## TURNING AND BORING - ValTURN


| | |
|---|---|
| **ValPro** | **6-51** |
| Nomenclature | 6 |
| Top Form Geometry & Grade Overview | 7-10 |
| Inserts | 11-29 |
| Technical Information | 31-51 |
| **Select Turning Inserts** | **53-65** |
| **Toolholders** | **67-97** |
| **ValTURN Tool Kits** | **98** |
| **Boring Bars** | **99-110** |

## INSERT NOMENCLATURE

ValTURN™

**C N M G 4 3 2 M8**

### INSERT SHAPE

- C = 80° Diamond
- D = 55° Diamond
- G = 45° Diamond
- M = 86° Diamond
- V = 35° Diamond
- R = Round
- S = Square
- T = Triangle
- W = Trigon

### RELIEF ANGLE

- B = 5°
- C = 7°
- N = 0°
- P = 11°

### TOLERANCE CLASS

C = Precision Ground
I.C. +/- .0005″
Thickness +/- .001″

E = Precision Ground
I.C. +/- .001″
Thickness +/- .001″

G = Precision Ground
I.C. +/- .001″
Thickness +/- .005″

M = Ground
I.C. +/- .002″ to .005″
Thickness +/- .005″

U = Utility
I.C. +/- .005″ to .012″
Thickness +/- .005″

### TYPE

- A = Flat with hole
- G = Hole and chip groove on both surfaces
- M = Hole and chip groove on top surface
- P = Hole and 10° chip groove on both surfaces
- R = No hole and chip groove on top surface
- T = ISO Screwdown with chip groove on top
- W = Flat top wiht ISO Screwdown

### I C

- 1.5 = 0.187″
- 1.8 = 0.219″
- 2 = 0.250″
- 3 = 0.375″
- 4 = 0.500″
- 5 = 0.625″
- 6 = 0.750″
- 8 = 1.000″

### THICKNESS

- 1.2 = 0.078″
- 1.5 = 0.094″
- 2 = 0.125″
- 2.5 = 0.156″
- 3 = 0.187″
- 4 = 0.250″
- 6 = 0.375″

### CORNER RADIUS

- 0 = .005″
- .004 = .004″
- .007 = .007″
- 0.5 = .0078″
- 1 = .0156″
- 2 = .0312″
- 3 = .0468″
- 4 = .0625″

### TOP FORM GEOMETRY

**ANSI Negative**

C2, EL/ER, F2, F5, GF, GM, GR, LF, LM, M2, M3, M5, M8, R3, R4, R6, 1W, 3C

**ANSI Negative Back Facing**

C3

**ANSI Negative Wiper**

W3, W6

**ISO Positive**

FH, FL, FM, PF2, PF5, PM2, PM3, PM4, PM5, RP, 1A, 1L, 2A, 2K

ValTURN™

## GRADE NOMENCLATURE

### COATED GRADES

**VP** — IDENTIFIES ValPro™

**5** — WORKPIECE MATERIAL
- 9 = High Temp. Alloys
- 8 = Stainless Steels
- 7 = Non-Ferrous Materials
- 6 = Low Carbon (Cermets)
- 5 = Carbon & Alloy Steels
- 4 = Titanium
- 3 = Open
- 2 = Hardened Steels
- 1 = Cast Irons
- 0 = Open

**5** — APPLICATION
- 9 = Open
- 8 = GROOVE Targeted
- 7 = GROOVE General
- 6 = TURN Targeted
- 5 = TURN General
- 4 = THREAD
- 3 = DRILL
- 2 = Open
- 1 = MILL General
- 0 = MILL Targeted

**25** — ISO RANGE
- 05 - 10 Finishing
- 10 - 20 Semi-Finishing
- 20 - 30 General Machining
- 30 - 40 Roughing
- 40 - 50 Heavy Roughing

### UNCOATED GRADES

**VP**

**U** — IDENTIFIES UNCOATED

**S** — MATERIAL TYPE
- K = Cast Irons
- P = Carbon & Alloy Steels
- M = Stainless Steels
- S = High Temp. Alloys
- N = Non-ferrous Materials
- H = Hardened Steels

**10**

## TOP FORM GEOMETRY NOMENCLATURE

### ANSI NEGATIVE INSERTS

**M** — OPERATION
- F = Finishing
- M= Medium Machining
- R = Roughing
- C = Complementary

**5** — EDGE STRENGTH
1 2 3 4 5 6 7 8 9 →
Increasing Strength & Feed Rate

### ANSI WIPER INSERTS

**W** — WIPER

**3** — FEED RATE
- 3 = Medium Feed
- 6 = High Feed

### ISO POSITIVE INSERTS

**P** — POSITIVE

**M** — OPERATION
- F = Finishing
- M = Medium Machining

**3** — EDGE STRENGTH
1 2 3 4 5 6 7 8 9 →
Increasing Strength & Feed Rate

## TOP FORM GEOMETRY OVERVIEW

ValTURN™

| ANSI NEGATIVE | MATERIALS | ROUGHING | GENERAL MACHINING | SEMI - FINISHING | FINISHING |
|---|---|---|---|---|---|
| F2 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | | | F2 |
| F5 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | | F5 | |
| M2 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | M2 | | |
| M3 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | M3 | | |
| M5 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | M5 | | |
| M8 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | M8 | | | |
| R3 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | R3 | | | |
| R4 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | R4 | | | |
| R6 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | R6 | | | |

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## TOP FORM GEOMETRY OVERVIEW

| ANSI NEGATIVE | MATERIALS | ROUGHING | GENERAL MACHINING | SEMI - FINISHING | FINISHING |
|---|---|---|---|---|---|
| C2 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | | C2 | |
| C3 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | | C3 | |
| W3 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | | W3 | |
| W6 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | W6 | | |

| ANSI NEGATIVE | MATERIALS | ROUGHING | GENERAL MACHINING | SEMI - FINISHING | FINISHING |
|---|---|---|---|---|---|
| PF2 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | | PF2 | |
| PF5 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | PF5 | | |
| PM2 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | PM2 | | |
| PM3 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | PM3 | | | |
| PM4 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | PM4 | | | |

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| ANSI NEGATIVE | MATERIALS | ROUGHING | GENERAL MACHINING | SEMI - FINISHING | FINISHING |
|---|---|---|---|---|---|
| PM5 | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | PM5 | | |
| 1L | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>ALUMINUM<br>HIGH TEMP. ALLOYS | | 1L | | |

## GRADE OVERVIEW

| | | ISO | PRIMARY | COMPLEMENTARY |
|---|---|---|---|---|
| STEELS | P | 10 | VP 5515 | VP 1510 |
| | | 20 | VP 5525 | |
| | | 30 | VP 5535 | VP 8535 |
| | | 40 | | |
| | | 50 | | |
| STAINLESS STEELS | M | 10 | | |
| | | 20 | VP 5525 | |
| | | 30 | VP 8535 | |
| | | 40 | | |
| CAST IRONS | K | 10 | VP 1510 | |
| | | 20 | VP 5515 | VP 5525 |
| | | 30 | | |
| | | 40 | | |
| HIGH TEMPERATURE ALLOYS | S | 10 | VP US10 | |
| | | 20 | VP 7615 | VP 8535 |
| | | 30 | | |
| | | 40 | | |
| ALUMINUM & NON-FERROUS MATERIALS | N | 10 | VP 7615 | VP US10 |
| | | 20 | | |
| | | 30 | | |
| | | 40 | | |
| HARDENED MATERIALS | H | 10 | VP 1510 | |
| | | 20 | VP 5515 | VP 5525 |
| | | 30 | | |
| | | 40 | | |

Toughness ↓ / Wear Resistance ↑

## VALPRO INSERTS


| | |
|---|---|
| 80° Diamond Inserts | 12-16 |
| 55° Diamond Inserts | 16-19 |
| Round Inserts | 19 |
| Square Inserts | 19-23 |
| Triangle Inserts | 23-27 |
| 35° Diamond Inserts | 27-28 |
| Trigon Inserts | 28-29 |

## ValPro™ INSERTS

ValTURN™

### CCGT 1L

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| CCGT 21.50.5 1L<br>CCGT 06 02 02 1L | VP7615 | **01705** |
| CCGT 21.50.5 1L<br>CCGT 06 02 02 1L | VPUS10 | **01727** |
| CCGT 21.51 1L<br>CCGT 06 02 04 1L | VP7615 | **01706** |
| CCGT 21.51 1L<br>CCGT 06 02 04 1L | VPUS10 | **01728** |
| CCGT 32.50.5 1L<br>CCGT 09 T3 02 1L | VP7615 | **01707** |
| CCGT 32.50.5 1L<br>CCGT 09 T3 02 1L | VPUS10 | **01729** |
| CCGT 32.51 1L<br>CCGT 09 T3 04 1L | VP7615 | **01708** |
| CCGT 32.51 1L<br>CCGT 09 T3 04 1L | VPUS10 | **01730** |
| CCGT 32.52 1L<br>CCGT 09 T3 08 1L | VP7615 | **01709** |
| CCGT 32.52 1L<br>CCGT 09 T3 08 1L | VPUS10 | **01731** |
| CCGT 432 1L<br>CCGT 12 04 08 1L | VP7615 | **01710** |
| CCGT 432 1L<br>CCGT 12 04 08 1L | VPUS10 | **01732** |

### CCGT PM2

NEW

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| CCGT 21.51 PM2<br>CCGT 06 02 04 PM2 | VP1510 | **19753** |
| CCGT 21.51 PM2<br>CCGT 06 02 04 PM2 | VP5515 | **19756** |
| CCGT 21.51 PM2<br>CCGT 06 02 04 PM2 | VP5525 | **19757** |
| CCGT 21.52 PM2<br>CCGT 06 02 08 PM2 | VP1510 | **19760** |
| CCGT 21.52 PM2<br>CCGT 06 02 08 PM2 | VP5515 | **19761** |
| CCGT 21.52 PM2<br>CCGT 06 02 08 PM2 | VP5525 | **19762** |
| CCGT 32.51 PM2<br>CCGT 09 T3 04 PM2 | VP1510 | **19763** |
| CCGT 32.51 PM2<br>CCGT 09 T3 04 PM2 | VP5515 | **19764** |
| CCGT 32.51 PM2<br>CCGT 09 T3 04 PM2 | VP5525 | **19765** |
| CCGT 32.52 PM2<br>CCGT 09 T3 08 PM2 | VP1510 | **19768** |
| CCGT 32.52 PM2<br>CCGT 09 T3 08 PM2 | VP5515 | **19769** |
| CCGT 32.52 PM2<br>CCGT 09 T3 08 PM2 | VP5525 | **19772** |
| CCGT 432 PM2<br>CCGT 12 04 08 PM2 | VP1510 | **19773** |
| CCGT 432 PM2<br>CCGT 12 04 08 PM2 | VP5515 | **19775** |
| CCGT 432 PM2<br>CCGT 12 04 08 PM2 | VP5525 | **19776** |
| CCGT 433 PM2<br>CCGT 12 04 12 PM2 | VP1510 | **19777** |
| CCGT 433 PM2<br>CCGT 12 04 12 PM2 | VP5515 | **19778** |

### CCMT PM3

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| CCMT 21.51 PM3<br>CCMT 06 02 04 PM3 | VP1510 | **01662** |
| CCMT 21.51 PM3<br>CCMT 06 02 04 PM3 | VP5515 | **01663** |
| CCMT 21.51 PM3<br>CCMT 06 02 04 PM3 | VP5525 | **01664** |
| CCMT 21.51 PM3<br>CCMT 06 02 04 PM3 | VP8535 | **01665** |
| CCMT 32.51 PM3<br>CCMT 09 T3 04 PM3 | VP1510 | **01666** |
| CCMT 32.51 PM3<br>CCMT 09 T3 04 PM3 | VP5515 | **01667** |
| CCMT 32.51 PM3<br>CCMT 09 T3 04 PM3 | VP5525 | **01668** |
| CCMT 32.51 PM3<br>CCMT 09 T3 04 PM3 | VP8535 | **01669** |
| CCMT 32.52 PM3<br>CCMT 09 T3 08 PM3 | VP5515 | **12875** |
| CCMT 32.52 PM3<br>CCMT 09 T3 08 PM3 | VP5525 | **01670** |
| CCMT 32.52 PM3<br>CCMT 09 T3 08 PM3 | VP8535 | **01671** |

### CCMT PM4

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| CCMT 32.52 PM4<br>CCMT 09 T3 08 PM4 | VP1510 | **01672** |
| CCMT 32.52 PM4<br>CCMT 09 T3 08 PM4 | VP5515 | **01673** |
| CCMT 32.52 PM4<br>CCMT 09 T3 08 PM4 | VP5525 | **01674** |
| CCMT 32.52 PM4<br>CCMT 09 T3 08 PM4 | VP8535 | **01675** |
| CCMT 432 PM4<br>CCMT 12 04 08 PM4 | VP1510 | **01676** |
| CCMT 432 PM4<br>CCMT 12 04 08 PM4 | VP5515 | **01677** |
| CCMT 432 PM4<br>CCMT 12 04 08 PM4 | VP5525 | **01678** |
| CCMT 432 PM4<br>CCMT 12 04 08 PM4 | VP8535 | **01679** |

### CCMT PM5

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| CCMT 32.52 PM5<br>CCMT 09 T3 08 PM5 | VP1510 | **14505** |
| CCMT 32.52 PM5<br>CCMT 09 T3 08 PM5 | VP5515 | **14500** |
| CCMT 32.52 PM5<br>CCMT 09 T3 08 PM5 | VP5525 | **14501** |
| CCMT 432 PM5<br>CCMT 12 04 08 PM5 | VP1510 | **14506** |
| CCMT 432 PM5<br>CCMT 12 04 08 PM5 | VP5515 | **14502** |
| CCMT 432 PM5<br>CCMT 12 04 08 PM5 | VP5525 | **14503** |
| CCMT 433 PM5<br>CCMT 12 04 12 PM5 | VP1510 | **14507** |

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## ValPro™ INSERTS

| | | |
|---|---|---|
| CCMT 433 PM5<br>CCMT 12 04 12 PM5 | VP5515 | **14504** |
| CCMT 433 PM5<br>CCMT 12 04 12 PM5 | VP5525 | **14508** |

| CCMW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CCMW 432<br>CCMW 12 04 08 | VP1510 | **00900** |

| CNMA | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CNMA 431<br>CNMA 12 04 04 NEW | VP1510 | **17921** |
| CNMA 432<br>CNMA 12 04 08 | VP1510 | **01422** |
| CNMA 433<br>CNMA 12 04 12 | VP1510 | **01423** |
| CNMA 434<br>CNMA 12 04 16 | VP1510 | **01424** |
| CNMA 543<br>CNMA 16 06 12 | VP1510 | **01425** |
| CNMA 544<br>CNMA 16 06 16 | VP1510 | **01426** |
| CNMA 643<br>CNMA 19 06 12 | VP1510 | **01427** |
| CNMA 644<br>CNMA 19 06 16 | VP1510 | **01428** |

| CNMG C2 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CNMG 432 C2<br>CNMG 12 04 08 C2 | VP5525 | **19624** |

| CNMG C3 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CNMG 432 C3<br>CNMG 12 04 08 C3 | VP5515 | **01436** |
| CNMG 432 C3<br>CNMG 12 04 08 C3 | VP5525 | **01437** |
| CNMG 433 C3<br>CNMG 12 04 12 C3 | VP5515 | **01456** |
| CNMG 433 C3<br>CNMG 12 04 12 C3 | VP5525 | **01457** |

| CNMG F2 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CNMG 431 F2<br>CNMG 12 04 04 F2 | VP5515 | **01429** |
| CNMG 431 F2<br>CNMG 12 04 04 F2 | VP5525 | **01430** |
| CNMG 432 F2<br>CNMG 12 04 08 F2 | VP1510 | **01438** |
| CNMG 432 F2<br>CNMG 12 04 08 F2 | VP5515 | **01439** |
| CNMG 432 F2<br>CNMG 12 04 08 F2 | VP5525 | **01440** |
| CNMG 433 F2<br>CNMG 12 04 12 F2 | VP5515 | **01458** |

| CNMG F5 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CNMG 431 F5<br>CNMG 12 04 04 F5 | VP5525 | **01431** |
| CNMG 431 F5<br>CNMG 12 04 04 F5 | VP8535 | **14515** |
| CNMG 432 F5<br>CNMG 12 04 08 F5 | VP5525 | **01441** |
| CNMG 432 F5<br>CNMG 12 04 08 F5 | VP8535 | **12877** |

| CNMG M2 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CNMG 432 M2<br>CNMG 12 04 08 M2 | VP5525 | **01443** |
| CNMG 432 M2<br>CNMG 12 04 08 M2 | VP8535 | **12878** |
| CNMG 433 M2<br>CNMG 12 04 12 M2 | VP5525 | **01459** |
| CNMG 433 M2<br>CNMG 12 04 12 M2 | VP8535 | **01460** |

| CNMG M3 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CNMG 432 M3<br>CNMG 12 04 08 M3 NEW | VP1510 | **19745** |
| CNMG 432 M3<br>CNMG 12 04 08 M3 | VP5515 | **01445** |
| CNMG 432 M3<br>CNMG 12 04 08 M3 | VP5525 | **01446** |
| CNMG 432 M3<br>CNMG 12 04 08 M3 | VP5535 | **01447** |
| CNMG 433 M3<br>CNMG 12 04 12 M3 NEW | VP1510 | **19748** |
| CNMG 433 M3<br>CNMG 12 04 12 M3 | VP5515 | **01461** |
| CNMG 433 M3<br>CNMG 12 04 12 M3 | VP5525 | **01462** |
| CNMG 433 M3<br>CNMG 12 04 12 M3 | VP5535 | **01463** |
| CNMG 543 M3<br>CNMG 16 06 12 M3 | VP5515 | **14509** |
| CNMG 543 M3<br>CNMG 16 06 12 M3 | VP5525 | **14510** |
| CNMG 543 M3<br>CNMG 16 06 12 M3 | VP5535 | **14511** |
| CNMG 544 M3<br>CNMG 16 06 16 M3 | VP5515 | **14530** |
| CNMG 544 M3<br>CNMG 16 06 16 M3 | VP5525 | **14531** |
| CNMG 544 M3<br>CNMG 16 06 16 M3 | VP5535 | **14532** |

## ValPro™ INSERTS

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| CNMG M3 | CONTINUED | |
|---|---|---|
| CNMG 643 M3<br>CNMG 19 06 12 M3 | VP5515 | **17692** |
| CNMG 643 M3<br>CNMG 19 06 12 M3 NEW | VP5525 | **17693** |
| CNMG 643 M3<br>CNMG 19 06 12 M3 | VP5535 | **17694** |
| CNMG 644 M3<br>CNMG 19 06 16 M3 | VP5525 | **14539** |
| CNMG 644 M3<br>CNMG 19 06 16 M3 | VP5535 | **14540** |

| CNMG M5 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CNMG 322 M5<br>CNMG 09 03 08 M5 | VP1510 | **19574** |
| CNMG 322 M5<br>CNMG 09 03 08 M5 NEW | VP5515 | **19622** |
| CNMG 322 M5<br>CNMG 09 03 08 M5 | VP8535 | **19539** |
| CNMG 431 M5<br>CNMG 12 04 04 M5 | VP1510 | **14516** |
| CNMG 431 M5<br>CNMG 12 04 04 M5 | VP5525 | **01434** |
| CNMG 431 M5<br>CNMG 12 04 04 M5 | VP8535 | **12876** |
| CNMG 432 M5<br>CNMG 12 04 08 M5 | VP1510 | **01448** |
| CNMG 432 M5<br>CNMG 12 04 08 M5 | VP5515 | **01449** |
| CNMG 432 M5<br>CNMG 12 04 08 M5 | VP5525 | **01450** |
| CNMG 432 M5<br>CNMG 12 04 08 M5 | VP8535 | **01451** |
| CNMG 433 M5<br>CNMG 12 04 12 M5 | VP1510 | **01464** |
| CNMG 433 M5<br>CNMG 12 04 12 M5 | VP5515 | **01465** |
| CNMG 433 M5<br>CNMG 12 04 12 M5 | VP5525 | **01466** |
| CNMG 433 M5<br>CNMG 12 04 12 M5 | VP8535 | **01467** |
| CNMG 434 M5<br>CNMG 12 04 16 M5 | VP1510 | **19855** |
| CNMG 434 M5<br>CNMG 12 04 16 M5 | VP5515 | **19855** |
| CNMG 434 M5<br>CNMG 12 04 16 M5 | VP5525 | **19857** |
| CNMG 434 M5<br>CNMG 12 04 16 M5 | VP8535 | **19858** |
| CNMG 542 M5<br>CNMG 16 06 08 M5 NEW | VP1510 | **04714** |
| CNMG 542 M5<br>CNMG 16 06 08 M5 | VP5515 | **04932** |
| CNMG 542 M5<br>CNMG 16 06 08 M5 | VP5525 | **04937** |
| CNMG 542 M5<br>CNMG 16 06 08 M5 | VP8535 | **04940** |
| CNMG 543 M5<br>CNMG 16 06 12 M5 | VP1510 | **14526** |
| CNMG 543 M5<br>CNMG 16 06 12 M5 | VP5515 | **14512** |
| CNMG 543 M5<br>CNMG 16 06 12 M5 | VP5525 | **14513** |
| CNMG 543 M5<br>CNMG 16 06 12 M5 | VP8535 | **14514** |
| CNMG 544 M5<br>CNMG 16 06 16 M5 | VP1510 | **14527** |
| CNMG 544 M5<br>CNMG 16 06 16 M5 | VP5515 | **14533** |
| CNMG 544 M5<br>CNMG 16 06 16 M5 | VP5525 | **14534** |
| CNMG 544 M5<br>CNMG 16 06 16 M5 | VP8535 | **14535** |
| CNMG 642 M5<br>CNMG 19 06 08 M5 | VP1510 | **17688** |
| CNMG 642 M5<br>CNMG 19 06 08 M5 | VP5515 | **17689** |
| CNMG 642 M5<br>CNMG 19 06 08 M5 NEW | VP5525 | **17690** |
| CNMG 642 M5<br>CNMG 19 06 08 M5 | VP8535 | **17691** |
| CNMG 643 M5<br>CNMG 19 06 12 M5 | VP1510 | **14528** |
| CNMG 643 M5<br>CNMG 19 06 12 M5 | VP5515 | **14536** |
| CNMG 643 M5<br>CNMG 19 06 12 M5 | VP5525 | **14537** |
| CNMG 643 M5<br>CNMG 19 06 12 M5 | VP8535 | **14538** |
| CNMG 644 M5<br>CNMG 19 06 16 M5 | VP1510 | **14529** |
| CNMG 644 M5<br>CNMG 19 06 16 M5 | VP5515 | **14541** |
| CNMG 644 M5<br>CNMG 19 06 16 M5 | VP5525 | **14542** |
| CNMG 644 M5<br>CNMG 19 06 16 M5 | VP8535 | **14543** |

| CNMG M8 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CNMG 432 M8<br>CNMG 12 04 08 M8 | VP5515 | **19625** |
| CNMG 432 M8<br>CNMG 12 04 08 M8 | VP5525 | **19626** |
| CNMG 433 M8<br>CNMG 12 04 12 M8 | VP5515 | **19629** |
| CNMG 433 M8<br>CNMG 12 04 12 M8 | VP5525 | **19630** |
| CNMG 542 M8<br>CNMG 16 06 08 M8 | VP5525 | **19634** |
| CNMG 543 M8<br>CNMG 16 06 12 M8 | VP5515 | **19635** |
| CNMG 543 M8<br>CNMG 16 06 12 M8 | VP5525 | **19636** |
| CNMG 544 M8<br>CNMG 16 06 16 M8 | VP5515 | **19639** |
| CNMG 544 M8<br>CNMG 16 06 16 M8 | VP5525 | **19640** |
| CNMG 642 M8<br>CNMG 19 06 08 M8 | VP5525 | **19642** |
| CNMG 643 M8<br>CNMG 19 06 12 M8 | VP5515 | **19643** |
| CNMG 643 M8<br>CNMG 19 06 12 M8 | VP5525 | **19644** |
| CNMG 644 M8<br>CNMG 19 06 16 M8 | VP5515 | **19647** |
| CNMG 644 M8<br>CNMG 19 06 16 M8 | VP5525 | **19648** |

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## ValPro™ INSERTS

| CNMG R3 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| CNMG 432 R3 CNMG 12 04 08 R3 | VP1510 | **01452** |
| CNMG 432 R3 CNMG 12 04 08 R3 | VP5515 | **01453** |
| CNMG 432 R3 CNMG 12 04 08 R3 | VP5525 | **01454** |
| CNMG 432 R3 CNMG 12 04 08 R3 | VP5535 | **01455** |
| CNMG 433 R3 CNMG 12 04 12 R3 | VP1510 | **01468** |
| CNMG 433 R3 CNMG 12 04 12 R3 | VP5515 | **01469** |
| CNMG 433 R3 CNMG 12 04 12 R3 | VP5525 | **01470** |
| CNMG 433 R3 CNMG 12 04 12 R3 | VP5535 | **01471** |
| CNMG 434 R3 CNMG 12 04 16 R3 | VP1510 | **01472** |
| CNMG 434 R3 CNMG 12 04 16 R3 | VP5515 | **01473** |
| CNMG 434 R3 CNMG 12 04 16 R3 | VP5525 | **01474** |
| CNMG 543 R3 CNMG 16 06 12 R3 | VP1510 | **01475** |
| CNMG 543 R3 CNMG 16 06 12 R3 | VP5515 | **01476** |
| CNMG 543 R3 CNMG 16 06 12 R3 | VP5525 | **01477** |
| CNMG 543 R3 CNMG 16 06 12 R3 | VP5535 | **01478** |
| CNMG 544 R3 CNMG 16 06 16 R3 | VP1510 | **01479** |
| CNMG 544 R3 CNMG 16 06 16 R3 | VP5515 | **01480** |
| CNMG 544 R3 CNMG 16 06 16 R3 | VP5525 | **01481** |
| CNMG 544 R3 CNMG 16 06 16 R3 | VP5535 | **01482** |
| CNMG 643 R3 CNMG 19 06 12 R3 | VP1510 | **01483** |
| CNMG 643 R3 CNMG 19 06 12 R3 | VP5515 | **01484** |
| CNMG 643 R3 CNMG 19 06 12 R3 | VP5525 | **01485** |
| CNMG 643 R3 CNMG 19 06 12 R3 | VP5535 | **01486** |
| CNMG 644 R3 CNMG 19 06 16 R3 | VP1510 | **01487** |
| CNMG 644 R3 CNMG 19 06 16 R3 | VP5515 | **01488** |
| CNMG 644 R3 CNMG 19 06 16 R3 | VP5525 | **01489** |
| CNMG 644 R3 CNMG 19 06 16 R3 | VP5535 | **01490** |

| CNMG R4 NEW | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| CNMG 432 R4 CNMG 12 04 08 R4 | VP5515 | **19627** |
| CNMG 432 R4 CNMG 12 04 08 R4 | VP5525 | **19628** |
| CNMG 433 R4 CNMG 12 04 12 R4 | VP5515 | **19631** |
| CNMG 433 R4 CNMG 12 04 12 R4 | VP5525 | **19632** |
| CNMG 434 R4 CNMG 12 04 16 R4 | VP5515 | **19633** |
| CNMG 543 R4 CNMG 16 06 12 R4 | VP5515 | **19637** |
| CNMG 543 R4 CNMG 16 06 12 R4 NEW | VP5525 | **19638** |
| CNMG 544 R4 CNMG 16 06 16 R4 | VP5515 | **19641** |
| CNMG 643 R4 CNMG 19 06 12 R4 | VP5515 | **19645** |
| CNMG 643 R4 CNMG 19 06 12 R4 | VP5525 | **19646** |
| CNMG 644 R4 CNMG 19 06 16 R4 | VP5515 | **19736** |
| CNMG 644 R4 CNMG 19 06 16 R4 | VP5525 | **19649** |

| CNMG W3 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| CNMG 432 W3 CNMG 12 04 08 W3 | VP1510 | **14517** |
| CNMG 432 W3 CNMG 12 04 08 W3 | VP5515 | **14518** |
| CNMG 432 W3 CNMG 12 04 08 W3 | VP5525 | **14519** |

| CNMG W6 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| CNMG 432 W6 CNMG 12 04 08 W6 | VP1510 | **14520** |
| CNMG 432 W6 CNMG 12 04 08 W6 | VP5515 | **14521** |
| CNMG 432 W6 CNMG 12 04 08 W6 | VP5525 | **14522** |
| CNMG 433 W6 CNMG 12 04 12 W6 | VP1510 | **14523** |
| CNMG 433 W6 CNMG 12 04 12 W6 | VP5515 | **14524** |
| CNMG 433 W6 CNMG 12 04 12 W6 | VP5525 | **14525** |

| CNMM R6 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| CNMM 432 R6 CNMM 12 04 08 R6 | VP5515 | **14544** |
| CNMM 432 R6 CNMM 12 04 08 R6 | VP5525 | **14545** |
| CNMM 432 R6 CNMM 12 04 08 R6 | VP5535 | **14546** |
| CNMM 433 R6 CNMM 12 04 12 R6 | VP5515 | **14547** |
| CNMM 433 R6 CNMM 12 04 12 R6 | VP5525 | **14548** |
| CNMM 433 R6 CNMM 12 04 12 R6 | VP5535 | **14549** |

## ValPro™ INSERTS

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| CNMM R6 | CONTINUED | |
|---|---|---|
| CNMM 434 R6<br>CNMM 12 04 16 R6 | VP5515 | **14550** |
| CNMM 434 R6<br>CNMM 12 04 16 R6 | VP5525 | **14551** |
| CNMM 434 R6<br>CNMM 12 04 16 R6 | VP5535 | **14552** |
| CNMM 543 R6<br>CNMM 16 06 12 R6 | VP5515 | **14566** |
| CNMM 543 R6<br>CNMM 16 06 12 R6 | VP5525 | **14567** |
| CNMM 543 R6<br>CNMM 16 06 12 R6 | VP5535 | **14568** |
| CNMM 544 R6<br>CNMM 16 06 16 R6 | VP5515 | **14569** |
| CNMM 544 R6<br>CNMM 16 06 16 R6 | VP5525 | **14570** |
| CNMM 544 R6<br>CNMM 16 06 16 R6 | VP5535 | **14572** |
| CNMM 643 R6<br>CNMM 19 06 12 R6 | VP5515 | **14573** |
| CNMM 643 R6<br>CNMM 19 06 12 R6 | VP5525 | **14574** |
| CNMM 643 R6<br>CNMM 19 06 12 R6 | VP5535 | **14575** |
| CNMM 644 R6<br>CNMM 19 06 16 R6 | VP5515 | **14576** |
| CNMM 644 R6<br>CNMM 19 06 16 R6 | VP5525 | **14577** |
| CNMM 644 R6<br>CNMM 19 06 16 R6 | VP5535 | **14578** |

| CPGT PM2 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CPGT 1.51.21 PM2<br>CPGT 04 T1 04 PM2 | VP1510 | **19779** |
| CPGT 1.51.21 PM2<br>CPGT 04 T1 04 PM2 | VP5525 | **19780** |
| CPGT 1.81.51 PM2<br>CPGT 05 02 04 PM2 | VP1510 | **19781** |
| CPGT 1.81.51 PM2<br>CPGT 05 02 04 PM2 | VP5525 | **19782** |
| CPGT 21.51 PM2<br>CPGT 06 02 04 PM2 | VP1510 | **19783** |
| CPGT 21.51 PM2<br>CPGT 06 02 04 PM2 | VP5515 | **19784** |
| CPGT 21.51 PM2<br>CPGT 06 02 04 PM2 | VP5525 | **19785** |
| CPGT 21.52 PM2<br>CPGT 06 02 08 PM2 | VP1510 | **19786** |
| CPGT 21.52 PM2<br>CPGT 06 02 08 PM2 | VP5515 | **19787** |
| CPGT 21.52 PM2<br>CPGT 06 02 08 PM2 | VP5525 | **19788** |
| CPGT 32.51 PM2<br>CPGT 09 T3 04 PM2 | VP1510 | **19789** |
| CPGT 32.51 PM2<br>CPGT 09 T3 04 PM2 | VP5515 | **19790** |
| CPGT 32.51 PM2<br>CPGT 09 T3 04 PM2 | VP5525 | **19791** |
| CPGT 32.52 PM2<br>CPGT 09 T3 08 PM2 | VP1510 | **19792** |
| CPGT 32.52 PM2<br>CPGT 09 T3 08 PM2 | VP5515 | **19793** |
| CPGT 32.52 PM2<br>CPGT 09 T3 08 PM2 | VP5525 | **19794** |
| CPGT 432 PM2<br>CPGT 12 04 08 PM2 NEW | VP1510 | **19795** |
| CPGT 432 PM2<br>CPGT 12 04 08 PM2 | VP5515 | **19796** |

| CPMW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| CPMW 18151<br>CPMW 05 02 04 | VP1510 | **00902** |
| CPMW 2151<br>CPMW 06 02 04 | VP1510 | **00920** |
| CPMW2152<br>CPMW 06 02 08 | VP1510 | **00930** |
| CPMW3251<br>CPMW 09 T3 04 | VP1510 | **00957** |
| CPMW3252<br>CPMW 09 T3 08 | VP1510 | **00809** |
| CPMW432<br>CPMW 12 04 08 | VP1510 | **00978** |

| DCGT 1L | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DCGT 21.50.5 1L<br>DCGT 07 02 02 1L | VP7615 | **01711** |
| DCGT 21.50.5 1L<br>DCGT 07 02 02 1L | VPUS10 | **01733** |
| DCGT 21.51 1L<br>DCGT 07 02 04 1L | VP7615 | **01712** |
| DCGT 21.51 1L<br>DCGT 07 02 04 1L | VPUS10 | **01734** |
| DCGT 32.50.5 1L<br>DCGT 11 T3 02 1L | VP7615 | **01713** |
| DCGT 32.50.5 1L<br>DCGT 11 T3 02 1L | VPUS10 | **01735** |
| DCGT 32.51 1L<br>DCGT 11 T3 04 1L | VP7615 | **01714** |
| DCGT 32.51 1L<br>DCGT 11 T3 04 1L | VPUS10 | **01736** |
| DCGT 32.52 1L<br>DCGT 11 T3 08 1L | VP7615 | **01715** |
| DCGT 32.52 1L<br>DCGT 11 T3 08 1L | VPUS10 | **01737** |

| DCGT PM2 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DCGT 21.50.5 PM2<br>DCGT 07 02 02 PM2 | VP1510 | **19797** |
| DCGT 21.50.5 PM2<br>DCGT 07 02 02 PM2 | VP5515 | **19798** |
| DCGT 21.51 PM2<br>DCGT 07 02 04 PM2 | VP1510 | **19799** |
| DCGT 21.51 PM2<br>DCGT 07 02 04 PM2 | VP5515 | **19800** |
| DCGT 21.51 PM2<br>DCGT 07 02 04 PM2 | VP5525 | **19801** |
| DCGT 21.52 PM2<br>DCGT 07 02 08 PM2 | VP1510 | **19802** |

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| | | |
|---|---|---|
| DCGT 2152 PM2<br>DCGT 07 02 08 PM2 | VP5515 | **19803** |
| DCGT 32.51 PM2<br>DCGT 11 T3 04 PM2 | VP1510 | **19804** |
| DCGT 32.51 PM2<br>DCGT 11 T3 04 PM2 | VP5515 | **19805** |
| DCGT 32.51 PM2<br>DCGT 11 T3 04 PM2 NEW | VP5525 | **19806** |
| DCGT 32.52 PM2<br>DCGT 11 T3 08 PM2 | VP1510 | **19807** |
| DCGT 32.52 PM2<br>DCGT 11 T3 08 PM2 | VP5515 | **19808** |
| DCGT 32.52 PM2<br>DCGT 11 T3 08 PM2 | VP5525 | **19809** |
| DCGT 432 PM2<br>DCGT 15 04 08 PM2 | VP1510 | **19810** |
| DCGT 432 PM2<br>DCGT 15 04 08 PM2 | VP5515 | **19811** |

### DCMT PM4

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| DCMT 32.51 PM4<br>DCMT 11 T3 04 PM4 | VP5515 | **01680** |
| DCMT 32.51 PM4<br>DCMT 11 T3 04 PM4 | VP5525 | **01681** |
| DCMT 32.52 PM4<br>DCMT 11 T3 08 PM4 | VP1510 | **01682** |
| DCMT 32.52 PM4<br>DCMT 11 T3 08 PM4 | VP5515 | **01683** |
| DCMT 32.52 PM4<br>DCMT 11 T3 08 PM4 | VP5525 | **01684** |
| DCMT 32.52 PM4<br>DCMT 11 T3 08 PM4 | VP8535 | **01685** |
| DCMT 32.53 PM4<br>DCMT 11 T3 12 PM4 | VP5525 | **01686** |

### DNGA

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| DNGA 432<br>DNGA 15 04 08 | VP1510 | **00980** |

### DNMA

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| DNMA 432<br>DNMA 15 04 08 | VP1510 | **01491** |
| DNMA 433<br>DNMA 15 04 12 | VP1510 | **01492** |

### DNMG C2 NEW

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| DNMG 432 C2<br>DNMG 15 04 08 C2 | VP5525 | **19650** |

### DNMG C3

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| DNMG 432 C3<br>DNMG 15 04 08 C3 | VP5515 | **01498** |
| DNMG 432 C3<br>DNMG 15 04 08 C3 | VP5525 | **01499** |
| DNMG 433 C3<br>DNMG 15 04 12 C3 | VP5515 | **01516** |
| DNMG 433 C3<br>DNMG 15 04 12 C3 | VP5525 | **01517** |

### DNMG F2

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| DNMG 431 F2<br>DNMG 15 04 04 F2 | VP5515 | **01495** |
| DNMG 432 F2<br>DNMG 15 04 08 F2 | VP1510 | **01500** |
| DNMG 432 F2<br>DNMG 15 04 08 F2 | VP5515 | **01501** |
| DNMG 432 F2<br>DNMG 15 04 08 F2 | VP5525 | **01502** |

### DNMG F5

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| DNMG 332 F5<br>DNMG 11 04 08 F5 | VP5525 | **01493** |
| DNMG 332 F5<br>DNMG 11 04 08 F5 | VP8535 | **01494** |
| DNMG 432 F5<br>DNMG 15 04 08 F5 | VP5525 | **01503** |
| DNMG 432 F5<br>DNMG 15 04 08 F5 | VP8535 | **01504** |

### DNMG M2

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| DNMG 432 M2<br>DNMG 15 04 08 M2 | VP5525 | **01505** |
| DNMG 432 M2<br>DNMG 15 04 08 M2 | VP8535 | **01506** |

