Rectangle milling insert, right hand



| Part Number     | Dimensions (inches) |       |               |       |            |       |            |          |
|-----------------|---------------------|-------|---------------|-------|------------|-------|------------|----------|
|                 | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       | Radius (R) | Hole (H) |
|                 | STD                 | NOM   | STD           | NOM   | STD        | NOM   |            |          |
| LNRX-1806AZ-R11 | 0.394               | 0.411 | 0.250         | 0.266 | 0.975      | 0.982 |            |          |

### MPRH

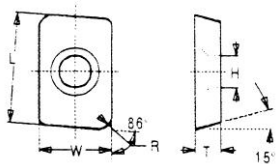
86° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| MPRH-21.5X  | 1/4                 | 0.267 | 3/32          | 0.103 | 0.250      |     | 0.052      | 0.102    |
| MPRH-2.52X  | 5/16                | 0.325 | 0.109         | 0.117 | 0.312      |     | 0.032      | 0.134    |
| MPRH-32     | 0.368               | 0.386 | 0.108         | 0.117 | 0.368      |     | 0.039      | 0.176    |
| MPRH-3.53X  | 0.430               | 0.448 | 0.170         | 0.179 | 0.430      |     | 0.046      | 0.218    |
| MPRH-43     | 0.494               | 0.512 | 0.171         | 0.180 | 0.494      |     | 0.050      | 0.220    |
| MPRH-4.53X  | 0.555               | 0.572 | 0.170         | 0.178 | 0.555      |     | 0.049      | 0.218    |
| MPRH-53X    | 0.618               | 0.636 | 0.172         | 0.181 | 0.618      |     | 0.048      | 0.220    |

### NDRW

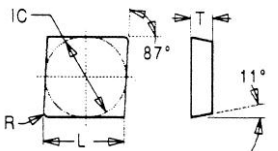
86° parallelogram end mill insert



| Part Number | Dimensions (inches) |       |               |       |            |       |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |            |          |
| NDRW-324    | 3/8                 | 0.392 | 0.125         | 0.143 | 0.588      | 0.605 | 0.060      | 0.175    |

### NPR

87° diamond



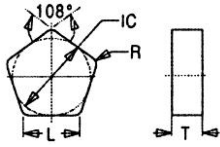
| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| NPR-633     | 3/4                 | 0.767 | 3/16          | 0.204 | 0.750      |     | 3/64       |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### PNR

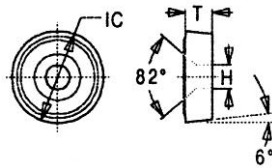
Pentagon



| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| PNR-423     | 1/2                 | 0.516 | 1/8           | 0.141 | 0.363      |     | 3/64 |            |          |
| PNR-433     | 1/2                 | 0.516 | 3/16          | 0.204 | 0.363      |     | 3/64 |            |          |

### RCRH

Round

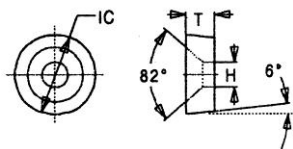


NO GRIND STOCK ON TOP

| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RCRH-52     | 5/8                 | 0.641 | 1/8           | 0.133 |            |     |  | 0.174      |          |
| RCRH-53     | 5/8                 | 0.641 | 3/16          | 0.196 |            |     |  | 0.174      |          |
| RCRH-63     | 3/4                 | 0.766 | 3/16          | 0.196 |            |     |  | 0.221      |          |
| RCRH-84     | 1.000               | 1.016 | 1/4           | 0.258 |            |     |  | 0.280      |          |

### RD-P

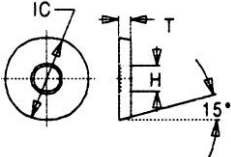
Round



| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RD-6P       | 3/8                 | 0.392 | 1/8           | 0.142 |            |     |  | 0.125      |          |
| RD-12P      | 3/4                 | 0.767 | 3/16          | 0.205 |            |     |  | 0.221      |          |
| RD-16P      | 1.000               | 1.016 | 3/16          | 0.205 |            |     |  | 0.263      |          |

### RDRA

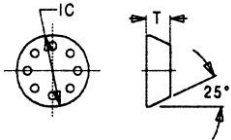
Round



| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RDRA-82     | 1.000               | 1.017 | 1/8           | 0.142 |            |     |  | 0.320      |          |

### RFR

Round, brake drum and rotor turning insert

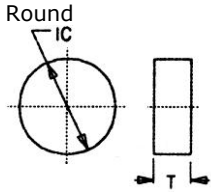


| Part Number  | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|--------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|              | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|              | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RFR-2.5(1.5) |                     | 0.330 |               | 0.110 |            |     |  |            |          |



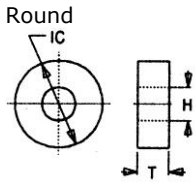
## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### RNR



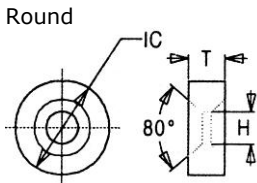
| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RNR-22      | 1/4                 | 0.266 | 1/8           | 0.141 |            |     |  |            |          |
| RNR-32      | 3/8                 | 0.391 | 1/8           | 0.141 |            |     |  |            |          |
| RNR-42      | 1/2                 | 0.516 | 1/8           | 0.141 |            |     |  |            |          |
| RNR-43      | 1/2                 | 0.516 | 3/16          | 0.204 |            |     |  |            |          |
| RNR-63      | 3/4                 | 0.766 | 3/16          | 0.204 |            |     |  |            |          |
| RNR-64      | 3/4                 | 0.766 | 1/4           | 0.266 |            |     |  |            |          |
| RNR-83      | 1.000               | 1.016 | 3/16          | 0.204 |            |     |  |            |          |
| RNR-84      | 1.000               | 1.016 | 1/4           | 0.266 |            |     |  |            |          |
| RNR-86      | 1.000               | 1.016 | 3/8           | 0.391 |            |     |  |            |          |
| RNR-103     | 1-1/4               | 1.266 | 3/16          | 0.204 |            |     |  |            |          |
| RNR-104     | 1-1/4               | 1.266 | 1/4           | 0.266 |            |     |  |            |          |
| RNR-106     | 1-1/4               | 1.266 | 3/8           | 0.391 |            |     |  |            |          |
| RNR-124     | 1-1/2               | 1.516 | 1/4           | 0.266 |            |     |  |            |          |
| RNR-126     | 1-1/2               | 1.516 | 3/8           | 0.391 |            |     |  |            |          |

### RNRA



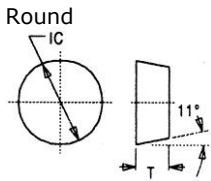
| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RNRA-32     | 3/8                 | 0.391 | 1/8           | 0.141 |            |     |  | 0.150      |          |
| RNRA-104    | 1-1/4               | 1.266 | 1/4           | 0.266 |            |     |  | 0.500      |          |
| RNRA-106    | 1-1/4               | 1.266 | 3/8           | 0.391 |            |     |  | 0.500      |          |