### DNMG M3 NEW

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| DNMG 332 M3<br>DNMG 11 04 08 M3 | VP5515 | **19859** |
| DNMG 332 M3<br>DNMG 11 04 08 M3 | VP5525 | **19860** |
| DNMG 431 M3<br>DNMG 15 04 04 M3 | VP5515 | **19861** |
| DNMG 431 M3<br>DNMG 15 04 04 M3 | VP5525 | **19862** |
| DNMG 431 M3<br>DNMG 15 04 04 M3 | VP5535 | **19863** |

## ValPro™ INSERTS

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| DNMG M3 | CONTINUED | |
|---|---|---|
| DNMG 432 M3<br>DNMG 15 04 08 M3 NEW | VP1510 | **19737** |
| DNMG 432 M3<br>DNMG 15 04 08 M3 | VP5515 | **01507** |
| DNMG 432 M3<br>DNMG 15 04 08 M3 | VP5525 | **01508** |
| DNMG 432 M3<br>DNMG 15 04 08 M3 | VP5535 | **01509** |
| DNMG 433 M3<br>DNMG 15 04 12 M3 | VP1510 | **19740** |
| DNMG 433 M3<br>DNMG 15 04 12 M3 | VP5515 | **19741** |
| DNMG 433 M3<br>DNMG 15 04 12 M3 NEW | VP5525 | **19743** |
| DNMG 442 M3<br>DNMG 15 06 08 M3 | VP5515 | **19744** |
| DNMG 542 M3<br>DNMG 19 06 08 M3 | VP5515 | **19864** |
| DNMG 542 M3<br>DNMG 19 06 08 M3 | VP5525 | **19865** |
| DNMG 542 M3<br>DNMG 19 06 08 M3 | VP5535 | **19866** |

| DNMG M5 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DNMG 331 M5<br>DNMG 11 04 04 M5 | VP1510 | **14553** |
| DNMG 332 M5<br>DNMG 11 04 08 M5 | VP1510 | **14554** |
| DNMG 431 M5<br>DNMG 15 04 04 M5 | VP1510 | **14557** |
| DNMG 431 M5<br>DNMG 15 04 04 M5 | VP5525 | **01497** |
| DNMG 432 M5<br>DNMG 15 04 08 M5 | VP1510 | **01510** |
| DNMG 432 M5<br>DNMG 15 04 08 M5 | VP5515 | **01511** |
| DNMG 432 M5<br>DNMG 15 04 08 M5 | VP5525 | **01512** |
| DNMG 432 M5<br>DNMG 15 04 08 M5 | VP8535 | **01513** |
| DNMG 433 M5<br>DNMG 15 04 12 M5 | VP1510 | **01518** |
| DNMG 433 M5<br>DNMG 15 04 12 M5 | VP5515 | **01519** |
| DNMG 433 M5<br>DNMG 15 04 12 M5 | VP5525 | **01520** |
| DNMG 433 M5<br>DNMG 15 04 12 M5 | VP8535 | **01521** |
| DNMG 442 M5<br>DNMG 15 06 08 M5 | VP5515 | **01524** |
| DNMG 443 M5<br>DNMG 15 06 12 M5 | VP1510 | **01166** |
| DNMG 443 M5<br>DNMG 15 06 12 M5 | VP1515 | **01525** |
| DNMG 542 M5<br>DNMG 19 06 08 M5 | VP1510 | **19540** |
| DNMG 542 M5<br>DNMG 19 06 08 M5 NEW | VP5515 | **19541** |
| DNMG 542 M5<br>DNMG 19 06 08 M5 | VP5525 | **19542** |
| DNMG 542 M5<br>DNMG 19 06 08 M5 | VP8535 | **19543** |
| DNMG 543 M5<br>DNMG 19 06 12 M5 | VP1510 | **19867** |
| DNMG 543 M5<br>DNMG 19 06 12 M5 NEW | VP5515 | **19868** |
| DNMG 543 M5<br>DNMG 19 06 12 M5 | VP5525 | **19869** |
| DNMG 543 M5<br>DNMG 19 06 12 M5 | VP8535 | **19870** |

| DNMG M8 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DNMG 432 M8<br>DNMG 15 04 08 M8 | VP5515 | **19651** |
| DNMG 432 M8<br>DNMG 15 04 08 M8 | VP5525 | **19652** |
| DNMG 433 M8<br>DNMG 15 04 012 M8 | VP5515 | **19653** |
| DNMG 433 M8<br>DNMG 15 04 12 M8 | VP5525 | **19654** |
| DNMG 442 M8<br>DNMG 15 06 08 M8 | VP5525 | **19657** |
| DNMG 443 M8<br>DNMG 15 06 12 M8 | VP5525 | **19658** |
| DNMG 542 M8<br>DNMG 19 06 08 M8 | VP5525 | **19659** |
| DNMG 543 M8<br>DNMG 19 06 12 M8 | VP5525 | **19660** |

| DNMG R3 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DNMG 432 R3<br>DNMG 15 04 08 R3 | VP1510 | **01514** |
| DNMG 432 R3<br>DNMG 15 04 08 R3 | VP5515 | **14852** |
| DNMG 432 R3<br>DNMG 15 04 08 R3 | VP5525 | **01515** |
| DNMG 433 R3<br>DNMG 15 04 12 R3 | VP1510 | **01522** |
| DNMG 433 R3<br>DNMG 15 04 12 R3 | VP5515 | **14853** |
| DNMG 433 R3<br>DNMG 15 04 12 R3 | VP5525 | **01523** |
| DNMG 443 R3<br>DNMG 15 06 12 R3 | VP1510 | **12879** |

| DNMG R4 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DNMG 433 R4<br>DNMG 15 04 12 R4 | VP5515 | **19655** |
| DNMG 433 R4<br>DNMG 15 04 12 R4 | VP5525 | **19656** |
| DNMG 543 R4<br>DNMG 19 06 12 R4 | VP5515 | **19661** |

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## ValPro™ INSERTS

| DNMG W3 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DNMG 332 W3<br>DNMG 11 04 08 W3 | VP5515 | **14555** |
| DNMG 432 W3<br>DNMG 15 04 08 W3 | VP5515 | **14559** |

| DNMG W6 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DNMG 332 W6<br>DNMG 11 04 08 W6 | VP5515 | **14556** |
| DNMG 432 W6<br>DNMG 15 04 08 W6 | VP1510 | **14560** |
| DNMG 432 W6<br>DNMG 15 04 08 W6 | VP5515 | **14561** |
| DNMG 432 W6<br>DNMG 15 04 08 W6 | VP5525 | **14562** |
| DNMG 433 W6<br>DNMG 15 04 12 W6 | VP5515 | **14563** |
| DNMG 442 W6<br>DNMG 15 06 08 W6 | VP5515 | **14564** |
| DNMG 443 W6<br>DNMG 15 06 12 W6 | VP5515 | **14565** |

| DPGT PM2 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DPGT 32.51 PM2<br>DPGT 11 T3 04 PM2 | VP1510 | **19812** |
| DPGT 32.51 PM2<br>DPGT 11 T3 04 PM2 | VP5515 | **19813** |

| DPMW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| DPMW 2151<br>DPMW 07 02 04 | VP1510 | **00996** |
| DPMW 3252<br>DPMW 11 T3 08 | VP1510 | **01002** |

| RCMT PM5 | | |
|---|---|---|
| **Part Number (metric)**<br>ISO Part Number (metric) | **Grade** | **EDP#** |
| RCMT 08 03 MO PM5<br>RCMT 08 03 MO PM5 | VP5515 | **01687** |
| RCMT 08 03 MO PM5<br>RCMT 08 03 MO PM5 | VP5525 | **01688** |
| RCMT 10 T3 MO PM5<br>RCMT 10 T3 MO PM5 | VP1510 | **14854** |
| RCMT 10 T3 MO PM5<br>RCMT 10 T3 MO PM5 | VP5515 | **01689** |
| RCMT 10 T3 MO PM5<br>RCMT 10 T3 MO PM5 | VP5525 | **01690** |
| RCMT 12 04 MO PM5<br>RCMT 12 04 MO PM5 | VP1510 | **14855** |
| RCMT 12 04 MO PM5<br>RCMT 12 04 MO PM5 | VP5515 | **01691** |
| RCMT 12 04 MO PM5<br>RCMT 12 04 MO PM5 | VP5525 | **01692** |

| RNMA NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| RNMA 43<br>RNMA 12 04 00 | VP1510 | **17944** |

| RNMG NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| RNMG 43<br>RNMG 12 04 00 | VP1510 | **17945** |

| SCGT 1L | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | Grade | **EDP#** |
| SCGT 32.51 1L<br>SCGT 09 T3 04 1L | VP7615 | **01717** |
| SCGT 32.51 1L<br>SCGT 09 T3 04 1L | VPUS10 | **01738** |
| SCGT 32.52 1L<br>SCGT 09 T3 08 1L | VP7615 | **01718** |
| SCGT 32.52 1L<br>SCGT 09 T3 08 1L | VPUS10 | **01739** |

| SCGT PM2 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | Grade | **EDP#** |
| SCGT 32.51 PM2<br>SCGT 09 T3 04 PM2 | VP1510 | **19814** |
| SCGT 32.51 PM2<br>SCGT 09 T3 04 PM2 | VP5525 | **19815** |
| SCGT 32.52 PM2<br>SCGT 09 T3 08 PM2 | VP1510 | **19816** |
| SCGT 32.52 PM2<br>SCGT 09 T3 08 PM2 | VP5515 | **19817** |
| SCGT 32.52 PM2<br>SCGT 09 T3 08 PM2 | VP5525 | **19818** |
| SCGT 432 PM2<br>SCGT 12 04 08 PM2 | VP1510 | **19819** |
| SCGT 432 PM2<br>SCGT 12 04 08 PM2 | VP5515 | **19820** |
| SCGT 432 PM2<br>SCGT 12 04 08 PM2 | VP5525 | **19821** |
| SCGT 433 PM2<br>SCGT 12 04 12 PM2 | VP1510 | **19822** |
| SCGT 433 PM2<br>SCGT 12 04 12 PM2 | VP5515 | **19823** |
| SCGT 433 PM2<br>SCGT 12 04 12 PM2 | VP5525 | **19824** |

## ValPro™ INSERTS

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### SCMT PM4

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| SCMT 32.51 PM4 SCMT 09 T3 04 PM4 | VP1510 | **17908** |
| SCMT 32.51 PM4 SCMT 09 T3 04 PM4 NEW | VP5515 | **17909** |
| SCMT 32.51 PM4 SCMT 09 T3 04 PM4 | VP5525 | **17910** |
| SCMT 32.51 PM4 SCMT 09 T3 04 PM4 | VP8535 | **17911** |
| SCMT 32.52 PM4 SCMT 09 T3 08 PM4 | VP1510 | **01693** |
| SCMT 32.52 PM4 SCMT 09 T3 08 PM4 | VP5515 | **01694** |
| SCMT 32.52 PM4 SCMT 09 T3 08 PM4 | VP5525 | **01695** |
| SCMT 32.52 PM4 SCMT 09 T3 08 PM4 | VP8535 | **01696** |

### SCMT PM5

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| SCMT 432 PM5 SCMT 12 04 08 PM5 | VP1510 | **01201** |

### SCMW

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| SCMW 2151 SCMW 06 02 04 | VP1510 | **01075** |
| SCMW3252 SCMW 09 T3 08 | VP1510 | **01092** |
| SCMW 432 SCMW 12 04 08 | VP1510 | **01162** |

### SNG

NEW

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| SNG 322 SNGN 09 03 08 | VP1510 | **17946** |
| SNG 434 SNGN 12 04 16 | VP1510 | **17947** |

### SNMA

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| SNMA 322 SNMA 09 03 08 | VP1510 | **01168** |
| SNMA 332 SNMA 09 04 08 | VP1510 | **01526** |
| SNMA 432 SNMA 12 04 08 | VP1510 | **01527** |
| SNMA 433 SNMA 12 04 12 | VP1510 | **01528** |
| SNMA 434 SNMA 12 04 16 | VP1510 | **01529** |
| SNMA 543 SNMG 15 06 12 NEW | VP1510 | **17922** |
| SNMA 544 SNMA 15 06 16 | VP1510 | **17923** |
| SNMA 643 SNMA 19 06 12 | VP1510 | **12880** |
| SNMA 644 SNMA 19 06 16 | VP1510 | **12881** |

### SNMG C2

NEW

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| SNMG 643 C2 SNMG 19 06 12 C2 | VP5515 | **19674** |

### SNMG F2

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| SNMG 322 F2 SNMG 09 03 08 F2 | VP5525 | **01530** |
| SNMG 432 F2 SNMG 12 04 08 F2 | VP5515 | **01531** |
| SNMG 432 F2 SNMG 12 04 08 F2 | VP5525 | **01532** |
| SNMG 433 F2 SNMG 12 04 12 F2 | VP5515 | **01544** |

### SNMG M2

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| SNMG 432 M2 SNMG 12 04 08 M2 | VP5525 | **01533** |
| SNMG 432 M2 SNMG 12 04 08 M2 | VP8535 | **01534** |
| SNMG 433 M2 SNMG 12 04 12 M2 | VP5525 | **01545** |
| SNMG 433 M2 SNMG 12 04 12 M2 | VP8535 | **01546** |

### SNMG M3

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| SNMG 322 M3 SNMG 09 03 08 M3 | VP5515 | **14579** |
| SNMG 322 M3 SNMG 09 03 08 M3 | VP5525 | **14580** |
| SNMG 322 M3 SNMG 09 03 08 M3 | VP5535 | **14581** |
| SNMG 432 M3 SNMG 12 04 08 M3 | VP5515 | **01535** |
| SNMG 432 M3 SNMG 12 04 08 M3 | VP5525 | **01536** |
| SNMG 433 M3 SNMG 12 04 12 M3 | VP5515 | **01547** |
| SNMG 433 M3 SNMG 12 04 12 M3 | VP5525 | **01548** |
| SNMG 433 M3 SNMG 12 04 12 M3 | VP5535 | **01549** |
| SNMG 434 M3 SNMG 12 04 16 M3 | VP5515 | **14582** |

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## ValPro™ INSERTS

| | | |
|---|---|---|
| SNMG 434 M3<br>SNMG 12 04 16 M3 | VP5525 | **14583** |
| SNMG 434 M3<br>SNMG 12 04 16 M3 | VP5535 | **14584** |
| SNMG 543 M3<br>SNMG 15 06 12 M3 | VP5515 | **14588** |
| SNMG 543 M3<br>SNMG 15 06 12 M3 | VP5525 | **14589** |
| SNMG 543 M3<br>SNMG 15 06 12 M3 | VP5535 | **14590** |
| SNMG 644 M3<br>SNMG 19 06 16 M3 | VP5515 | **14601** |
| SNMG 644 M3<br>SNMG 19 06 16 M3 | VP5525 | **14602** |
| SNMG 644 M3<br>SNMG 19 06 16 M3 | VP5535 | **14603** |

### SNMG M5

NEW

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| SNMG 322 M5<br>SNMG 09 03 08 M5 | VP1510 | **17912** |
| SNMG 332 M5<br>SNMG 09 03 08 M5 | VP5515 | **17913** |
| SNMG 322 M5<br>SNMG 09 03 08 M5 | VP5525 | **17914** |
| SNMG 322 M5<br>SNMG 09 03 08 M5 | VP8535 | **17915** |
| SNMG 432 M5<br>SNMG 12 04 08 M5 | VP1510 | **01537** |
| SNMG 432 M5<br>SNMG 12 04 08 M5 | VP5515 | **01538** |
| SNMG 432 M5<br>SNMG 12 04 08 M5 | VP5525 | **01539** |
| SNMG 432 M5<br>SNMG 12 04 08 M5 | VP8535 | **01540** |
| SNMG 433 M5<br>SNMG 12 04 12 M5 | VP1510 | **01550** |
| SNMG 433 M5<br>SNMG 12 04 12 M5 | VP5515 | **01551** |
| SNMG 433 M5<br>SNMG 12 04 12 M5 | VP5525 | **01552** |
| SNMG 433 M5<br>SNMG 12 04 12 M5 | VP8535 | **01553** |
| SNMG 434 M5<br>SNMG 12 04 16 M5 | VP5515 | **14585** |
| SNMG 434 M5<br>SNMG 12 04 16 M5 | VP5525 | **14586** |
| SNMG 434 M5<br>SNMG 12 04 16 M5 | VP8535 | **14587** |
| SNMG 543 M5<br>SNMG 15 06 12 M5 | VP5515 | **14591** |
| SNMG 543 M5<br>SNMG 15 06 12 M5 | VP5525 | **14593** |
| SNMG 543 M5<br>SNMG 15 06 12 M5 | VP8535 | **14594** |
| SNMG 544 M5<br>SNMG 15 06 16 M5 | VP5515 | **14595** |
| SNMG 544 M5<br>SNMG 15 06 16 M5 | VP5525 | **14596** |
| SNMG 544 M5<br>SNMG 15 06 16 M5 | VP8535 | **14597** |
| SNMG 643 M5<br>SNMG 19 06 12 M5 | VP5515 | **14598** |
| SNMG 643 M5<br>SNMG 19 06 12 M5 | VP5525 | **14599** |
| SNMG 643 M5<br>SNMG 19 06 12 M5 | VP8535 | **14600** |
| SNMG 644 M5<br>SNMG 19 06 16 M5 | VP5515 | **14604** |
| SNMG 644 M5<br>SNMG 19 06 16 M5 | VP5525 | **14605** |
| SNMG 644 M5<br>SNMG 19 06 16 M5 | VP8535 | **14606** |

### SNMG M8

NEW

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| SNMG 432 M8<br>SNMG 12 04 08 M8 | VP5515 | **19662** |
| SNMG 432 M8<br>SNMG 12 04 08 M8 | VP5525 | **19663** |
| SNMG 433 M8<br>SNMG 12 04 12 M8 | VP5515 | **19664** |
| SNMG 433 M8<br>SNMG 12 04 12 M8 | VP5525 | **19665** |
| SNMG 434 M8<br>SNMG 12 04 16 M8 | VP5525 | **19668** |
| SNMG 543 M8<br>SNMG 15 06 12 M8 | VP5515 | **19669** |
| SNMG 543 M8<br>SNMG 15 06 12 M8 | VP5525 | **19670** |
| SNMG 544 M8<br>SNMG 15 06 16 M8 | VP5525 | **19673** |
| SNMG 643 M8<br>SNMG 19 06 12 M8 | VP5515 | **19749** |
| SNMG 643 M8<br>SNMG 19 06 12 M8 | VP5525 | **19675** |
| SNMG 644 M8<br>SNMG 19 06 16 M8 | VP5515 | **19678** |
| SNMG 644 M8<br>SNMG 19 06 16 M8 | VP5525 | **19679** |

### SNMG R3

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| SNMG 432 R3<br>SNMG 12 04 08 R3 | VP1510 | **01541** |
| SNMG 432 R3<br>SNMG 12 04 08 R3 | VP5515 | **01542** |
| SNMG 432 R3<br>SNMG 12 04 08 R3 | VP5525 | **01543** |
| SNMG 433 R3<br>SNMG 12 04 12 R3 | VP1510 | **01554** |
| SNMG 433 R3<br>SNMG 12 04 12 R3 | VP5515 | **01555** |
| SNMG 433 R3<br>SNMG 12 04 12 R3 | VP5525 | **01556** |
| SNMG 543 R3<br>SNMG 15 06 12 R3 | VP1510 | **01557** |
| SNMG 543 R3<br>SNMG 15 06 12 R3 | VP5515 | **01558** |
| SNMG 543 R3<br>SNMG 15 06 12 R3 | VP5525 | **01559** |
| SNMG 544 R3<br>SNMG 15 06 16 R3 | VP1510 | **01560** |
| SNMG 544 R3<br>SNMG 15 06 16 R3 | VP5515 | **01561** |

## ValPro™ INSERTS

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| SNMG R3 | CONTINUED | |
|---|---|---|
| SNMG 544 R3<br>SNMG 15 06 16 R3 | VP5525 | **01562** |
| SNMG 643 R3<br>SNMG 19 06 12 R3 | VP1510 | **01563** |
| SNMG 643 R3<br>SNMG 19 06 12 R3 | VP5515 | **14607** |
| SNMG 643 R3<br>SNMG 19 06 12 R3 | VP5525 | **01564** |
| SNMG 644 R3<br>SNMG 19 06 16 R3 | VP1510 | **14592** |
| SNMG 644 R3<br>SNMG 19 06 16 R3 | VP5515 | **14608** |
| SNMG 644 R3<br>SNMG 19 06 16 R3 | VP5525 | **01565** |
| SNMG 644 R3<br>SNMG 19 06 16 R3 | VP5535 | **14609** |
| SNMG 866 R3<br>SNMG 25 09 24 R3 | VP5525 | **14610** |
| SNMG 866 R3<br>SNMG 25 09 24 R3 | VP5535 | **14611** |

| SNMG R4 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| SNMG 433 R4<br>SNMG 12 04 12 R4 | VP5515 | **19666** |
| SNMG 433 R4<br>SNMG 12 04 12 R4 | VP5525 | **19667** |
| SNMG 543 R4<br>SNMG 15 06 12 R4 | VP5515 | **19671** |
| SNMG 543 R4<br>SNMG 15 06 12 R4 | VP5525 | **19672** |
| SNMG 643 R4<br>SNMG 19 06 12 R4 | VP5515 | **19676** |
| SNMG 643 R4<br>SNMG 19 06 12 R4 | VP5525 | **19677** |
| SNMG 644 R4<br>SNMG 19 06 16 R4 | VP5515 | **19680** |
| SNMG 644 R4<br>SNMG 19 06 16 R4 | VP5525 | **19681** |
| SNMG 866 R4<br>SNMG 25 09 24 R4 | VP5515 | **19682** |
| SNMG 866 R4<br>SNMG 25 09 24 R4 | VP5525 | **19683** |

| SNMM R6 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| SNMM 432 R6<br>SNMM 12 04 08 R6 | VP5515 | **14612** |
| SNMM 432 R6<br>SNMM 12 04 08 R6 | VP5525 | **14613** |
| SNMM 432 R6<br>SNMM 12 04 08 R6 | VP5535 | **14614** |
| SNMM 433 R6<br>SNMM 12 04 12 R6 | VP5515 | **14615** |
| SNMM 433 R6<br>SNMM 12 04 12 R6 | VP5525 | **14616** |
| SNMM 433 R6<br>SNMM 12 04 12 R6 | VP5535 | **14617** |
| SNMM 543 R6<br>SNMM 15 06 12 R6 | VP5515 | **14618** |
| SNMM 543 R6<br>SNMM 15 06 12 R6 | VP5525 | **14619** |
| SNMM 543 R6<br>SNMM 15 06 12 R6 | VP5535 | **14620** |
| SNMM 544 R6<br>SNMM 15 06 16 R6 | VP5515 | **14621** |
| SNMM 544 R6<br>SNMM 15 06 16 R6 | VP5525 | **14624** |
| SNMM 544 R6<br>SNMM 15 06 16 R6 | VP5535 | **14625** |
| SNMM 643 R6<br>SNMM 19 06 12 R6 | VP5515 | **14626** |
| SNMM 643 R6<br>SNMM 19 06 12 R6 | VP5525 | **14627** |
| SNMM 643 R6<br>SNMM 19 06 12 R6 | VP5535 | **14628** |
| SNMM 644 R6<br>SNMM 19 06 16 R6 | VP5515 | **14629** |
| SNMM 644 R6<br>SNMM 19 06 16 R6 | VP5525 | **14630** |
| SNMM 644 R6<br>SNMM 19 06 16 R6 | VP5535 | **14631** |

| SPGT PM2 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| SPGT 32.52 PM2<br>SPGT 09 T3 08 PM2 | VP1510 | **19825** |
| SPGT 32.52 PM2<br>SPGT 09 T3 08 PM2 | VP5515 | **19826** |
| SPGT 32.52 PM2<br>SPGT 09 T3 08 PM2 | VP5525 | **19827** |

| SNU NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| SNU 434<br>SNUN 12 04 16 | VP1510 | **17948** |

| SPG NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| SPG 322<br>SPGN 09 03 08 | VP1510 | **17949** |
| SPG 422<br>SPGN 12 03 08 | VP1510 | **17950** |
| SPG 424<br>SPGN 12 03 16 | VP1510 | **17924** |
| SPG 634<br>SPGN 19 04 16 | VP1510 | **17951** |

| SPMR PF2 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| SPMR 321 PF2<br>SPMR 09 03 04 PF2 | VP5515 | **06449** |
| SPMR 322 PF2<br>SPMR 09 03 08 PF2 | VP5515 | **06508** |
| SPMR 322 PF2<br>SPMR 09 03 08 PF2 | VP5535 | **06514** |

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## ValPro™ INSERTS

| | | |
|---|---|---|
| SPMR 421 PF2<br>SPMR 12 03 04 PF2 | VP5515 | **06734** |
| SPMR 422 PF2<br>SPMR 12 03 08 PF2 | VP5515 | **06738** |

### SPMR PF5

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| SPMR 321 PF5<br>SPMR 09 03 04 PF5 | VP5515 | **06491** |
| SPMR 321 PF5<br>SPMR 09 03 04 PF5 | VP5525 | **06492** |
| SPMR 321 PF5<br>SPMR 09 03 04 PF5 | VP5535 | **06494** |
| SPMR 322 PF5<br>SPMR 09 03 08 PF5 | VP1510 | **06555** |
| SPMR 322 PF5<br>SPMR 09 03 08 PF5 | VP5525 | **06568** |
| SPMR 322 PF5<br>SPMR 09 03 08 PF5 | VP5535 | **06569** |
| SPMR 421 PF5<br>SPMR 12 03 04 PF5 | VP5515 | **06735** |
| SPMR 421 PF5<br>SPMR 12 03 04 PF5 | VP5525 | **06736** |
| SPMR 421 PF5<br>SPMR 12 03 04 PF5 | VP5535 | **06737** |
| SPMR 422 PF5<br>SPMR 12 03 08 PF5 | VP1510 | **06742** |
| SPMR 422 PF5<br>SPMR 12 03 08 PF5 | VP5525 | **06743** |
| SPMR 422 PF5<br>SPMR 12 03 08 PF5 | VP5535 | **06744** |
| SPMR 423 PF5<br>SPMR 12 03 12 PF5 | VP5525 | **06748** |
| SPMR 423 PF5<br>SPMR 12 03 12 PF5 | VP5535 | **06749** |

### SPMW

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| SPMW 3251<br>SPMW 09 T3 04 | VP1510 | **01170** |
| SPMW3252<br>SPMW 09 T3 08 | VP1510 | **00818** |
| SPMW 3253<br>SPMW 09 T3 12 | VP1510 | **17925** |
| SPMW 432<br>SPMW 12 04 08 | VP1510 | **01172** |

### TCGT 1L

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| TCGT 21.50.5 1L<br>TCGT 11 02 02 1L | VP7615 | **01719** |
| TCGT 21.50.5 1L<br>TCGT 11 02 02 1L | VPUS10 | **01740** |
| TCGT 21.51 1L<br>TCGT 11 02 04 1L | VP7615 | **01720** |
| TCGT 21.51 1L<br>TCGT 11 02 04 1L | VPUS10 | **01741** |
| TCGT 32.51 1L<br>TCGT 16 T3 04 1L | VP7615 | **01721** |
| TCGT 32.51 1L<br>TCGT 16 T3 04 1L | VPUS10 | **01742** |
| TCGT 32.52 1L<br>TCGT 16 T3 08 1L | VP7615 | **01722** |
| TCGT 32.52 1L<br>TCGT 16 T3 08 1L | VPUS10 | **01743** |

### TCGT PM2

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| TCGT 21.51 PM2<br>TCGT 11 02 04 PM2 | VP1510 | **19828** |
| TCGT 21.51 PM2<br>TCGT 11 02 04 PM2 | VP5515 | **19829** |
| TCGT 21.51 PM2<br>TCGT 11 02 04 PM2 | VP5525 | **19830** |
| TCGT 21.52 PM2<br>TCGT11 08 08 PM2 | VP1510 | **19831** |
| TCGT 21.52 PM2<br>TCGT 11 02 08 PM2 | VP5515 | **19832** |
| TCGT 21.52 PM2<br>TCGT 11 02 08 PM2 | VP5525 | **19833** |
| TCGT 32.51 PM2<br>TCGT 16 T3 04 PM2 | VP1510 | **19834** |
| TCGT 32.51 PM2<br>TCGT 16 T3 04 PM2 | VP5525 | **19835** |
| TCGT 32.52 PM2<br>TCGT 16 T3 08 PM2 | VP1510 | **19836** |
| TCGT 32.52 PM2<br>TCGT 16 T3 08 PM2 | VP5515 | **19837** |
| TCGT 32.52 PM2<br>TCGT 16 T3 08 PM2 | VP5525 | **19838** |
| TCGT 432 PM2<br>TCGT 22 04 08 PM2 | VP5515 | **19839** |

### TCMT PM4

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| TCMT 21.51 PM4<br>TCMT 11 02 04 PM4 | VP1510 | **01697** |
| TCMT 21.51 PM4<br>TCMT 11 02 04 PM4 | VP5525 | **01698** |
| TCMT 21.51 PM4<br>TCMT 11 02 04 PM4 | VP8535 | **01699** |
| TCMT 21.52 PM4<br>TCMT 11 02 08 PM4 | VP1510 | **17916** |
| TCMT 21.52 PM4<br>TCMT 11 02 08 PM4 | VP5515 | **17917** |
| TCMT 21.52 PM4<br>TCMT 11 02 08 PM4 | VP5525 | **17918** |
| TCMT 21.52 PM4<br>TCMT 11 02 08 PM4 | VP8535 | **17919** |

### TCMT PM5

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| TCMT 32.51 PM5<br>TCMT 16 T3 04 PM5 | VP1510 | **00850** |
| TCMT 32.52 PM5<br>TCMT 16 T3 08 PM5 | VP1510 | **01190** |
| TCMT 32.52 PM5<br>TCMT 16 T3 08 PM5 | VP5515 | **00627** |

## ValPro™ INSERTS

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| TCMW | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| TCMW 3252 TCMW 16 T3 08 | VP1510 | **01175** |

| TNMA | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| TNMA 222 TNMA 11 03 08 NEW | VP1510 | **17926** |
| TNMA 332 TNMA 16 04 08 | VP1510 | **01566** |
| TNMA 432 TNMA 22 04 08 | VP1510 | **01567** |
| TNMA 433 TNMA 22 04 12 | VP1510 | **01568** |
| TNMA 434 TNMA 22 04 16 | VP1510 | **01569** |

| TNMG C2 NEW | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| TNMG 332 C2 TNMG 16 04 08 C2 | VP5515 | **19686** |
| TNMG 543 C2 TNMG 27 06 12 C2 | VP5515 | **19700** |

| TNMG F2 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| TNMG 331 F2 TNMG 16 04 04 F2 | VP5515 | **01570** |
| TNMG 332 F2 TNMG 16 04 08 F2 | VP1510 | **01572** |
| TNMG 332 F2 TNMG 16 04 08 F2 | VP5515 | **01573** |
| TNMG 332 F2 TNMG 16 04 08 F2 | VP5525 | **01574** |

| TNMG F5 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| TNMG 332 F5 TNMG 16 04 08 F5 | VP5525 | **01575** |
| TNMG 332 F5 TNMG 16 04 08 F5 | VP8535 | **01576** |

| TNMG M2 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| TNMG 432 M2 TNMG 22 04 08 M2 | VP5525 | **01587** |
| TNMG 432 M2 TNMG 22 04 08 M2 | VP8535 | **01588** |
| TNMG 433 M2 TNMG 22 04 12 M2 | VP5525 | **01600** |
| TNMG 433 M2 TNMG 22 04 12 M2 | VP8535 | **01601** |

| TNMG M3 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| TNMG 321 M3 TNMG 16 03 04 M3 NEW | VP5515 | **17708** |
| TNMG 321 M3 TNMG 16 03 04 M3 | VP5525 | **17709** |
| TNMG 322 M3 TNMG 16 03 08 M3 | VP5515 | **14632** |
| TNMG 322 M3 TNMG 16 03 08 M3 | VP5525 | **14633** |
| TNMG 323 M3 TNMG 16 03 12 M3 NEW | VP5515 | **17710** |
| TNMG 323 M3 TNMG 16 03 12 M3 | VP5525 | **17711** |
| TNMG 331 M3 TNMG 16 04 04 M3 | VP5515 | **14636** |
| TNMG 331 M3 TNMG 16 04 04 M3 | VP5525 | **14637** |
| TNMG 331 M3 TNMG 16 04 04 M3 | VP5535 | **14638** |
| TNMG 332 M3 TNMG 16 04 08 M3 | VP5515 | **01577** |
| TNMG 332 M3 TNMG 16 04 08 M3 | VP5525 | **01578** |
| TNMG 333 M3 TNMG 16 04 12 M3 | VP5525 | **14639** |
| TNMG 333 M3 TNMG 16 04 12 M3 | VP5535 | **14640** |
| TNMG 432 M3 TNMG 22 04 08 M3 | VP5515 | **01589** |
| TNMG 432 M3 TNMG 22 04 08 M3 | VP5525 | **01590** |
| TNMG 432 M3 TNMG 22 04 08 M3 | VP5535 | **01591** |
| TNMG 433 M3 TNMG 22 04 12 M3 | VP5515 | **19550** |
| TNMG 433 M3 TNMG 22 04 12 M3 NEW | VP5525 | **19551** |
| TNMG 433 M3 TNMG 22 04 12 M3 | VP5535 | **19552** |

| TNMG M5 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| TNMG 322 M5 TNMG 16 03 08 M5 | VP1510 | **14622** |
| TNMG 322 M5 TNMG 16 03 08 M5 | VP5515 | **14634** |
| TNMG 322 M5 TNMG 16 03 08 M5 | VP5525 | **14635** |
| TNMG 331 M5 TNMG 16 04 04 M5 | VP5525 | **01571** |
| TNMG 332 M5 TNMG 16 04 08 M5 | VP1510 | **01579** |

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## ValPro™ INSERTS

| | | |
|---|---|---|
| TNMG 332 M5<br>TNMG 16 04 08 M5 | VP5515 | **01580** |
| TNMG 332 M5<br>TNMG 16 04 08 M5 | VP5525 | **01581** |
| TNMG 332 M5<br>TNMG 16 04 08 M5 | VP8535 | **01582** |
| TNMG 333 M5<br>TNMG 16 04 12 M5 | VP1510 | **01583** |
| TNMG 333 M5<br>TNMG 16 04 12 M5 | VP5515 | **01584** |
| TNMG 333 M5<br>TNMG 16 04 12 M5 | VP5525 | **01585** |
| TNMG 333 M5<br>TNMG 16 04 12 M5 | VP8535 | **01586** |
| TNMG 431 M5<br>TNMG 22 04 04 M5 | VP1510 | **19871** |
| TNMG 431 M5<br>TNMG 22 04 04 M5 NEW | VP5515 | **19872** |
| TNMG 431 M5<br>TNMG 22 04 04 M5 | VP5525 | **19873** |
| TNMG 431 M5<br>TNMG 22 04 04 M5 | VP8535 | **19874** |
| TNMG 432 M5<br>TNMG 22 04 08 M5 | VP1510 | **01592** |
| TNMG 432 M5<br>TNMG 22 04 08 M5 | VP5515 | **01593** |
| TNMG 432 M5<br>TNMG 22 04 08 M5 | VP5525 | **01594** |
| TNMG 432 M5<br>TNMG 22 04 08 M5 | VP8535 | **01595** |
| TNMG 433 M5<br>TNMG 22 04 12 M5 | VP1510 | **01602** |
| TNMG 433 M5<br>TNMG 22 04 12 M5 | VP5515 | **01603** |
| TNMG 433 M5<br>TNMG 22 04 12 M5 | VP5525 | **01604** |
| TNMG 433 M5<br>TNMG 22 04 12 M5 | VP8535 | **01605** |
| TNMG 434 M5<br>TNMG 22 04 16 M5 NEW | VP1510 | **19553** |
| TNMG 434 M5<br>TNMG 22 04 16 M5 | VP5515 | **01609** |
| TNMG 434 M5<br>TNMG 22 04 16 M5 | VP5525 | **19554** |
| TNMG 542 M5<br>TNMG 27 06 08 M5 | VP1510 | **19875** |
| TNMG 542 M5<br>TNMG 27 06 08 M5 | VP5515 | **19876** |
| TNMG 542 M5<br>TNMG 27 06 08 M5 | VP5525 | **19877** |
| TNMG 542 M5<br>TNMG 27 06 08 M5 | VP8535 | **19878** |
| TNMG 543 M5<br>TNMG 27 06 12 M5 | VP1510 | **17712** |
| TNMG 543 M5<br>TNMG 27 06 12 M5 NEW | VP5515 | **17713** |
| TNMG 543 M5<br>TNMG 27 06 12 M5 | VP5525 | **17714** |
| TNMG 543 M5<br>TNMG 27 06 12 M5 | VP8535 | **17715** |
| TNMG 544 M5<br>TNMG 27 06 16 M5 | VP1510 | **19556** |
| TNMG 544 M5<br>TNMG 27 06 16 M5 | VP5515 | **19557** |
| TNMG 544 M5<br>TNMG 27 06 16 M5 | VP5525 | **19558** |
| TNMG 544 M5<br>TNMG 27 06 16 M5 | VP8535 | **19559** |

| **TNMG M8** | | |
|---|---|---|
| **Part Number**<br>ISO Part Number NEW | **Grade** | **EDP#** |
| TNMG 322 M8<br>TNMG 16 03 08 M8 | VP5515 | **19684** |
| TNMG 322 M8<br>TNMG 16 03 08 M8 | VP5525 | **19685** |
| TNMG 332 M8<br>TNMG 16 04 08 M8 | VP5515 | **19687** |
| TNMG 332 M8<br>TNMG 16 04 08 M8 | VP5525 | **19688** |
| TNMG 333 M8<br>TNMG 16 04 12 M8 | VP5515 | **19689** |
| TNMG 333 M8<br>TNMG 16 04 12 M8 | VP5525 | **19690** |
| TNMG 432 M8<br>TNMG 22 04 08 M8 | VP5515 | **19691** |
| TNMG 432 M8<br>TNMG 22 04 08 M8 | VP5525 | **19692** |
| TNMG 433 M8<br>TNMG 22 04 12 M8 | VP5525 | **19695** |
| TNMG 434 M8<br>TNMG 22 04 16 M8 | VP5515 | **19698** |
| TNMG 434 M8<br>TNMG 22 04 16 M8 | VP5525 | **19699** |
| TNMG 543 M8<br>TNMG 27 06 12 M8 | VP5515 | **19701** |
| TNMG 543 M8<br>TNMG 27 06 12 M8 | VP5525 | **19704** |
| TNMG 544 M8<br>TNMG 27 06 16 M8 | VP5515 | **19709** |
| TNMG 544 M8<br>TNMG 27 06 16 M8 | VP5525 | **19712** |
| TNMG 666 M8<br>TNMG 33 09 24 M8 | VP5525 | **19713** |

| **TNMG R3** | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| TNMG 432 R3<br>TNMG 22 04 08 R3 | VP1510 | **01596** |
| TNMG 432 R3<br>TNMG 22 04 08 R3 | VP5515 | **01597** |
| TNMG 432 R3<br>TNMG 22 04 08 R3 | VP5525 | **01598** |
| TNMG 432 R3<br>TNMG 22 04 08 R3 | VP5535 | **01599** |
| TNMG 433 R3<br>TNMG 22 04 12 R3 | VP1510 | **01606** |
| TNMG 433 R3<br>TNMG 22 04 12 R3 | VP5515 | **01607** |
| TNMG 433 R3<br>TNMG 22 04 12 R3 | VP5525 | **01608** |
| TNMG 434 R3<br>TNMG 22 04 16 R3 | VP1510 | **14623** |
| TNMG 434 R3<br>TNMG 22 04 16 R3 | VP5525 | **01610** |
| TNMG 438 R3<br>TNMG 22 04 32 R3 | VP5525 | **19555** |
| TNMG 543 R3<br>TNMG 27 06 12 R3 NEW | VP1510 | **17716** |
| TNMG 543 R3<br>TNMG 27 06 12 R3 | VP5515 | **17717** |