### RNRC



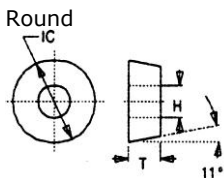
| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RNRC-43     | 1/2                 | 0.518 | 3/16          | 0.196 |            |     |  | 0.177      |          |

### RPR



| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RPR-42      | 1/2                 | 0.516 | 1/8           | 0.141 |            |     |  |            |          |
| RPR-43      | 1/2                 | 0.516 | 3/16          | 0.204 |            |     |  |            |          |
| RPR-63      | 5/8                 | 0.641 | 3/16          | 0.204 |            |     |  |            |          |

### RPRA



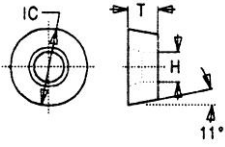
| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RPRA-43     | 1/2                 | 0.516 | 3/16          | 0.204 |            |     |  | 0.203      |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### RPRW

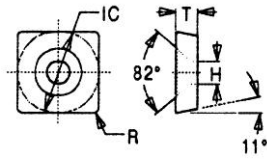
Round



| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RPRW-43     | 1/2                 | 0.517 | 3/16          | 0.204 |            |     |  | 0.204      |          |

### SD-P

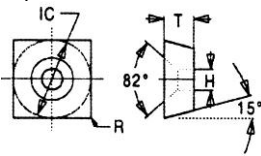
Square



| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| SD-322P-UG  | 3/8                 | 0.390 | 1/8           | 0.141 | 0.375      |     | 1/32 | 0.158      |          |
| SD-422P-UG  | 1/2                 | 0.518 | 1/8           | 0.141 | 0.500      |     | 1/32 | 0.193      |          |
| SD-8P-UG    | 1/2                 | 0.518 | 1/8           | 0.141 | 0.500      |     | 1/32 | 0.193      |          |
| SD-532P-UG  | 5/8                 | 0.642 | 3/16          | 0.204 | 0.625      |     | 1/32 | 0.217      |          |
| SD-12P-UG   | 3/4                 | 0.768 | 3/16          | 0.204 | 0.750      |     | 3/64 | 0.210      |          |

### SDRB

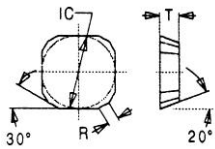
Square



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| SDRB-860    | 1.000               | 1.032 | 3/8           | 0.395 | 1.000      |     | 0.005 | 0.275      |          |

### SER-K

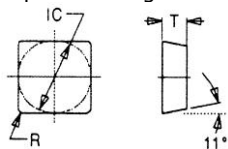
Square milling insert



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| SER-63K8    | 3/4                 | 0.768 | 3/16          | 0.204 | 0.750      |     | 0.125 |            |          |

### SM

Square milling insert



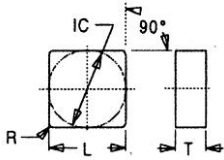
| Part Number  | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|--------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|              | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|              | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| SM-10-3-1-UG | 5/16                | 0.330 | 3/32          | 0.112 | 0.313      |     | 0.019 |            |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### SNR

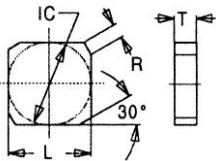
Square



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| SNR-320     | 3/8                 | 0.391 | 1/8           | 0.141 | 0.375      |     | 0.004 |            |          |
| SNR-330     | 3/8                 | 0.391 | 3/16          | 0.204 | 0.375      |     | 0.004 |            |          |
| SNR-420     | 1/2                 | 0.516 | 1/8           | 0.141 | 0.500      |     | 0.004 |            |          |
| SNR-430     | 1/2                 | 0.516 | 3/16          | 0.204 | 0.500      |     | 0.004 |            |          |
| SNR-432     | 1/2                 | 0.516 | 3/16          | 0.204 | 0.500      |     | 1/32  |            |          |
| SNR-530     | 5/8                 | 0.641 | 3/16          | 0.204 | 0.625      |     | 0.004 |            |          |
| SNR-540     | 5/8                 | 0.641 | 1/4           | 0.266 | 0.625      |     | 0.004 |            |          |
| SNR-630     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.750      |     | 0.004 |            |          |
| SNR-632     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.750      |     | 1/32  |            |          |
| SNR-640     | 3/4                 | 0.766 | 1/4           | 0.266 | 0.750      |     | 0.004 |            |          |
| SNR-642     | 3/4                 | 0.766 | 1/4           | 0.266 | 0.750      |     | 1/32  |            |          |
| SNR-830     | 1.000               | 1.016 | 3/16          | 0.204 | 1.000      |     | 0.004 |            |          |
| SNR-840     | 1.000               | 1.016 | 1/4           | 0.266 | 1.000      |     | 0.004 |            |          |

### SNR-D

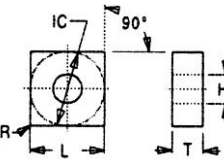
Square milling insert



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| SNR-63D8L-R | 3/4                 | 0.767 | 3/16          | 0.204 | 0.750      |     | 0.132 |            |          |

### SNRA

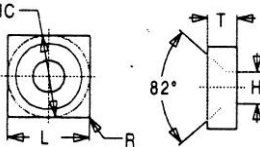
Square



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| SNRA-320    | 3/8                 | 0.391 | 1/8           | 0.141 | 0.375      |     | 0.004 |            |          |
| SNRA-330    | 3/8                 | 0.391 | 3/16          | 0.204 | 0.375      |     | 0.004 |            |          |
| SNRA-430    | 1/2                 | 0.516 | 3/16          | 0.204 | 0.500      |     | 0.004 |            |          |
| SNRA-630    | 3/4                 | 0.766 | 3/16          | 0.204 | 0.750      |     | 0.004 |            |          |
| SNRA-640    | 3/4                 | 0.766 | 1/4           | 0.266 | 0.750      |     | 0.004 |            |          |

### SNRB

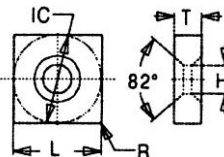
Square



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| SNRB-320    | 3/8                 | 0.391 | 1/8           | 0.141 | 0.375      |     | 0.004 | 0.150      |          |
| SNRB-530    | 5/8                 | 0.643 | 3/16          | 0.204 | 0.625      |     | 0.004 | 0.250      |          |
| SNRB-540    | 5/8                 | 0.643 | 1/4           | 0.268 | 0.625      |     | 0.004 | 0.250      |          |
| SNRB-630    | 3/4                 | 0.768 | 3/16          | 0.204 | 0.750      |     | 0.004 | 0.312      |          |
| SNRB-640    | 3/4                 | 0.768 | 1/4           | 0.268 | 0.750      |     | 0.004 | 0.312      |          |

### SNRC

Square



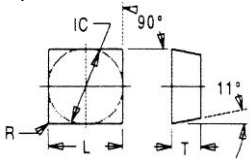
| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| SNRC-530    | 5/8                 | 0.643 | 3/16          | 0.204 | 0.625      |     | 0.004 | 0.210      |          |
| SNRC-540    | 5/8                 | 0.643 | 1/4           | 0.268 | 0.625      |     | 0.004 | 0.210      |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### SPR