## ValPro™ INSERTS

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| TNMG R3 | CONTINUED | |
|---|---|---|
| TNMG 543 R3<br>TNMG 27 06 12 R3 NEW | VP5525 | **17718** |
| TNMG 543 R3<br>TNMG 27 06 12 R3 | VP5535 | **17719** |
| TNMG 544 R3<br>TNMG 27 06 16 R3 | VP5515 | **14641** |
| TNMG 544 R3<br>TNMG 27 06 16 R3 | VP5525 | **14642** |
| TNMG 544 R3<br>TNMG 27 06 16 R3 | VP5535 | **14643** |
| TNMG 666 R3<br>TNMG 33 09 24 R3 | VP5525 | **14644** |
| TNMG 666 R3<br>TNMG 33 09 24 R3 | VP5535 | **14645** |

| TNMG R4 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| TNMG 432 R4<br>TNMG 22 04 08 R4 | VP5515 | **19693** |
| TNMG 432 R4<br>TNMG 22 04 08 R4 | VP5525 | **19694** |
| TNMG 433 R4<br>TNMG 22 04 12 R4 | VP5515 | **19696** |
| TNMG 433 R4<br>TNMG 22 04 12 R4 | VP5525 | **19697** |
| TNMG 543 R4<br>TNMG 27 06 12 R4 | VP5515 | **19705** |
| TNMG 543 R4<br>TNMG 27 06 12 R4 | VP5525 | **19708** |
| TNMG 666 R4<br>TNMG 33 09 24 R4 | VP5525 | **19716** |

| TNMM R6 | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| TNMM 432 R6<br>TNMM 22 04 08 R6 | VP5515 | **14646** |
| TNMM 432 R6<br>TNMM 22 04 08 R6 | VP5525 | **14647** |
| TNMM 432 R6<br>TNMM 22 04 08 R6 | VP5535 | **14648** |
| TNMM 433 R6<br>TNMM 22 04 12 R6 | VP5515 | **14649** |
| TNMM 433 R6<br>TNMM 22 04 12 R6 | VP5525 | **14650** |
| TNMM 433 R6<br>TNMM 22 04 12 R6 | VP5535 | **14651** |

| TPG NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| TPG 221<br>TPGN 11 03 04 | VP1510 | **17952** |
| TPG 222<br>TPGN 11 03 08 | VP1510 | **17953** |
| TPG 321<br>TPGN 16 03 04 | VP1510 | **17954** |
| TPG 322<br>TPGN 16 03 08 | VP1510 | **17955** |
| TPG 323<br>TPGN 16 03 12 | VP1510 | **17956** |
| TPG 431<br>TPGN 22 04 04 | VP1510 | **17957** |
| TPG 432<br>TPGN 22 04 08 NEW | VP1510 | **17958** |
| TPG 433<br>TPGN 22 04 12 | VP1510 | **17959** |
| TPG 434<br>TPGN 22 04 16 | VP1510 | **17960** |

| TPGT PM2 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| TPGT 1.81.51 PM2<br>TPGT 09 02 04 PM2 | VP1510 | **19840** |
| TPGT 1.81.51 PM2<br>TPGT 09 02 04 PM2 | VP5515 | **19841** |
| TPGT 1.81.51 PM2<br>TPGT 09 02 04 PM2 | VP5525 | **19842** |
| TPGT 21.51 PM2<br>TPGT 11 02 04 PM2 | VP5515 | **19843** |
| TPGT 21.52 PM2<br>TPGT 11 02 08 PM2 | VP1510 | **19844** |
| TPGT 21.52 PM2<br>TPGT 11 02 08 PM2 | VP5515 | **19845** |
| TPGT 21.52 PM2<br>TPGT 11 02 08 PM2 | VP5525 | **19846** |
| TPGT 32.51 PM2<br>TPGT 16 T3 04 PM2 | VP1510 | **19847** |
| TPGT 32.51 PM2<br>TPGT 16 T3 04 PM2 | VP5525 | **19848** |
| TPGT 32.52 PM2<br>TPGT 16 T3 08 PM2 | VP1510 | **19849** |
| TPGT 32.52 PM2<br>TPGT 16 T3 08 PM2 | VP5515 | **19850** |
| TPGT 32.52 PM2<br>TPGT 16 T3 08 PM2 | VP5525 | **19851** |
| TPGT 432 PM2<br>TPGT 12 04 08 PM2 | VP1510 | **19852** |
| TPGT 432 PM2<br>TPGT 12 04 08 PM2 | VP5525 | **19853** |

| TPMR PF2 NEW | | |
|---|---|---|
| **Part Number**<br>ISO Part Number | **Grade** | **EDP#** |
| TPMR 221 PF2<br>TPMR 11 03 04 PF2 | VP1510 | **06752** |
| TPMR 221 PF2<br>TPMR 11 03 04 PF2 | VP5515 | **06755** |
| TPMR 221 PF2<br>TPMR 11 03 04 PF2 | VP5535 | **06759** |
| TPMR 222 PF2<br>TPMR 11 03 08 PF2 | VP1510 | **06788** |
| TPMR 222 PF2<br>TPMR 11 03 08 PF2 | VP5515 | **06793** |
| TPMR 222 PF2<br>TPMR 11 03 08 PF2 | VP5535 | **06795** |
| TPMR 321 PF2<br>TPMR 16 03 04 PF2 | VP5515 | **06814** |
| TPMR 321 PF2<br>TPMR 16 03 04 PF2 | VP5535 | **06839** |

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| | | |
|---|---|---|
| TPMR 322 PF2<br>TPMR 16 03 08 PF2 | VP1510 | **06844** |
| TPMR 322 PF2<br>TPMR 16 03 08 PF2 NEW | VP5515 | **06845** |
| TPMR 322 PF2<br>TPMR 16 03 08 PF2 | VP5535 | **06846** |

### TPMR PF5 NEW

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| TPMR 221 PF5<br>TPMR 11 03 04 PF5 | VP1510 | **06772** |
| TPMR 221 PF5<br>TPMR 11 03 04 PF5 | VP5525 | **06773** |
| TPMR 221 PF5<br>TPMR 11 03 04 PF5 | VP5535 | **06777** |
| TPMR 222 PF5<br>TPMR 11 03 08 PF5 | VP1510 | **06797** |
| TPMR 222 PF5<br>TPMR 11 03 08 PF5 | VP5525 | **06800** |
| TPMR 222 PF5<br>TPMR 11 03 08 PF5 | VP5535 | **06813** |
| TPMR 321 PF5<br>TPMR 16 03 04 PF5 | VP1510 | **06840** |
| TPMR 321 PF5<br>TPMR 16 03 04 PF5 | VP5515 | **06841** |
| TPMR 321 PF5<br>TPMR 16 03 04 PF5 | VP5525 | **06842** |
| TPMR 321 PF5<br>TPMR 16 03 04 PF5 | VP5535 | **06843** |
| TPMR 322 PF5<br>TPMR 16 03 08 PF5 | VP1510 | **06847** |
| TPMR 322 PF5<br>TPMR 16 03 08 PF5 | VP5515 | **06848** |
| TPMR 322 PF5<br>TPMR 16 03 08 PF5 | VP5525 | **06849** |
| TPMR 322 PF5<br>TPMR 16 03 08 PF5 | VP5535 | **06861** |
| TPMR 323 PF5<br>TPMR 16 03 12 PF5 | VP5525 | **06947** |
| TPMR 323 PF5<br>TPMR 16 03 12 PF5 | VP5535 | **07008** |

### TPMW

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| TPMW 21.51<br>TPMW 11 02 04 | VP1510 | **01191** |
| TPMW 32.51<br>TPMW 16 T3 04 | VP1510 | **01194** |
| TPMW 21.52<br>TPMW 11 02 08 NEW | VP1510 | **17927** |
| TPMW 32.52<br>TPMW 16 T3 08 | VP1510 | **00823** |
| TPMW 432<br>TPMW 22 04 08 | VP1510 | **01198** |

### TPU NEW

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| TPU 321<br>TPUN 16 03 04 | VP1510 | **17961** |
| TPU 433<br>TPUN 22 04 12 | VP1510 | **17962** |

### VBMT PM4

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| VBMT 331 PM4<br>VBMT 16 04 04 PM4 | VP5525 | **01700** |
| VBMT 332 PM4<br>VBMT 16 04 08 PM4 | VP1510 | **01701** |
| VBMT 332 PM4<br>VBMT 16 04 08 PM4 | VP5515 | **01702** |
| VBMT 332 PM4<br>VBMT 16 04 08 PM4 | VP5525 | **01703** |
| VBMT 332 PM4<br>VBMT 16 04 08 PM4 | VP8535 | **01704** |

### VCGT 1L

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| VCGT 21.50.5 1L<br>VCGT 11 02 02 1L | VP7615 | **01723** |
| VCGT 21.50.5 1L<br>VCGT 11 02 02 1L | VPUS10 | **01744** |
| VCGT 21.51 1L<br>VCGT 11 02 04 1L | VP7615 | **01724** |
| VCGT 21.51 1L<br>VCGT 11 02 04 1L | VPUS10 | **01745** |
| VCGT 331 1L<br>VCGT 16 04 04 1L | VP7615 | **01725** |
| VCGT 331 1L<br>VCGT 16 04 04 1L | VPUS10 | **01746** |
| VCGT 332 1L<br>VCGT 16 04 08 1L | VP7615 | **01726** |
| VCGT 332 1L<br>VCGT 16 04 08 1L | VPUS10 | **01747** |

### VNMA

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| VNMA 332<br>VNMA 16 04 08 | VP1510 | **01611** |
| VNMA 432<br>VNMA 22 04 08 NEW | VP1510 | **17928** |

### VNMG C2 NEW

| Part Number<br>ISO Part Number | Grade | EDP# |
|---|---|---|
| VNMG 332 C2<br>VNMG 16 04 08 C2 | VP5515 | **19717** |
| VNMG 431 C2<br>VNMG 22 04 04 C2 | VP5515 | **19719** |

## ValPro™ INSERTS

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### VNMG F5

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| VNMG 332 F5 VNMG 16 04 08 F5 | VP5525 | 01614 |
| VNMG 332 F5 VNMG 16 04 08 F5 | VP8535 | 01615 |

### VNMG M2

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| VNMG 332 M2 VNMG 16 04 08 M2 | VP5525 | 01616 |
| VNMG 332 M2 VNMG 16 04 08 M2 | VP8535 | 01617 |

### VNMG M3

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| VNMG 331 M3 VNMG 16 04 04 M3 NEW | VP5515 | 19560 |
| VNMG 331 M3 VNMG 16 04 04 M3 | VP5525 | 19561 |
| VNMG 332 M3 VNMG 16 04 08 M3 | VP5515 | 01618 |
| VNMG 332 M3 VNMG 16 04 08 M3 | VP5525 | 01619 |

### VNMG M5

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| VNMG 331 M5 VNMG 16 04 04 M5 | VP1510 | 14667 |
| VNMG 331 M5 VNMG 16 04 04 M5 | VP5525 | 01612 |
| VNMG 331 M5 VNMG 16 04 04 M5 | VP8535 | 01613 |
| VNMG 332 M5 VNMG 16 04 08 M5 | VP1510 | 01620 |
| VNMG 332 M5 VNMG 16 04 08 M5 | VP5515 | 01621 |
| VNMG 332 M5 VNMG 16 04 08 M5 | VP5525 | 01622 |
| VNMG 332 M5 VNMG 16 04 08 M5 | VP8535 | 01623 |
| VNMG 432 M5 VNMG 22 04 08 M5 | VP1510 | 19879 |
| VNMG 432 M5 VNMG 22 04 08 M5 | VP5515 | 19880 |
| VNMG 432 M5 VNMG 22 04 08 M5 | VP5525 | 19881 |
| VNMG 432 M5 VNMG 22 04 08 M5 | VP8535 | 19882 |
| VNMG 442 M5 VNMG 22 06 08 M5 | VP5515 | 19883 |
| VNMG 442 M5 VNMG 22 06 08 M5 | VP5525 | 19884 |

### VNMG M8 NEW

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| VNMG 332 M8 VNMG16 04 08 M8 | VP5515 | 19718 |

### WNMA

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| WNMA 432 WNMA 08 04 08 | VP1510 | 01624 |
| WNMA 433 WNMA 08 04 12 | VP1510 | 01625 |

### WNMG C2 NEW

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| WNMG 432 C2 WNMG 08 04 08 C2 | VP5525 | 19721 |
| WNMG 433 C2 WNMG 08 04 12 C2 | VP5515 | 19728 |

### WNMG F2

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| WNMG 332 F2 WNMG 06 04 08 F2 | VP1510 | 17720 |
| WNMG 332 F2 WNMG 06 04 08 F2 NEW | VP5515 | 17721 |
| WNMG 332 F2 WNMG 06 04 08 F2 | VP5525 | 17722 |
| WNMG 431 F2 WNMG 08 04 04 F2 | VP5515 | 01629 |
| WNMG 432 F2 WNMG 08 04 08 F2 | VP1510 | 01632 |
| WNMG 432 F2 WNMG 08 04 08 F2 | VP5515 | 01633 |
| WNMG 432 F2 WNMG 08 04 08 F2 | VP5525 | 14652 |

### WNMG F5

| Part Number ISO Part Number | Grade | EDP# |
|---|---|---|
| WNMG 332 F5 WNMG 06 04 08 F5 | VP5525 | 01626 |
| WNMG 332 F5 WNMG 06 04 08 F5 | VP8535 | 01627 |
| WNMG 431 F5 WNMG 08 04 04 F5 | VP5525 | 01630 |
| WNMG 431 F5 WNMG 08 04 04 F5 | VP8535 | 01631 |
| WNMG 432 F5 WNMG 08 04 08 F5 | VP5525 | 01634 |
| WNMG 432 F5 WNMG 08 04 08 F5 | VP8535 | 01635 |

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| WNMG M2 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| WNMG 432 M2 WNMG 08 04 08 M2 | VP5525 | **01636** |
| WNMG 432 M2 WNMG 08 04 08 M2 | VP8535 | **01637** |
| WNMG 433 M2 WNMG 08 04 12 M2 | VP5525 | **01648** |
| WNMG 433 M2 WNMG 08 04 12 M2 | VP8535 | **01649** |

| WNMG M3 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| WNMG 432 M3 WNMG 08 04 08 M3 | VP5515 | **01638** |
| WNMG 432 M3 WNMG 08 04 08 M3 | VP5525 | **01639** |
| WNMG 432 M3 WNMG 08 04 08 M3 | VP5535 | **01640** |
| WNMG 433 M3 WNMG 08 04 12 M3 | VP5515 | **01650** |
| WNMG 433 M3 WNMG 08 04 12 M3 | VP5525 | **01651** |
| WNMG 433 M3 WNMG 08 04 12 M3 | VP5535 | **01652** |

| WNMG M5 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| WNMG 331 M5 WNMG 06 04 04 M5 | VP1510 | **01202** |
| WNMG 332 M5 WNMG 06 04 08 M5 | VP5525 | **01628** |
| WNMG 432 M5 WNMG 08 04 08 M5 | VP1510 | **01641** |
| WNMG 432 M5 WNMG 08 04 08 M5 | VP5515 | **01642** |
| WNMG 432 M5 WNMG 08 04 08 M5 | VP5525 | **01643** |
| WNMG 432 M5 WNMG 08 04 08 M5 | VP8535 | **01644** |
| WNMG 433 M5 WNMG 08 04 12 M5 | VP1510 | **01653** |
| WNMG 433 M5 WNMG 08 04 12 M5 | VP5515 | **01654** |
| WNMG 433 M5 WNMG 08 04 12 M5 | VP5525 | **01655** |
| WNMG 433 M5 WNMG 08 04 12 M5 | VP8535 | **01656** |

| WNMG M8 NEW | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| WNMG 332 M8 WNMG 06 04 08 M8 | VP5515 | **19720** |
| WNMG 432 M8 WNMG 08 04 08 M8 | VP5515 | **19724** |
| WNMG 432 M8 WNMG 08 04 08 M8 | VP5525 | **19725** |
| WNMG 433 M8 WNMG 08 04 12 M8 NEW | VP5515 | **19729** |
| WNMG 433 M8 WNMG 08 04 12 M8 | VP5525 | **19732** |

| WNMG R3 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| WNMG 432 R3 WNMG 08 04 08 R3 | VP1510 | **01645** |
| WNMG 432 R3 WNMG 08 04 08 R3 | VP5515 | **01646** |
| WNMG 432 R3 WNMG 08 04 08 R3 | VP5525 | **01647** |
| WNMG 433 R3 WNMG 08 04 12 R3 | VP1510 | **01657** |
| WNMG 433 R3 WNMG 08 04 12 R3 | VP5515 | **01658** |
| WNMG 433 R3 WNMG 08 04 12 R3 | VP5525 | **01659** |
| WNMG 434 R3 WNMG 08 04 16 R3 | VP1510 | **01660** |
| WNMG 434 R3 WNMG 08 04 16 R3 | VP5525 | **01661** |

| WNMG R4 NEW | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| WNMG 433 R4 WNMG 08 04 12 R4 | VP5515 | **19733** |

| WNMG W3 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| WNMG 332 W3 WNMG 06 04 08 W3 | VP5515 | **14697** |

| WNMG W6 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| WNMG 332 W6 WNMG 06 04 08 W6 | VP5515 | **14698** |
| WNMG 432 W6 WNMG 08 04 08 W6 | VP1510 | **14699** |
| WNMG 432 W6 WNMG 08 04 08 W6 | VP5515 | **14700** |
| WNMG 432 W6 WNMG 08 04 08 W6 | VP5525 | **14701** |

| WPGT PM2 | | |
|---|---|---|
| **Part Number** ISO Part Number | **Grade** | **EDP#** |
| WPGT 32.52 PM2 WPGT 06 T3 08 PM2 | VP5525 | **19854** |

### How To Order

Example:

| EDP# | Qty. |
|---|---|
| 14531 | 20 Pieces |
| CNMG 544 M3, VP5525 | 20 Pieces |

## ValPro TECHNICAL INFORMATION


| | |
|---|---|
| Work Piece Material Table | 33 |
| Insert Selection Process & Application Data | 34-45 |
| Insert Geometry Application Data | 46-48 |
| Wiper Technical Guidelines | 49 |
| Back Facing Guidelines | 50 |
| Turning Formulas | 51 |

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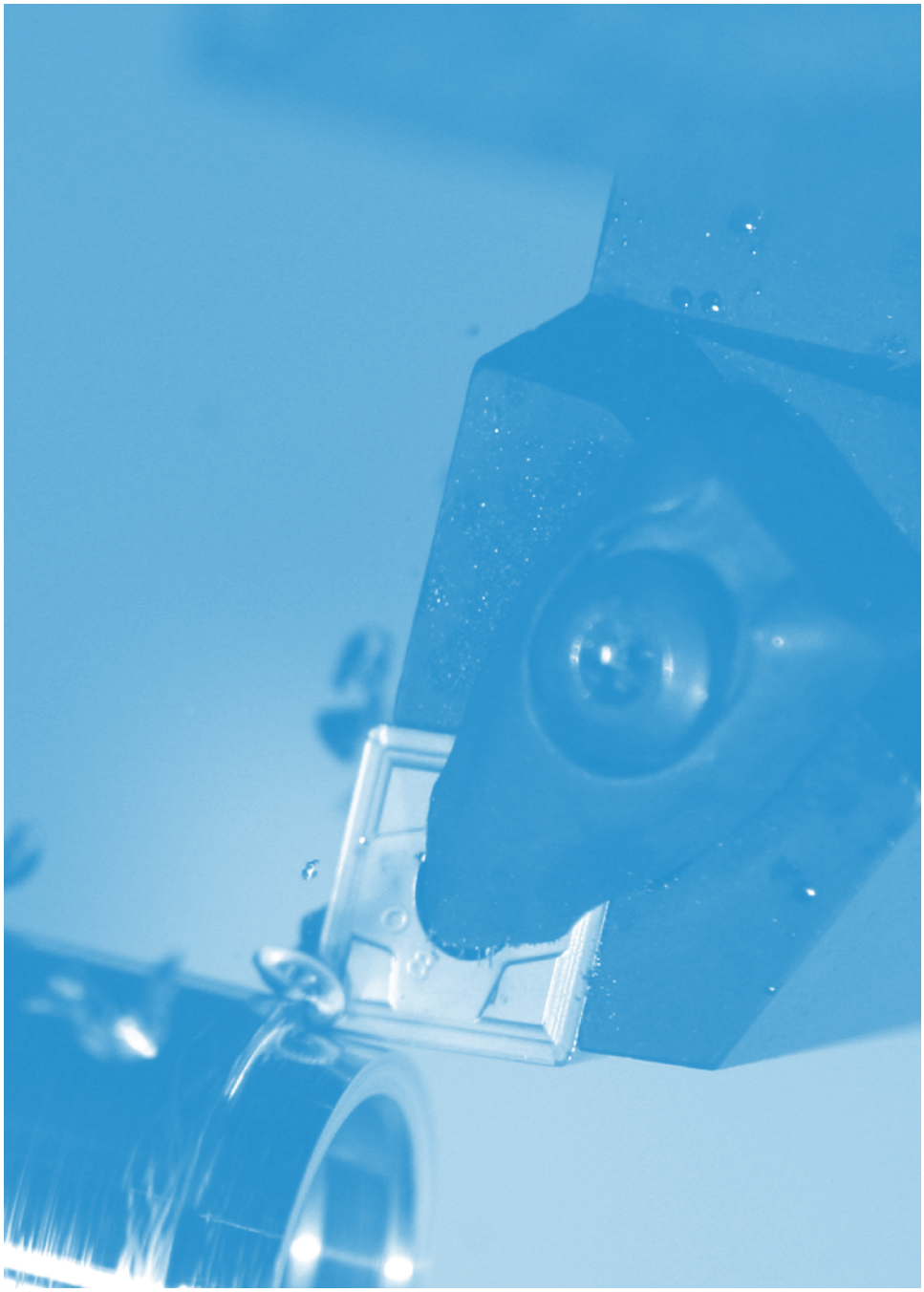

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## GUIDE TO WORKPIECE MATERIALS

| | Category | Material Designation |
|---|---|---|
| STEELS | FREE MACHINING & LOW CARBON | 1006, 1008, 1010, 1015, 1018, 1020, 1022, 1025, 1117, 1141, 1213, 12L13, 12L14, 11L41 |
| | MEDIUM CARBON & HIGH CARBON | 1030, 1035, 1040, 1045, 1052, 1055, 1060, 1085, 1095, 1424, 1541, 1551 |
| | ALLOY STEELS & EASY TO MACHINE TOOL STEELS | 4130, 4140, 4150, 4340, 5140, 4320, 5120, 8620, 6150, 52100, W1, W2, W5, 300M, W5, 300M |
| | TOOL & DIE STEELS | M1, M2, T1, T4, T5, T15, A2, A3, D2, D4, O1, O2, H10 ,H11, P2, P20 |
| STAINLESS STEELS | FERRITIC & MARTENSITIC | 403, 405, 409, 410, 410S, 414, 430, 431, 434, 440, 442 |
| | AUSTENITIC | 201, 203, 303, 304, 304L, 316, 316L, 321, 327, Nitronic 40, Custom 455 |
| | PH & DUPLEX | 15-5 PH, 17-4 PH, PH 13-8 Mo, AM350, AM355, Ferralium 255, 329, S32950 |
| CAST IRONS | GRAY CAST IRONS | ASTM A48, Class 20, 25, 30, 35, 40<br>SAE J431C Grades G2000, G2500, G3000, G3500, G4000 |
| | DUCTILE & MALLEABLE - Low & Medium Tensile | ASTM A546 Grades 60-40-18, 65-45-12, 80-55-06, SAE 434 J434C Grades D4512, D5506, ASTM A220 Grades 40010, 45006,45008, 55005, 60004 SAE J158 Grades M3210, M4504, M5003, M5503 |
| | DUCTILE & MALLEABLE - High Tensile | ASTM A536 Grades 100-70-03, SAE J434C Grade D7003<br>ASTM A220 Grades 70003, 820002, 90001, SAE J158 Grades M7002, M8501 |
| HIGH TEMPERATURE ALLOYS | IRON BASE | A-286, Incoloy 800, 801, 802, N-155, 19-9 DL |
| | NICKEL & COBALT BASE | Inconel 600, 625, 718, and X750, Waspaloy, Nimonic 90, Udimet 500 & 700, Monel Alloys L-605, Haynes Alloy 25, 188, Haynes Stellite 6, 21, WI-52 |
| | TITANIUM ALLOYS | 6Al4V, 5Al-2.5Sn, 6AL-2Sn-4Zr-6Mo |
| ALUMINUM & NON-FERROUS MATERIALS | ALUMINUM ALLOYS < 7 % Silicon | AA 2014, 2024, 4032, 6061, 6151, 7075; SAE 304, 335, 336, 380 |
| | ALUMINUM ALLOYS 7 - 12 % Silicon | AA 380, A380, 384, A384; SAE 303, 305, 306, 308, 309, 383 |
| | ALUMINUM ALLOYS > 12% Silicon | AA 390, 392 |
| | NON-FERROUS | Precious Metals, Copper & Brass Alloys, Plastics, Magnesium Alloys |
| HARDENED MATERIALS | HEAT TREATED STEELS | 40 - 50 RC |
| | HEAT TREATED TOOL & DIE STEELS | 50 - 60 RC |
| | CHILLED & NI-RESIST CAST IRONS | 40 - 60 RC |

## INSERT APPLICATION DATA

ValTURN™

### STEELS

| OPERATION | CONDITION | TOP FORM GEOMETRY ANSI Negative | TOP FORM GEOMETRY ISO Positive | RECOMMENDED Grade First Choice | RECOMMENDED Grade Second Choice |
|---|---|---|---|---|---|
| **Finishing**<br>**Depth of Cut:** 0.020 - 0.040 in.<br>**Feed Rate:** 0.004 - 0.008 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | F2 | PM2, PM3, PF2 | VP1510 | VP5515 |
| | Interruption | M3 | PM4 | VP5515 | |
| **Semi-Finishing**<br>**Depth of Cut:** 0.040 - 0.080 in.<br>**Feed Rate:** 0.005 - 0.010 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | F2, M3 | PM2, PM3, PF5 | VP5515 | |
| | Moderate Interruption | M5, M8 | PM4 | VP5515 | VP5525 |
| | Heavy Interruption | R3, R4 | | VP5525 | VP5535 |
| **General Machining**<br>**Depth of Cut:** 0.070 - 0.150 in.<br>**Feed Rate:** 0.008 - 0.020 ipr<br>**Nose Radius:** 0.047 in. | Continuous Cuts | M3 | PM2, PM3 | VP5515 | VP5525 |
| | Moderate Interruption | M5, M8, R3 | PM4, PM5 | VP5525 | VP8535<br>VP5535 |
| | Heavy Interruption | R3, R4 | | VP5535 | |
| **Roughing**<br>**Depth of Cut:** 0.080 - 0.300 in.<br>**Feed Rate:** 0.010 - 0.030 ipr<br>**Nose Radius:** 0.047 in. | Continuous Cuts | M5, R3 | | VP5515 | VP5525 |
| | Moderate Interruption | M8, R3, R4, R6 | | VP5525 | VP5535 |
| | Heavy Interruption | R3, R4 | | VP5535 | |
| **Back Facing**<br>**Depth of Cut:** 50% of radius (max.)<br>**Feed Rate:** 40% of radius (max.) | Continuous Cuts | C3 | | VP5515 | VP5525 |
| **Profiling**<br>**Depth of Cut:** 100% of radius (max.)<br>**Feed Rate:** 50% of radius (max.) | Interruption | C3 | | VP5525 | VP5515 |
| **Wipers**<br>**Depth of Cut:** 0.015 - 0.080 in. (w3)<br>0.025 - 0.180 in. (w6)<br>**Feed Rate:** 0.006 - 0.020 ipr (w3)<br>0.010 - 0.026 ipr (w6)<br>**Nose Radius:** 0.031 in. | Medium Feed | W3 | | VP5515 | VP1510 |
| | Heavy Feed | W6 | | VP5525 | VP5515 |

ValTURN™

## INSERT APPLICATION DATA

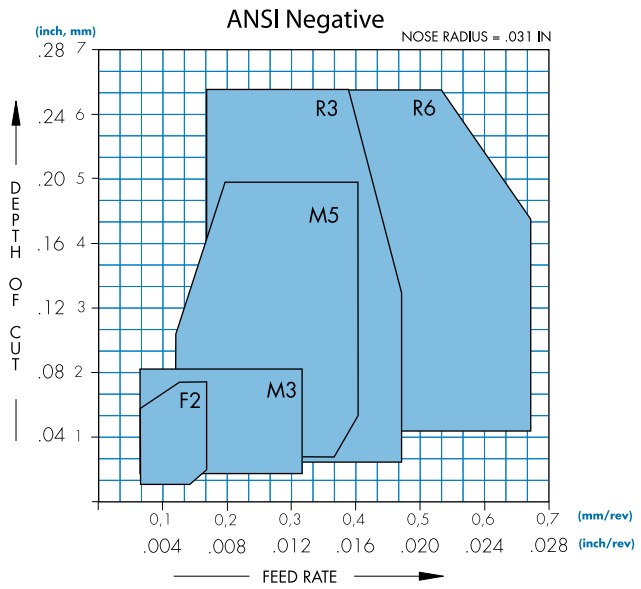
### STEELS

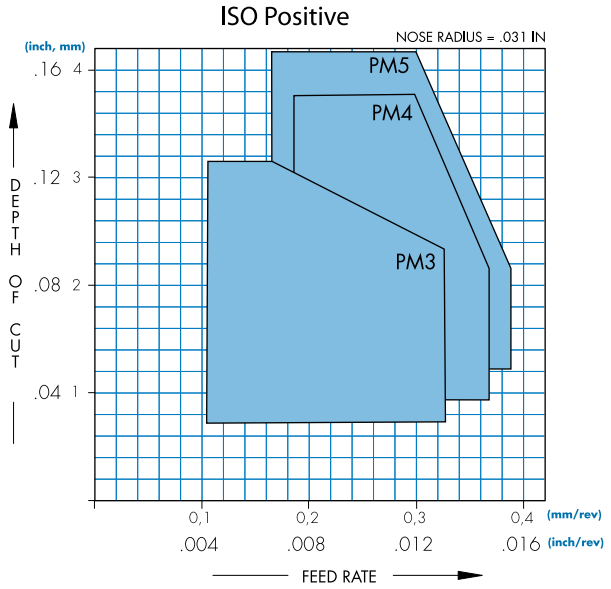
GRADE APPLICATION RANGE

| | | CUTTING SPEED, SFM | | | | | Nose Radius, Inch | DOC, inch | FEED RATE, IPR |
|---|---|---|---|---|---|---|---|---|---|
| | | COATED | | | | | | | |
| | | VP5515 | VP5525 | VP5535 | VP1510 | VP8535 | | | |
| Free Machining & Low Carbon Steel | F | 1500 | 1300 | | 1700 | | 0.031 | .020 - .040 | .004 - .008 |
| | SF | 1300 | 1100 | 1000 | 1500 | 1000 | 0.031 | .040 - .080 | .005 - .010 |
| | GM | 1000 | 850 | 750 | | 750 | 0.047 | .070 - .150 | .008 - .018 |
| | R | 700 | 600 | 500 | | | 0.047 | .080 - .300 | .010 - .025 |
| Medium Carbon & High Carbon Steels | F | 1200 | 1000 | | 1300 | | 0.031 | .020 - .040 | .004 - .008 |
| | SF | 1000 | 800 | 700 | 1200 | 700 | 0.031 | .040 - .080 | .005 - .010 |
| | GM | 900 | 700 | 600 | 1000 | 600 | 0.047 | .070 - .150 | .008 - .018 |
| | R | 800 | 600 | 500 | | | 0.047 | .080 - .300 | .010 - .025 |
| Alloy Steels & Easy to Machine Tool Steels | F | 1000 | 850 | | 1100 | | 0.031 | .020 - .040 | .004 - .008 |
| | SF | 900 | 700 | 600 | 1000 | 600 | 0.031 | .040 - .080 | .005 - .010 |
| | GM | 800 | 600 | 500 | | 500 | 0.047 | .070 - .150 | .008 - .016 |
| | R | 700 | 500 | 400 | | | 0.047 | .080 - .250 | .010 - .023 |
| Tool Steels & Die Steels | F | 700 | 600 | | 900 | | 0.031 | .020 - .040 | .004 - .008 |
| | SF | 600 | 550 | | 800 | | 0.031 | .040 - .080 | .005 - .010 |
| | GM | 500 | 450 | 450 | | 450 | 0.047 | .060 - .125 | .008 - .015 |
| | R | 450 | 400 | 350 | | | 0.047 | .080 - .200 | .010 - .020 |

F - Finishing, SF - Semi-Finishing, GM - General Machining, R - Roughing

GEOMETRY APPLICATION RANGE



## INSERT SELECTION PROCESS

ValTURN™

### STAINLESS STEELS

| OPERATION | CONDITION | TOP FORM GEOMETRY | | RECOMMENDED Grade | |
|---|---|---|---|---|---|
| | | ANSI Negative | ISO Positive | First Choice | Second Choice |
| **Finishing**<br>**Depth of Cut:** 0.010 - 0.020 in.<br>**Feed Rate:** 0.004 - 0.007 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | F5 | PM2, PM3, PF2 | VP5525 | |
| | Interruption | M2 | PM4 | VP5525 | VP8535 |
| **Semi-Finishing**<br>**Depth of Cut:** 0.020 - 0.040 in.<br>**Feed Rate:** 0.005 - 0.010 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | F5, M2 | PM2, PM3, PF5 | VP5525 | |
| | Moderate Interruption | M2, M5 | PM4, PM5 | VP5525 | VP8535 |
| | Heavy Interruption | M5, M8 | | VP8535 | |
| **General Machining**<br>**Depth of Cut:** 0.040 - 0.100 in.<br>**Feed Rate:** 0.008 - 0.015 ipr<br>**Nose Radius:** 0.047 in. | Continuous Cuts | M2, M5 | PM4 | VP5525 | |
| | Moderate Interruption | M5, R6, M8 | PM5 | VP8535 | VP5535 |
| | Heavy Interruption | R3, R4 | | VP5535 | |
| **Roughing**<br>**Depth of Cut:** 0.080 - 0.250 in.<br>**Feed Rate:** 0.010 - 0.025 ipr<br>**Nose Radius:** 0.047 in. | Continuous Cuts | M5, M8, R6 | | VP8535 | VP5525<br>VP5535 |
| | Moderate Interruption | R3, R4, R6 | | VP5535 | |
| | Heavy Interruption | R3, R4 | | VP5535 | |

ValTURN™

## INSERT APPLICATION DATA

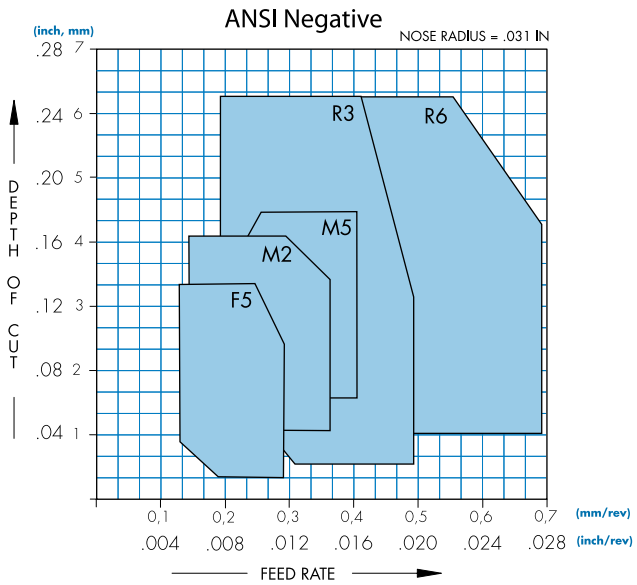
### STAINLESS STEELS

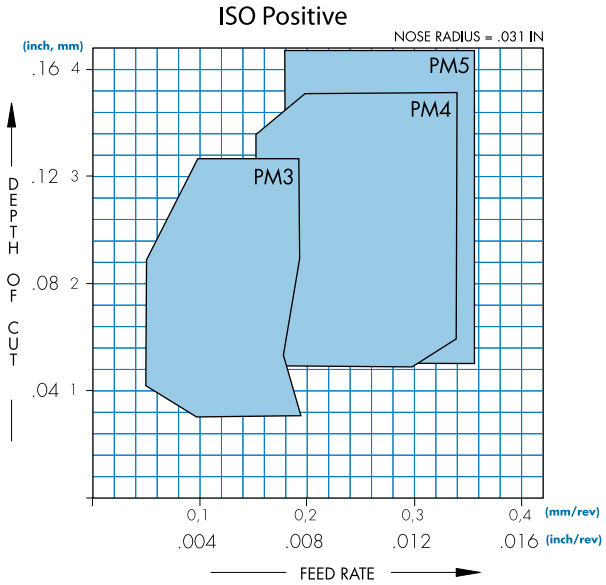
GRADE APPLICATION RANGE

| | | CUTTING SPEED, SFM | | | Nose Radius, Inch | DOC, inch | FEED RATE, IPR |
|---|---|---|---|---|---|---|---|
| | | COATED | | | | | |
| | | VP5525 | VP8535 | VP5535 | | | |
| Ferritic & Martensitic | F | 1000 | 700 | | 0.031 | .010 - .020 | .004 - .007 |
| | SF | 850 | 600 | | 0.031 | .020 - .040 | .005 - .010 |
| | GM | 700 | 550 | 550 | 0.047 | .040 - .100 | .008 - .140 |
| | R | 550 | 450 | 450 | 0.047 | .100 - .250 | .010 - .025 |
| Austenitic | F | 800 | 600 | | 0.031 | .010 - .020 | .004 - .007 |
| | SF | 700 | 500 | | 0.031 | .020 - .040 | .005 - .010 |
| | GM | 600 | 450 | 450 | 0.047 | .040 - .100 | .008 - .012 |
| | R | 500 | 400 | 400 | 0.047 | .100 - .250 | .010 - .022 |
| PH & Duplex | F | 600 | 500 | | 0.031 | .010 - .020 | .004 - .007 |
| | SF | 525 | 450 | | 0.031 | .020 - .040 | .005 - .010 |
| | GM | 450 | 400 | 400 | 0.047 | .040 - .100 | .008 - .012 |
| | R | | 350 | 350 | 0.047 | .100 - .200 | .010 - .020 |