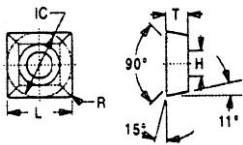
Square



| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| SPR-321     | 3/8                 | 0.391 | 1/8           | 0.141 | 0.375      |     | 1/64 |            |          |
| SPR-421     | 1/2                 | 0.516 | 1/8           | 0.141 | 0.500      |     | 1/64 |            |          |
| SPR-422     | 1/2                 | 0.516 | 1/8           | 0.141 | 0.500      |     | 1/32 |            |          |
| SPR-431     | 1/2                 | 0.516 | 3/16          | 0.204 | 0.500      |     | 1/64 |            |          |
| SPR-532     | 5/8                 | 0.641 | 3/16          | 0.204 | 0.625      |     | 1/32 |            |          |
| SPR-632     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.750      |     | 1/32 |            |          |
| SPR-633     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.750      |     | 3/64 |            |          |
| SPR-638     | 3/4                 | 0.766 | 3/16          | 0.204 | 0.750      |     | 1/8  |            |          |
| SPR-833     | 1.000               | 1.016 | 3/16          | 0.204 | 1.000      |     | 3/64 |            |          |
| SPR-842     | 1.000               | 1.016 | 1/4           | 0.266 | 1.000      |     | 1/32 |            |          |

### SPRH

Square milling insert

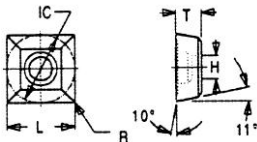


NO GRIND STOCK ON TOP

| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| SPRH-321    | 3/8                 | 0.392 | 1/8           | 0.136 | 0.375      |     | 1/64 | 0.156      |          |

### SPRH-HF

Square milling insert, high feed applications

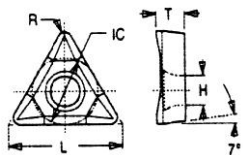


NO GRIND STOCK ON TOP

| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| SPRH-431HF  | 1/2                 | 0.515 | 3/13          | 0.196 | 0.500      |     | 1/64 | 0.175      |          |

### TCRT-HP

Triangle, high positive for aluminum

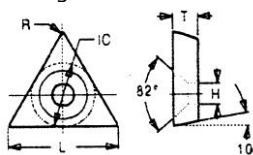


NO GRIND STOCK ON TOP

| Part Number  | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|--------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|              | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|              | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| TCRT-32.52HP | 3/8                 | 0.390 | 5/32          | 0.168 | 0.650      |     | 0.039 | 0.177      |          |

### TD-P

Triangle



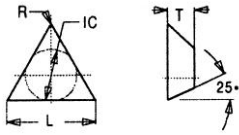
| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| TD-6P       | 3/8                 | 0.392 | 1/8           | 0.141 | 0.650      |     | 1/32 | 0.130      |          |
| TD-10P      | 5/8                 | 0.642 | 3/16          | 0.204 | 1.080      |     | 1/16 | 0.187      |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### TFR

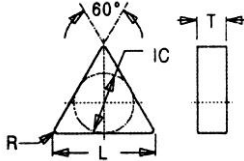
Triangle



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| TFR-320     | 3/8                 | 0.392 | 1/8           | 0.141 | 0.650      |     | 0.004 |            |          |

### TNR

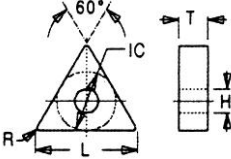
Triangle



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| TNR-220     | 1/4                 | 0.266 | 1/8           | 0.141 | 0.433      |     | 0.004 |            |          |
| TNR-2.521   | 5/16                | 0.328 | 1/8           | 0.141 |            |     | 1/64  |            |          |
| TNR-320     | 3/8                 | 0.391 | 1/8           | 0.141 | 0.650      |     | 0.004 |            |          |
| TNR-323     | 3/8                 | 0.391 | 1/8           | 0.141 | 0.650      |     | 3/64  |            |          |
| TNR-330     | 3/8                 | 0.391 | 3/16          | 0.204 | 0.650      |     | 0.004 |            |          |
| TNR-333     | 3/8                 | 0.391 | 3/16          | 0.204 | 0.650      |     | 3/64  |            |          |
| TNR-420     | 1/2                 | 0.516 | 1/8           | 0.141 | 0.866      |     | 0.004 |            |          |
| TNR-430     | 1/2                 | 0.516 | 3/16          | 0.204 | 0.866      |     | 0.004 |            |          |
| TNR-440     | 1/2                 | 0.516 | 1/4           | 0.266 | 0.866      |     | 0.004 |            |          |
| TNR-532     | 5/8                 | 0.641 | 3/16          | 0.204 | 1.080      |     | 1/32  |            |          |
| TNR-5412    | 5/8                 | 0.641 | 1/4           | 0.266 | 1.080      |     | 3/16  |            |          |
| TNR-54R     | 5/8                 | 0.642 | 1/4           | 0.267 | 1.080      |     | 0.126 |            |          |
| TNR-640     | 3/4                 | 0.766 | 1/4           | 0.266 |            |     | 0.004 |            |          |
| TNR-660     | 3/4                 | 0.766 | 3/8           | 0.391 | 1.300      |     | 0.004 |            |          |

### TNRA

Triangle



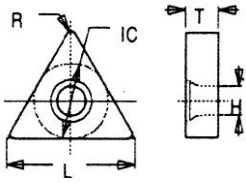
| Part Number        | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|--------------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|                    | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|                    | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| TNRA-21.52         | 1/4                 | 0.266 | 1/8           | 0.141 | 0.433      |     | 1/32  | 0.089      |          |
| TNRA-220           | 1/4                 | 0.266 | 1/8           | 0.141 | 0.433      |     | 0.004 | 0.089      |          |
| TNRA-220 (.140 ID) | 1/4                 | 0.266 | 1/8           | 0.141 | 0.433      |     | 0.004 | 0.140      |          |
| TNRA-2.521         | 5/16                | 0.328 | 1/8           | 0.141 | 0.541      |     | 1/64  | 0.089      |          |
| TNRA-320           | 3/8                 | 0.391 | 1/8           | 0.141 | 0.650      |     | 0.004 | 0.150      |          |
| TNRA-330           | 3/8                 | 0.391 | 3/16          | 0.204 | 0.650      |     | 0.004 | 0.150      |          |
| TNRA-430           | 1/2                 | 0.516 | 3/16          | 0.204 | 0.866      |     | 0.004 | 0.203      |          |
| TNRA-440           | 1/2                 | 0.516 | 1/4           | 0.266 | 0.866      |     | 0.004 | 0.203      |          |
| TNRA-530           | 5/8                 | 0.641 | 3/16          | 0.204 | 1.080      |     | 0.004 | 0.250      |          |
| TNRA-540           | 5/8                 | 0.641 | 1/4           | 0.266 | 1.080      |     | 0.004 | 0.250      |          |
| TNRA-550           | 5/8                 | 0.641 | 5/16          | 0.328 | 1.080      |     | 0.004 | 0.250      |          |
| TNRA-630           | 3/4                 | 0.766 | 3/16          | 0.204 | 1.300      |     | 0.004 | 0.312      |          |
| TNRA-640           | 3/4                 | 0.766 | 1/4           | 0.266 | 1.300      |     | 0.004 | 0.312      |          |
| TNRA-660           | 3/4                 | 0.766 | 3/8           | 0.391 | 1.300      |     | 0.004 | 0.312      |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### TNRB

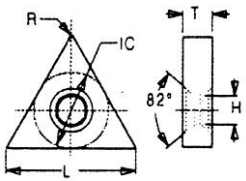
Triangle



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| TNRB-175060 | 5/32                | 0.176 | 3/64          | 0.066 | 0.271      |     | 0.006      | 0.094    |
| TNRB-2.521  | 5/16                | 0.330 | 1/8           | 0.141 | 0.541      |     | 1/64       | 0.150    |
| TNRB-320    | 3/8                 | 0.392 | 1/8           | 0.141 | 0.654      |     | 0.004      | 0.173    |
| TNRB-330    | 3/8                 | 0.392 | 3/16          | 0.204 | 0.654      |     | 0.004      | 0.173    |
| TNRB-430    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 0.004      | 0.217    |
| TNRB-540    | 5/8                 | 0.642 | 1/4           | 0.267 | 1.080      |     | 0.004      | 0.217    |
| TNRB-640    | 3/4                 | 0.767 | 1/4           | 0.267 | 1.300      |     | 0.004      | 0.256    |
| TNRB-660    | 3/4                 | 0.767 | 3/8           | 0.392 | 1.300      |     | 0.004      | 0.256    |

### TNRC

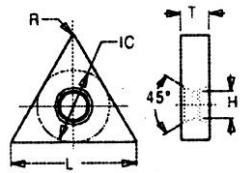
Triangle



| Part Number     | Dimensions (inches) |       |               |       |            |     |            |          |
|-----------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|                 | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|                 | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| TNRC-320        | 3/8                 | 0.392 | 1/8           | 0.141 | 0.654      |     | 0.004      | 0.150    |
| TNRC-330        | 3/8                 | 0.392 | 3/16          | 0.204 | 0.654      |     | 0.004      | 0.173    |
| TNRC-430        | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 0.004      | 0.203    |
| TNRC-440        | 1/2                 | 0.500 | 1/4           | 0.267 | 0.866      |     | 0.004      | 0.203    |
| TNRC-540        | 5/8                 | 0.642 | 1/4           | 0.267 | 1.080      |     | 0.004      | 0.250    |
| TNRC-540 (.200) | 5/8                 | 0.642 | 1/4           | 0.267 | 1.080      |     | 0.200      | 0.250    |
| TNRC-550        | 5/8                 | 0.642 | 5/16          | 0.329 | 1.080      |     | 0.004      | 0.250    |
| TNRC-640        | 3/4                 | 0.767 | 1/4           | 0.267 | 1.300      |     | 0.004      | 0.312    |
| TNRC-660        | 3/4                 | 0.767 | 3/8           | 0.392 | 1.300      |     | 0.004      | 0.312    |

### TNRC (45°)

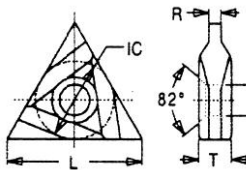
Triangle



| Part Number    | Dimensions (inches) |       |               |       |            |     |            |          |
|----------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|                | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|                | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| TNRC-630 (45°) | 3/4                 | 0.767 | 3/16          | 0.204 | 1.300      |     | 0.004      | 0.312    |

### TNRC-NV

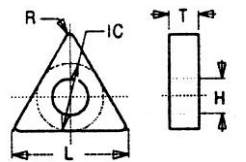
Triangle threading insert



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| TNRC-430NV  | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 0.084      | 0.203    |
| TNRC-540NV  | 5/8                 | 0.642 | 1/4           | 0.267 | 1.080      |     | 0.045      | 0.250    |

### TNRD

Triangle, miniature boring insert



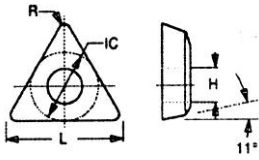
| Part Number   | Dimensions (inches) |       |               |       |            |     |            |          |
|---------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|               | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|               | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| TNRD-17506002 | 5/32                | 0.176 | 3/64          | 0.063 | 0.271      |     | 0.006      | 0.095    |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### TP

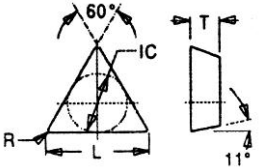
Triangle



| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| TP-41       | 1/4                 | 0.267 | 3/32          | 0.111 | 0.433      |     | 1/64 | 0.137      |          |
| TP-62       | 3/8                 | 0.392 | 1/8           | 0.141 | 0.650      |     | 1/32 | 0.150      |          |

### TPR

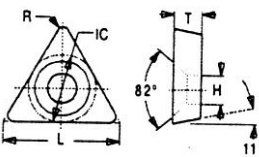
Triangle



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| TPR-220     | 1/4                 | 0.266 | 1/8           | 0.141 | 0.433      |     | 0.004 |            |          |
| TPR-321     | 3/8                 | 0.391 | 1/8           | 0.141 | 0.650      |     | 1/64  |            |          |
| TPR-431     | 1/2                 | 0.516 | 3/16          | 0.204 | 0.866      |     | 1/64  |            |          |
| TPR-532     | 5/8                 | 0.641 | 3/16          | 0.204 | 1.080      |     | 1/32  |            |          |
| TPR-542     | 5/8                 | 0.641 | 1/4           | 0.266 | 1.080      |     | 1/32  |            |          |

### TPRB

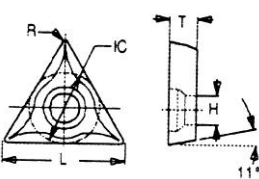
Triangle



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| TPRB-21.51  | 1/4                 | 0.267 | 3/32          | 0.110 | 0.433      |     | 0.024 | 0.115      |          |
| TPRB-32.52  | 3/8                 | 0.392 | 5/32          | 0.173 | 0.650      |     | 1/32  | 0.150      |          |
| TPRB-321    | 3/8                 | 0.392 | 1/8           | 0.141 | 0.650      |     | 1/64  | 0.150      |          |
| TPRB-431    | 1/2                 | 0.517 | 3/16          | 0.204 | 0.866      |     | 1/64  | 0.177      |          |

### TPRH

Triangle

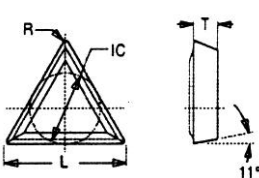


NO GRIND STOCK ON TOP

| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| TPRH-21.50  | 1/4                 | 0.267 | 3/32          | 0.111 | 0.433      |     | 0.003 | 0.123      |          |
| TPRH-32.52  | 3/8                 | 0.392 | 5/32          | 0.173 | 0.650      |     | 1/64  | 0.177      |          |
| TPRH-321    | 3/8                 | 0.392 | 1/8           | 0.141 | 0.650      |     | 1/64  | 0.177      |          |
| TPRH-431    | 1/2                 | 0.517 | 3/16          | 0.239 | 0.866      |     | 1/64  | 0.216      |          |