F - Finishing, SF - Semi-Finishing, GM - General Machining, R - Roughing

GEOMETRY APPLICATION RANGE



## INSERT SELECTION PROCESS

ValTURN™

### CAST IRONS

| OPERATION | CONDITION | TOP FORM GEOMETRY | | RECOMMENDED Grade | |
|---|---|---|---|---|---|
| | | ANSI Negative | ISO Positive | First Choice | Second Choice |
| **Finishing**<br>**Depth of Cut:** 0.015 - 0.030 in.<br>**Feed Rate:** 0.004 - 0.008 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | M5, F2 | PF2, PM3, PM2 | VP1510 | |
| | Interruption | M8, R3, R4 | PM4 | VP1510 | VP5515 |
| **Semi-Finishing**<br>**Depth of Cut:** 0.030 - 0.080 in.<br>**Feed Rate:** 0.006 - 0.012 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | M5, M8 | PM2, PM3, PF5 | VP1510 | |
| | Moderate Interruption | R3, R4 | PM4, PM5 | VP1510 | VP5515 |
| | Heavy Interruption | R3, R4 | | VP5515 | VP5525 |
| **General Machining**<br>**Depth of Cut:** 0.060 - 0.150 in.<br>**Feed Rate:** 0.008 - 0.020 ipr<br>**Nose Radius:** 0.047 in. | Continuous Cuts | M8, R3 | PM4 | VP1510 | |
| | Moderate Interruption | R3, R4 | PM5 | VP1510 | VP5515 |
| | Heavy Interruption | R3, R4 | | VP5515 | VP5525 |
| **Roughing**<br>**Depth of Cut:** 0.100 - 0.300 in.<br>**Feed Rate:** 0.012 - 0.025 ipr<br>**Nose Radius:** 0.047 in. | Continuous Cuts | M8, R3 | | VP1510 | VP5515 |
| | Moderate Interruption | R3, R4 | | VP5515 | VP5525 |
| | Heavy Interruption | R3, R4 | | VP5515 | |
| **Wipers**<br>**Depth of Cut:** 0.015 - 0.080 in. (w3)<br>0.025 - 0.180 in. (w6)<br>**Feed Rate:** 0.006 - 0.020 ipr (w3)<br>0.010 - 0.026 ipr (w6)<br>**Nose Radius:** 0.031 in. | Medium Feed | W3 | | VP1510 | VP5515 |
| | Heavy Feed | W6 | | VP1510 | VP5515 |

ValTURN™

## INSERT APPLICATION DATA

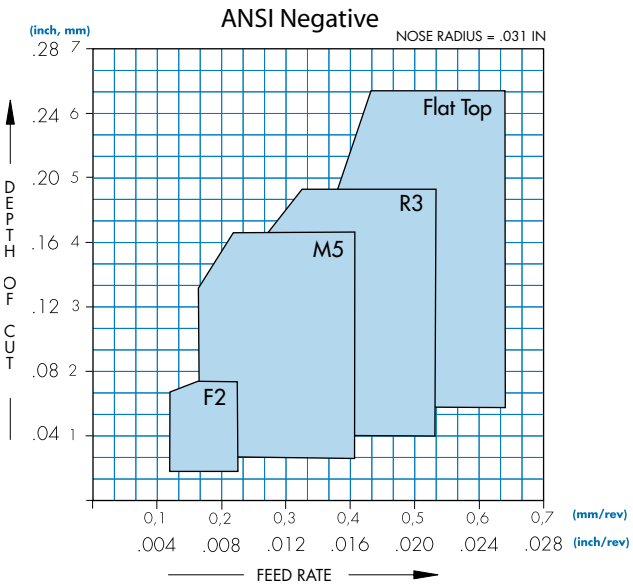
### CAST IRONS

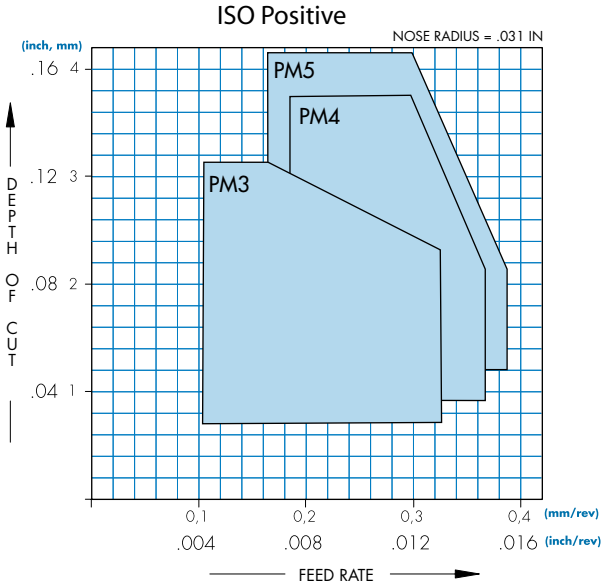
GRADE APPLICATION RANGE

| | | CUTTING SPEED, SFM | | | Nose Radius, Inch | DOC, inch | FEED RATE, IPR |
|---|---|---|---|---|---|---|---|
| | | COATED | | | | | |
| | | VP1510 | VP5515 | VP5525 | | | |
| Gray Cast Iron 180 - 220 BHN | F | 1800 | | | 0.031 | .015 - .030 | .004 - .008 |
| | SF | 1500 | 1100 | | 0.031 | .030 - .080 | .006 - .012 |
| | GM | 1200 | 900 | 700 | 0.047 | .060 - .150 | .008 - .018 |
| | R | 900 | 700 | 600 | 0.047 | .100 - .300 | .012 - .025 |
| Gray Cast Iron 220 - 260 BHN | F | 1500 | | | 0.031 | .015 - .030 | .004 - .008 |
| | SF | 1250 | 900 | | 0.031 | .030 - .080 | .006 - .012 |
| | GM | 1000 | 700 | 600 | 0.047 | .060 - .150 | .008 - .016 |
| | R | 800 | 600 | 500 | 0.047 | .100 - .275 | .010 - .023 |
| Ductile & Malleable Cast Iron 140 - 180 BHN | F | 1200 | | | 0.031 | .015 - .030 | .004 - .008 |
| | SF | 1050 | 850 | | 0.031 | .030 - .080 | .006 - .012 |
| | GM | 850 | 750 | 650 | 0.047 | .060 - .150 | .008 - .017 |
| | R | 750 | 650 | 550 | 0.047 | .100 - .300 | .012 - .024 |
| Ductile & Malleable Cast Iron 220 - 260 BHN | F | 1100 | | | 0.031 | .015 - .030 | .004 - .008 |
| | SF | 900 | 800 | | 0.031 | .030 - .080 | .006 - .012 |
| | GM | 800 | 650 | 550 | 0.047 | .060 - .150 | .008 - .015 |
| | R | 700 | 550 | 450 | 0.047 | .100 - .250 | .012 - .022 |
| Powder Metals | F | 1000 | | | 0.031 | .015 - .030 | .004 - .008 |
| | SF | 800 | 700 | | 0.031 | .030 - .080 | .006 - .012 |
| | GM | 700 | 600 | 500 | 0.047 | .060 - .150 | .008 - .015 |
| | R | 600 | 500 | 450 | 0.047 | .100 - .250 | .012 - .022 |

F - Finishing, SF - Semi-Finishing, GM - General Machining, R - Roughing

GEOMETRY APPLICATION RANGE



## INSERT SELECTION PROCESS

ValTURN™

### HIGH TEMPERATURE ALLOYS

| OPERATION | CONDITION | TOP FORM GEOMETRY | | RECOMMENDED Grade | |
|---|---|---|---|---|---|
| | | ANSI Negative | ISO Positive | First Choice | Second Choice |
| **Finishing**<br>**Depth of Cut:** 0.010 - 0.015 in. **ISO**<br>0.010 - 0.025 in. **ANSI**<br>**Feed Rate:** 0.002 - 0.004 ipr **ISO**<br>0.003 - 0.005 ipr **ANSI**<br>**Nose Radius:** 0.031 in. | Continuous Cuts | | 1L | VP7615 | VPUS10 |
| | Continuous Cuts | F5, M2 | | VP8535 | VP5525 |
| | Interruption | M5, M8 | | VP8535 | VP5525 |
| **Semi-Finishing**<br>**Depth of Cut:** 0.010 - 0.025 in. **ISO**<br>0.015 - 0.030 in. **ANSI**<br>**Feed Rate:** 0.003 - 0.004 ipr **ISO**<br>0.004 - 0.006 ipr **ANSI**<br>**Nose Radius:** 0.031 in. | Continuous Cuts | | 1L | VP7615 | VPUS10 |
| | Continuous Cuts | F5, M2 | | VP8535 | VP5525 |
| | Interruption | M5, M8 | | VP8535 | VP5525 |
| **General Machining**<br>**Depth of Cut:** 0.015 - 0.030 in. **ISO**<br>0.025 - 0.060 in. **ANSI**<br>**Feed Rate:** 0.003 - 0.006 ipr **ISO**<br>0.004 - 0.010 ipr **ANSI**<br>**Nose Radius:** 0.031 in. | Continuous Cuts | | 1L | VP7615 | VPUS10 |
| | Continuous Cuts | M2 | | VP8535 | VP5525 |
| | Interruption | M5, M8, R6 | | VP8535 | VP5525<br>VP5535 |
| **Roughing**<br>**Depth of Cut:** 0.050 - 0.100 in.<br>**Feed Rate:** 0.006 - 0.015 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | M5 | | VP8535 | VP5525 |
| | Moderate Interruption | M5, M8, R6 | | VP8535 | VP5535 |
| | Heavy Interruption | R3, R4 | | VP5535 | |

ValTURN™

## INSERT APPLICATION DATA

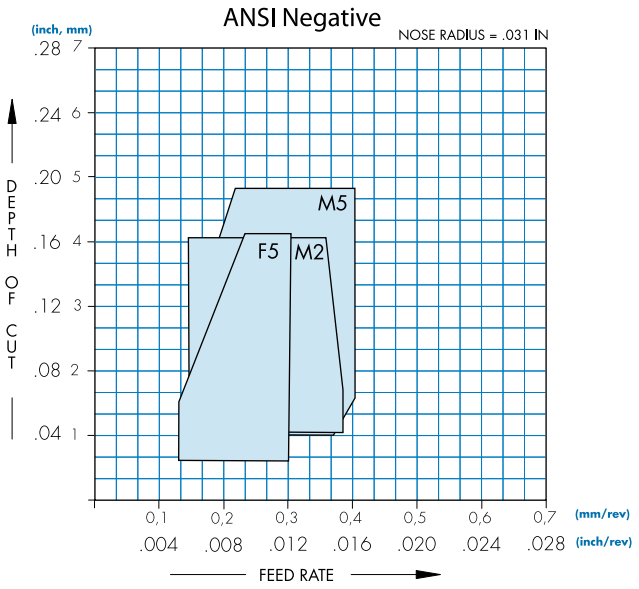
### HIGH TEMPERATURE ALLOYS

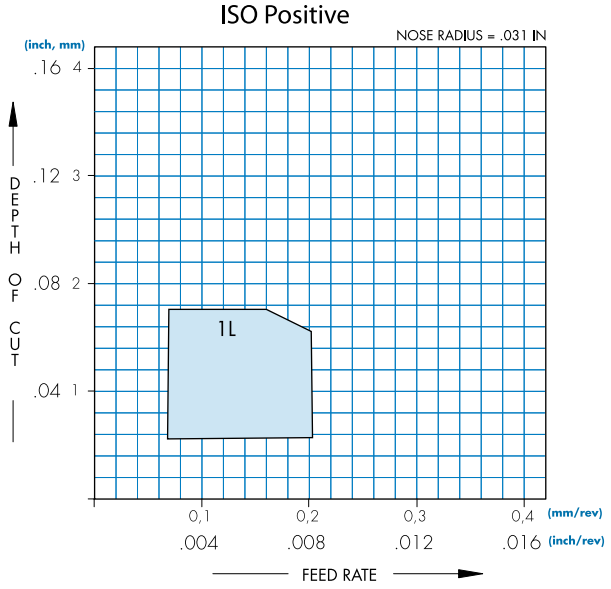
GRADE APPLICATION RANGE

| | | CUTTING SPEED, SFM | | | | Nose Radius, Inch | DOC, inch | FEED RATE, IPR |
|---|---|---|---|---|---|---|---|---|
| | | COATED | | VP8535 | UNCOATED | | | |
| | | VP7615 | VP5525 | VP5535 | VPUS10 | | | |
| Iron Base Alloys - A-286, Discalloy, Incoloy | F | 450 | 350 | 300 | 275 | 0.031 | .010 - .025 | .003 - .005 |
| | SF | 400 | 325 | 275 | 250 | 0.031 | .015 - .030 | .004 - .006 |
| | GM | 350 | 300 | 250 | 225 | 0.031 | .025 - .060 | .005 - .010 |
| | R | 300 | 275 | 225 | 200 | 0.031 | .060 - .150 | .006 - .015 |
| Nickel Base Alloys - Monel, Hastelloy Inconel, Wapaloy | F | 250 | 200 | 175 | 150 | 0.031 | .010 - .025 | .003 - .005 |
| | SF | 225 | 175 | 150 | 125 | 0.031 | .015 - .030 | .004 - .006 |
| | GM | 200 | 150 | 125 | 100 | 0.031 | .025 - .060 | .005 - .010 |
| | R | 175 | 125 | 100 | 80 | 0.031 | .060 - .150 | .006 - .015 |
| Cobalt Base Alloys - Haynes Stellite | F | 200 | 150 | 125 | 115 | 0.031 | .010 - .025 | .003 - .005 |
| | SF | 175 | 125 | 100 | 100 | 0.031 | .015 - .030 | .004 - .006 |
| | GM | 150 | 100 | 80 | 70 | 0.031 | .025 - .060 | .005 - .010 |
| | R | | 80 | 60 | 50 | 0.031 | .060 - .150 | .006 - .015 |
| Titanium Alloys - 6Al-4V | F | 350 | | | 300 | 0.031 | .010 - .025 | .003 - .005 |
| | SF | 300 | | | 250 | 0.031 | .015 - .030 | .004 - .006 |
| | GM | 250 | | | 225 | 0.031 | .025 - .060 | .005 - .010 |
| | R | | | | 200 | 0.031 | .060 - .150 | .006 - .015 |

F - Finishing, SF - Semi-Finishing, GM - General Machining, R - Roughing

GEOMETRY APPLICATION RANGE



## INSERT SELECTION PROCESS

ValTURN™

### NON-FERROUS MATERIALS

| OPERATION | CONDITION | TOP FORM GEOMETRY | | RECOMMENDED Grade | |
|---|---|---|---|---|---|
| | | ISO Positive | ISO Positive | First Choice | Second Choice |
| **Aluminum <7% Silicon** | | | | | |
| **Finishing/Semi-Finishing**<br>**Depth of Cut:** 0.010 - 0.050 in.<br>**Feed Rate:** 0.003 - 0.008 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | Flat Top | 1L Flat Top | VP7615 | VPUS10<br>VPD720* |
| | Interruption | Flat Top | 1L Flat Top | VP7615 | VPUS10<br>VPD720* |
| **General Machining**<br>**Depth of Cut:** 0.050 - 0.100 in.<br>**Feed Rate:** 0.008 - 0.0204 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | Flat Top | 1L Flat Top | VP7615 | VPUS10<br>VPD720* |
| | Interruption | Flat Top | 1L Flat Top | VP7615 | VPUS10<br>VPD720* |
| **Aluminum > 7% Silicon & Non-Ferrous Materials** | | | | | |
| **Finishing/Semi-Finishing**<br>**Depth of Cut:** 0.010 - 0.050 in.<br>**Feed Rate:** 0.003 - 0.008 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | Flat Top | Flat Top 1L | VPD720* VP7615 | VPUS10 |
| | Interruption | Flat Top | Flat Top 1L | VPD720* VP7615 | VPUS10 |
| **General Machining**<br>**Depth of Cut:** 0.050 - 0.100 in.<br>**Feed Rate:** 0.008 - 0.020 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | Flat Top | Flat Top 1L | VPD720* VP7615 | VPUS10 |
| | Interruption | Flat Top | Flat Top 1L | VPD720* VP7615 | VPUS10 |

* VPD720 Product availability Information - Contact your Valenite Sales Representative.

ValTURN™

## INSERT APPLICATION DATA

### NON-FERROUS MATERIALS

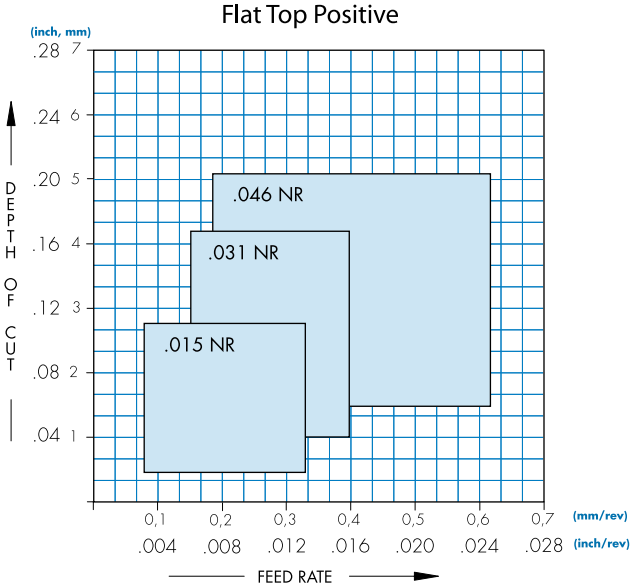
GRADE APPLICATION RANGE

| | | CUTTING SPEED, SFM | | | Nose Radius, Inch | DOC, inch | FEED RATE, IPR |
|---|---|---|---|---|---|---|---|
| | | PCD | COATED | UNCOATED | | | |
| | | VPD720 | VP7615 | VPUS10 | | | |
| Aluminum Alloys < 7% Silicon | F, SF | 6000 - 2000 | 2500 - 2000 | 1750 - 1500 | 0.031 | .010 - .050 | .003 - .008 |
| | GM | 2500 - 1500 | 2000 - 1500 | 1500 - 1250 | 0.031 | .050 - .100 | .008 - .020 |
| Aluminum Alloys 7 - 12% Silicon | F, SF | 6000 - 2000 | 2250 - 1750 | 1500 - 1250 | 0.031 | .010 - .050 | .003 - .008 |
| | GM | 2500 - 1500 | 1750 - 1250 | 1250 - 1000 | 0.031 | .050 - .100 | .008 - .020 |
| Aluminum Alloys > 12% Silicon | F, SF | 1400 - 800 | 800 - 600 | 600 - 500 | 0.031 | .010 - .050 | .003 - .008 |
| | GM | 1200 - 600 | 600 - 500 | 500 - 400 | 0.031 | .050 - .100 | .008 - .020 |
| Copper Alloys | F, SF | 1800 - 1200 | 1200 - 800 | 800 - 600 | 0.031 | .010 - .050 | .003 - .008 |
| | GM | 1200 - 600 | 800 - 500 | 600 - 400 | 0.031 | .050 - .100 | .008 - .020 |

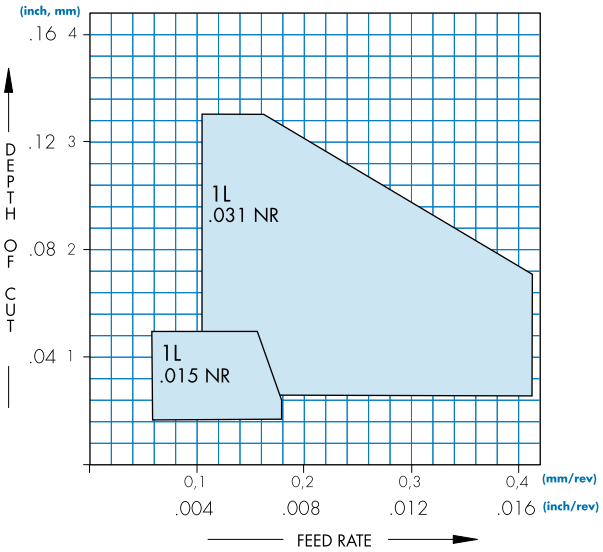
F - Finishing, SF - Semi-Finishing, GM - General Machining, R - Roughing

GEOMETRY APPLICATION RANGE

Flat Top Positive




ISO Positive



## INSERT SELECTION PROCESS

ValTURN™

### HARDENED MATERIALS

| OPERATION | CONDITION | TOP FORM GEOMETRY | RECOMMENDED Grade | |
|---|---|---|---|---|
| | | ANSI Negative | First Choice | Second Choice |
| **Hard Metals 40 - 50 RC** | | | | |
| **Finishing/Semi-Finishing**<br>**Depth of Cut:** 0.010 - 0.030 in.<br>**Feed Rate:** 0.003 - 0.005 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | Flat Top M5, M8 | Q35 | VP1510 |
| | Moderate Interruption | Flat Top R3, R4 | VP5515 | Q35 |
| | Heavy Interruption | Flat Top R3, R4 | VP5525 | |
| **General Machining**<br>**Depth of Cut:** 0.030 - 0.080 in.<br>**Feed Rate:** 0.006 - 0.010 ipr<br>**Nose Radius:** 0.047 in. | Continuous Cuts | Flat Top M5, M8 | Q35 | Q35<br>VP1510 |
| | Moderate Interruption | Flat Top M8, R3, R4 | VP5515 | Q35 |
| | Heavy Interruption | Flat Top R3, R4 | VP5525 | |
| **Hard Metals 50 - 60 RC** | | | | |
| **Finishing/Semi-Finishing**<br>**Depth of Cut:** 0.010 - 0.030 in.<br>**Feed Rate:** 0.003 - 0.005 ipr<br>**Nose Radius:** 0.031 in. | Continuous Cuts | Flat Top M5 | VPB215* | Q35<br>VP1510 |
| | Moderate Interruption | Flat Top M8, R3 | VPB125 | VP5515 |
| | Heavy Interruption | Flat Top R3, R4 | VPB125 | VP5515 |
| **General Machining**<br>**Depth of Cut:** 0.030 - 0.080 in.<br>**Feed Rate:** 0.006 - 0.010 ipr<br>**Nose Radius:** 0.047 in. | Continuous Cuts | Flat Top M5, M8 | VPB125 | Q35<br>VP1510 |
| | Moderate Interruption | Flat Top M8, R3, R4 | VPB125 | VP5515 |
| | Heavy Interruption | Flat Top R3, R4 | VPB125 | VP5515 |

* VPB215 Product availability Information - Contact your Valenite Sales Representative.

ValTURN™

## INSERT APPLICATION DATA

### HARDENED MATERIALS

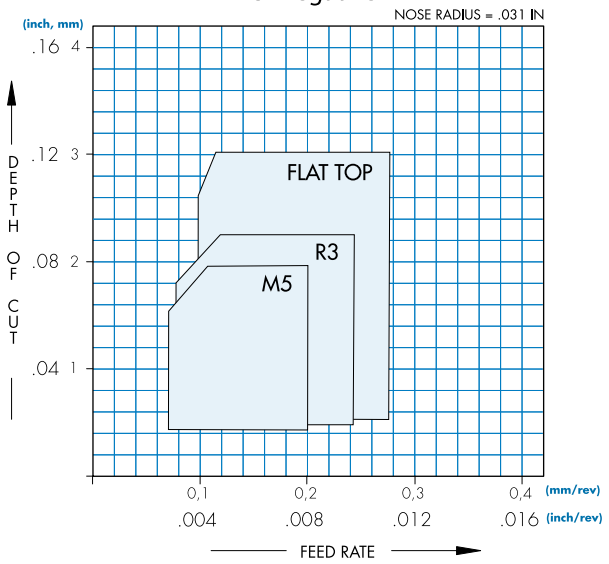
GRADE APPLICATION RANGE

| | | CUTTING SPEED, SFM | | | | | Nose Radius, Inch | DOC, Inch | FEED RATE, IPR |
|---|---|---|---|---|---|---|---|---|---|
| | | CBN | CERAMIC | COATED | | | | | |
| | | VPB125 | Q35 | VP1510 | VP5515 | VP5525 | | | |
| Alloy Steels 40 - 50 Rc | F, SF | 500 - 400 | 450 - 350 | 150 - 125 | 125 - 100 | 125 - 100 | 0.031 | .010 | .003 - .005 |
| | GM | 400 - 350 | 350 - 250 | 125 - 100 | 100 - 80 | 100 - 80 | 0.047 | .030 - .080 | .006 - .010 |
| Tool & Die Steels 50 - 60 Rc | F, SF | 400 - 300 | 350 - 300 | 125 - 100 | 100 - 75 | 100 - 75 | 0.031 | .010 - .030 | .003 - .005 |
| | GM | 300 - 200 | 300 - 250 | 100 - 75 | 75 - 50 | 75 - 50 | 0.047 | .030 - .080 | .006 - .010 |
| Chilled Cast Irons Ni-Resist Irons 40 - 50 Rc | F, SF | 500 - 400 | 450 - 350 | 150 - 125 | 125 - 100 | 125 - 100 | 0.031 | .010 - .030 | .003 - .005 |
| | GM | 400 - 350 | 350 - 250 | 125 - 100 | 100 - 80 | 100 - 80 | 0.047 | .030 - .080 | .006 - .010 |
| Chilled Cast Irons Ni-Resist Irons 50 - 60 Rc | F, SF | 400 - 300 | 350 - 300 | 125 - 100 | 100 - 75 | 100 - 75 | 0.031 | .010 - .030 | .003 - .005 |
| | GM | 300 - 200 | 300 - 250 | 100 - 75 | 75 - 50 | 75 - 50 | 0.047 | .030 - .080 | .006 - .010 |

F - Finishing, SF - Semi-Finishing, GM - General Machining, R - Roughing

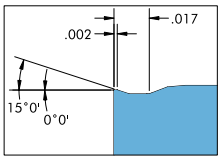
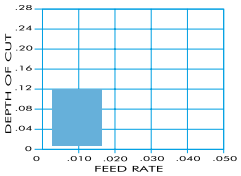
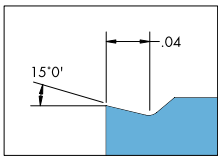
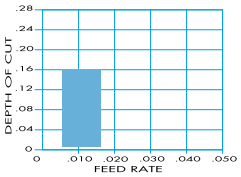
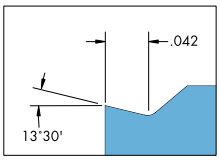
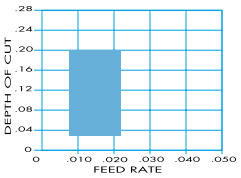
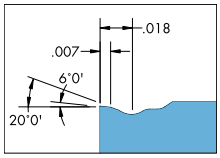
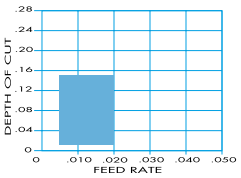
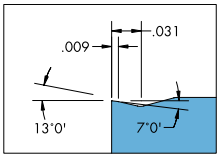
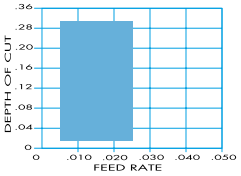
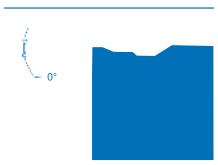
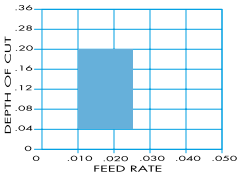
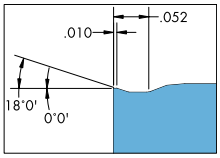
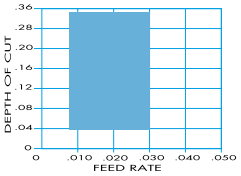
GEOMETRY APPLICATION RANGE

ANSI Negative



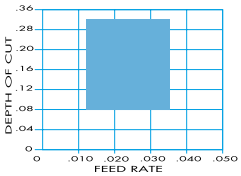
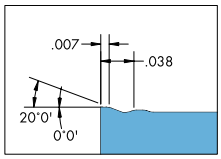
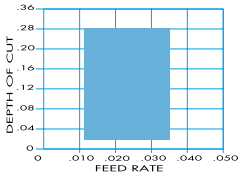
## INSERT GEOMETRY APPLICATION DATA

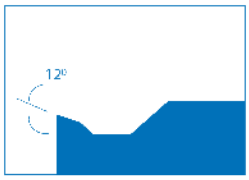
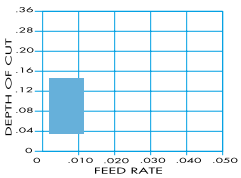
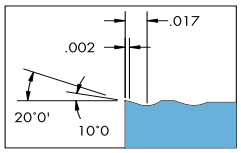
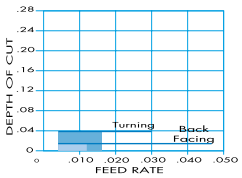
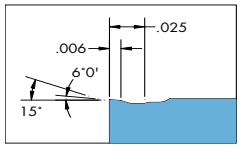
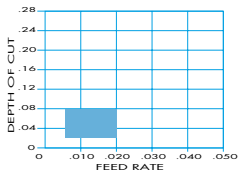
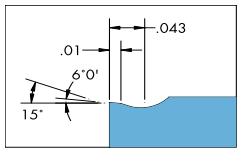
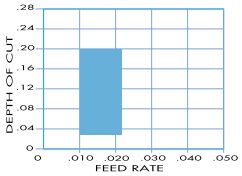
ValTURN™

| ANSI NEGATIVE | CHIPBREAKER PROFILE | MATERIAL | APPLICATION RANGE | FEATURES & BENEFITS |
|---|---|---|---|---|
| **F2** | 15° Positive Cutting Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •Finishing applications<br>•Good chip control on light cuts<br><br>Main Application Area:<br>0.002 - 0.016 ipr feed rate<br>0.012 - 0.120 in. depth of cut |
| **F5** | 15° Positive Cutting Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •Finishing to medium machining<br>•High positive cutting angle<br>•Low cutting forces - ideal for soft materials, work hardening materials<br><br>Main Application Area:<br>0.002 - 0.014 ipr feed rate<br>0.010 - 0.160 in. depth of cut |
| **M2** | 13°30' Positive Cutting Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •Semi-finishing to light roughing<br>•High positive cutting angle<br>•Low cutting forces - ideal for soft materials, work hardening materials<br><br>Main Application Area:<br>0.005 - 0.022 ipr feed rate<br>0.030 - 0.200 in. depth of cut |
| **M3** | 6° Positive Cutting Land Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •Finishing to semi-finishing<br>•Neutral land for greater edge strength<br>•Medium to high feed rates<br>•Good for slight to moderate interrupted cuts<br><br>Main Application Area:<br>0.004 - 0.017 ipr feed rate<br>0.015 - 0.150 in. depth of cut |
| **M5** | 7° Positive Cutting Land Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •General machining/semi-finishing to light-roughing<br>•Wide range of materials<br>•Positive cutting angle<br>•Medium feed rates and medium depths of cut<br><br>Main Application Area:<br>0.005 - 0.023 ipr feed rate<br>0.020 - 0.3000 in. depth of cut |
| **M8** | Neutral Cutting Land Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | • Double-Sided General Purpose Insert<br>• Strong Cutting Edge for Reliability<br>• Good for Machining Cast & Forged Surfaces<br>• First Choice for Cast Iron Materials<br><br>Main Application Area<br>0.010 - 0.024 ipr feed rate<br>0.040 - 0.200 in. depth of cut |
| **R3** | Neutral Cutting Land Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •Roughing applications<br>•Neutral land for strong edge<br>•Suitable for interrupted cuts<br>•Medium to high feed rates and depths of cut<br><br>Main Application Area:<br>0.008 - 0.030 ipr feed rate<br>0.040 - 0.340 in. depth of cut |

ValTURN™

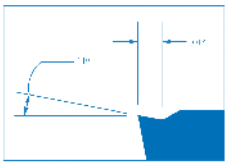
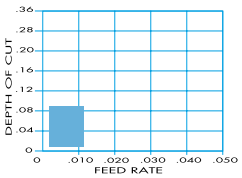
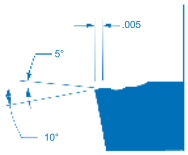
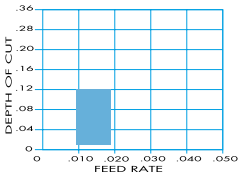
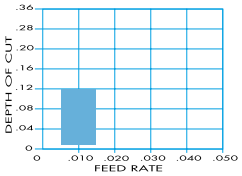
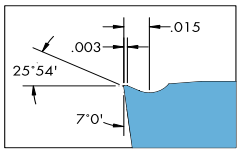
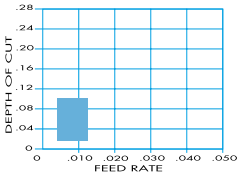
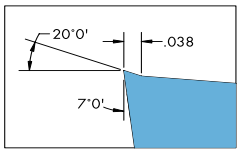
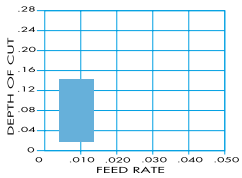
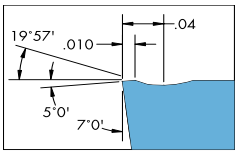
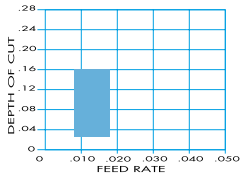
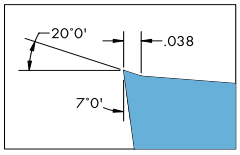
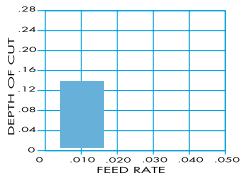
## INSERT GEOMETRY APPLICATION DATA

| ANSI NEGATIVE | CHIPBREAKER PROFILE | MATERIALS | APPLICATION RANGE | FEATURES & BENEFITS |
|---|---|---|---|---|
| **R4** | Neutral Cutting Land Angle | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | • Double-Sided Insert for Medium Roughing<br>• Extremely Tough Cutting Edge<br>• Best Choice Interrupted Cuts<br>• Maximum Chip Control Capability<br><br>Main Application Area:<br>0.014 - 0.034 ipr feed rate<br>0.080 - 0.300 in. depth of cut |
| **R6** | Neutral Cutting Land Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •High feed roughing<br>•Positive cutting angle<br>•Reduced cutting forces, smooth chip flow<br>•Primarily for continuous cuts<br><br>Main Application Area:<br>0.012 - 0.35 ipr feed rate<br>0.020 - 0.280 in. depth of cut |

| ANSI NEGATIVE | CHIPBREAKER PROFILE | MATERIALS | APPLICATION RANGE | FEATURES & BENEFITS |
|---|---|---|---|---|
| **C2** | 12° Postive Cutting Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | • Double-Sided Insert Positive Cutting Land<br>• Excellent on Low Carbon Automotive Stampings<br>• Effective Chip Control at Low Depths of Cut<br>• Produces Superior Surface Finishes<br><br>Main Application Area:<br>0.004 - 0.010 ipr feed rate<br>0.020 - 0.125 in. depth of cut |
| **C3** | 20° Positive Cutting Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •Unique insert shape for back facing<br>•Good chip control on very light finishing cuts<br>Turning Application Area:<br>.004 - .016 ipr<br>.040 max doc<br>Back Facing Application range:<br>.004 - .012 ipr<br>.015 max doc |
| **W3** | 6° Positive Cutting Land Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •Wiper geometry for finishing<br>•Produces good surface finishes at high feed rates<br>•Can be used to improve surface finish<br>•Light to medium depths of cut<br><br>Main Application Area:<br>0.006 - 0.020 ipr feed rate<br>0.020 - 0.080 in. depth of cut |
| **W6** | 6° Positive Cutting Land Angle   | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |   | •Wiper geometry for semi-finishing and finishing<br>•Produces good surface finishes at high feed rates<br>•Can be used to improve surface finish<br>•medium to heavy depths of cut<br><br>Main Application Area:<br>0.005 - 0.022 ipr feed rate<br>0.030 - 0.200 in. depth of cut |

## INSERT GEOMETRY APPLICATION DATA

ValTURN™

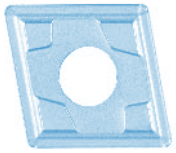
| ANSI NEGATIVE | | MATERIALS | | ROUGHING |
|---|---|---|---|---|
| **PF2** | 11° Positve Cutting Angle  | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |  | • Single-Sided Insert for Low Feed Finishing<br>• Positive Land Reduce Cutting Forces<br>• Excellent Chip-Control At Low Depths Of Cut<br>• Recommended for Steel, Stainless Steels<br><br>Main Application<br>0.003 - 0.011 ipr feed rate<br>0.010 - 0.080 in. depth of cut |
| **PF5** | 5° Positive Cutting Angle  | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |  | • Single-Sided Insert For Light / Medium Machining<br>• Negative Cutting Land for Improved Edge Strength<br>• Unique Positive Step Chipbreaker at Corner Radius<br>• Recommended for Steels, Stainless Steels, & Irons<br><br>Main Application<br>0.008 - 0.016 ipr feed rate<br>0.020 - 0.120 in. depth of cut |
| **PM2** | 12° Positive Cutting Angle | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |  | • Single-sided, Screw-Down Finishing Insert<br>• Positive Cutting Land for Reduced Forces<br>• Broad Chip Control Application Range<br>• Excellent Profiling Capabilities<br><br>Main Application Area:<br>0.003 - 0.16 ipr feed rate<br>0.005 - 0.100 in. depth of cut |
| **PM3** | 25°54' Positive Cutting Angle  | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |  | •Finishing and semi-finishing applications<br>•High positive cutting angle<br>•Low cutting forces<br>•Good chip control at light feed/depth of cut<br><br>Main Application Area:<br>0.003 - 0.012 ipr feed rate<br>0.015 - 0.100 in. depth of cut |
| **PM4** | 20° Positive Cutting Angle  | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |  | •Semi-finishing to medium machining<br>•Positive geometry with neutral land<br>•Low to medium feed rates/medium depths of cut<br>•Good chip control on wide variety of applications<br>Main Application Area:<br>0.0035 - 0.0135 ipr feed rate<br>0.025 - 0.140 in. depth of cut |
| **PM5** | Negative 5° Cutting Land Angle  | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |  | •Semi-finishing to light roughing<br>•Available only in round inserts<br>•Negative land for additional edge strength<br>•Medium feed rates and medium depths of cut<br><br>Main Application Area:<br>0.008 - 0.018 ipr feed rate<br>0.030 - 0.160 in. depth of cut |
| **1L** | 20° Positive Cutting Angle  | STEELS<br>STAINLESS STEELS<br>CAST IRONS<br>NON-FERROUS MATERIAL<br>HIGH TEMPERATURE ALLOYS<br>HARDENED MATERIAL |  | •High positive cutting angle<br>•Finishing to roughing on aluminum<br>•Finishing on high temp alloys<br>•Low cutting forces, good chip control<br><br>Main Application Area:<br>0.004 - 0.016 ipr feed rate<br>0.005 - 0.140 in. depth of cut |

ValTURN™

## W3/W6 WIPER TECHNICAL GUIDELINES

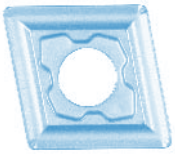
### Insert Geometries Selection

**W3**



Used for finishing operations. Capable of producing quality finishes at high rates. Can be used at conventional feed rates for superior finishes.

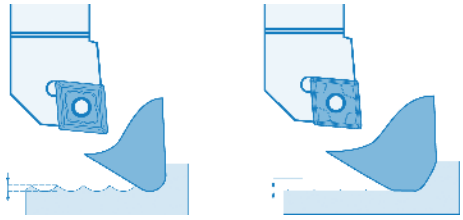
**W6**



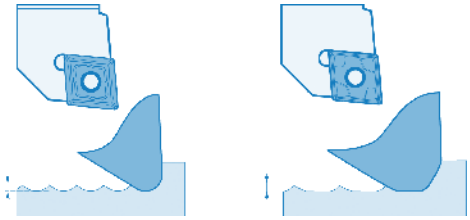
Used for semi-finish and finishing operations. Allows increased productivity while producing surfaces as good as those produced by conventional inserts.

### How Wiper Inserts Work

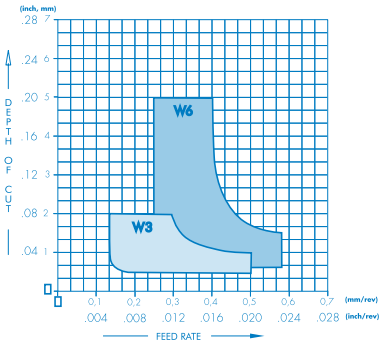
Conventional inserts produce a certain finish (Ra) at a given feed rate(ipr). Using wiper inserts can improve finish or increase feed rate.



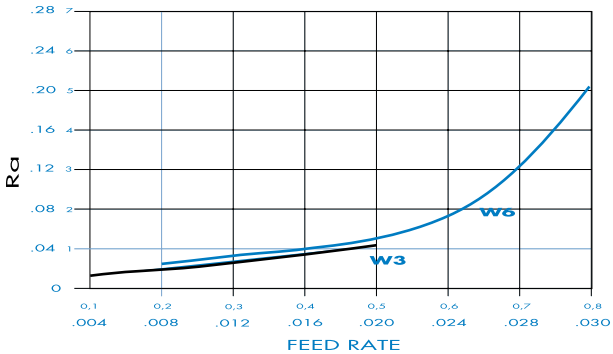
Wiper inserts operating at the same feed rate (ipr) as conventional inserts can improve surface finish by up to 100%.



Wiper inserts can also produce surfaces equal to those of conventional inserts while doubling the feed rate (ipr).

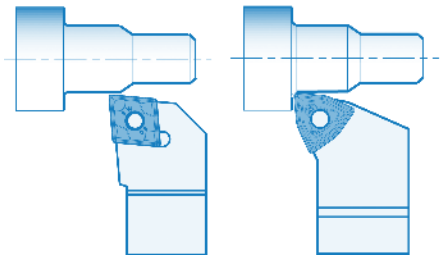



Get improved chip control and improved tool life at existing feed rates while improving surface finishes by 100%.

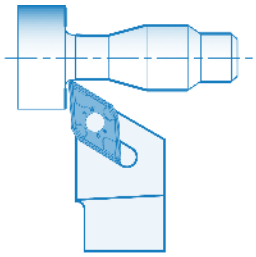



Innovative wiper corner radius design improves surface finish compared to conventional inserts with the same corner radius.

### Wiper Usage Guidelines



CNMG and WNMG wiper inserts produce a "true corner radius" equal to the radius produced by non-wiper inserts.



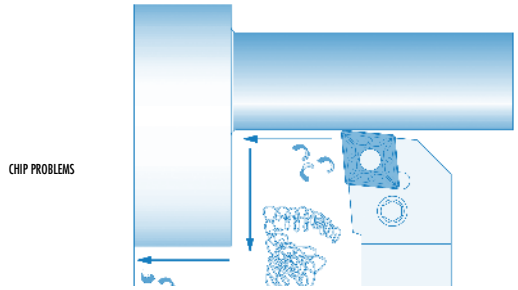
DNMG wiper inserts produce corner radius that is not "true"; but is within tolerance range of most manufacturing requirements.

## C3 BACK FACING GUIDELINES

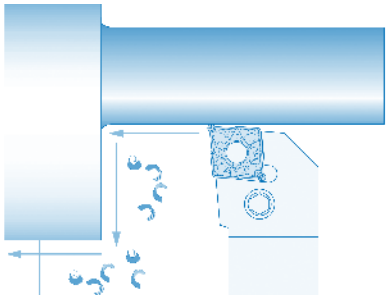
ValTURN™

### Facing Cuts

Special corner radius shape provides chip control on difficult to control out-facing operations



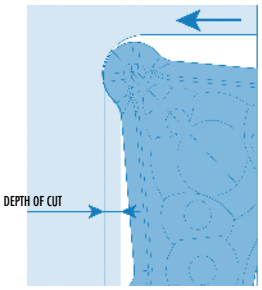

Problem: Standard inserts produce an uncontrolled chip when working up the face.



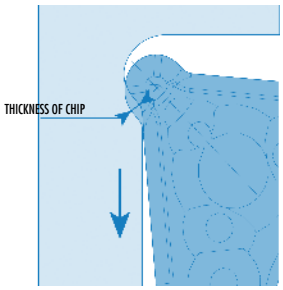
Solution: Due to its special radius shape, the C3 geometry provides excellent chip control when working up faces.

### How to Position for Facing Cuts

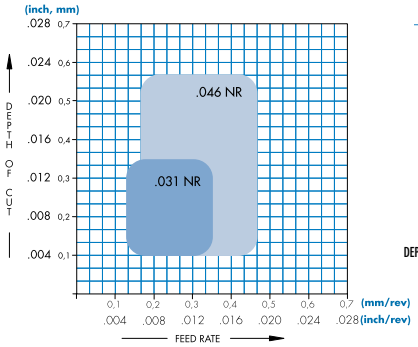
Position of insert at the end of lathe cutting

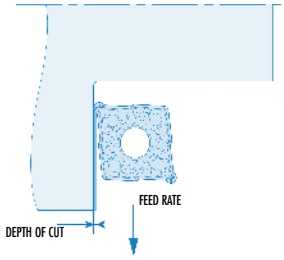



Removing material while "working up" the face




#### Application Range for Facing Cuts



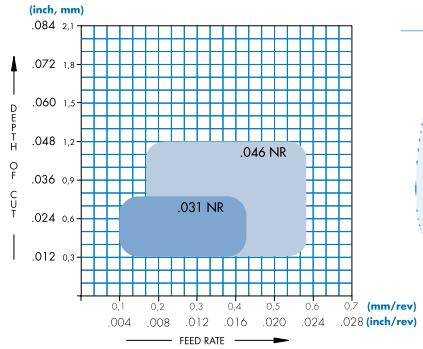

### Rough Finishing

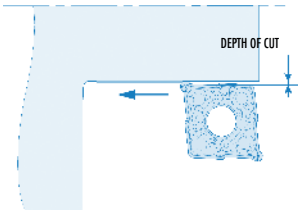
Can be used for corner cuts, rough finishing of cylindrical contact surfaces or recesses on shoulders without interruption of machining.

### Turning Cuts

Excellent chip control where light depth of cut and low feed rate is required.

#### Application Range for Turning




The recommended depth of cut should not exceed the nose radius.

ValTURN™

## TURNING FORMULAS

### Cutting Speed (surface feet/min)

$$SFM = .262 \times DIA \times RPM$$

### Revolutions Per Minute

$$RPM = \frac{3.82 \times SFM}{DIA}$$

### Feed Rate (in./min.)

$$IPM = IPR \times RPM$$

### Cutting Time (min.)

$$T = \frac{L}{IPM}$$

### Surface Finish - AA Calculation

$$AA = \frac{IPR^2}{24 \times N.R.}$$

### Surface Finish - RMS Calculation

$$RMS = \frac{IPR^2}{21 \times N.R}$$

### Rate of Removal (cubic in./min.)

$$Q = 12 \times DOC \times IPR \times SFM$$

### Horsepower Required at Spindle

$$HP_s = QxP$$

### Horsepower Required at Motor

$$HP_m = \frac{HP_s}{E}$$

### Torque Required at Spindle (in. - lbs.)

$$T_s = \frac{63030 \times HP_s}{RPM}$$

### AA to RMS Conversion

$$RMS = 1.11 \times A.A.$$

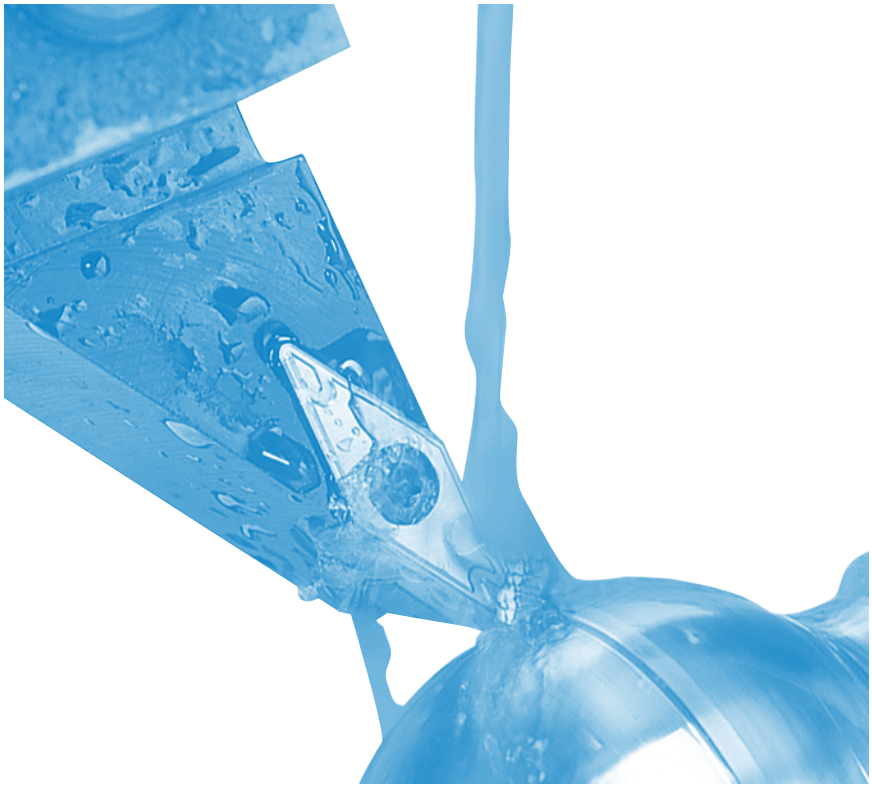
### Rockwell C to BHN Conversion

BHN ≈ Rockwell C x 10
For Materials ≥ 20 RC

**AA** = Arithmetical average surface measurement
**BHN** = Brinell hardness number
**DIA** = Diameter of workpiece in inches
**DOC** = Depth of cut in inches
**E** = Efficiency of spindle drive (typically 45%)
**HPm** = Horsepower at the motor
**HPs** = Horsepower at the spindle
**IPR** = Feed rate in inches per revolution
**IPM** = Feed rate in inches per minute
**L** = Length of cut in inches
**NR** = Nose radius
**P** = Unit power factor, horsepower per cubic inch per minute
**Q** = Metal removal rate in cubic inches per minute
**RC** = Rockwell C hardness scale
**RMS** = Root mean square surface finish measurement
**RPM** = Revolutions per minute
**SFM** = Cutting speed in surface feet per minute
**T** = Cutting time in minutes
**Ts** = Torque at spindle
**Ra** = Surface finish in mm is equal to Ra (microinches)/39.4
**AA** = Arithmetic average is equal to Ra (roughness average)

## SELECT TURNING INSERTS


| | |
|---|---|
| 80° Diamond Inserts | 54-56 |
| 55° Diamond Inserts | 56-57 |
| 45° Diamond Inserts | 57 |
| 86° Diamond Inserts | 57 |
| Round Inserts | 57-58 |
| Square Inserts | 58-60 |
| Triangle Inserts | 60-64 |
| 35° Diamond Inserts | 64 |
| Trigon Inserts | 65 |

## SELECT TURNING INSERTS

ValTURN™

| CCGT | | | | |
|---|---|---|---|---|
| **Part Number** ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CCGT2151FH CCGT 06 02 04 FH | 1/4 | .015 | SV325 | **04750** |
| CCGT2151FH CCGT 06 02 04 FH | 1/4 | .015 | VC929 | **06251** |
| CCGT2152FH CCGT 06 02 08 FH | 1/4 | .031 | VC929 | **06252** |
| CCGT3251FH CCGT 09 T3 04 FH | 3/8 | .015 | SV325 | **04755** |
| CCGT3251FH CCGT 09 T3 04 FH | 3/8 | .015 | VC929 | **06254** |
| CCGT3252FH CCGT 09 T3 08 FH | 3/8 | .031 | SV315 | **04757** |
| CCGT3252FH CCGT 09 T3 08 FH | 3/8 | .031 | SV325 | **04758** |
| CCGT3252FH CCGT 09 T3 08 FH | 3/8 | .031 | VC929 | **06256** |
| CCGT3252FH0025H CCGT 32 52 FH | 3/8 | .031 | VC901 | **06257** |
| CCGT432FH CCGT 12 04 08 FH | 1/2 | .031 | SV235 | **03618** |
| CCGT432FH CCGT 12 04 08 FH | 1/2 | .031 | SV325 | **04761** |
| CCGT433FH CCGT 12 04 12 FH | 1/2 | .046 | SV310 | **04762** |

| CCMT | | | | |
|---|---|---|---|---|
| **Part Number** ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CCMT21512A CCMT 06 02 04 2A | 1/4 | .015 | VN8 | **05587** |
| CCMT21512A CCMT 06 02 08 2A | 1/4 | .015 | V1N | **05586** |
| CCMT32511A CCMT 09 T3 04 1A | 3/8 | .015 | VN8 | **05590** |
| CCMT32511A CCMT 09 T3 04 1A | 3/8 | .015 | V1N | **05589** |
| CCMT32511A CCMT 09 T3 04 1A | 3/8 | .015 | SV235 | **04763** |
| CCMT32521A CCMT 09 T3 08 1A | 3/8 | .031 | SV235 | **04764** |
| CCMT4321A CCMT 12 04 08 1A | 1/2 | .031 | V1N | **05594** |

| CNMA | | | | |
|---|---|---|---|---|
| **Part Number** ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CNMA432 CNMA 12 04 08 | 1/2 | .031 | SV310 | **03764** |
| CNMA432 CNMA 12 04 08 | 1/2 | .031 | VC2 | **08481** |
| CNMA433 CNMA 12 04 12 | 1/2 | .046 | SV310 | **03766** |

| CNMG | | | | |
|---|---|---|---|---|
| **Part Number** ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CNMG431GF CNMG 12 04 04 GF | 1/2 | .015 | SV315 | **03788** |
| CNMG431GF CNMG 12 04 04 GF | 1/2 | .015 | VC929 | **05981** |
| CNMG431LM CNMG 12 04 04 LM | 1/2 | .015 | SV315 | **03788** |
| CNMG431LM CNMG 12 04 04 LM | 1/2 | .015 | SV325 | **03789** |
| CNMG431LM CNMG 12 04 04 LM | 1/2 | .015 | VC29 | **09412** |
| CNMG431 CNMG 12 04 04 | 1/2 | .015 | V1N | **03156** |
| CNMG432 CNMG 12 04 08 | 1/2 | .031 | VN8 | **03161** |
| CNMG432 CNMG 12 04 08 | 1/2 | .031 | V1N | **03159** |
| CNMG432 CNMG 12 04 08 | 1/2 | .031 | VC2 | **08600** |
| CNMG432GF CNMG 12 04 08 GF | 1/2 | .031 | SV315 | **03794** |
| CNMG432GF CNMG 12 04 08 GF | 1/2 | .031 | SV325 | **03795** |
| CNMG432GF CNMG 12 04 08 GF | 1/2 | .031 | VC29 | **09413** |
| CNMG432GM CNMG 12 04 08 GM | 1/2 | .031 | SV235 | **03797** |
| CNMG432GM CNMG 12 04 08 GM | 1/2 | .031 | SV310 | **03799** |
| CNMG432GM CNMG 12 04 08 GM | 1/2 | .031 | SV315 | **03800** |
| CNMG432GM CNMG 12 04 08 GM | 1/2 | .031 | SV325 | **03801** |
| CNMG432GM CNMG 12 04 08 GM | 1/2 | .031 | SV525 | **05033** |
| CNMG432GR CNMG 12 04 08 GR | 1/2 | .031 | SV235 | **03802** |
| CNMG432GR CNMG 12 04 08 GR | 1/2 | .031 | SV315 | **03805** |
| CNMG432GR CNMG 12 04 08 GR | 1/2 | .031 | SV325 | **03806** |
| CNMG432LF CNMG 12 04 08 LF | 1/2 | .031 | SV315 | **03812** |
| CNMG432LM CNMG 12 04 08 LM | 1/2 | .031 | VN8 | **03161** |
| CNMG432LM CNMG 12 04 08 LM | 1/2 | .031 | V1N | **03159** |
| CNMG432LM CNMG 12 04 08 LM | 1/2 | .031 | SV209 | **03366** |
| CNMG432LM CNMG 12 04 08 LM | 1/2 | .031 | SV230 | **03814** |
| CNMG432LM CNMG 12 04 08 LM | 1/2 | .031 | SV235 | **03815** |
| CNMG432LM CNMG 12 04 08 LM | 1/2 | .031 | SV310 | **03817** |
| CNMG432LM CNMG 12 04 08 LM | 1/2 | .031 | SV315 | **03818** |
| CNMG432LM CNMG 12 04 08 LM | 1/2 | .031 | SV325 | **03819** |
| CNMG432LM CNMG 12 04 08 LM | 1/2 | .031 | VC29 | **09416** |

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## SELECT TURNING INSERTS

| CNMG | CONTINUED | | | |
|---|---|---|---|---|
| CNMG433GF<br>CNMG 12 04 12 GF | 1/2 | .046 | SV315 | **03824** |
| CNMG433GM<br>CNMG 12 04 12 GM | 1/2 | .046 | SV310 | **03827** |
| CNMG433GM<br>CNMG 12 04 12 GM | 1/2 | .046 | SV315 | **03828** |
| CNMG433GM<br>CNMG 12 04 12 GM | 1/2 | .046 | SV325 | **03829** |
| CNMG433GM<br>CNMG 12 04 12 GM | 1/2 | .046 | SV525 | **05053** |
| CNMG433LM<br>CNMG 12 04 12 LM | 1/2 | .046 | SV315 | **03838** |
| CNMG433LM<br>CNMG 12 04 12 LM | 1/2 | .046 | SV325 | **03839** |
| CNMG433LM<br>CNMG 12 04 12 LM | 1/2 | .046 | SV510 | **05058** |
| CNMG433LM<br>CNMG 12 04 12 LM | 1/2 | .046 | SV515 | **05059** |
| CNMG433LM<br>CNMG 12 04 12 LM | 1/2 | .046 | SV525 | **05060** |
| CNMG543GM<br>CNMG 16 06 12 GM | 5/8 | .046 | SV325 | **03858** |
| CNMG543GM<br>CNMG 16 06 12 GM | 5/8 | .046 | SV525 | **05070** |
| CNMG543LM<br>CNMG 16 06 12 LM | 5/8 | .046 | SV315 | **03868** |
| CNMG543LM<br>CNMG 16 06 12 LM | 5/8 | .046 | SV325 | **03869** |
| CNMG544GM<br>CNMG 16 06 16 GM | 5/8 | .062 | SV515 | **05077** |
| CNMG643GM<br>CNMG 19 06 12 GM | 3/4 | .046 | SV315 | **03884** |
| CNMG643GM<br>CNMG 19 06 12 GM | 3/4 | .046 | SV325 | **03885** |
| CNMG643GM<br>CNMG 19 06 12 GM | 3/4 | .046 | SV515 | **05081** |
| CNMG643GM<br>CNMG 19 06 12 GM | 3/4 | .046 | VC901 | **05996** |
| CNMG643GR<br>CNMG 19 06 12 GR | 3/4 | .046 | SV315 | **03890** |
| CNMG643GR<br>CNMG 19 06 12 GR | 3/4 | .046 | SV325 | **03891** |
| CNMG643GR<br>CNMG 19 06 12 GR | 3/4 | .046 | SV515 | **05084** |
| CNMG644GM<br>CNMG 19 06 16 GM | 3/4 | .062 | SV315 | **03901** |
| CNMG644GR<br>CNMG 19 06 16 GR | 3/4 | .062 | SV325 | **03906** |

| CNMP | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CNMP4311W<br>CNMG 12 04 04 1W | 1/2 | .015 | SV230 | **03914** |
| CNMP4311W<br>CNMG 12 04 04 1W | 1/2 | .015 | SV315 | **03917** |
| CNMP4311W<br>CNMG 12 04 04 1W | 1/2 | .015 | SV325 | **03918** |
| CNMP4311W<br>CNMG 12 04 04 1W | 1/2 | .015 | VC929 | **05999** |
| CNMP4311W<br>CNMG 12 04 04 1W | 1/2 | .015 | VC29 | **09424** |
| CNMP431E<br>CNMM 12 04 04 EN (G) | 1/2 | .015 | V1N | **03373** |
| CNMP4321W<br>CNMG 12 04 08 1W | 1/2 | .031 | SV230 | **03919** |
| CNMP4321W<br>CNMG 12 04 08 1W | 1/2 | .031 | SV325 | **03923** |
| CNMP4321W<br>CNMG 12 04 08 1W | 1/2 | .031 | VC929 | **06001** |
| CNMP4321W<br>CNMG 12 04 08 1W | 1/2 | .031 | VC2 | **08610** |
| CNMP432E<br>CNMM 12 04 08 EN (G) | 1/2 | .031 | V1N | **03377** |
| CNMP432E<br>CNMM 12 04 08 EN (G) | 1/2 | .031 | VC2 | **08737** |

| CPG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CPG421<br>CPGN 12 03 04 | 1/2 | .015 | VC29 | **09543** |
| CPG422<br>CPGN 12 03 08 | 1/2 | .031 | VC929 | **06169** |
| CPG422<br>CPGN 12 03 08 | 1/2 | .031 | VC5 | **09545** |

| CPGT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CPGT151212A<br>CPGT 04 T1 08 2A | 3/16 | .015 | V1N | **05596** |
| CPGT181512A<br>CPGT 05 02 04 2A | 7/32 | .015 | VO1 | **05598** |
| CPGT181512A<br>CPGT 05 02 04 2A | 7/32 | .015 | V1N | **05597** |
| CPGT181512A<br>CPGT 05 02 04 2A | 7/32 | .015 | VC2 | **13533** |
| CPGT181512A<br>CPGT 05 02 04 2A | 7/32 | .015 | VC5 | **13534** |
| CPGT18151FH<br>CPGT 05 02 04 FH | 7/32 | .015 | SV325 | **04768** |
| CPGT2150FH<br>CPGT 06 02 00 FH | 1/4 | .005 | VC929 | **06276** |
| CPGT2151FH<br>CPGT 06 02 04 FH | 1/4 | .015 | SV315 | **04771** |
| CPGT2151FH<br>CPGT 06 02 04 FH | 1/4 | .015 | SV325 | **04772** |
| CPGT2151FH<br>CPGT 06 02 04 FH | 1/4 | .015 | VC901 | **06277** |
| CPGT2151FH<br>CPGT 06 02 04 FH | 1/4 | .015 | VC929 | **06278** |
| CPGT2152FH<br>CPGT 06 02 08 FH | 1/4 | .031 | SV315 | **04774** |
| CPGT2152FH<br>CPGT 06 02 08 FH | 1/4 | .031 | SV325 | **04775** |
| CPGT3250FH<br>CPGT 09 T3 00 FH | 3/8 | .005 | VC929 | **06281** |
| CPGT3251FH<br>CPGT 09 T3 04 FH | 3/8 | .015 | VC929 | **06283** |

## SELECT TURNING INSERTS

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| CPGT | CONTINUED | | | |
|---|---|---|---|---|
| CPGT3252FH<br>CPGT 09 T3 08 FH | 3/8 | .031 | SV310 | **04779** |
| CPGT3252FH<br>CPGT 09 T3 08 FH | 3/8 | .031 | SV315 | **04780** |
| CPGT3252FH<br>CPGT 09 T3 08 FH | 3/8 | .031 | SV325 | **04781** |
| CPGT3252FH<br>CPGT 09 T3 08 FH | 3/8 | .031 | VC929 | **06285** |

| CPGW | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CPGW18151<br>CPGW 05 02 04 | 7/32 | .015 | VC2 | **09550** |

| CPMT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CPMT21502A<br>CPMT 06 02 00 2A | 1/4 | .005 | SV235 | **03625** |
| CPMT21512A<br>CPMT 06 02 04 2A | 1/4 | .015 | VO1 | **05603** |
| CPMT21512A<br>CPMT 06 02 04 2A | 1/4 | .015 | VN8 | **05602** |
| CPMT21512A<br>CPMT 06 02 04 2A | 1/4 | .015 | V1N | **05601** |
| CPMT21512A<br>CPMT 06 02 04 2A | 1/4 | .015 | SV235 | **04783** |
| CPMT21512A<br>CPMT 06 02 04 2A | 1/4 | .015 | VC29 | **13536** |
| CPMT32511A<br>CPMT 09 T3 04 1A | 3/8 | .015 | V1N | **05604** |
| CPMT32511A<br>CPMT 09 T3 04 1A | 3/8 | .015 | SV235 | **04784** |
| CPMT32511A<br>CPMT 09 T3 04 1A | 3/8 | .015 | VC929 | **06287** |
| CPMT32511A<br>CPMT 09 T3 04 1A | 3/8 | .015 | VC29 | **10020** |
| CPMT32521A<br>CPMT 09 T3 08 1A | 3/8 | .031 | VO1 | **05609** |
| CPMT32521A<br>CPMT 09 T3 08 1A | 3/8 | .031 | VN8 | **05608** |
| CPMT32521A<br>CPMT 09 T3 08 1A | 3/8 | .031 | V1N | **05607** |
| CPMT32521A<br>CPMT 09 T3 08 1A | 3/8 | .031 | SV235 | **04785** |
| CPMT32521A<br>CPMT 09 T3 08 1A | 3/8 | .031 | SV325 | **04786** |

| CPMW | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| CPMW18151<br>CPMW 05 02 04 | 7/32 | .015 | VC2 | **09551** |
| CPMW2151<br>CPMW 06 02 04 | 1/4 | .015 | VC29 | **09554** |
| CPMW3251<br>CPMW 09 T304 | 3/8 | .015 | VC29 | **09557** |
| CPMW3252<br>CPMW 09 T3 08 | 3/8 | .031 | V1N | **05379** |
| CPMW3252<br>CPMW 09 T3 08 | 3/8 | .031 | VC29 | **09558** |
| CPMW432<br>CPMW 12 04 08 | 1/2 | .031 | VC29 | **09560** |

| DCGT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DCGT2152FH<br>DCGT 07 02 08 FH | 1/4 | .031 | VC929 | **06290** |
| DCGT3251FH<br>DCGT 11 T3 04 FH | 3/8 | .015 | SV310 | **04792** |
| DCGT3251FH<br>DCGT 11 T3 04 FH | 3/8 | .015 | VC929 | **06294** |
| DCGT3252FH<br>DCGT 11 T3 08 FH | 3/8 | .031 | VC929 | **06295** |

| DCMT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DCMT21512A<br>DCMT 07 02 04 2A | 1/4 | .015 | VN8 | **05614** |
| DCMT21512A<br>DCMT 07 02 04 2A | 1/4 | .015 | V1N | **05613** |
| DCMT32521A<br>DCMT 11 T3 08 1A | 3/8 | .031 | SV310 | **04800** |

| DNGA | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DNGA432<br>DNGA 15 04 08 | 1/2 | .031 | VC2 | **13741** |

| DNGP | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DNGP432A<br>DNGG 12 04 08 | 1/2 | .031 | VC2 | **10461** |

| DNMG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DNMG431LM<br>DNMG 15 04 04 LM | 1/2 | .015 | SV325 | **03944** |
| DNMG432GF<br>DNMG 15 04 08 GF | 1/2 | .031 | SV315 | **03948** |
| DNMG432GF<br>DNMG 15 04 08 GF | 1/2 | .031 | SV325 | **03949** |
| DNMG432GM<br>DNMG 15 04 08 GM | 1/2 | .031 | SV310 | **03952** |
| DNMG432GM<br>DNMG 15 04 08 GM | 1/2 | .031 | SV315 | **03953** |
| DNMG432GM<br>DNMG 15 04 08 GM | 1/2 | .031 | SV325 | **03954** |

## SELECT TURNING INSERTS

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| DNMG | CONTINUED | | | |
|---|---|---|---|---|
| DNMG432GM<br>DNMG 15 04 08 GM | 1/2 | .031 | SV525 | **05115** |
| DNMG432LF<br>DNMG 15 04 08 LF | 1/2 | .031 | SV310 | **03958** |
| DNMG432LF<br>DNMG 15 04 08 LF | 1/2 | .031 | SV315 | **03959** |
| DNMG432LM<br>DNMG 15 04 08 LM | 1/2 | .031 | SV315 | **03964** |
| DNMG432LM<br>DNMG 15 04 08 LM | 1/2 | .031 | SV325 | **03965** |
| DNMG432<br>DNMG 15 04 08 | 1/2 | .031 | V1N | **03179** |
| DNMG433GM<br>DNMG 15 04 12 GM | 1/2 | .046 | SV325 | **03972** |
| DNMG442GM<br>DNMG 15 06 08 GM | 1/2 | .031 | SV310 | **03983** |
| DNMG443GF<br>DNMG 15 06 12 GF | 1/2 | .046 | SV315 | **03991** |
| DNMG532LM<br>DNMG 19 04 08 LM | 5/8 | .031 | SV235 | **04003** |
| DNMG542LM<br>DNMG 19 06 08 LM | 5/8 | .031 | SV325 | **04007** |
| DNMG543LM<br>DNMG 19 06 12 LM | 5/8 | .046 | SV235 | **04013** |

| DNMM | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DNMM432EL<br>DNMM 12 04 08 EL | 1/2 | .031 | VC902 | **06015** |

| DNMP | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DNMP4321W<br>DNMG 15 04 08 1W | 1/2 | .031 | SV325 | **04022** |
| DNMP432E<br>DNMM 15 04 08 EN (G) | 1/2 | .031 | VC2 | **08749** |

| DPGA | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DPGA432W<br>DPGA 12 04 08 W | 1/2 | .031 | VC2 | **13582** |

| DPGT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DPGT2151FH<br>DPGT 07 02 04 FH | 1/4 | .015 | VC929 | **06306** |
| DPGT3251FH<br>DPGT 11 T3 04 FH | 3/8 | .015 | SV235 | **03627** |
| DPGT3252FH<br>DPGT 11 T3 08 FH | 3/8 | .031 | VC929 | **06311** |

| DPMT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| DPMT21512A<br>DPMT 07 02 04 2A | 1/4 | .015 | V1N | **05619** |

| GNFM | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| GNFM2522ER | 5/16 | .031 | VN5 | **03410** |

| MPL | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| MPL5534 | 5/8 | .062 | VC2 | **10167** |

| RBGH | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| RBGHX52 | .622 | -- | SV230 | **04804** |
| RBGHX52 | .745 | -- | SV230 | **04805** |
| RBGHX52 | .996 | -- | SV230 | **04806** |

| RCGT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| RCGT10T3MORP | 1/2 | -- | SV315 | **04807** |
| RCGT43RP<br>RCGT 12 04 00 RP | 1/2 | -- | SV315 | **04812** |
| RCGT43RP<br>RCGT 12 04 00 RP | 1/2 | -- | SV325 | **04813** |
| RCGT64RP<br>RCGT 19 06 00 RP | 3/4 | -- | SV325 | **04815** |

| RCGTX | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| RCGTX533B | 0.745 | -- | V1N | **05392** |
| RCGTX633B | 3/4 | -- | V1N | **05393** |

| RCMT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| RCMT3251A<br>RCMT 09 T3 04 1A | 3/8 | -- | V1N | **05628** |

## SELECT TURNING INSERTS

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### RCMW

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| RCMW325 RCMW 09 T3 00 | 3/8 | -- | VC29 | **09584** |

### RNG

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| RNG53 RNGN 15 04 00 | 5/8 | -- | VC7 | **10339** |

### RNMA

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| RNMA33 RNMA 09 04 00 | 3/8 | -- | VC2 | **08491** |
| RNMA54 RNMA 15 06 00 | 5/8 | -- | VC2 | **08494** |
| RNMA64 RNMA 19 06 00 | 3/4 | -- | VC2 | **08496** |

### RNMF

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| RNMF55RN | 5/8 | -- | SV315 | **04029** |

### RNMG

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| RNMG43 RNMG 12 04 00 | 1/2 | -- | V1N | **03194** |
| RNMG43 RNMG 12 04 00 | 1/2 | -- | SV325 | **04032** |
| RNMG64 RNMG 19 06 00 | 3/4 | -- | VC2 | **08620** |

### SCGT

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| SCGT3252FH SCGT 09 T3 08 FH | 3/8 | .031 | SV310 | **04820** |
| SCGT3252FH SCGT 09 T3 08 FH | 3/8 | .031 | SV325 | **04822** |
| SCGT432FH SCGT 12 04 08 FH | 1/2 | .031 | SV325 | **04825** |
| SCGT433FH SCGT 12 04 12 FH | 1/2 | .046 | SV325 | **04827** |

### SCMT

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| SCMT21512A SCMT 06 02 04 2A | 1/4 | .015 | V1N | **05630** |
| SCMT32521A SCMT 09 T3 08 1A | 3/8 | .031 | VN8 | **05635** |

### SCMW

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| SCMW2151 SCMW 06 02 04 | 1/4 | .015 | VC29 | **09596** |
| SCMW3252 SCMW 09 T3 08 | 3/8 | .031 | V1N | **05401** |
| SCMW3252 SCMW 09 T3 08 | 3/8 | .031 | VO1 | **05402** |

### SDSEE

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| SDSEE42A7J | 1/2 | 0/.005 | VC2 | **13645** |

### SEC

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| SEC422 SEHN 12 03 08 | 1/2 | .031 | VC902 | **06180** |
| SEC424J SEHN 12 03 16 | 1/2 | .062 | VC2 | **09619** |
| SEC424J SEHN12 03 16 | 1/2 | .062 | VC3 | **09620** |
| SECW2121 SECW 06 T1 04 | 1/4 | .015 | V1N | **05409** |
| SECW25151 SECW 08 02 04 | 5/16 | .015 | V1N | **05410** |

### SM

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| SM1032 | 5/16 | .031 | VN8 | **05412** |
| SM1032 | 5/16 | .031 | VO1 | **05413** |
| SM1032 | 5/16 | .031 | VC2 | **09644** |

### SNG

| Part Number ISO Part Number | IC (in.) | R (in.) | Grade | EDP# |
|---|---|---|---|---|
| SNG432 SNGN 12 04 08 | 1/2 | .031 | V1N | **05850** |
| SNG432 SNGN 12 04 08 | 1/2 | .031 | SV230 | **04835** |