### TPRR

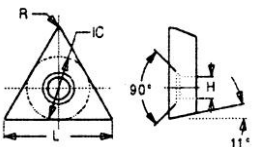
Triangle



| Part Number      | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|------------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|                  | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|                  | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| TPRR-221         | 1/4                 | 0.267 | 1/8           | 0.141 | 0.433      |     | 1/64  |            |          |
| TPRR-321         | 3/8                 | 0.392 | 1/8           | 0.133 | 0.650      |     | 1/64  |            |          |
| TPRR-431         | 1/2                 | 0.517 | 3/16          | 0.239 | 0.866      |     | 1/64  |            |          |
| TPRR-544 W/.206R | 5/8                 | 0.687 | 1/4           | 0.259 | 1.080      |     | 0.206 |            |          |

### TPRW

Triangle



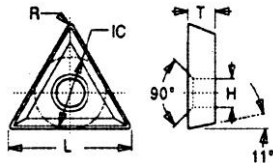
| Part Number  | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|--------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|              | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|              | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| TPRW-32.50.5 | 3/8                 | 0.392 | 5/32          | 0.173 | 0.650      |     | 0.007 | 0.137      |          |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### TT

Triangle

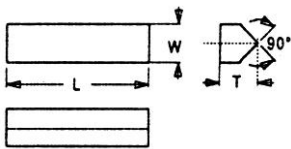


NO GRIND STOCK ON TOP

| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| TT-221-UG   | 0.243               | 0.263 | 1/8           | 0.141 | 0.433      |     | 1/64       | 0.093    |
| TT-222-UG   | 0.243               | 0.263 | 1/8           | 0.141 | 0.433      |     | 1/32       | 0.093    |
| TT-321-UG   | 0.369               | 0.389 | 1/8           | 0.133 | 0.650      |     | 1/64       | 0.150    |
| TT-322-UG   | 0.369               | 0.389 | 1/8           | 0.133 | 0.650      |     | 1/32       | 0.150    |
| TT-323-UG   | 0.369               | 0.389 | 1/8           | 0.133 | 0.650      |     | 3/64       | 0.150    |
| TT-431-UG   | 0.494               | 0.514 | 3/16          | 0.196 | 0.866      |     | 1/64       | 0.202    |
| TT-432-UG   | 0.494               | 0.514 | 3/16          | 0.196 | 0.866      |     | 1/32       | 0.202    |

### V

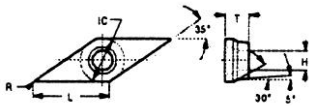
V-bottom parting insert



| Part Number     | Dimensions (inches) |       |               |       |            |       |            |          |
|-----------------|---------------------|-------|---------------|-------|------------|-------|------------|----------|
|                 | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       | Radius (R) | Hole (H) |
|                 | STD                 | NOM   | STD           | NOM   | STD        | NOM   |            |          |
| V-.188x.337x1.5 |                     | 0.210 |               | 0.360 |            | 1.520 |            |          |
| V-.250x.250x1.0 |                     | 0.270 |               | 0.270 |            | 1.020 |            |          |
| V-.250x.337x1.5 |                     | 0.270 |               | 0.360 |            | 1.520 |            |          |
| V-.312x.337x1.0 |                     | 0.337 |               | 0.360 |            | 1.020 |            |          |
| V-.437x.337x1.0 |                     | 0.460 |               | 0.360 |            | 1.020 |            |          |
| V-.580x.337x1.0 |                     | 0.600 |               | 0.360 |            | 1.020 |            |          |

### VBRM

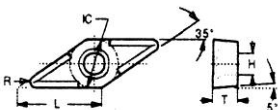
35° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| VBRM-331    | 3/8                 | 0.390 | 3/16          | 0.212 | 0.654      |     | 1/64       | 0.177    |

### VBRT

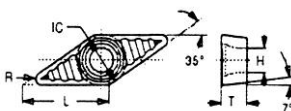
35° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| VBRT-333    | 3/8                 | 0.393 | 3/16          | 0.196 | 0.654      |     | 3/64       | 0.173    |

### VCRT-HP

35° diamond, high-positive chip control for aluminum



NO GRIND STOCK ON TOP

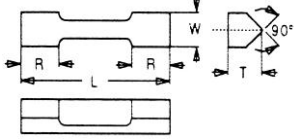
| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| VCRT-333    | 3/8                 | 0.393 | 3/16          | 0.196 | 0.654      |     | 3/64       | 0.177    |



## Insert Blanks – Grind Stock on Periphery, Top and Bottom

### VDB

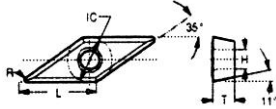
V-bottom parting insert



| Part Number | Dimensions (inches) |       |               |       |            |       |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |       |            |          |
| VDB-125-UG  |                     | 0.140 |               | 0.263 |            | 1.150 | 0.265 |            |          |
| VDB-188-UG  |                     | 0.208 |               | 0.263 |            | 1.150 | 0.280 |            |          |
| VDB-250-UG  |                     | 0.270 |               | 0.263 |            | 1.150 | 0.280 |            |          |
| VDB-250T-UG |                     | 0.270 |               | 0.365 |            | 1.150 | 0.280 |            |          |
| VDB-312-UG  |                     | 0.332 |               | 0.365 |            | 1.150 | 0.280 |            |          |
| VDB-375-UG  |                     | 0.395 |               | 0.365 |            | 1.150 | 0.280 |            |          |

### VPRH

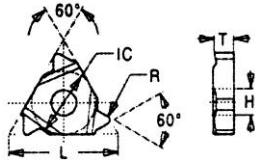
35° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| VPRH-221    | 1/4                 | 0.268 | 1/8           | 0.133 | 0.436      |     | 1/64 | 0.112      |          |

### XL

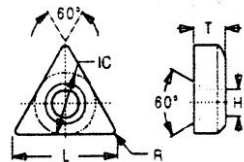
Triangle, lay-down threading and grooving



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| XL-534381   | 5/8                 | 0.642 | 3/16          | 0.196 | 1.080      |     | 0.038 | 0.250      |          |

### XTNRB

Triangle



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| XTNRB-221   | 1/4                 | 0.267 | 1/8           | 0.140 | 0.433      |     | 1/64  | 0.118      |          |
| XTNRB-32.51 | 3/8                 | 0.375 | 0.145         | 0.161 | 0.650      |     | 1/64  | 0.155      |          |
| XTNRB-435   | 1/2                 | 0.517 | 3/16          | 0.201 | 0.866      |     | 0.084 | 0.205      |          |