## SELECT TURNING INSERTS

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| SNG | CONTINUED | | | |
|---|---|---|---|---|
| SNG433<br>SNGN 12 04 12 | 1/2 | .046 | V1N | **05853** |

| SNMA | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SNMA433<br>SNMA 12 04 12 | 1/2 | .046 | SV310 | **04047** |
| SNMA434<br>SNMA 12 04 16 | 1/2 | .062 | SV310 | **04048** |

| SNMC | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SNMC542H | 5/8 | .031 | V1N | **03109** |

| SNMG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SNMG322<br>SNMG 09 03 08 | 3/8 | .031 | VN8 | **03205** |
| SNMG322<br>SNMG 09 03 08 | 3/8 | .031 | V1N | **03203** |
| SNMG322LM<br>SNMG 09 03 08 LM | 3/8 | .031 | SV235 | **04055** |
| SNMG322LM<br>SNMG 09 03 08 LM | 3/8 | .031 | SV310 | **04056** |
| SNMG322LM<br>SNMG 09 03 08 LM | 3/8 | .031 | SV325 | **04057** |
| SNMG432<br>SNMG 12 04 08 | 1/2 | .031 | VN8 | **03209** |
| SNMG432<br>SNMG 12 04 08 | 1/2 | .031 | V1N | **03207** |
| SNMG432GM<br>SNMG 12 04 08 GM | 1/2 | .031 | SV315 | **04065** |
| SNMG432GM<br>SNMG 12 04 08 GM | 1/2 | .031 | SV325 | **04066** |
| SNMG432LM<br>SNMG 12 04 08 LM | 1/2 | .031 | SV310 | **04077** |
| SNMG432LM<br>SNMG 12 04 08 LM | 1/2 | .031 | SV325 | **04079** |
| SNMG433<br>SNMG 12 04 12 | 1/2 | .046 | V1N | **03213** |
| SNMG433GF<br>SNMG 12 04 12 GF | 1/2 | .046 | SV515 | **05178** |
| SNMG433GM<br>SNMG 12 04 12 GM | 1/2 | .046 | SV235 | **04081** |
| SNMG433GM<br>SNMG 12 04 12 GM | 1/2 | .046 | SV325 | **04084** |
| SNMG433GR<br>SNMG 12 04 12 GR | 1/2 | .046 | SV310 | **04085** |
| SNMG434<br>SNMG 12 04 16 | 1/2 | .062 | V1N | **03215** |
| SNMG434LM<br>SNMG 12 04 16 LM | 1/2 | .062 | SV310 | **04095** |
| SNMG543GR<br>SNMG 15 06 12 GR | 5/8 | .046 | SV325 | **04105** |
| SNMG543GR<br>SNMG 15 06 12 GR | 5/8 | .046 | SV515 | **05191** |
| SNMG543LM<br>SNMG 15 06 12 LM | 5/8 | .046 | SV315 | **04110** |
| SNMG643GM<br>SNMG 19 06 12 GM | 3/4 | .046 | SV325 | **04120** |
| SNMG643GR<br>SNMG 19 06 12 GR | 3/4 | .046 | SV325 | **04124** |
| SNMG644GM<br>SNMG 19 06 16 GM | 3/4 | .062 | SV310 | **04130** |
| SNMG644GR<br>SNMG 19 06 16 GR | 3/4 | .062 | SV235 | **04134** |
| SNMG644GR<br>SNMG 19 06 16 GR | 3/4 | .062 | SV315 | **04135** |
| SNMG644GR<br>SNMG 19 06 16 GR | 3/4 | .062 | SV325 | **04136** |
| SNMG644LM<br>SNMG 19 06 16 LM | 3/4 | .062 | SV235 | **04137** |

| SNMM | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SNMM432EL<br>SNMM 12 04 08 EL | 1/2 | .031 | VN8 | **03419** |

| SNMP | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SNMP4321W<br>SNMG 12 04 08 1W | 1/2 | .031 | SV315 | **04150** |

| SNPE | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **FLAT** | **Grade** | **EDP#** |
| SNPE63G | 3/4 | .187 | V1N | **05771** |

| SNU | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SNU433<br>SNUN 12 04 12 | 1/2 | .046 | VC35M | **08527** |

| SPG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SPG322<br>SPGN 09 03 08 | 3/8 | .031 | V1N | **05450** |
| SPG322<br>SPGN 09 03 08 | 3/8 | .031 | VO1 | **05453** |
| SPG322<br>SPGN 09 03 08 | 3/8 | .031 | SV310 | **04845** |
| SPG322<br>SPGN 09 03 08 | 3/8 | .031 | VC902 | **06185** |

## SELECT TURNING INSERTS

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| SPG | CONTINUED | | | |
|---|---|---|---|---|
| SPG322<br>SPGN 09 03 08 | 3/8 | .031 | VC2 | **09698** |
| SPG325<br>SPGN 09 T3 | 3/8 | .078 | VC23 | **09702** |
| SPG422<br>SPGN 12 03 08 | 1/2 | .031 | SV225 | **04846** |
| SPG422<br>SPGN 12 03 08 | 1/2 | .031 | SV310 | **04847** |
| SPG422<br>SPGN 12 03 08 | 1/2 | .031 | VC927 | **06187** |
| SPG422<br>SPGN 12 03 08 | 1/2 | .031 | VC2 | **09705** |
| SPG432<br>SPGN 12 04 08 | 1/2 | .031 | VC28 | **09715** |
| SPG433<br>SPGN 12 04 12 | 1/2 | .046 | V1N | **05463** |

| SPMR | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SPMR3211A<br>SPMR 09 03 04 1A | 3/8 | .015 | V1N | **05642** |
| SPMR3221A<br>SPMR 09 03 08 1A | 3/8 | .031 | V1N | **05643** |

| SPMT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SPMT32521A<br>SPMT 09 T3 08 1A | 3/8 | .031 | V1N | **05659** |
| SPMT4321A<br>SPMT 12 04 08 1A | 1/2 | .031 | V1N | **05661** |

| SPMU | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SPMU7312A<br>SPMR 05 02 04 2A | 7/32 | .015 | VN8 | **05663** |

| SPMW | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SPMW2521<br>SPMW 08 03 04 | 5/16 | .015 | VC29 | **09734** |
| SPMW2522<br>SPMW 08 03 04 | 5/16 | .031 | V1N | **05471** |
| SPMW2522<br>SPMW 08 03 04 | 5/16 | .031 | VC2 | **09735** |
| SPMW3251<br>SPMW 09 T3 04 | 3/8 | .015 | VC29 | **09736** |
| SPMW3252<br>SPMW 09 T3 08 | 3/8 | .031 | V1N | **05475** |
| SPMW3252<br>SPMW 09 T3 08 | 3/8 | .031 | VC29 | **09738** |
| SPMW432<br>SPMW 12 04 08 | 1/2 | .031 | V1N | **05478** |
| SPMW432<br>SPMW 12 04 08 | 1/2 | .031 | SV225 | **04867** |
| SPMW432<br>SPMW 12 04 08 | 1/2 | .031 | VC29 | **09741** |
| SPMW643<br>SPMW 19 06 12 | 3/4 | .046 | VC29 | **09744** |

| SPU | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| SPU422<br>SPUN 12 03 08 | 1/2 | .031 | V1N | **03038** |
| SPU422<br>SPUN 12 03 08 | 1/2 | .031 | VC35M | **08439** |

| TBEE | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TBEE521<br>TBEN 06 01 04 | 5/32 | .015 | V1N | **05480** |
| TBEE521<br>TBEN 06 01 04 | 5/32 | .015 | VC3 | **09748** |

| TCGT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TCGT2151FH<br>TCGT 11 02 04 FH | 1/4 | .015 | SV310 | **04871** |
| TCGT432FH<br>TCGT 12 04 08 FH | 1/2 | .031 | SV310 | **04883** |

| TCMT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TCMT21512A<br>TCMT 11 02 04 2A | 1/4 | .015 | VN8 | **05669** |
| TCMT21512A<br>TCMT 11 02 04 2A | 1/4 | .015 | V1N | **05668** |
| TCMT32511A<br>TCMT 16 T3 04 1A | 3/8 | .015 | V1N | **05671** |

| TCMW | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TCMW2151<br>TCMW 11 02 04 | 1/4 | .015 | VC29 | **09752** |

| TEG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TEG2521J<br>TEGN 13 02 04 1J | 5/16 | .015 | VC3 | **09766** |
| TEG322J<br>TEGN 16 03 08 2J | 3/8 | .031 | VC2 | **09770** |

## SELECT TURNING INSERTS

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| TEG | CONTINUED | | | |
|---|---|---|---|---|
| TEG322J<br>TEGN 16 03 08 2J | 3/8 | .031 | VC3 | **09771** |
| TEG422J<br>TEGN 22 03 08 | 1/2 | .031 | VC2 | **09772** |

| TNEA | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TNEA2521<br>TNEA 13 03 04 | 5/16 | .015 | VC2 | **13774** |

| TNFM | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TNFM221EL<br>TNMG 11 03 04 EL (L) | 1/4 | .015 | VN8 | **03433** |
| TNFM2521EL<br>TNMG 13 03 04 EL (L) | 5/16 | .015 | VN8 | **03440** |
| TNFM2522ER<br>TNMG 13 30 08 EL (L) | 5/16 | .031 | VO1 | **03446** |
| TNFM2522EL<br>TNMG 13 03 08 EL (L) | 5/16 | .031 | VN8 | **03443** |

| TNG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TNG332<br>TNGN 16 04 08 | 3/8 | .031 | VC2 | **10395** |

| TNGA | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TNGA2522150<br>TNGA 13 03 08 | 5/16 | .031 | VC35M | **13788** |

| TNMA | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TNMA322<br>TNMA 16 03 08 | 3/8 | .031 | VO1 | **03116** |
| TNMA322<br>TNMA 16 03 08 | 3/8 | .031 | VC2 | **08539** |
| TNMA432<br>TNMA 22 04 08 | 1/2 | .031 | SV310 | **04156** |
| TNMA432<br>TNMA 22 04 08 | 1/2 | .031 | VC2 | **08544** |
| TNMA666<br>TNMA 33 09 24 | 3/4 | .093 | VC2 | **08548** |

| TNMG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | Grade | **EDP#** |
| TNMG2522GF<br>TNMG 13 03 08 GF | 5/16 | .031 | SV310 | **04166** |
| TNMG321<br>TNMG 16 03 04 | 3/8 | .015 | VN8 | **03235** |
| TNMG321LM<br>TNMG 16 03 04 LM | 3/8 | .015 | SV235 | **04170** |
| TNMG322<br>TNMG 16 03 08 | 3/8 | .031 | VN8 | **03240** |
| TNMG322<br>TNMG 16 03 08 | 3/8 | .031 | V1N | **03237** |
| TNMG322<br>TNMG 16 03 08 | 3/8 | .031 | VO1 | **03241** |
| TNMG322GM<br>TNMG 16 03 08 GM | 3/8 | .031 | SV325 | **04173** |
| TNMG322LM<br>TNMG 16 03 08 LM | 3/8 | .031 | SV235 | **04176** |
| TNMG322LM<br>TNMG 16 03 08 LM | 3/8 | .031 | SV315 | **04177** |
| TNMG322LM<br>TNMG 16 03 08 LM | 3/8 | .031 | SV325 | **04178** |
| TNMG331LM<br>TNMG 16 04 04 LM | 3/8 | .015 | SV315 | **04182** |
| TNMG331LM<br>TNMG 16 04 04 LM | 3/8 | .015 | SV325 | **04183** |
| TNMG332<br>TNMG 16 04 08 | 3/8 | .031 | VN5 | **03246** |
| TNMG332<br>TNMG 16 04 08 | 3/8 | .031 | VN8 | **03247** |
| TNMG332GM<br>TNMG 16 04 08 GM | 3/8 | .031 | SV235 | **04188** |
| TNMG332GM<br>TNMG 16 04 08 GM | 3/8 | .031 | SV510 | **05210** |
| TNMG332GM<br>TNMG 16 04 08 GM | 3/8 | .031 | VC929 | **06030** |
| TNMG332LM<br>TNMG 16 04 08 LM | 3/8 | .031 | SV235 | **04195** |
| TNMG332LM<br>TNMG 16 04 08 LM | 3/8 | .031 | SV310 | **04197** |
| TNMG332LM<br>TNMG 16 04 08 LM | 3/8 | .031 | SV315 | **04198** |
| TNMG332LM<br>TNMG 16 04 08 LM | 3/8 | .031 | SV325 | **04199** |
| TNMG332LM<br>TNMG 16 04 08 LM | 3/8 | .031 | SV525 | **05218** |
| TNMG333LM<br>TNMG 16 04 12 LM | 3/8 | .046 | SV325 | **04206** |
| TNMG431LM<br>TNMG 22 04 04 LM | 1/2 | .015 | SV235 | **04213** |
| TNMG431LM<br>TNMG 22 04 04 LM | 1/2 | .015 | SV310 | **04214** |
| TNMG431LM<br>TNMG 22 04 04 LM | 1/2 | .015 | SV315 | **04215** |
| TNMG431LM<br>TNMG 22 04 04 LM | 1/2 | .015 | SV325 | **04216** |
| TNMG432<br>TNMG 22 04 08 | 1/2 | .031 | VN8 | **03256** |
| TNMG432<br>TNMG 22 04 08 | 1/2 | .031 | V1N | **03254** |
| TNMG432GM<br>TNMG 22 04 08 GM | 1/2 | .031 | SV235 | **04220** |
| TNMG432GM<br>TNMG 22 04 08 GM | 1/2 | .031 | SV315 | **04222** |
| TNMG432GM<br>TNMG 22 04 08 GM | 1/2 | .031 | SV325 | **04223** |
| TNMG432GR<br>TNMG 22 04 08 GR | 1/2 | .031 | SV325 | **04226** |
| TNMG432LM<br>TNMG 22 04 08 LM | 1/2 | .031 | SV235 | **04234** |

## SELECT TURNING INSERTS

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| TNMG | CONTINUED | | | |
|---|---|---|---|---|
| TNMG432LM<br>TNMG 22 04 08 LM | 1/2 | .031 | SV305 | **04235** |
| TNMG432LM<br>TNMG 22 04 08 LM | 1/2 | .031 | SV315 | **04237** |
| TNMG432LM<br>TNMG 22 04 08 LM | 1/2 | .031 | SV325 | **04238** |
| TNMG433GM<br>TNMG 22 04 12 GM | 1/2 | .046 | SV525 | **05241** |
| TNMG434LM<br>TNMG 22 04 16 LM | 1/2 | .062 | SV510 | **05257** |
| TNMG438LM<br>TNMG 22 04 32 LM | 1/2 | .125 | SV310 | **04267** |
| TNMG542LM<br>TNMG 27 06 08 LM | 5/8 | .031 | SV325 | **04272** |
| TNMG543<br>TNMG 27 06 12 | 5/8 | .046 | V1N | **03274** |
| TNMG5433C<br>TNMG 27 06 12 3C | 5/8 | .046 | SV235 | **04273** |
| TNMG543GM<br>TNMG 27 06 12 GM | 5/8 | .046 | SV325 | **04277** |
| TNMG544GM<br>TNMG 27 06 16 GM | 5/8 | .062 | SV325 | **04291** |
| TNMG666<br>TNMG 33 09 27 | 3/4 | .092 | VN5 | **08674** |
| TNMG666GM<br>TNMG 33 09 24 GM | 3/4 | .093 | SV235 | **04296** |

| TNMM | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TNMM332EL<br>TNMM 16 04 08 EL (G) | 3/8 | .031 | VN8 | **03474** |
| TNMM431EL<br>TNMM 22 04 04 EL (G) | 1/2 | .015 | VN8 | **03476** |
| TNMM431EL<br>TNMM 22 04 04 EL (G) | 1/2 | .015 | VC2 | **08780** |
| TNMM431ER<br>TNMM 22 04 04 ER (G) | 1/2 | .015 | VN8 | **03477** |
| TNMM432EL<br>TNMM 22 04 08 EL (G) | 1/2 | .031 | V1N | **03478** |
| TNMM432EL<br>TNMM 22 04 08 EL (G) | 1/2 | .031 | VN8 | **03480** |
| TNMM432EL<br>TNMM 22 04 08 EL (G) | 1/2 | .031 | SV325 | **04301** |
| TNMM432ER<br>TNMM 22 04 08 ER (G) | 1/2 | .031 | V1N | **03482** |
| TNMM432ER<br>TNMM 22 04 08 ER (G) | 1/2 | .031 | VN8 | **03484** |
| TNMM432ER<br>TNMM 22 04 08 ER (G) | 1/2 | .031 | SV325 | **04302** |
| TNMM434ER<br>TNMM 22 04 16 ER (G) | 1/2 | .062 | VN5 | **08789** |

| TNMP | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TNMP4321W<br>TNMG 22 04 08 1W | 1/2 | .031 | SV325 | **04312** |

| TPCE | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPCE631J3<br>TPHN 08 02 04 J | 3/16 | .015 | VC3 | **09790** |

| TPEE | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPEE731<br>TPEN 09 02 04 | 7/32 | .015 | VC2 | **09802** |
| TPEE731<br>TPEN 09 02 04 | 7/32 | .015 | VC3 | **09803** |
| TPEE731<br>TPEN 09 02 04 | 7/32 | .015 | VN8 | **05487** |
| TPEE731<br>TPEN 09 02 04 | 7/32 | .015 | VO1 | **05488** |
| TPEE732<br>TPEN 09 02 08 | 7/32 | .031 | VC2 | **09806** |
| TPEE732<br>TPEN 09 02 08 | 7/32 | .031 | VC3 | **09807** |

| TPEW | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPEW332PDFR | 3/8 | .031 | VC28 | **13660** |
| TPEW332PDJR | 3/8 | .031 | VC2 | **13661** |

| TPG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPG221<br>TPGN 11 03 04 | 1/4 | .015 | V1N | **05490** |
| TPG221<br>TPGN 11 03 04 | 1/4 | .015 | VC903 | **06197** |
| TPG221<br>TPGN 11 03 04 | 1/4 | .015 | VC2 | **09809** |
| TPG221<br>TPGN 11 03 04 | 1/4 | .015 | VC3 | **09810** |
| TPG222<br>TPGN 11 03 08 | 1/4 | .031 | V1N | **05494** |
| TPG222<br>TPGN 11 03 08 | 1/4 | .031 | SV310 | **04888** |
| TPG222<br>TPGN 11 03 08 | 1/4 | .031 | VC903 | **06198** |
| TPG222<br>TPGN 11 03 08 | 1/4 | .031 | VC2 | **09813** |
| TPG222<br>TPGN 11 03 08 | 1/4 | .031 | VC3 | **09814** |
| TPG2521<br>TPGN 13 03 04 | 5/16 | .015 | VC2 | **09818** |
| TPG2522<br>TPGN 13 03 08 | 5/16 | .031 | VC2 | **09819** |
| TPG321<br>TPGN 16 03 04 | 3/8 | .015 | VN5 | **09824** |

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## SELECT TURNING INSERTS

| TPG | CONTINUED | | | |
|---|---|---|---|---|
| TPG321<br>TPGN 16 03 04 | 3/8 | .015 | VN8 | **05500** |
| TPG321<br>TPGN 16 03 04 | 3/8 | .015 | V1N | **05498** |
| TPG321<br>TPGN 16 03 04 | 3/8 | .015 | SV310 | **04890** |
| TPG321<br>TPGN 16 03 04 | 3/8 | .015 | SV325 | **04891** |
| TPG321<br>TPGN 16 03 04 | 3/8 | .015 | VC929 | **06201** |
| TPG321<br>TPGN 16 03 04 | 3/8 | .015 | VC2 | **09823** |
| TPG321<br>TPGN 16 03 04 | 3/8 | .015 | VC29 | **09826** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | VN5 | **09830** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | VN8 | **05505** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | V1N | **05502** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | VO1 | **05506** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | SV235 | **04892** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | SV310 | **04893** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | SV325 | **04894** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | VC929 | **06203** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | VC2 | **09828** |
| TPG322<br>TPGN 16 03 08 | 3/8 | .031 | VC29 | **09832** |
| TPG323<br>TPGN 16 03 12 | 3/8 | .046 | SV310 | **04896** |
| TPG323<br>TPGN 16 03 12 | 3/8 | .046 | VC2 | **09836** |
| TPG431<br>TPGN 22 04 04 | 1/2 | .015 | V1N | **05514** |
| TPG432<br>TPGN 22 04 08 | 1/2 | .031 | VN5 | **09842** |
| TPG432<br>TPGN 22 04 08 | 1/2 | .031 | VN8 | **05519** |
| TPG432<br>TPGN 22 04 08 | 1/2 | .031 | V1N | **05517** |
| TPG432<br>TPGN 22 04 08 | 1/2 | .031 | SV325 | **04901** |
| TPG432<br>TPGN 22 04 08 | 1/2 | .031 | VC2 | **09841** |

| TPGA | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPGA0902042K | 7/32 | .015 | VO1 | **05526** |
| TPGA0902042K | 7/32 | .015 | VC902 | **06211** |
| TPGA0902042K | 7/32 | .015 | VC2 | **09853** |

| TPGA | CONTINUED | | | |
|---|---|---|---|---|
| TPGA0902042K | 7/32 | .015 | VC3 | **09854** |
| TPGA0902042K | 7/32 | .015 | VC5 | **09855** |
| TPGA090204J2K | 7/32 | .015 | VC2 | **09857** |
| TPGA0902082K | 7/32 | .031 | VO1 | **05527** |

| TPGR | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPGR222FM<br>TPGR 11 03 08 FM | 1/4 | .031 | VC901 | **06329** |
| TPGR322FM<br>TPGR 16 04 08 FM | 3/8 | .031 | SV325 | **04914** |

| TPGT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPGT18151FH<br>TPGT 09 02 04 FH | 5/16 | .015 | SV325 | **04917** |
| TPGT18151P2S<br>TPGT 09 02 04 P 2S | 5/16 | .031 | V1N | **05792** |
| TPGT2151FH<br>TPGT 11 02 04 FH | 1/4 | .015 | SV325 | **03642** |
| TPGT2151FH<br>TPGT 11 02 04 FH | 1/4 | .015 | VC929 | **06335** |
| TPGT22025P2S<br>TPGT 11 03 06 P 2S | 1/4 | .025 | V1N | **05793** |
| TPGT3251FH<br>TPGT 16 T3 04 FH | 3/8 | .015 | SV325 | **04922** |
| TPGT3251FH<br>TPGT 16 T3 04 FH | 3/8 | .015 | VC929 | **06377** |
| TPGT3252FH<br>TPGT 16 T3 08 FH | 3/8 | .031 | SV310 | **04923** |
| TPGT3252FH<br>TPGT 16 T3 08 FH | 3/8 | .031 | SV325 | **04925** |
| TPGT3252FH<br>TPGT 16 T3 08 FH | 3/8 | .031 | VC929 | **06338** |
| TPGT432FH<br>TPGT 22 04 08 FH | 1/2 | .031 | SV325 | **04926** |

| TPMR | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPMR2212A<br>TPMR 11 03 04 2A | 1/4 | .015 | V1N | **05677** |
| TPMR2212A<br>TPMR 11 03 04 2A | 1/4 | .015 | VN8 | **05678** |
| TPMR2222A<br>TPMR 11 03 08 2A | 1/4 | .031 | VN8 | **05681** |
| TPMR25222A<br>TPMR 13 03 08 2A | 5/16 | .031 | VN8 | **05684** |
| TPMR3211A<br>TPMR 13 03 04 1A | 3/8 | .015 | V1N | **05686** |
| TPMR3211A<br>TPMR 16 03 04 1A | 3/8 | .015 | VN8 | **05687** |

## SELECT TURNING INSERTS

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| TPMR | CONTINUED | | | |
|---|---|---|---|---|
| TPMR3221A<br>TPMR 16 03 08 1A | 3/8 | .031 | V1N | **05691** |
| TPMR3221A<br>TPMR 16 03 08 1A | 3/8 | .031 | VN8 | **05692** |
| TPMR3221A<br>TPMR 16 03 08 1A | 3/8 | .031 | SV310 | **04928** |
| TPMR3221A<br>TPMR 16 03 08 1A | 3/8 | .031 | VC912 | **07836** |
| TPMR4321A<br>TPMR 22 04 08 1A | 1/2 | .031 | VN8 | **05697** |

| TPMT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPMT181512A<br>TPMT 09 02 04 2A | 7/32 | .015 | VN8 | **05701** |
| TPMT21512A<br>TPMT11 02 04 2A | 3/8 | .031 | V1N | **05702** |
| TPMT21512A<br>TPMT 11 02 04 2A | 3/8 | .031 | VN8 | **05703** |
| TPMT32511A<br>TPMT 16 T3 04 1A | 5/16 | .015 | V1N | **05705** |
| TPMT32521A<br>TPMT 16 T3 08 1A | 3/8 | .031 | V1N | **05708** |
| TPMT32521A<br>TPMT 16 T3 08 1A | 3/8 | .031 | VN8 | **05709** |
| TPMT4321A<br>TPMT 22 04 08 1A | 1/2 | .031 | SV235 | **04930** |

| TPMU | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPMU7322A<br>TPMR 09 03 08 2A | 7/32 | .031 | V1N | **05715** |

| TPMW | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPMW2151<br>TPMW 11 02 04 | 1/4 | .015 | VC29 | **09682** |
| TPMW2521<br>TPMW 13 02 04 | 5/16 | .015 | VC29 | **09864** |
| TPMW3251<br>TPMW 16 T3 04 | 3/8 | .015 | VC29 | **09867** |
| TPMW3252<br>TPMW 16 T3 08 | 3/8 | .031 | V1N | **05533** |
| TPMW3252<br>TPMW 16 T3 08 | 3/8 | .031 | VC29 | **09870** |

| TPU | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| TPU322<br>TPUN 16 03 08 | 3/8 | .031 | V1N | **03042** |
| TPU322<br>TPUN 16 03 08 | 3/8 | .031 | VN5 | **08446** |

| TPU | CONTINUED | | | |
|---|---|---|---|---|
| TPU432<br>TPUN 12 04 08 | 1/2 | .031 | V1N | **03045** |
| TPU433<br>TPUN 12 04 12 | 1/2 | .046 | VN5 | **08450** |

| VBGT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| VBGT332FL<br>VBGT 16 04 08 fl | 3/8 | .031 | VC929 | **06344** |

| VBMT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| VBMT3311A<br>VBMT 16 04 04 1A | 3/8 | .015 | SV315 | **03652** |

| VNGA | | | | |
|---|---|---|---|---|
| **Part Number**<br>**ISO Part Number** | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| VNGA332<br>VNGA 16 04 08 | 3/8 | .031 | VC2 | **10212** |

| VNMG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| VNMG331<br>VNMG 16 04 04 | 3/8 | .015 | VN8 | **03285** |
| VNMG331LM<br>VNMG 16 04 04 LM | 3/8 | .015 | SV325 | **04327** |
| VNMG332<br>VNMG 16 04 08 | 3/8 | .031 | VN8 | **03287** |
| VNMG332GF<br>VNMG 16 04 08 GF | 3/8 | .031 | SV315 | **04329** |
| VNMG332LM<br>VNMG 16 04 08 LM | 3/8 | .031 | SV235 | **04336** |
| VNMG332LM<br>VNMG 16 04 08 LM | 3/8 | .031 | SV315 | **04338** |
| VNMG332LM<br>VNMG 16 04 08 LM | 3/8 | .031 | SV325 | **04339** |

| VNMP | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| VNMP331E<br>VNMM 16 04 04 EN (G) | 3/8 | .015 | V1N | **03506** |
| VNMP331E<br>VNMM 16 04 04 EN (G) | 3/8 | .015 | VN8 | **03507** |
| VNMP331E<br>VNMM 16 04 04 EN (G) | 3/8 | .015 | VC2 | **08794** |
| VNMP332E<br>VNMM 16 04 08 EN (G) | 3/8 | .031 | V1N | **03508** |
| VNMP332E<br>VNMM 16 04 08 EN (G) | 3/8 | .031 | VN8 | **03510** |

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| VNMP | CONTINUED | | | |
|---|---|---|---|---|
| VNMP332E<br>VNMM 16 04 08 EN (G) | 3/8 | .031 | VC2 | **08797** |
| VNMP332E<br>VNMM 16 04 08 EN (G) | 3/8 | .031 | VC29 | **08800** |

| VPMA | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| VPMA443W<br>VPMA 22 06 12 W | 1/2 | .046 | VC2 | **08452** |

| WCGT | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| WCGT3252FH<br>WCGT 06 T3 08 FH | 3/8 | .031 | SV315 | **03655** |

| WNMG | | | | |
|---|---|---|---|---|
| **Part Number**<br>ISO Part Number | **IC (in.)** | **R (in.)** | **Grade** | **EDP#** |
| WNMG432GM<br>WNMG 08 04 08 GM | 1/2 | .031 | SV310 | **04381** |
| WNMG432GM<br>WNMG 08 04 08 GM | 1/2 | .031 | SV315 | **04382** |
| WNMG432GM<br>WNMG 08 04 08 GM | 1/2 | .031 | SV325 | **04383** |
| WNMG432LM<br>WNMG 08 04 08 LM | 1/2 | .031 | SV315 | **04394** |
| WNMG432LM<br>WNMG 08 04 08 LM | 1/2 | .031 | SV325 | **04395** |
| WNMG432LM<br>WNMG 08 04 08 LM | 1/2 | .031 | VC929 | **06072** |
| WNMG433GM<br>WNMG 08 04 12 GM | 1/2 | .046 | SV315 | **04400** |
| WNMG433GR<br>WNMG 08 04 12 GR | 1/2 | .046 | SV310 | **04402** |

## How To Order

Example:

| EDP# | Qty. |
|---|---|
| 03801 | 20 Pieces |
| CNMG 432 GM, SV325 | 20 Pieces |

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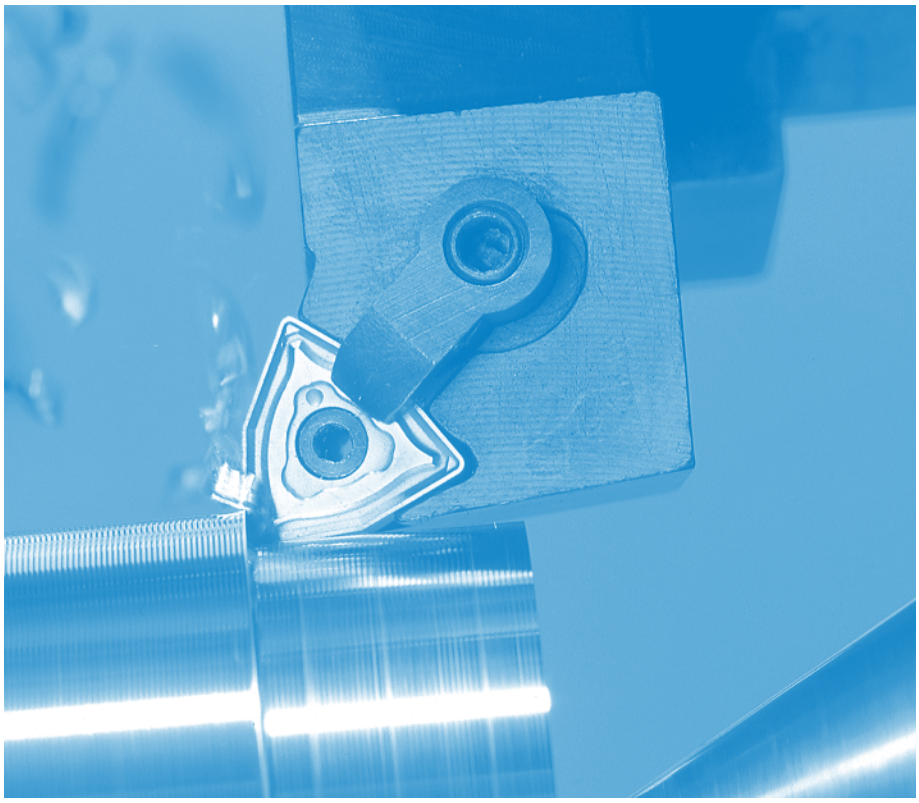
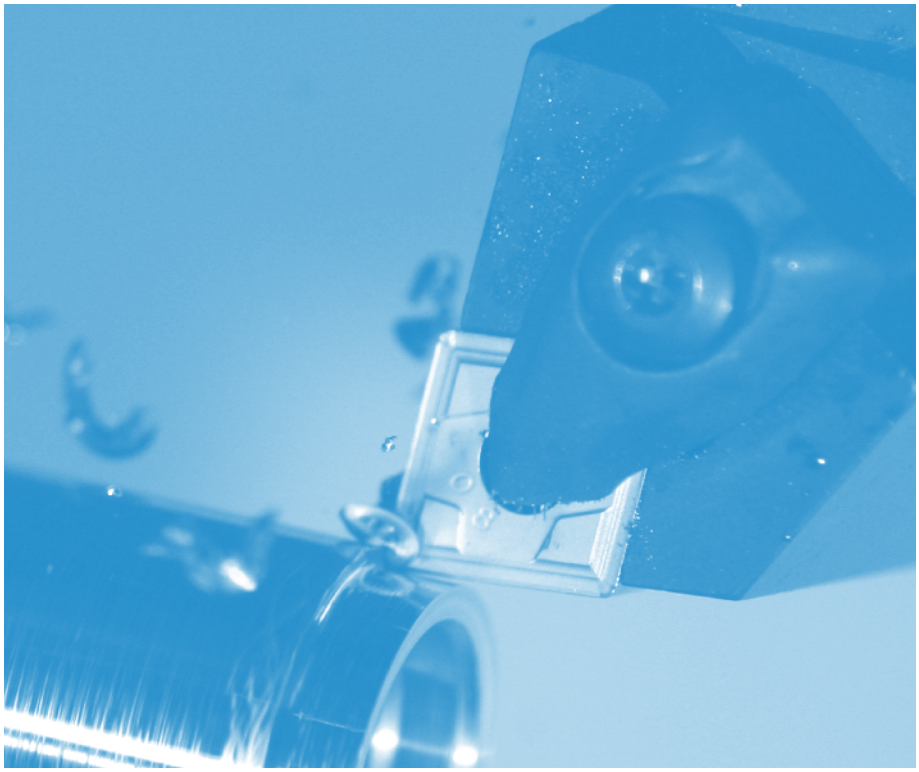


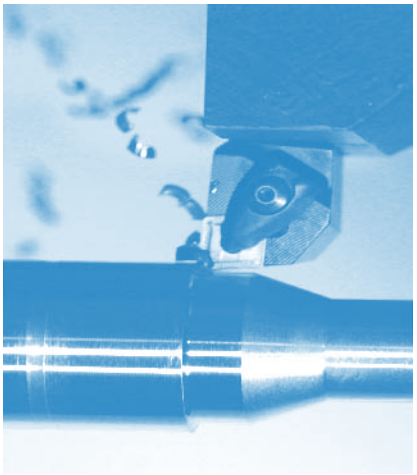


## TOOLHOLDERS


| | |
|---|---|
| **ProGRIP** | **67-77** |
| Nomenclature | 69 |
| Toolholders | 70-77 |
| **Common Hardware** | **78-87** |
| **ISO Screw Down** | **87-91** |
| **Top Clamp** | **91-93** |
| **Wedge Lock** | **94-96** |
| **Small Shank Economy** | **97** |
| **ValTURN Tool Kits** | **98** |

# New ProGRIP™ Toolholders

ValTURN™



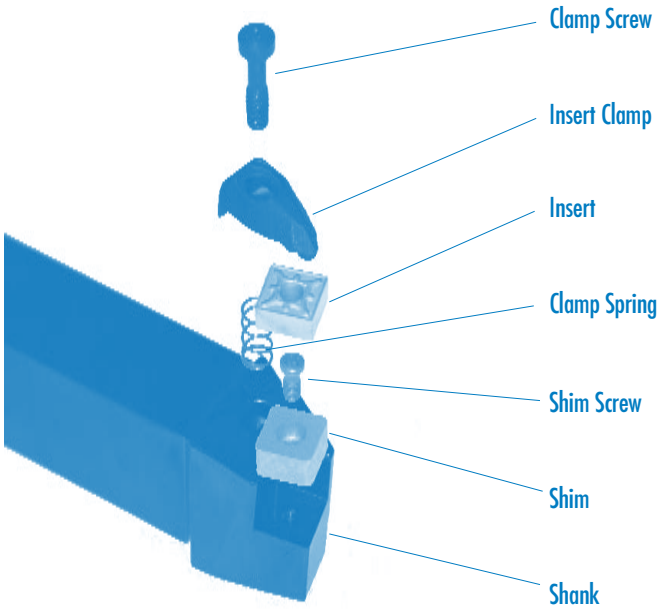
## Improved Performance

**Greater Stability** - allows higher feed rates without vibration.

**Greater Accuracy** - reliable clamping helps maintain close tolerances.

**More Secure** - new clamp feature grips the insert in two directions, downward and back to pocket wall.

**Easy Change Out** - only one key required to change inserts.
**Close Tolerances** - less scrap with reduced measuring cuts required.
**Flexibility** - reduce inventory stock with total interchangability of clamps and shims.




## Easy to Use

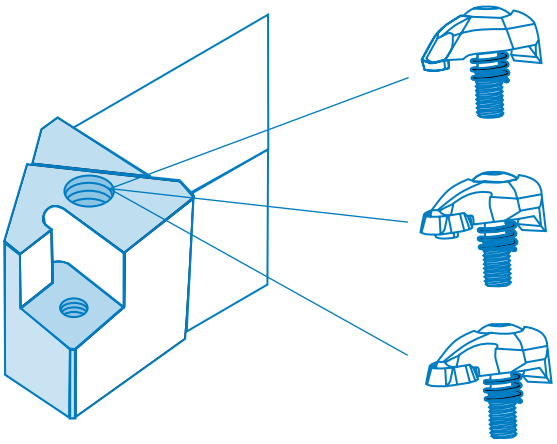
**Fewer Spare Parts** – same wrench for clamp screw and shim screw.

**Easy Index** - inserts can be changed easily whether holder is upright or upside down.

**Highly Versatile** - interchangeable clamps and shims can accommodate carbide, ceramic or CBN inserts.

**Easy to Maintain** – designed for dirty environments such as cast iron machining; ideal for machining all steels and heat treated materials.

## Available Clamp Sets



**Standard Clamp Set**
Designed for inserts with holes

**Optional Clamp Set**
Designed for flat inserts with holes for improved security

**Optional Clamp Set**
Designed for ceramic and carbide flat top inserts without holes

ValTURN™

## TOOLHOLDER NOMENCLATURE

**M T J N R S 16 4 D**

### METHOD OF HOLDING INSERT

M = Multi-option (with lock pin and top clamp)
P = with lock pin
C = with top clamp
D = Top and hole clamping
S = with screw
L = Loc-A-Dex-Wedge
SD = Screw Down
SDC = Screw down and clamp option

### INSERT CLEARANCE

N = Negative
P = Positive

### HAND OF HOLDER

R = Right
N = Neutral
L = Left

### IC of Insert

1.5 = 0.187"
1.8 = 0.219"
2 = 0.250"
3 = 0.375"
4 = 0.500"
5 = 0.625"
6 = 0.750"
8 = 1.000"

### INSERT SHAPE

C = 80° Diamond
D = 55° Diamond
V = 35° Diamond
R = Round
S = Square
T = Triangle
W = Trigon

### HOLDER STYLE

A = 0° side cutting angle, no offset
B = 15° lead side cutting angle, no offset
C = 0° lead end cutting angle
D = 45° lead side cutting angle, no offset
E = 30° lead side cutting angle
F = 0° lead end cutting angle offset
G = 0° lead side cutting angle offset
J = Neg. 3° lead side cutting angle with offset
K = 15° lead end cutting angle, no offset
L = Neg. 5° lead side cutting angle with offset
M = 40° lead side cutting angle, no offset
P = 27.5° lead side angle, no offset
Q = 17.5° lead side/end cutting with cutting offset
R = 15° lead cutting angle with offset
S = 45° lead, cutting angle with offset
V = 72.5° lead side cutting angle, no offset
VW = -22° lead side, -33° lead end cutting with offset (i.e. MVVWNR/L)
W = 10° lead side cutting angle with offset
X = 50° lead side cutting angle, no offset (i.e. MCXNN)

### SHANK STYLE

Digits less than 40 represent square shanks. These two digits equal the number of 1/16ths in shank width and height

Digits greater than 40 represent rectangular shanks.

The first digit is equal to the number of 1/8ths in the width and the second digit to the number of 1/4ths in shank height.

### Pocket Style

S = Single wall pocket construction. Full pocket construction when letter position is vacant

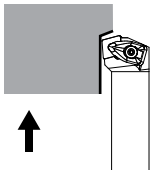
### Length

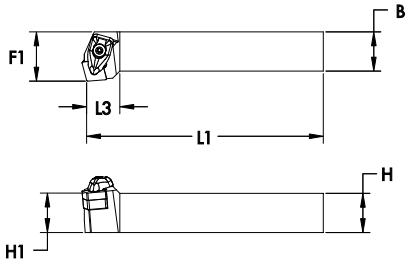
A = 4.00" LG.
B = 4.50" LG.
C = 5.00" LG.
G = 5.50" LG.
D = 6.00" LG.
E = 7.00" LG.
F = 8.00" LG.

All dimensions are in inches.

## DCKN R/L ProGRIP™ TOOLHOLDERS

15° LEAD
FACING






Right Hand Shown

CNMA
CNMG
CNMM

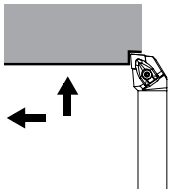
| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DCKN R/L 164D | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | .83 | -6° | -6° | **62295** | **62294** |

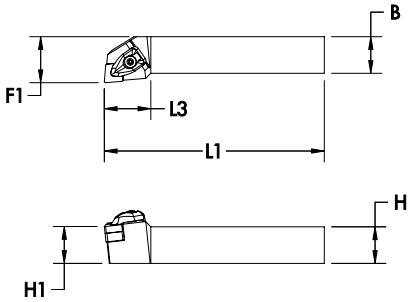
### Spare Parts

| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | 5322234-01 | **62512** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |

## DCLN R/L ProGRIP™ TOOLHOLDERS

-5° LEAD
TURNING & FACING






Right Hand Shown

CNMA
CNMG
CNMM

| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DCLN R/L 124B | 432 | 0.750 | 1.000 | 0.750 | 0.750 | 4.500 | 1.260 | -6° | -6° | **62306** | **62296** |
| DCLN R/L 164C | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 5.000 | 1.260 | -6° | -6° | **62307** | **62297** |
| DCLN R/L 164D | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.260 | -6° | -6° | **62308** | **62298** |
| DCLN R/L 204D | 432 | 1.250 | 1.500 | 1.250 | 1.250 | 6.000 | 1.260 | -6° | -6° | **62311** | **62301** |
| DCLN R/L 244D | 432 | 1.500 | 2.000 | 1.500 | 1.500 | 6.000 | 1.260 | -6° | -6° | **62314** | **62304** |
| DCLN R/L 165D | 543 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.540 | -6° | -6° | **62309** | **62299** |
| DCLN R/L 205D | 543 | 1.250 | 1.500 | 1.250 | 1.250 | 6.000 | 1.540 | -6° | -6° | **62312** | **62302** |
| DCLN R/L 166D | 643 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.700 | -6° | -6° | **62310** | **62300** |
| DCLN R/L 206D | 643 | 1.250 | 1.500 | 1.250 | 1.250 | 6.000 | 1.700 | -6° | -6° | **62313** | **62303** |
| DCLN R/L 246D | 643 | 1.500 | 2.000 | 1.500 | 1.500 | 6.000 | 1.700 | -6° | -6° | **62315** | **62305** |

### Spare Parts

| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | 5322 234-01 | **62512** | 5513020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |
| 543 | 5322 234-03 | **62513** | 5513 020-07 | **62474** | VP5680043-14 | **62435** | 5412 028-031 | **62515** | 4.7 |
| 643 | 5322 236-01 | **62458** | 5513 020-07 | **62474** | VP5680043-14 | **62435** | 5412 028-041 | **62517** | 4.7 |

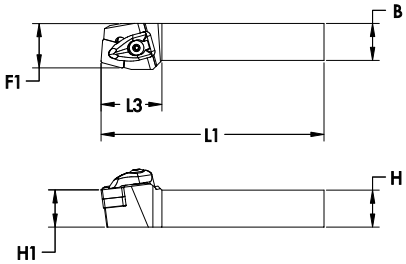
* Advanced Torx Plus® locking mechanism ** Clamp Set includes screw, clamp, and spring

ValTURN™

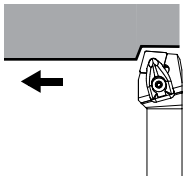
CNMA
CNMG
CNMM

## DCRN R/L ProGRIP™ TOOLHOLDERS

15° LEAD
TURNING




Right Hand Shown



| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DCRN R/L 164D | 432 | 1.000 | 1.128 | 1.000 | 1.000 | 6.000 | 1.360 | -6° | -6° | **62321** | **62316** |
| DCRN R/L 204D | 432 | 1.250 | 1.378 | 1.250 | 1.250 | 6.000 | 1.360 | -6° | -6° | **62322** | **62317** |
| DCRN R/L 244D | 432 | 1.500 | 1.628 | 1.500 | 1.500 | 6.000 | 1.360 | -6° | -6° | **62325** | **62320** |
| DCRN R/L 205D | 543 | 1.250 | 1.291 | 1.250 | 1.250 | 6.000 | 1.640 | -6° | -6° | **62323** | **62318** |
| DCRN R/L 206D | 643 | 1.250 | 1.291 | 1.250 | 1.250 | 6.000 | 1.820 | -6° | -6° | **62324** | **62319** |

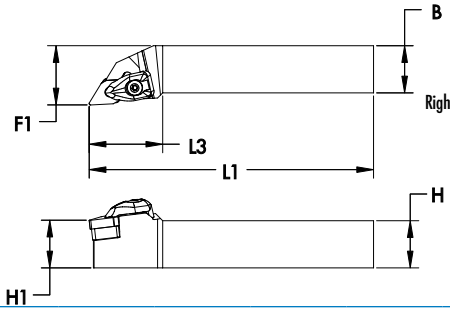
### Spare Parts

| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | 5322 234-01 | **62512** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |
| 543 | 5322 234-03 | **62513** | 5513 02 -07 | **62474** | VP5680043-14 | **62435** | 5412 028-031 | **62515** | 4.7 |
| 643 | 5322 236-01 | **62458** | 5513 020-07 | **62474** | VP5680043-14 | **62435** | 5412 028-041 | **62517** | 4.7 |

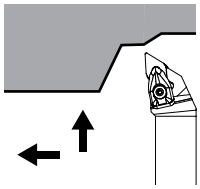
## DDJN R/L ProGRIP™ TOOLHOLDERS

-3° LEAD
TURNING & PROFILING

DNMA
DNMG
DNMM




Right Hand Shown



| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DDJN R/L 163D | 332 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.190 | -6° | -7° | **62332** | **62327** |
| DDJN R/L 124B | 432 | 0.750 | 1.000 | 0.750 | 0.750 | 6.000 | 1.550 | -6° | -7° | **62331** | **62326** |
| DDJN R/L 164C | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 5.000 | 1.550 | -6° | -7° | **62333** | **62328** |
| DDJN R/L 164D | 432 | 1.000 | 1.250 | 1.000 | 1.250 | 6.000 | 1.640 | -6° | -7° | **62334** | **62318** |

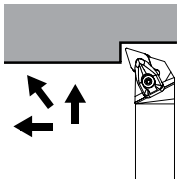
### Spare Parts

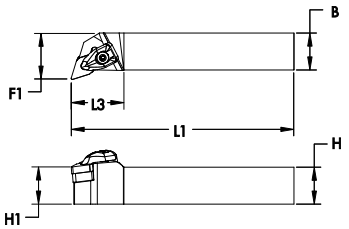
| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | 5322 267-01 | **62460** | 5513 020-04 | **62473** | VP5680051-03 | **62437** | 5412 028-011 | **62514** | 1.3 |
| 432 | 5322 266-01 | **62459** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |

* Advanced Torx Plus® locking mechanism ** Clamp Set includes screw, clamp, and spring

## DDQN R/L ProGRIP™ TOOLHOLDERS

-17°30° LEAD
TURNING & PROFILING






Right Hand Shown

DNMA
DNMG
DNMM

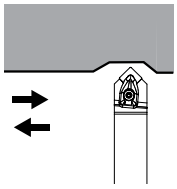
| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DDQN R/L 164D | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.420 | -6° | -7° | **62338** | **62336** |
| DDQN R/L 204D | 432 | 1.250 | 1.500 | 1.250 | 1.250 | 6.000 | 1.420 | -6° | -7° | **62339** | **62337** |

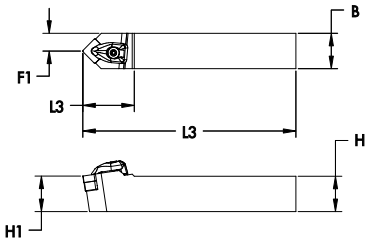
### Spare Parts

| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | 5322 266-01 | **62459** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |

## DSDNN ProGRIP™ TOOLHOLDERS

45° LEAD
TURN & CHAMFER






Right Hand Shown

SNMA
SNMG
SNMM

| Part Number | Dimensions | | | | | | | | | EDP# |
|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | |
| DSDNN 124B | 432 | .750 | 0.386 | 0.750 | 0.750 | 4.500 | 1.450 | -6° | -6° | **62340** |
| DSDNN 164D | 432 | 1.000 | 0.512 | 1.000 | 1.000 | 6.000 | 1.450 | -6° | -6° | **62341** |
| DSDNN 165D | 543 | 1.000 | 0.520 | 1.000 | 1.000 | 6.000 | 1.760 | -6° | -6° | **62342** |
| DSDNN 206D | 643 | 1.250 | 0.646 | 1.250 | 1.250 | 6.000 | 1.970 | -6° | -6° | **62343** |

### Spare Parts

| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | 5322 425-01 | **62465** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |
| 543 | 5322 425-03 | **62466** | 5513 020-07 | **62474** | VP5680043-14 | **62435** | 5412 028-031 | **62515** | 4.7 |
| 643 | 5322 425-04 | **62467** | 5513 020-07 | **62474** | VP5680043-14 | **62435** | 5412 028-041 | **62517** | 4.7 |

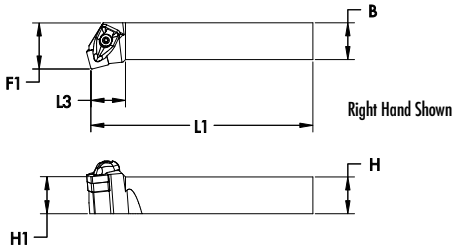
* Advanced Torx Plus® locking mechanism ** Clamp Set includes screw, clamp, and spring

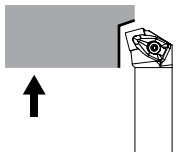
ValTURN™

SNMA
SNMG
SNMM

## DSKN R/L ProGRIP™ TOOLHOLDERS

15°LEAD
FACING



| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DSKN R/L 164D | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 0.930 | -6° | -6° | **62346** | **62344** |
| DSKN R/L 205D | 543 | 1.250 | 1.500 | 1.250 | 1.250 | 6.000 | 1.140 | -6° | -6° | **62347** | **62345** |

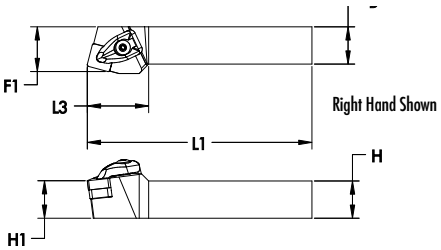
### Spare Parts

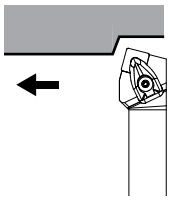
| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | 5322 425-01 | **62465** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |
| 543 | 5322 425-03 | **62466** | 5513 020-07 | **62474** | VP5680043-14 | **62435** | 5412 028-031 | **62515** | 4.7 |

SNMA
SNMG
SNMM

## DSRN R/L ProGRIP™ TOOLHOLDERS

15° LEAD
TURNING



| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DSRN R/L 124B | 432 | 0.750 | 0.878 | 0.750 | 0.750 | 4.500 | 1.350 | -6° | -6° | **62353** | **62348** |
| DSRN R/L 164D | 432 | 1.000 | 1.128 | 1.000 | 1.000 | 6.000 | 1.350 | -6° | -6° | **62354** | **62349** |
| DSRN R/L 165D | 543 | 1.000 | 1.047 | 1.000 | 1.000 | 6.000 | 1.640 | -6° | -6° | **62355** | **62350** |
| DSRN R/L 205D | 543 | 1.250 | 1.291 | 1.250 | 1.250 | 6.000 | 1.640 | -6° | -6° | **62356** | **62351** |
| DSRN R/L 206D | 643 | 1.250 | 1.321 | 1.250 | 1.250 | 6.000 | 1.830 | -6° | -6° | **62357** | **62352** |

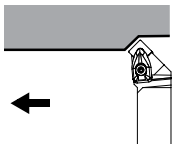
### Spare Parts

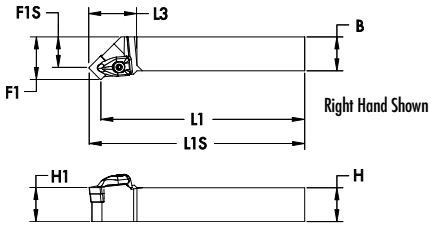
| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | 5322 425-01 | **62465** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |
| 543 | 5322 425-03 | **62466** | 5513 020-07 | **62474** | VP5680043.-14 | **62435** | 5412 028-031 | **62515** | 4.7 |
| 643 | 5322 425-04 | **62467** | 5513 202-07 | **62474** | VP5680043-14 | **62435** | 5412 028-041 | **62517** | 4.7 |

* Advanced Torx Plus® locking mechanism ** Clamp Set includes screw, clamp, and spring

## DSSN R/L ProGRIP™ TOOLHOLDERS

45° LEAD
TURNING & CHAMFER





SNMA
SNMG
SNMM

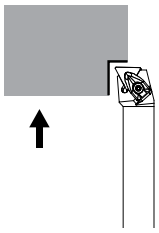
| Part Number | Dimensions | | | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | F1S | H | H1 | L1 | L1S | L3 | Axial | Radial | Right Hand | Left Hand |
| DSSN R/L 164D | 432 | 1.000 | 1.250 | 0.921 | 1.000 | 1.000 | 6.000 | 6.327 | 1.075 | -8° | 0 | **62360** | **62358** |
| DSSN R/L 206D | 643 | 1.250 | 1.500 | 1.008 | 1.250 | 1.250 | 6.000 | 6.492 | 1.413 | -8° | 0 | **62361** | **62359** |

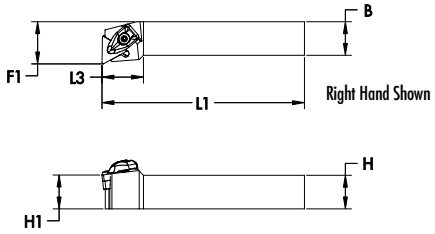
### Spare Parts

| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | 5322 425-01 | **62465** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |
| 643 | 5322 425-04 | **62467** | 5513 020-07 | **62474** | VP5680043-14 | **62435** | 5412 028-041 | **62517** | 4.7 |

## DTFN R/L ProGRIP™ TOOLHOLDERS

-1° LEAD
FACING





TNMA
TNMG
TNMM

| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DTFN R/L 123B | 332 | .0750 | 1.000 | 0.750 | 0.750 | 4.500 | 0.933 | -6° | -6° | **62364** | **62362** |
| DTFN R/L 164D | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.228 | -6° | -6° | **62365** | **62363** |

### Spare Parts

| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | 5322 315-02 | **62461** | 5513 020-04 | **62473** | VP5680051-03 | **62437** | 5412 028-011 | **62514** | 1.3 |
| 432 | 5322 315-04 | **62462** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |

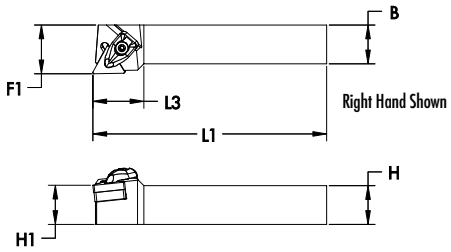
* Advanced Torx Plus® locking mechanism ** Clamp Set includes screw, clamp, and spring

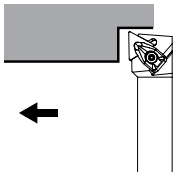
ValTURN™

## DTGN R/L ProGRIP™ TOOLHOLDERS

-1° LEAD
TURNING

TNMA
TNMG
TNMM



| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DTGN R/L 123B | 332 | 0.750 | 1.000 | 0.750 | 0.750 | 4.500 | 0.970 | -6° | -6° | **62369** | **62366** |
| DTGN R/L 164D | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.260 | -6° | -6° | **62370** | **62367** |
| DTGN R/L 204D | 432 | 1.250 | 1.500 | 1.250 | 1.250 | 6.000 | 1.310 | -6° | -6° | **62371** | **62378** |

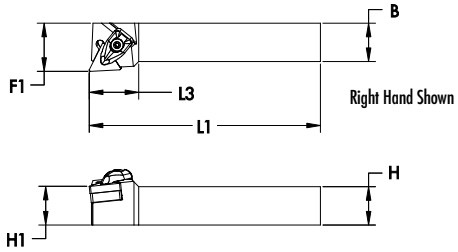
### Spare Parts

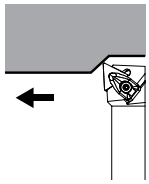
| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | 5322 315-02 | **62461** | 5513 020-04 | **62473** | VP5680051-03 | **62437** | 5412 028-011 | **62514** | 1.3 |
| 432 | 5322 315-04 | **62462** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |

## DTJN R/L ProGRIP™ TOOLHOLDERS

-3° LEAD
TURNING & PROFILING

TNMA
TNMG
TNMM



| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DTJN R/L 123B | 332 | 0.750 | 1.000 | 0.750 | 0.750 | 4.500 | 0.953 | -6° | -6° | **62376** | **62372** |
| DTJN R/L 163D | 332 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 0.980 | -6° | -6° | **62377** | **62373** |
| DTJN R/L 164D | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.283 | -6° | -6° | **62378** | **62374** |
| DTGN R/L 204D | 432 | 1.250 | 1.516 | 1.250 | 1.250 | 6.000 | 1.283 | -6° | -6° | **62379** | **62375** |

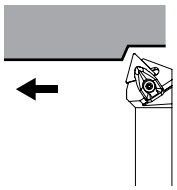
### Spare Parts

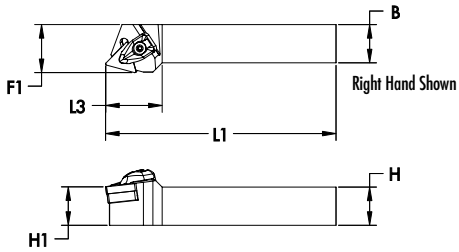
| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | 5322 315-02 | **62461** | 5513 020-04 | **62473** | VP5680051-03 | **62437** | 5412 028-011 | **62514** | 1.3 |
| 432 | 5322 315-04 | **62462** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |

* Advanced Torx Plus® locking mechanism ** Clamp Set includes screw, clamp, and spring

## DTRN R/L ProGRIP™ TOOLHOLDERS

15° LEAD
TURNING





TNMA
TNMG
TNMM

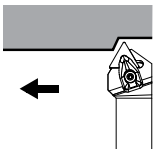
| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DTRN R/L 164D | 432 | 1.000 | 1.047 | 1.000 | 1.000 | 6.000 | 1.472 | -6° | -6° | **62381** | **62380** |

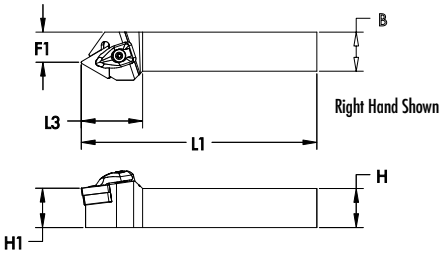
### Spare Parts

| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | 5322 315-04 | **62462** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |

## DTTN R/L ProGRIP™ TOOLHOLDERS

30° LEAD
TURN & CHAMFER





TNMA
TNMG
TNMM

| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DTTN R/L 123B | 332 | 0.750 | 0.598 | 0.750 | 0.750 | 4.500 | 1.190 | -6° | -6° | **62384** | **62382** |
| DTTN R/L 164D | 432 | 1.000 | 0.791 | 1.000 | 1.000 | 6.000 | 1.560 | -6° | -6° | **62385** | **62383** |

### Spare Parts

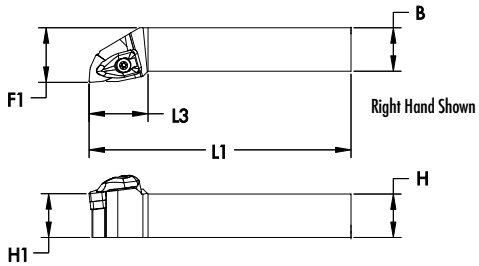
| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | 5322 315-02 | **62461** | 5513 020-04 | **62473** | VP5680051-03 | **62437** | 5412 028-011 | **62514** | 1.3 |
| 432 | 5322 315-04 | **62462** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |

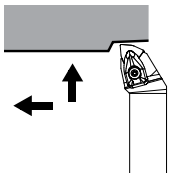
* Advanced Torx Plus® locking mechanism ** Clamp Set includes screw, clamp, and spring

ValTURN™

## DWLN R/L ProGRIP™ TOOLHOLDERS
-5° LEAD
TURNING & FACING

WNMA
WNMG
WNMM



| Part Number | Dimensions | | | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insert | B | F1 | H | H1 | L1 | L3 | Axial | Radial | Right Hand | Left Hand |
| DWLN R/L 163D | 332 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.067 | -6° | -6° | **62389** | **62386** |
| DWLN R/L 164D | 432 | 1.000 | 1.250 | 1.000 | 1.000 | 6.000 | 1.378 | -6° | -6° | **62390** | **62387** |
| DWLN R/L 204D | 432 | 1.250 | 1.500 | 1.250 | 1.250 | 6.000 | 1.378 | -6° | -6° | **62391** | **62388** |

### Spare Parts

| Insert | Shim | | Shim Screw* | | Wrench* | | Clamp Set** | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | 5322 328-01 | **62463** | 5513 020-04 | **62473** | VP5680051-03 | **62437** | 5412 028-011 | **62514** | 1.3 |
| 432 | 5322 331-12 | **62464** | 5513 020-02 | **62472** | VP5680049-01 | **62436** | 5412 028-021 | **62516** | 2.9 |

* Advanced Torx Plus® locking mechanism ** Clamp Set includes screw, clamp, and spring

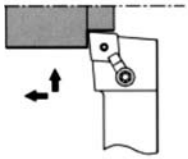
## ADDITIONAL TOOLHOLDER SPARE PARTS

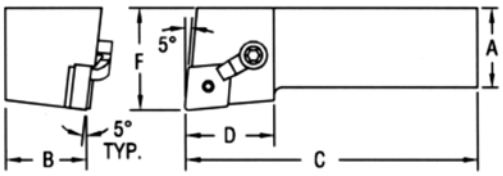
| Description | Insert Size | Clamp Set | | Clamp | | Clamp Screw | |
|---|---|---|---|---|---|---|---|
| | | Part Number | EDP# | Part Number | EDP# | Part Number | EDP# |
| Standard Parts Supplied with Holder | 332 | 5412028011 | **62514** | 541202801 | **50427** | 551208601 | **50627** |
| | 432 | 5412028021 | **62516** | 541202802 | **50916** | 551208602 | **50628** |
| | 543 | 5412028031 | **62515** | 541202803 | **50431** | 551208603 | **50631** |
| | 643 | 5412028041 | **62517** | 541202804 | **50432** | 551208603 | **50631** |
| Extra Clamping Security | 432 | 5412032021 | **50497** | 541203202 | **50488** | 551208602 | **50628** |
| | 543 | 5412032031 | **50499** | 541203203 | **50498** | 551208603 | **50631** |
| Use with Solid Inserts | 432 | 5412034021 | **50517** | 541203402 | **50500** | 551208602 | **50628** |
| | 543 | 5412034031 | **50522** | 541203403 | **50521** | 551208603 | **50631** |

| Description | Insert Size | Compression Spring | | Pin | | Wrench | |
|---|---|---|---|---|---|---|---|
| | | Part Number | EDP# | Part Number | EDP# | Part Number | EDP# |
| Standard Parts Supplied with Holder | 332 | 556100157 | **50652** | 3113030255 | **50417** | VP568005103 | **62437** |
| | 432 | 556100158 | **50779** | 3113030307 | **50418** | VP568004901 | **62436** |
| | 543 | 556100159 | **50814** | 3113030307 | **50418** | VP568004314 | **62435** |
| | 643 | 556100159 | **50814** | 3113030307 | **50418** | VP568004314 | **62435** |
| Extra Clamping Security | 432 | 556100158 | **50779** | 3113030307 | **50418** | VP568005102 | **50165** |
| | 543 | 556100159 | **50814** | 3113030307 | **50418** | VP568005102 | **50165** |
| Use with Solid Inserts | 432 | 556100158 | **50779** | 3113030307 | **50418** | VP568005102 | **50165** |
| | 543 | 556100159 | **50814** | 3113030307 | **50418** | VP568005102 | **50165** |

## MCLN R/L COMMON HARDWARE

-5° LEAD
NEGATIVE RAKE
TURNING & FACING






**80° Diamond Insert**
Use Insert Style:
CNFM
CNG
CNGA
CNGM
CNGP
CNMA
CNMG
CNMM
CNMP

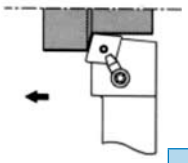
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MCLN R/L 12-4A | 432 | .75 | .75 | 4.00 | 1.19 | 1.000 | **60416** | **60390** |
| MCLN R/L 12-4B | 432 | .75 | .75 | 4.50 | 1.19 | 1.000 | **60417** | **60391** |
| MCLN R/L 16-4C | 432 | 1.00 | 1.00 | 5.00 | 1.19 | 1.250 | **60420** | **60394** |
| MCLNR/L 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.19 | 1.250 | **60395** | **60421** |
| MCLNR/L 16-5D | 543 | 1.00 | 1.00 | 6.00 | 1.38 | 1.250 | **60397** | **60423** |
| MCLNR/L 16-6D | 643 | 1.00 | 1.00 | 6.00 | 1.50 | 1.250 | **55555** | **60425** |
| MCLNR/L 20-4D | 432 | 1.25 | 1.25 | 6.00 | 1.19 | 1.500 | **60401** | **60427** |
| MCLNR/L-20-5D | 543 | 1.25 | 1.25 | 6.00 | 1.38 | 1.500 | **60402** | **60428** |
| MCLNR /L20-6D | 643 | 1.25 | 1.25 | 6.00 | 1.50 | 1.500 | **60403** | **60429** |

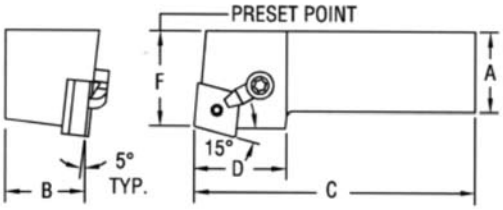
### Spare Parts

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | *EDP#* | Part # | EDP# | Part # | EDP# | |
| 432 | CSN-433 | **09143** | NL-46 | **52959** | CLI-20 | **59048** | XNS-48 | **53058** | |
| 543 | CSN-533 | **09147** | NL-58 | **52960** | CLI-12 | **59046** | XNS-510 | **53059** | |
| 643 | CSN-633 | **09150** | NL-68 | **52961** | CLI-12 | **59046** | XNS-510 | **53059** | |

## MCRN R/L COMMON HARDWARE

15°LEAD
NEGATIVE RAKE
TURNING






**80° Diamond Insert**
Use Insert Style:
CNFM
CNG
CNGA
CNGM
CNMA
CNMG
CNMM

| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MCRNR 12-4B | 432 | .75 | .75 | 4.50 | 1.18 | .878 | **60463** | - |
| MCRNR/L 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.18 | 1.128 | **60466** | **60454** |

### Spare Parts

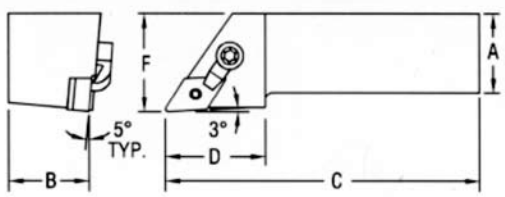
| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | CSN-433 | **09143** | NL-46 | **52959** | CLI-9 | **59055** | XNS-58 | **53060** | |

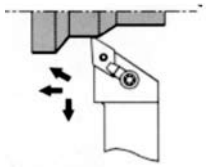
ValTURN™

**55˚ Diamond Insert**
Use Insert Style:
DNFM
DNGA
DNGN
DNGM
DNGP
DNMG
DNMM
DNMP

## MDJN R/L COMMON HARDWARE

-3° LEAD
NEGATIVE RAKE
TURNING & PROFILING



| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MDJN R/L 12-4B | 432 | .75 | .75 | 450 | .42 | 1.000 | **60497** | **60480** |
| MDJN R/L 16-4C | 432 | 1.00 | 1.00 | 5.00 | .29 | 1.250 | **60500** | **60483** |
| MDJN R/L 16-4D | 432 | 1.00 | 1.00 | 6.00 | .29 | 1.250 | **60501** | **60484** |
| MDJN R/L 20-4D | 432 | 1.25 | 1.25 | 6.00 | .29 | 1.500 | **60504** | **60487** |

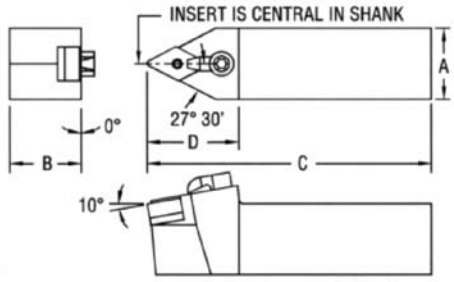
### Spare Parts

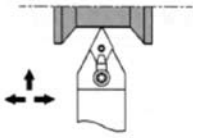
| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | DSN-443 | **09160** | NL-46L | **59232** | CLI-20 | **59048** | XNS-48 | **53058** | |

**55˚ Diamond Insert**
Use Insert Style:
DNFM
DNGA
DNG
DNMG
DNMM
DNMP

## MDPN N COMMON HARDWARE

27° 30′ LEAD
NEGATIVE RAKE
TURNING & PROFILING



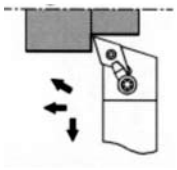
| Part Number | Insert Size | Dimensions | | | | | EDP# |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | |
| MDPNN 12-4B | 432 | .75 | .75 | 4.50 | 1.75 | | **60514** |
| MDPNN 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.75 | | **60517** |

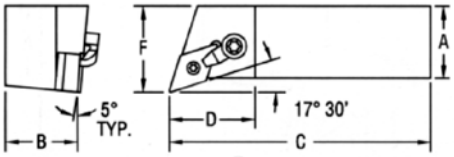
### Spare Parts

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | DSN-443 | **09160** | NL-46L | **59232** | CLI-12 | **59046** | XNS-510 | **53059** | |

## MDQN R/L COMMON HARDWARE

-17° 30° LEAD
NEGATIVE RAKE
TURNING & PROFILING






**55° Diamond Insert**
Use Insert Style:
DNFM
DNGA
DNG
DNGP
DNMG
DNMM
DNMP

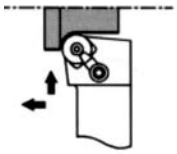
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MDQNR/L 12-4B | 432 | .75 | .75 | 4.50 | 1.38 | 1.00 | **60534** | **60480** |
| MDQNR/L 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.38 | 1.250 | **60535** | **60528** |

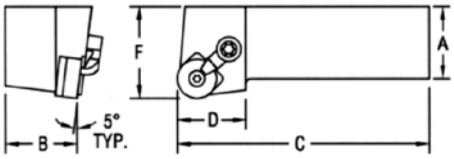
**Spare Parts**

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | DSN-443 | **09160** | NL-46L | **59232** | CLI-20 | **59048** | XNS-48 | **53058** | |

## MRGN R/L COMMON HARDWARE

ROUND
NEGATIVE RAKE
TURNING & FACING






**Round Insert**
Use Insert Style:
RNEA
RNFM
RNG
RNMA
RNMG
RNMN

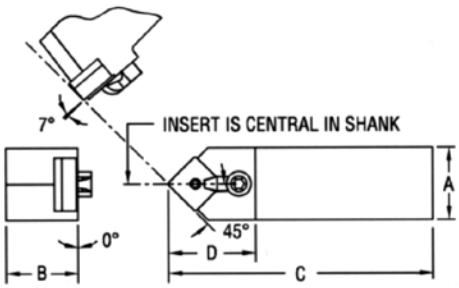
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MRGNR 12-3B | 32 | .75 | .75 | 4.50 | .89 | 1.00 | **60557** | - |
| MRGNR/L 16-4D | 43 | 1.00 | 1.00 | 6.00 | 1.13 | 6.00 | **60561** | **60546** |

**Spare Parts**

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 32 | - | - | NL-33 | **59230** | CLI-6 | **59053** | XNS-36 | **53055** | |
| 43 | IRSN-43 | **09163** | NL-46 | **52959** | CLI-9 | **59055** | XNS-59 | **53061** | |

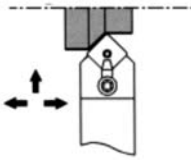
ValTURN™

**Square Insert**
Use Insert Style:
SNE SNGM
SNEA SNMA
SNFM SNMG
SNG SNMN




## MSDN N COMMON HARDWARE

45° LEAD
NEGATIVE RAKE
TURNING & CHAMFERING



| Part Number | Insert Size | Dimensions | | | | | EDP# |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | |
| MSDNN 08-3B | 322 | .50 | .50 | 4.50 | 1.04 | - | **60593** |
| MSDNN 12-4B | 432 | .75 | .75 | 4.50 | 1.38 | - | **60596** |
| MSDNN 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.38 | - | **60599** |
| MSDNN 16-5D | 543 | 1.00 | 1.00 | 6.00 | 1.63 | - | **60600** |
| MSDNN 20-6D | 643 | 1.25 | 1.25 | 6.00 | 1.75 | - | **60603** |

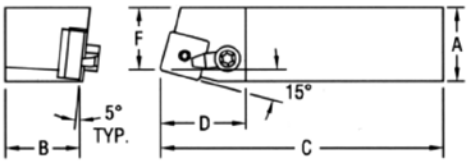
### Spare Parts

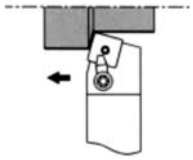
| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | ISSN-322 | **09165** | NL-34 | **59231** | CLI-6 | **59053** | XNS-36 | **53055** | |
| 432 | ISSN-433 | **09166** | NL-46 | **52959** | CLI-9 | **59055** | XNS-59 | **53061** | |
| 543 | ISSN-543 | **09168** | NL-58 | **52960** | CLI-12 | **59056** | XNS-59 | **53061** | |
| 643 | ISSN-633 | **09169** | NL-68 | **52901** | CLI-12 | **59056** | XNS-59 | **53061** | |

## MSRN R/L COMMON HARDWARE

15° LEAD
NEGATIVE RAKE
TURNING

**Square Insert**
Use Insert Style:
SNC SNGX
SNE SNMA
SNEA SNMG
SNFM SNMM
SNG SNMN
SNGM



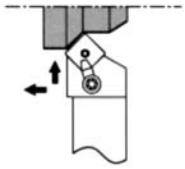
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MSRNL 12-4B | 432 | .75 | .75 | 4.50 | 1.38 | 0.880 | - | **60637** |
| MSRNR 20-6D | 643 | 1.25 | 1.25 | 6.00 | 1.63 | 1.321 | **60654** | - |

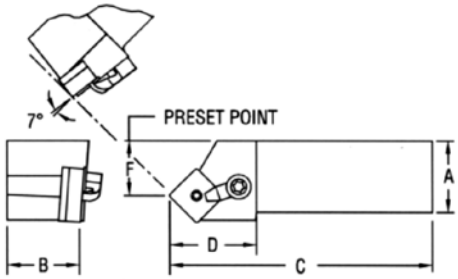
### Spare Parts

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | ISSN-433 | **09167** | NL-46 | **52959** | CLI-9 | **59055** | XNS-59 | **53061** | |
| 643 | ISSN-633 | **09170** | NL-68 | **52961** | CLI-12 | **59046** | XNS-510 | **53059** | |

## MSSN R/L COMMON HARDWARE

45° LEAD
NEGATIVE RAKE
TURNING, FACING & CHAMFERING






**Square Insert**
Use Insert Style:

| | |
|---|---|
| SNC | SNGM |
| SNE | SNMA |
| SNEA | SNMG |
| SNFM | SNMM |
| SNG | SNMN |

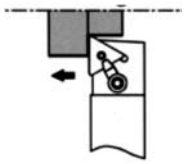
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MSSNR/L 12-4B | 432 | .75 | .75 | 4.50 | 1.38 | .675 | **60668** | **60659** |
| MSSNR/L 16-4C | 432 | 1.00 | 1.00 | 5.00 | 1.38 | .925 | **60669** | **60660** |
| MSSNR/L 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.38 | .925 | **60670** | **60661** |

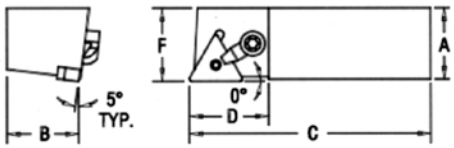
### Spare Parts

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | ISSN-433 | **09166** | NL-46 | **52959** | CLI-9 | **59055** | XNS-59 | **53061** | |

## MTAN R/L COMMON HARDWARE

0° LEAD
NEGATIVE RAKE
TURNING






**Triangular Insert**
Use Insert Style:

| | |
|---|---|
| TNEA | TNGX |
| TNFM | TNMA |
| TNG | TNMG |
| TNGA | TNMM |
| TNGM | TNMN |

| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MTANR 08-2 | 221 | .50 | .50 | 4.50 | .97 | .500 | **60684** | - |
| MTANR 10-3B | 322 | .62 | .62 | 4.50 | 1.13 | .625 | **60686** | - |
| MTANR 12-3B | 322 | .75 | .75 | 4.50 | 1.13 | .750 | **60687** | - |
| MTANR 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.38 | 1.000 | **60689** | - |

### Spare Parts

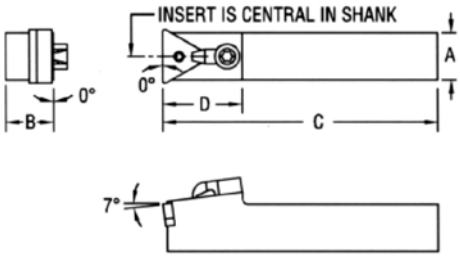
| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 221 | - | - | NL-23 | **59229** | CLI-19 | **59047** | XNS-36 | **53055** | |
| 322 | ITSN-333 | **09172** | NL-34L | **52957** | CLI-6 | **59053** | XNS-36 | **53055** | |
| 432 | ITSN-433 | **09173** | NL-46 | **52959** | CLI-9 | **59055** | XNS-59 | **53061** | |