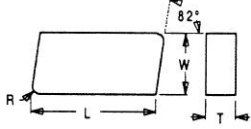


## Insert Blanks – Grind Stock on Top and Bottom Only

**Insert blanks with grind stock on top and bottom only**

### BNS

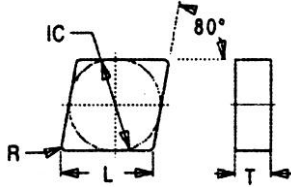
Parallelogram end mill insert



| Part Number | Dimensions (inches) |       |               |       |            |       |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |            |          |
| BNS-4444    | 1/2                 | 0.500 | 1/4           | 0.266 | 1.032      | 1.032 | 1/16       |          |

### CNS

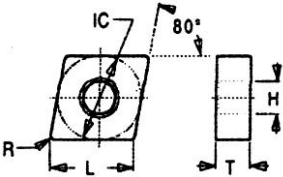
80° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| CNS-422     | 1/2                 | 0.500 | 1/8           | 0.141 | 0.508      |     | 1/32       |          |
| CNS-432     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.508      |     | 1/32       |          |
| CNS-632     | 3/4                 | 0.750 | 3/16          | 0.204 | 0.762      |     | 1/32       |          |
| CNS-633     | 3/4                 | 0.750 | 3/16          | 0.204 | 0.762      |     | 3/64       |          |
| CNS-642     | 3/4                 | 0.750 | 1/4           | 0.266 | 0.762      |     | 1/32       |          |

### CNSA

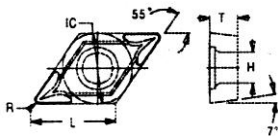
80° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| CNSA-432    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.508      |     | 1/32       | 0.203    |
| CNSA-433    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.508      |     | 3/64       | 0.203    |
| CNSA-542    | 5/8                 | 0.625 | 1/4           | 0.266 | 0.635      |     | 1/32       | 0.250    |
| CNSA-543    | 5/8                 | 0.625 | 1/4           | 0.266 | 0.635      |     | 3/64       | 0.250    |
| CNSA-642    | 3/4                 | 0.750 | 1/4           | 0.266 | 0.762      |     | 1/32       | 0.312    |
| CNSA-643    | 3/4                 | 0.750 | 1/4           | 0.266 | 0.762      |     | 3/64       | 0.312    |
| CNSA-644    | 3/4                 | 0.750 | 1/4           | 0.266 | 0.762      |     | 1/16       | 0.312    |

### DCSW

55° diamond

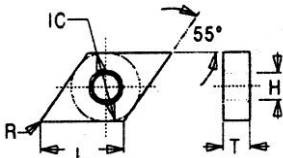


NO GRIND STOCK ON TOP

| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| DCSW-432    | 1/2                 | 0.500 | 3/16          | 0.196 | 0.610      |     | 1/32       | 0.220    |

### DNSA

55° diamond



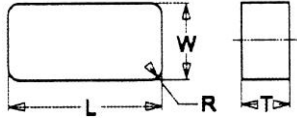
| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| DNSA-431    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.540      |     | 1/64       | 0.203    |
| DNSA-432    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.540      |     | 1/32       | 0.203    |
| DNSA-434    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.540      |     | 1/16       | 0.203    |
| DNSA-441    | 1/2                 | 0.500 | 1/4           | 0.266 | 0.540      |     | 1/64       | 0.203    |
| DNSA-442    | 1/2                 | 0.500 | 1/4           | 0.266 | 0.540      |     | 1/32       | 0.203    |
| DNSA-444    | 1/2                 | 0.500 | 1/4           | 0.266 | 0.540      |     | 1/16       | 0.203    |



## Insert Blanks – Grind Stock on Top and Bottom Only

### LNS

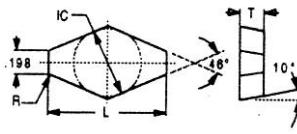
Rectangle



| Part Number | Dimensions (inches) |       |               |       |            |       |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |      |            |          |
| LNS-5566    | 0.625               | 0.625 | 0.375         | 0.392 | 1.250      | 1.250 | 3/32 |            |          |
| LNS-6688    | 0.775               | 0.775 | 0.500         | 0.516 | 1.530      | 1.530 | 1/8  |            |          |

### PRN

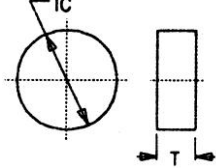
Pulley ring grooving insert



| Part Number | Dimensions (inches) |       |               |       |            |       |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-------|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |       |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM   |       |            |          |
| PRN-2AU     | 0.573               | 0.573 | 0.188         | 0.204 | 1.000      | 1.000 | 0.031 |            |          |

### RNS

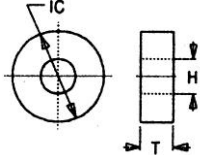
Round



| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RNS-22      | 1/4                 | 0.250 | 1/8           | 0.141 |            |     |  |            |          |
| RNS-32      | 3/8                 | 0.375 | 1/8           | 0.141 |            |     |  |            |          |
| RNS-42      | 1/2                 | 0.500 | 1/8           | 0.141 |            |     |  |            |          |
| RNS-43      | 1/2                 | 0.500 | 3/16          | 0.204 |            |     |  |            |          |
| RNS-53      | 5/8                 | 0.625 | 3/16          | 0.204 |            |     |  |            |          |
| RNS-54      | 5/8                 | 0.625 | 1/4           | 0.266 |            |     |  |            |          |
| RNS-84      | 1.000               | 1.000 | 1/4           | 0.266 |            |     |  |            |          |
| RNS-86      | 1.000               | 1.000 | 3/8           | 0.391 |            |     |  |            |          |

### RNSA

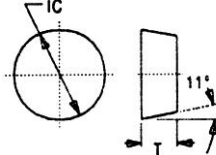
Round



| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RNSA-32     | 3/8                 | 0.375 | 1/8           | 0.141 |            |     |  | 0.150      |          |
| RNSA-43     | 1/2                 | 0.500 | 3/16          | 0.204 |            |     |  | 0.203      |          |
| RNSA-64     | 3/4                 | 0.750 | 1/4           | 0.266 |            |     |  | 0.312      |          |
| RNSA-84     | 1.000               | 1.000 | 1/4           | 0.266 |            |     |  | 0.358      |          |
| RNSA-86     | 1.000               | 1.000 | 3/8           | 0.391 |            |     |  | 0.358      |          |
| RNSA-106    | 1-1/4               | 1.250 | 3/8           | 0.391 |            |     |  | 0.500      |          |

### RPS

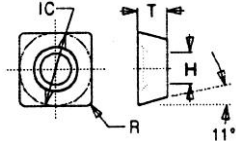
Round



| Part Number | Dimensions (inches) |       |               |       |            |     |  | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|--|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |  |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |  |            |          |
| RPS-43      | 1/2                 | 0.500 | 3/16          | 0.204 |            |     |  |            |          |
| RPS-63      | 3/4                 | 0.750 | 3/16          | 0.204 |            |     |  |            |          |

### SDSA

Square



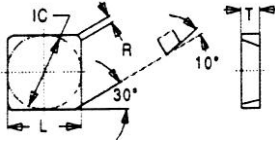
| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| SDSA-432    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 1/32 | 0.215      |          |



## Insert Blanks – Grind Stock on Top and Bottom Only

### SHS-D

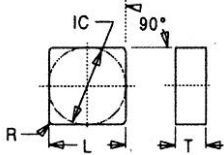
Square



| Part Number | Dimensions (inches) |       |               |       |            |     |       | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|-------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |       |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |       |            |          |
| SHS-63D4    | 3/4                 | 0.750 | 3/16          | 0.204 | 0.750      |     | 0.069 |            |          |

### SNS

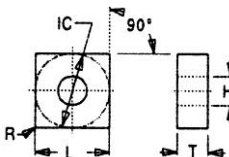
Square



| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| SNS-322     | 3/8                 | 0.375 | 1/8           | 0.141 | 0.375      |     | 1/32 |            |          |
| SNS-422     | 1/2                 | 0.500 | 1/8           | 0.141 | 0.500      |     | 1/32 |            |          |
| SNS-423     | 1/2                 | 0.500 | 1/8           | 0.141 | 0.500      |     | 3/64 |            |          |
| SNS-424     | 1/2                 | 0.500 | 1/8           | 0.141 | 0.500      |     | 1/16 |            |          |
| SNS-426     | 1/2                 | 0.500 | 1/8           | 0.141 | 0.500      |     | 3/32 |            |          |
| SNS-432     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 1/32 |            |          |
| SNS-433     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 3/64 |            |          |
| SNS-434     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 1/16 |            |          |
| SNS-436     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 3/32 |            |          |
| SNS-533     | 5/8                 | 0.625 | 3/16          | 0.204 | 0.625      |     | 3/64 |            |          |
| SNS-543     | 5/8                 | 0.625 | 1/4           | 0.266 | 0.625      |     | 3/64 |            |          |
| SNS-548     | 5/8                 | 0.625 | 1/4           | 0.266 | 0.625      |     | 1/8  |            |          |
| SNS-632     | 3/4                 | 0.750 | 3/16          | 0.204 | 0.750      |     | 1/32 |            |          |
| SNS-633     | 3/4                 | 0.750 | 3/16          | 0.204 | 0.750      |     | 3/64 |            |          |
| SNS-634     | 3/4                 | 0.750 | 3/16          | 0.204 | 0.750      |     | 1/16 |            |          |
| SNS-642     | 3/4                 | 0.750 | 1/4           | 0.266 | 0.750      |     | 1/32 |            |          |
| SNS-643     | 3/4                 | 0.750 | 1/4           | 0.266 | 0.750      |     | 3/64 |            |          |
| SNS-644     | 3/4                 | 0.750 | 1/4           | 0.266 | 0.750      |     | 1/16 |            |          |
| SNS-748     | 7/8                 | 0.875 | 1/4           | 0.266 | 0.875      |     | 1/8  |            |          |
| SNS-758     | 7/8                 | 0.875 | 5/16          | 0.328 | 0.875      |     | 1/8  |            |          |
| SNS-768     | 7/8                 | 0.875 | 3/8           | 0.391 | 0.875      |     | 1/8  |            |          |
| SNS-778     | 7/8                 | 0.875 | 7/16          | 0.454 | 0.875      |     | 1/8  |            |          |
| SNS-8512    | 1.000               | 1.000 | 5/16          | 0.328 | 1.000      |     | 3/16 |            |          |
| SNS-1066    | 1-1/4               | 1.250 | 3/8           | 0.391 | 1.250      |     | 3/32 |            |          |
| SNS-1288    | 1-1/2               | 1.500 | 1/2           | 0.516 | 1.500      |     | 1/8  |            |          |

### SNSA

Square



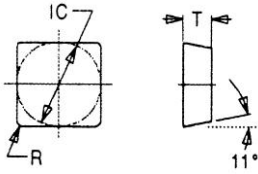
| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| SNSA-322    | 3/8                 | 0.375 | 1/8           | 0.141 | 0.375      |     | 1/32 | 0.150      |          |
| SNSA-432    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 1/32 | 0.203      |          |
| SNSA-433    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 3/64 | 0.203      |          |
| SNSA-434    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 1/16 | 0.203      |          |
| SNSA-436    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 3/32 | 0.203      |          |
| SNSA-548    | 5/8                 | 0.625 | 1/4           | 0.266 | 0.625      |     | 1/8  | 0.250      |          |
| SNSA-644    | 3/4                 | 0.750 | 1/4           | 0.266 | 0.750      |     | 1/16 | 0.312      |          |
| SNSA-866    | 1.000               | 1.000 | 3/8           | 0.391 | 1.000      |     | 3/32 | 0.358      |          |



## Insert Blanks – Grind Stock on Top and Bottom Only

### SPS

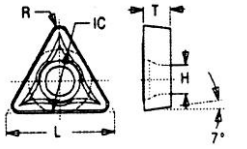
Square



| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| SPS-422     | 1/2                 | 0.500 | 1/8           | 0.141 | 0.500      |     | 1/32 |            |          |
| SPS-432     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.500      |     | 1/32 |            |          |
| SPS-532     | 5/8                 | 0.625 | 3/16          | 0.204 | 0.625      |     | 1/32 |            |          |
| SPS-632     | 3/4                 | 0.750 | 3/16          | 0.204 | 0.750      |     | 1/32 |            |          |
| SPS-633     | 3/4                 | 0.750 | 3/16          | 0.204 | 0.750      |     | 3/64 |            |          |
| SPS-634     | 3/4                 | 0.750 | 3/16          | 0.204 | 0.750      |     | 1/16 |            |          |

### TCST-HF

Triangle

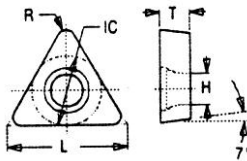


NO GRIND STOCK ON TOP

| Part Number  | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|--------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|              | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|              | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| TCST-32.53HF | 3/8                 | 0.375 | 5/32          | 0.166 | 0.650      |     | 3/64 | 0.173      |          |

### TCSW

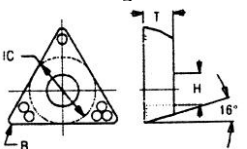
Triangle



| Part Number    | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|----------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|                | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|                | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| TCSW-1.2(1.2)1 | 5/32                | 0.156 | 5/64          | 0.095 | 0.271      |     | 1/64 | 0.080      |          |
| TCSW-1.2(1.5)1 | 5/32                | 0.156 | 3/32          | 0.110 | 0.271      |     | 1/64 | 0.080      |          |
| TCSW-731       | 7/32                | 0.219 | 3/32          | 0.110 | 0.370      |     | 1/64 | 0.095      |          |

### TDSA

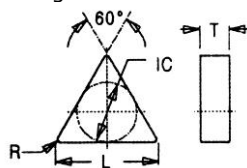
Triangle brake drum and rotor turning insert



| Part Number     | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-----------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|                 | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|                 | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| TDSA-2.52(.020) | 5/16                | 0.312 | 1/8           | 0.141 | 0.541      |     | .020 | 0.150      |          |

### TNS

Triangle



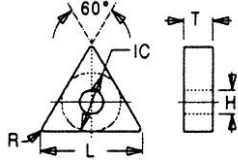
| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| TNS-222     | 1/4                 | 0.250 | 1/8           | 0.141 | 0.433      |     | 1/32 |            |          |
| TNS-322     | 3/8                 | 0.375 | 1/8           | 0.141 | 0.650      |     | 1/32 |            |          |
| TNS-323     | 3/8                 | 0.375 | 1/8           | 0.141 | 0.650      |     | 3/64 |            |          |
| TNS-332     | 3/8                 | 0.375 | 3/16          | 0.204 | 0.650      |     | 1/32 |            |          |
| TNS-333     | 3/8                 | 0.391 | 3/16          | 0.204 | 0.650      |     | 3/64 |            |          |
| TNS-432     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 1/32 |            |          |
| TNS-433     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 3/64 |            |          |
| TNS-434     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 1/16 |            |          |
| TNS-542     | 5/8                 | 0.625 | 1/4           | 0.266 | 1.080      |     | 1/32 |            |          |
| TNS-544     | 5/8                 | 0.625 | 1/4           | 0.266 | 1.080      |     | 1/16 |            |          |
| TNS-664     | 3/4                 | 0.750 | 3/8           | 0.391 | 1.300      |     | 1/16 |            |          |
| TNS-666     | 3/4                 | 0.750 | 3/8           | 0.391 | 1.300      |     | 3/32 |            |          |



## Insert Blanks – Grind Stock on Top and Bottom Only

### TNSA

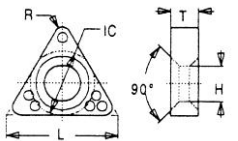
Triangle



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| TNSA-222    | 1/4                 | 0.250 | 1/8           | 0.141 | 0.433      |     | 1/32       | 0.089    |
| TNSA-321    | 3/8                 | 0.375 | 1/8           | 0.141 | 0.650      |     | 1/64       | 0.150    |
| TNSA-322    | 3/8                 | 0.375 | 1/8           | 0.141 | 0.650      |     | 1/32       | 0.150    |
| TNSA-323    | 3/8                 | 0.375 | 1/8           | 0.141 | 0.650      |     | 3/64       | 0.150    |
| TNSA-324    | 3/8                 | 0.375 | 1/8           | 0.141 | 0.650      |     | 1/16       | 0.150    |
| TNSA-332    | 3/8                 | 0.375 | 3/16          | 0.204 | 0.650      |     | 1/32       | 0.150    |
| TNSA-333    | 3/8                 | 0.391 | 3/16          | 0.204 | 0.650      |     | 3/64       | 0.150    |
| TNSA-334    | 3/8                 | 0.391 | 3/16          | 0.204 | 0.650      |     | 1/16       | 0.150    |
| TNSA-431    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 1/64       | 0.203    |
| TNSA-432    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 1/32       | 0.203    |
| TNSA-433    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 3/64       | 0.203    |
| TNSA-434    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 1/16       | 0.203    |
| TNSA-436    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 3/32       | 0.203    |
| TNSA-438    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 1/8        | 0.203    |
| TNSA-5412   | 5/8                 | 0.625 | 1/4           | 0.266 | 1.080      |     | 3/16       | 0.250    |
| TNSA-542    | 5/8                 | 0.625 | 1/4           | 0.266 | 1.080      |     | 1/32       | 0.250    |
| TNSA-543    | 5/8                 | 0.625 | 1/4           | 0.266 | 1.080      |     | 3/64       | 0.250    |
| TNSA-544    | 5/8                 | 0.625 | 1/4           | 0.266 | 1.080      |     | 1/16       | 0.250    |
| TNSA-548    | 5/8                 | 0.625 | 1/4           | 0.266 | 1.080      |     | 1/8        | 0.250    |
| TNSA-6612   | 3/4                 | 0.750 | 3/8           | 0.391 | 1.300      |     | 3/16       | 0.312    |
| TNSA-664    | 3/4                 | 0.750 | 3/8           | 0.391 | 1.300      |     | 1/16       | 0.312    |
| TNSA-666    | 3/4                 | 0.750 | 3/8           | 0.391 | 1.300      |     | 3/32       | 0.312    |

### TNSC-D

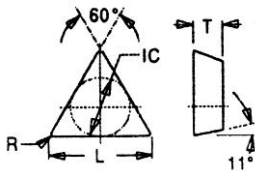
Triangle brake drum and rotor turning insert



| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| TNSC-21.52D | 1/4                 | 0.250 | 3/32          | 0.110 | 0.433      |     | 1/32       | 0.140    |
| TNSC-222D   | 1/4                 | 0.250 | 1/8           | 0.141 | 0.433      |     | 1/32       | 0.140    |

### TPS

Triangle



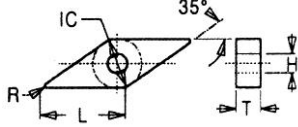
| Part Number | Dimensions (inches) |       |               |       |            |     |            |          |
|-------------|---------------------|-------|---------------|-------|------------|-----|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     | Radius (R) | Hole (H) |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |            |          |
| TPS-221     | 1/4                 | 0.250 | 1/8           | 0.141 | 0.433      |     | 1/64       |          |
| TPS-222     | 1/4                 | 0.250 | 1/8           | 0.141 | 0.433      |     | 1/32       |          |
| TPS-321     | 3/8                 | 0.375 | 1/8           | 0.141 | 0.650      |     | 1/64       |          |
| TPS-322     | 3/8                 | 0.375 | 1/8           | 0.141 | 0.650      |     | 1/32       |          |
| TPS-323     | 3/8                 | 0.375 | 1/8           | 0.141 | 0.650      |     | 3/64       |          |
| TPS-432     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 1/32       |          |
| TPS-433     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 3/64       |          |
| TPS-434     | 1/2                 | 0.500 | 3/16          | 0.204 | 0.866      |     | 1/16       |          |



## Insert Blanks – Grind Stock on Top and Bottom Only

### VNSA

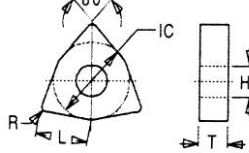
35° diamond



| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| VNSA-332    | 3/8                 | 0.375 | 3/16          | 0.204 | 0.654      |     | 1/32 | 0.150      |          |
| VNSA-432    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.872      |     | 1/32 | 0.203      |          |
| VNSA-433    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.872      |     | 3/64 | 0.203      |          |

### WNSA

80° trigon



| Part Number | Dimensions (inches) |       |               |       |            |     |      | Radius (R) | Hole (H) |
|-------------|---------------------|-------|---------------|-------|------------|-----|------|------------|----------|
|             | IC / Width (W)      |       | Thickness (T) |       | Length (L) |     |      |            |          |
|             | STD                 | NOM   | STD           | NOM   | STD        | NOM |      |            |          |
| WNSA-432    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.342      |     | 1/32 | 0.203      |          |
| WNSA-433    | 1/2                 | 0.500 | 3/16          | 0.204 | 0.342      |     | 3/64 | 0.203      |          |

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