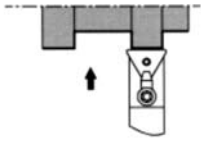
ValTURN™

**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNG TNMG
TNGA TNMM
TNGM TNMN

## MTCN N COMMON HARDWARE

0° LEAD
NEGATIVE RAKE
PLUNGE



| Part Number | Insert Size | Dimensions | | | | | EDP# |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | |
| MTCNN 44-3 | 322 | .50 | 1.00 | 8.00 | 1.13 | - | **60707** |
| MTCNN 64-4 | 432 | .75 | 1.00 | 8.00 | 1.38 | - | **60708** |

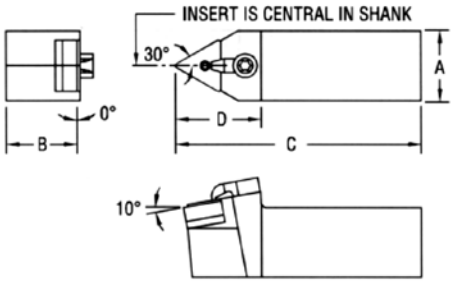
### Spare Parts

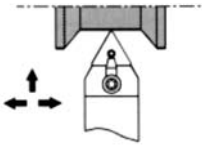
| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | ITSN-333 | **09172** | NL-34L | **52957** | CLI-7 | **59054** | XNS-36 | **53055** | |
| 432 | ITSN-433 | **09173** | NL-46 | **52959** | CLI-12 | **59046** | XNS-59 | **53061** | |

**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNG TNMG
TNGA TNMM
TNGM TNMN

## MTEN NS COMMON HARDWARE

30° LEAD
NEGATIVE RAKE
TURNING & CHAMFERING



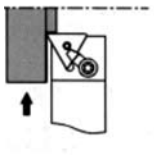
| Part Number | Insert Size | Dimensions | | | | | EDP# |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | |
| MTENNS 08-2 | 221 | .50 | .50 | 4.50 | 1.00 | - | **60709** |
| MTENNS 10-3B | 322 | .62 | .62 | 4.50 | 1.18 | - | **60710** |
| MTENNS 12-3B | 322 | .75 | .75 | 4.50 | 1.18 | - | **60711** |
| MTENNS 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.50 | - | **60713** |

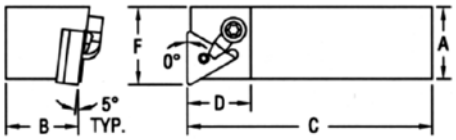
### Spare Parts

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 221 | - | - | NL-23 | **59229** | CLI-6 | **59053** | XNS-36 | **53055** | |
| 322 | ITSN-333 | **09172** | NL-34L | **52957** | CLI-6 | **59053** | XNS-36 | **53055** | |
| 322 | ITSN-333 | **09172** | NL-34L | **52957** | CLI-6 | **59053** | XNS-36 | **53055** | |
| 432 | ITSN-433 | **09173** | NL-46 | **59232** | CLI-9 | **59055** | XNS-59 | **53061** | |

## MTFN R/L COMMON HARDWARE

0° LEAD
NEGATIVE RAKE
FACING






**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNG TNMG
TNGA TNMM
TNGM TNMN

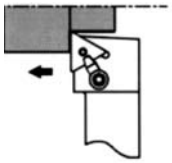
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MTFNL 12-3B | 322 | .75 | .75 | 4.50 | 1.00 | 1.00 | - | **60719** |
| MTFNR/L 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.13 | 1.250 | **60744** | **60723** |

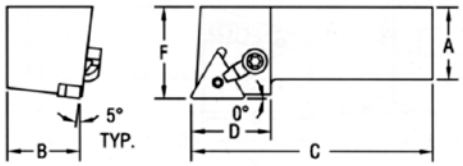
**Spare Parts**

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | ITSN-333 | **09172** | NL-34L | **52957** | CLI-6 | **59053** | XNS-36 | **53055** | |
| 432 | ITSN-433 | **09173** | NL-46 | **52959** | CLI-9 | **59055** | XNS-510 | **53059** | |

## MTGN R/L COMMON HARDWARE

0° LEAD
NEGATIVE RAKE
TURNING






**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNG TNMG
TNGA TNMM
TNGM TNMN

| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MTGNR/L 10-3B | 322 | .62 | .62 | 4.50 | 1.13 | .875 | **60784** | **60760** |
| MTGNR 12-3A | 322 | .75 | .75 | 4.00 | 1.13 | 1.00 | **60785** | - |
| MTGNR 12-3B | 322 | .75 | .75 | 4.50 | 1.13 | 1.00 | **60786** | - |
| MTGNR/L 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.38 | 1.250 | **60791** | **60767** |

**Spare Parts**

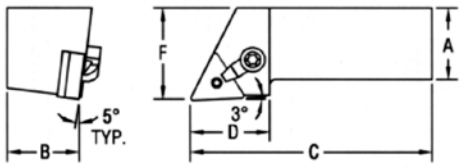
| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | ITSN-333 | **09172** | NL-34L | **52957** | CLI-6 | **59053** | XNS-36 | **53055** | |
| 432 | ITSN-433 | **09173** | NL-46 | **52959** | CLI-9 | **59055** | XNS-510 | **53059** | |

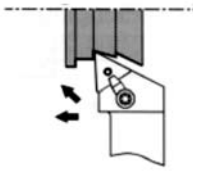
ValTURN™

## MTJN RS/LS COMMON HARDWARE

3° LEAD
NEGATIVE RAKE
TURNING & PROFILING

**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNG TNMG
TNGA TNMM
TNGM TNMN



| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MTJN RS/LS 12-3B | 322 | .75 | .75 | 4.50 | 1.04 | 1.00 | **60812** | **60806** |
| MTJN RS/LS 16-3D | 322 | 1.00 | 1.00 | 6.00 | 1.04 | 1.250 | **60813** | **60807** |
| MTJN RS/LS 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.38 | 1.250 | **60814** | **60808** |
| MTJN RS 20-4D | 432 | 1.25 | 1.25 | 6.00 | 1.38 | 1.50 | **60815** | - |

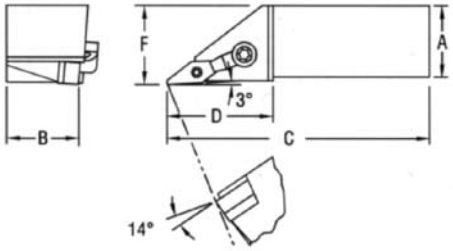
### Spare Parts

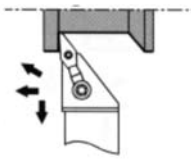
| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | ITSN-333 | **09172** | NL-34L | **52957** | CLI-6 | **59053** | XNS-36 | **53055** | |
| 432 | ITSN-433 | **09173** | NL-46 | **52959** | CLI-9 | **59055** | XNS-510 | **53059** | |

## MVJN R/L COMMON HARDWARE

-3° LEAD
NEGATIVE RAKE
TURNING & PROFILING

**35° Diamond Insert**
Use Insert Style:
VNFM
VNGA
VNGM
VNGP
VNMA
VNMG
VNMP



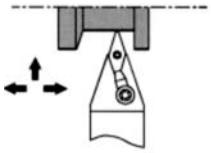
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MVJNR/L 12-3B | 332 | .75 | .75 | 4.50 | 1.73 | 1.00 | **60847** | **60836** |
| MVJNR/L 16-3C | 332 | 1.00 | 1.00 | 5.00 | 1.73 | 1.250 | **60848** | **60837** |
| MVJNR/L 16-3D | 332 | 1.00 | 1.00 | 6.00 | 1.73 | 1.250 | **60849** | **60838** |
| MVJNR 16-4D | 442 | 1.00 | 1.00 | 6.00 | 1.94 | 1.250 | **60851** | - |
| MVJNR/L 20-3D | 332 | 1.25 | 1.25 | 6.00 | 1.78 | 1.50 | **60852** | **60841** |
| MVJNR 20-4D | 442 | 1.25 | 1.25 | 6.00 | 1.94 | 1.50 | **60853** | - |

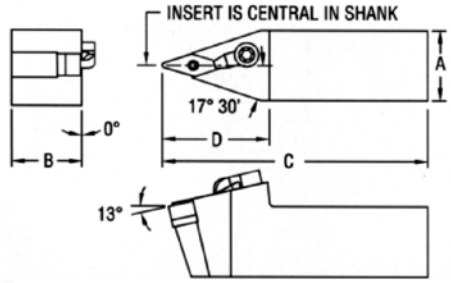
### Spare Parts

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | IVSN-324 | **09177** | NL-34L | **52957** | CLI-30 | **59051** | XNS-510 | **53059** | |
| 442 | IVSN-433 | **09178** | NL-46L | **59232** | CLI-30 | **59051** | XNS-510 | **53059** | |

## MVVN N COMMON HARDWARE

17° 30′ LEAD
NEGATIVE RAKE
TURNING & PROFILING






**35˚ Diamond Insert**
Use Insert Style:
VNFM
VNGA
VNGM
VNGP
VNMA
VNMG
VNMP

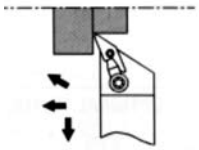
| Part Number | Insert Size | Dimensions | | | | | EDP# |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | |
| MVVNN 12-3B | 332 | .75 | .75 | 4.50 | 1.75 | - | **60858** |
| MVVNN 16-3C | 332 | 1.00 | 1.00 | 5.00 | 1.75 | - | **60859** |
| MVVNN 16-3D | 332 | 1.00 | 1.00 | 6.00 | 1.75 | - | **60860** |

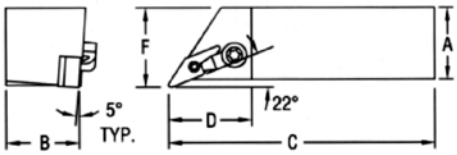
**Spare Parts**

| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | IVSN-324 | **09177** | NL-34L | **52957** | CLI-22 | **59049** | XNS-48 | **53058** | |

## MVWN R/L COMMON HARDWARE

22° LEAD
NEGATIVE RAKE
TURNING & PROFILING






**35˚ Diamond Insert**
Use Insert Style:
VNFM
VNGA
VNGM
VNGP
VNMA
VNMG
VNMP

| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MVWNR/L 12-3B | 332 | .75 | .75 | 4.50 | 1.63 | 1.00 | **60871** | **60866** |
| MVWNR/L 16-3D | 332 | 1.00 | 1.00 | 6.00 | 1.63 | 1.250 | **60872** | **60867** |

**Spare Parts**

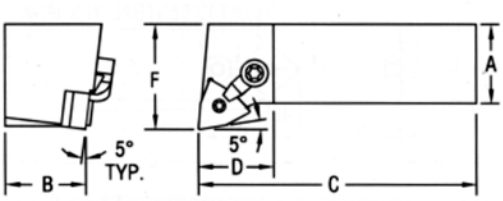
| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | IVSN-324 | **09177** | NL-34L | **52957** | CLI-30 | **59051** | XNS-510 | **53059** | |

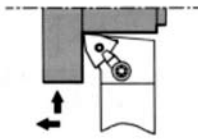
ValTURN™

## MWLN R/L COMMON HARDWARE

-5° LEAD
NEGATIVE RAKE
TURNING & FACING

**80˚ Trigon Insert**
Use Insert Style:
WNMA
WNMG
WNMM



| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| MWLNR/L 12-4B | 432 | .75 | .75 | 4.50 | 1.13 | 1.00 | **60888** | **60877** |
| MWLNR/L 16-4D | 432 | 1.00 | 1.00 | 6.00 | 1.13 | 1.250 | **60892** | **60881** |
| MWLNR/L 20-4D | 432 | 1.25 | 1.25 | 6.00 | 1.13 | 1.500 | **60894** | **60883** |

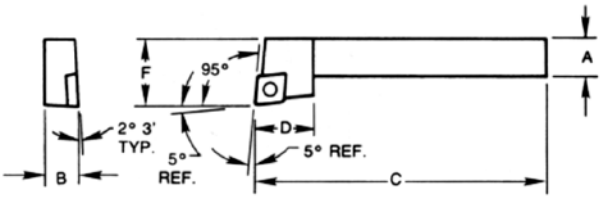
### Spare Parts

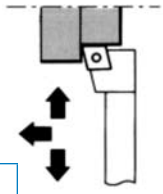
| Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | IWSN-433 | **09180** | NL-46 | **52959** | CLI-20 | **59048** | XNS-48 | **53058** | |

## SCLC R/L ISO SCREW DOWN

-5° 30′ LEAD
POSITIVE RAKE
TURNING & FACING

**80˚ Diamond Insert**
Use Insert Style:
CCGT
CCMT
CCMW



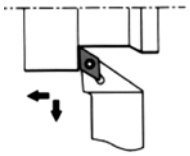
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| SCLCR/L 06-21.5 | 21.51 | .38 | .38 | 3.00 | .50 | .625 | **61074** | **61053** |
| SCLCR/L 08-21.5B | 21.51 | .50 | .50 | 4.50 | .50 | .750 | **61076** | **61054** |

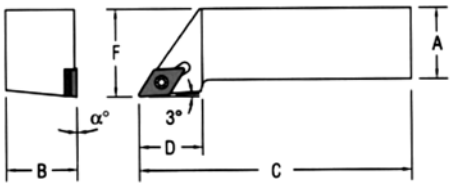
### Spare Parts

| Insert Size | Lock Screw | | Torx Wrench® Screw | |
|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# |
| 21.51 | PT-542T | **52286** | T-7 Torx Wrench | **50101** |

## SDJC R/L ISO SCREW DOWN

-5° LEAD
POSITIVE RAKE
TURNING & PROFILING






**55° Diamond Insert**
Use Insert Style:
DCGT
DCMT
DCMW

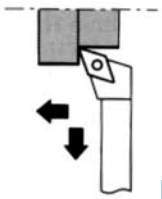
| Part Number | Insert Size | Dimensions | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | α° | Right Hand | Left Hand |
| SDJCR 06-21.5 | 21.51 | .38 | .38 | 3.00 | .62 | .625 | 0° | **61145** | - |
| SDJCR/L 08-215B | 21.51 | .50 | .50 | 4.50 | .62 | .750 | 0° | **61147** | **61131** |
| SDJCL 12-32.5B | 32.52 | .75 | .75 | 4.50 | 1.00 | 1.00 | 0° | | **61133** |

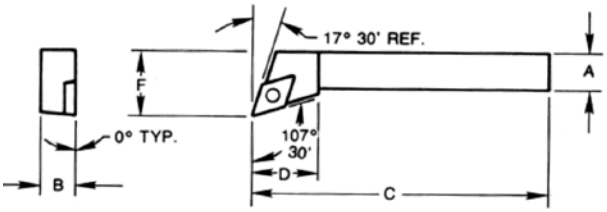
### Spare Parts

| Insert Size | Lock Screw | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| 21.51 | PT-542T | **52286** | T-7 Torx Wrench | **50101** | |
| 32.52 | PT-544T | **52288** | T-15 Torx Wrench | **50087** | |

## SDQC R/L ISO SCREW DOWN

17.5° LEAD
POSITIVE RAKE
PROFILING






**55° Diamond Insert**
Use Insert Style:
DCGT
DCMT
DCMW

| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| SDQCR 06-21.5 | 21.51 | .38 | .38 | 3.00 | .62 | .625 | **61173** | - |
| SDQCR 08-21.5B | 21.51 | .50 | .50 | 4.50 | .62 | .750 | **61174** | - |

### Spare Parts

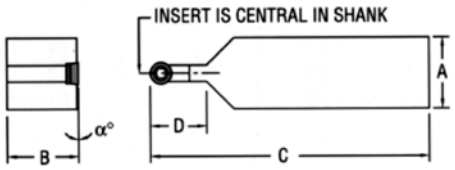
| Insert Size | Lock Screw | | Torx Wrench® Screw | |
|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# |
| 21.51 | PT-542T | **52286** | T-7 Torx Wrench | **50101** |

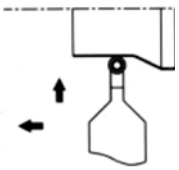
ValTURN™

**Round Insert**
Use Insert Style
RCGT-RP
RCMT-1A
RCMW

## SRDC N ISO SCREW DOWN

NEUTRAL
PROFILING



| Part Number | Insert Size | Dimensions | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | α° | Right Hand | Left Hand |
| SRDCN 16-3D | 32.5 | 1.00 | 1.00 | 6.00 | 1.00 | - | 0° | **61205** | - |

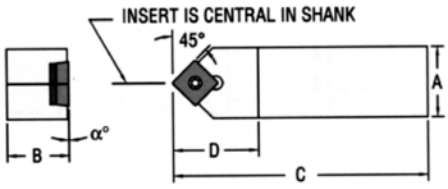
### Spare Parts

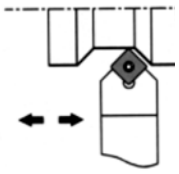
| Insert Size | Shim Seat | | Lock Screw | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 32.5 | SRCN-32.5A | **09234** | PT-818T | **52332** | T-15 Torx Wrench | **50087** | |

**Square Insert**
Use Insert Style:
SCGT
SCMT
SCMW

## SSDC N ISO SCREW DOWN

45° LEAD
POSITIVE RAKE
TURNING & CHAMFERING



| Part Number | Insert Size | Dimensions | | | | | | EDP# |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | α° | |
| SSDCN 05-21.5 | 21.51 | .31 | .31 | 2.50 | .50 | - | 0° | **61253** |
| SSDCN 06-21.5 | 21.51 | .38 | .38 | 3.00 | .50 | - | 0° | **61254** |
| SSDCN 08-21.5B | 21.51 | .50 | .50 | 4.50 | .50 | - | 0° | **61256** |

### Spare Parts

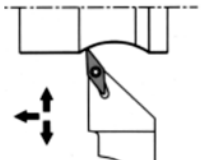
| Insert Size | Lock Screw | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| 21.51 | PT-542T | **52286** | T-7 Torx Wrench | **50101** | |

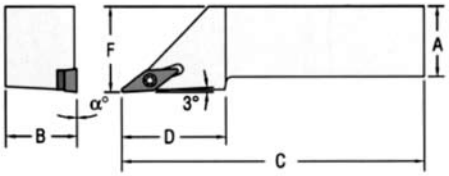
ValTURN™

## SVJB R/L ISO SCREW DOWN

-3° LEAD
POSITIVE RAKE
TURNING & PROFILING

**35° Diamond Insert**
Use Insert Style:
VBGT
VBMT






| Part Number | Insert Size | Dimensions | | | | | | EDP# |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | α° | |
| SVJBR 12-3B | 332 | .75 | .75 | 4.50 | 1.25 | 1.00 | 0° | **61318** |
| SVJBR 16-3C | 332 | 1.00 | 1.00 | 5.00 | 1.56 | 1.250 | 0° | **61319** |

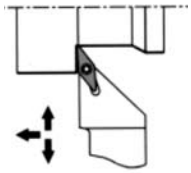
### Spare Parts

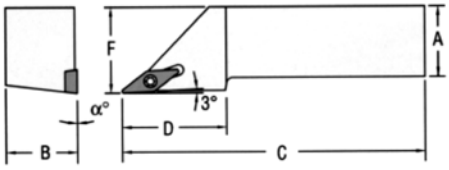
| Insert Size | Shim Seat | | Shim Filler | | Lock Screw | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | SVCN-32.5 | **57407** | PT-776 | **52325** | PT-818T | **52327** | T-15 Torx Wrench | **50087** | |

## SVJC R/L ISO SCREW DOWN

-3° LEAD
POSITIVE RAKE
TURNING & PROFILING

**35° Diamond Insert**
Use Insert Style:
VCMT
VCMW






| Part Number | Insert Size | Dimensions | | | | | | EDP# |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | α° | |
| SVJCR 12-32.5B | 32.52 | .75 | .75 | 4.50 | 1.37 | 1.00 | 0° | **61328** |

### Spare Parts

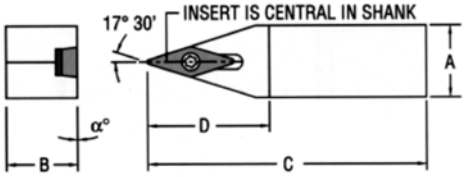
| Insert Size | Shim Seat | | Shim Filler | | Lock Screw | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 32.52 | - | - | - | - | PT-544T | **52288** | T-15 Torx Wrench | **50087** | |

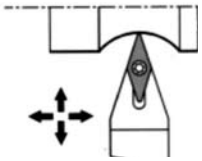
ValTURN™

**35˚ Diamond Insert**
Use Insert Style:
VBMT
VBGT

## SVVB N ISO SCREW DOWN

17.5°LEAD
POSITIVE RAKE
TURNING & PROFILING



| Part Number | Insert Size | Dimensions | | | | | | EDP# |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | α˚ | |
| SVVBN 16-3C | 332 | 1.00 | 1.00 | 5.00 | 1.30 | - | 0˚ | **61331** |
| SVVBN 16-3D | 332 | 1.00 | 1.00 | 6.00 | 1.30 | - | 0˚ | **61332** |

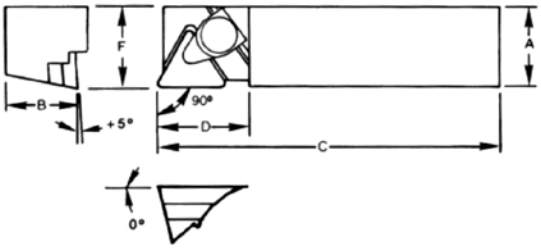
### Spare Parts

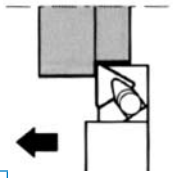
| Insert Size | Shim Seat | | Shim Filler | | Lock Screw | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 332 | SVCN-32.5 | **57407** | PT-776 | **52325** | PT-781T | **52327** | T-15 Torx Wrench | **50087** | |

**Triangular Insert**
Use Insert Style:
TPC
TPE
TPG
TPGR
TPMR

## CTAP R/L TOP CLAMP

0° LEAD
POSITIVE RAKE
TURNING



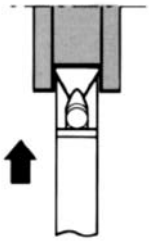
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| CTAPR-08-2 | 221 | .50 | .50 | 4.50 | .75 | .500 | **59633** | - |
| CTAPR/L-12-3 | 322 | .75 | .75 | 4.50 | 1.11 | .750 | **59635** | **59632** |

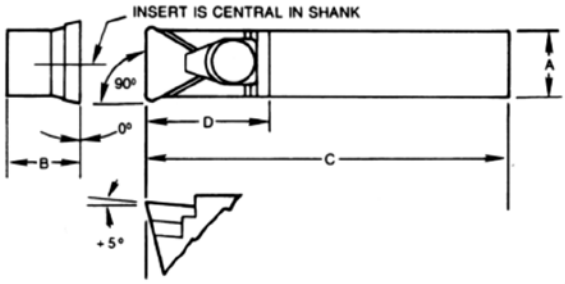
### Spare Parts

| Insert Size | Shim Seat | | Clamp | | Clamp Screw | | Shim Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 221 | - | - | NC-1S | **59077** | CS-8E | **52817** | - | - | |
| 322 | STBC-12-2 | **09324** | NC-2S | **59083** | CSC-1B | **52819** | SSS-1 | **53039** | |

## CTCP N TOP CLAMP

0° LEAD
POSITIVE RAKE
FACING & PLUNGING






**Triangular Insert**
Use Insert Style:
TPC
TPE
TPG
TPGR
TPMR

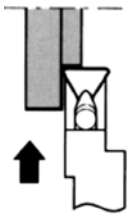
| Part Number | Insert Size | Dimensions | | | | | EDP# |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | |
| CTCPN-44-3 | 322 | .50 | 1.00 | 8 | 1.12 | - | **59640** |
| CTCPN-64-4 | 432 | .75 | 1.00 | 8 | 1.44 | - | **59641** |

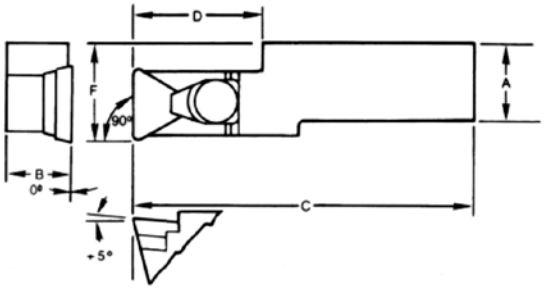
### Spare Parts

| Insert Size | Shim Seat | | Clamp | | Clamp Screw | | Shim Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | STBC-12-2 | **09324** | NC-2S | **59083** | CSC-1B | **52819** | SSS-1 | **53039** | |
| 432 | STBC-16-3 | **09326** | NC-3ST | **59089** | CSC-2B | **52820** | SSS-2 | **52358** | |

## CTCP R TOP CLAMP

0° LEAD
POSITIVE RAKE
FACING & PLUNGING






**Triangular Insert**
Use Insert Style:
TPC
TPE
TPG
TPGR
TPMR

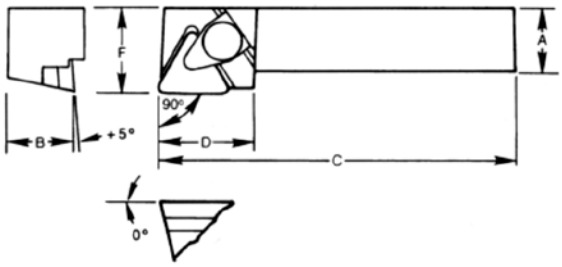
| Part Number | Insert Size | Dimensions | | | | | EDP# |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | |
| CTCPR-16-3C | 322 | 1.00 | 1.00 | 5.00 | 1.12 | 1.250 | **59644** |

### Spare Parts

| Insert Size | Shim Seat | | Clamp | | Clamp Screw | | Shim Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | STBC-12-2 | **09324** | NC-2S | **59083** | CSC-1B | **52819** | SSS-1 | **53039** | |

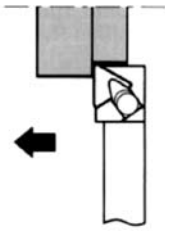
ValTURN™

**Triangular Insert**
Use Insert Style:
TPC
TPE
TPG
TPGR
TPMR




## CTGP R/L TOP CLAMP

0° LEAD
POSITIVE RAKE
TURNING

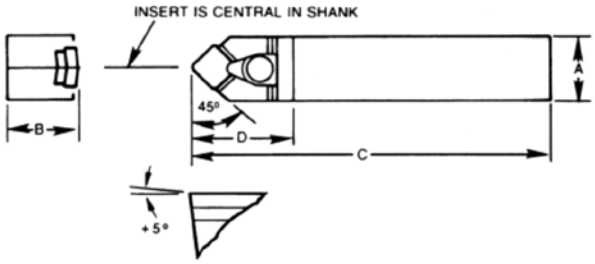


| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| CTGP R 08-2A | 221 | .50 | .50 | 4.00 | .64 | .750 | **59673** | - |
| CTGP R/L 12-3B | 322 | .75 | .75 | 4.50 | 1.09 | 1.00 | **59676** | **59667** |
| CTGP R 16-3C | 322 | 1.00 | 1.00 | 5.00 | 1.09 | 1.250 | **59678** | - |

### Spare Parts

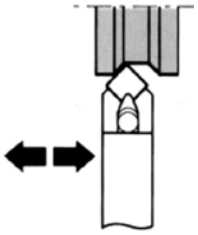
| Insert Size | Shim Seat | | Clamp | | Clamp Screw | | Shim Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 221 | - | - | NC-1S | **59077** | CS-8E | **52817** | - | - | |
| 322 | STBC-12-2 | **09324** | NC-2S | **59083** | CSC-1B | **52819** | SSS-1 | **53039** | |

**Square Insert**
Use Insert Style:
SPC
SPE
SPG
SPGR
SPMR




## CSDP N TOP CLAMP

45° LEAD
POSITIVE RAKE
TURNING & CHAMFERING



| Part Number | Insert Size | Dimensions | | | | | EDP# |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | |
| CSDPN-08-3A | 322 | .50 | .50 | 4.00 | .98 | - | **59617** |
| CSDPN-10-3B | 322 | .62 | .62 | 4.50 | .98 | - | **59618** |
| CSDPN-12-4B | 422 | .75 | .75 | 4.50 | 1.22 | - | **59621** |
| CSDPN-16-4D | 422 | 1.00 | 1.00 | 6.00 | 1.22 | - | |
| CSDPN-85-6 | 633 | 1.00 | 1.25 | 7.00 | 1.63 | - | **59627** |

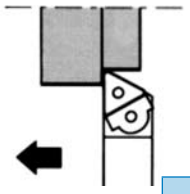
### Spare Parts

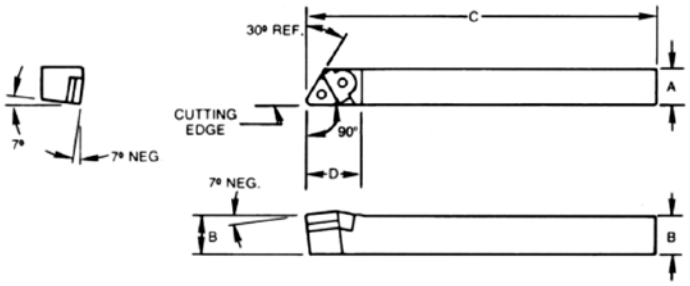
| Insert Size | Shim Seat | | Clamp | | Clamp Screw | | Shim Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | SSQC-12-2 | **09288** | NC-1 AS | **59076** | CS-8E | **52817** | SSS-1 | **53039** | |
| 422 | SSQC-16-2 | **09289** | NC-2S | **59082** | CSC-1B | **52819** | SSS-1 | **53039** | |
| 633 | SSQC-24-3 | **09290** | NC-3SS | **59088** | CSC-2B | **52820** | SSS-2 | **52358** | |

ValTURN™

## LTA R/L WEDGE LOCK

0° LEAD
NEGATIVE RAKE
TURNING






**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNGA TNMG
TNGM TNMM

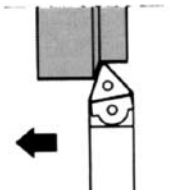
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| LTAR-8 | 222 | .50 | .50 | 4.50 | .68 | - | **60176** | - |
| LTAR-10 | 322 | .62 | .62 | 4.50 | 1.00 | - | **60170** | - |
| LTAR-12 | 322 | .75 | .75 | 4.50 | 1.00 | - | **60171** | - |
| LTAR/L-16 | 432 | 1.00 | 1.00 | 6.00 | 1.38 | - | **60172** | **60165** |
| LTAR-20 | 543 | 1.25 | 1.25 | 7.00 | 1.56 | - | **60174** | - |

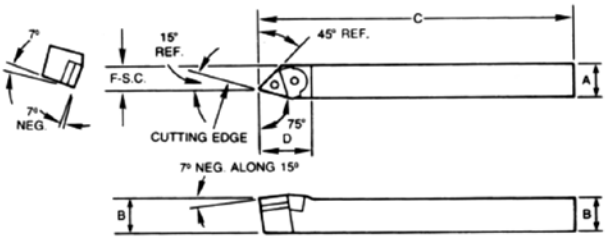
### Spare Parts

| Insert Size | Shim Seat | | Shim Seat Retainer Clip | | Pin | | Wedge Lock R.H./L.H. | | Wedge Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 222 | - | - | - | - | LP-10 | **59199** | W-1 | **59123** | LS-10 | **59216** | |
| 322 | STN-32 | **09336** | 5103-15 | **57320** | LP-20 | **59202** | WR-7 | **59171** | LS-20 | **59219** | |
| 322 | STN-32 | **09336** | - | - | LP-20 | **59202** | WR-8 | **59172** | LS-20 | **59219** | |
| 432 | STN-43 | **09341** | 5103-21 | **57321** | LP-30 | **59205** | W-3 | **59143** | LS-30 | **59221** | |
| 543 | STN-54 | **09348** | 5103-25 | **57322** | LP-40 | **59208** | W-4 | **59150** | LS-31 | **59222** | |

## LTBR/L WEDGE LOCK

15° LEAD
NEGATIVE RAKE
TURNING






**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNGA TNMG
TNGM TNMM

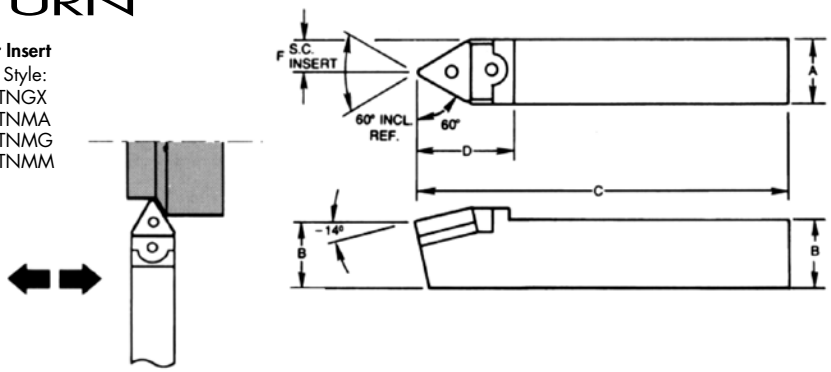
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| LTBR-12 | 322 | .75 | .75 | 4.50 | 1.06 | .59 | **60185** | - |
| LTBR-16 | 432 | 1.00 | 1.00 | 6.00 | 1.38 | .78 | **60186** | - |

### Spare Parts

| Insert Size | Shim Seat | | Shim Seat Retainer Clip | | Pin | | Wedge Lock R.H./L.H. | | Wedge Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | STN-32 | **09336** | 5103-15 | **57320** | LP-20 | **59202** | W-2 | **59131** | LS-20 | **59219** | |
| 432 | STN-43 | **09341** | 5103-21 | **57321** | LP-30 | **59205** | W-3 | **59143** | LS-30 | **59221** | |

ValTURN™

**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNGA TNMG
TNGM TNMM



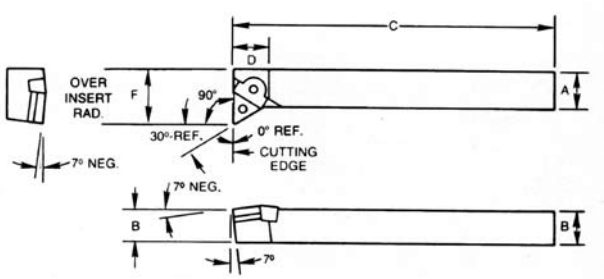

## LTE WEDGE LOCK
30° LEAD
NEGATIVE RAKE
TURNING

| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| LTE-16 | 432 | 1.00 | 1.00 | 6.00 | 1.38 | .50 | **60199** | - |

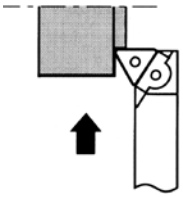
### Spare Parts

| Insert Size | Shim Seat | | Shim Seat Retainer Clip | | Pin | | Wedge Lock R.H./L.H. | | Wedge Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | STN-43 | **09341** | 5103-21 | **57321** | LP-30 | **59205** | W-3 | **59143** | LS-30 | **59221** | |

**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNGA TNMG
TNGM TNMM




## LTFR/L WEDGE LOCK
0° LEAD
NEGATIVE RAKE
FACING



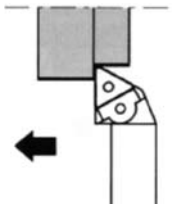
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| LTFR-16 | 432 | 1.00 | 1.00 | 6.00 | .94 | 1.50 | **60214** | - |
| LTFR-20 | 543 | 1.25 | 1.25 | 7.00 | 1.00 | 2.00 | **60215** | **60211** |

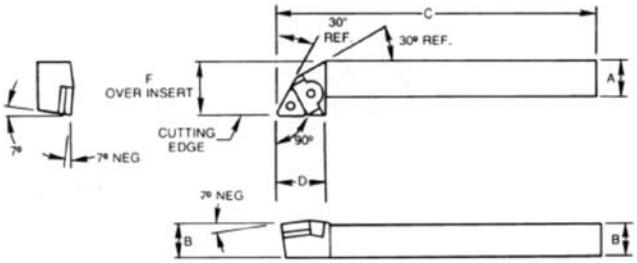
### Spare Parts

| Insert Size | Shim Seat | | Shim Seat Retainer Clip | | Pin | | Wedge Lock R.H./L.H. | | Wedge Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | STN-43 | **09341** | 5103-21 | **57321** | LP-30 | **59205** | W-3 | **59143** | LS-30 | **59221** | |
| 543 | STN-54 | **09348** | 5103-25 | **57322** | LP-40 | **59208** | W-4 | **59150** | LS-31 | **59222** | |

## LTGR/L WEDGE LOCK

0° LEAD
NEGATIVE RAKE
TURNING






**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNGA TNMG
TNGM TNMM

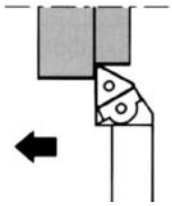
| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| LTGR/L-10 | 322 | .62 | .62 | 4.50 | .94 | .88 | **60230** | **60221** |
| LTGR/L-16 | 432 | 1.00 | 1.00 | 6.00 | 1.25 | 1.25 | **60232** | **60223** |

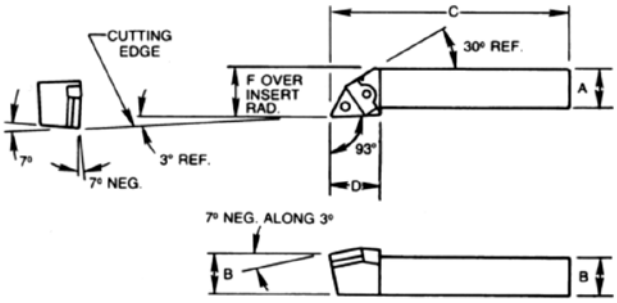
**Spare Parts**

| Insert Size | Shim Seat | | Shim Seat Retainer Clip | | Pin | | Wedge Lock R.H./L.H. | | Wedge Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | STN-32 | **09336** | 5103-15 | **57320** | LP-20 | **59202** | W-2 | **59131** | LS-20 | **59219** | |
| 432 | STN-43 | **09341** | 5103-21 | **57321** | LP-30 | **59205** | W-3 | **59143** | LS-30 | **59221** | |

## LTJR/L WEDGE LOCK

-3° LEAD
NEGATIVE RAKE
TURNING & PROFILING






**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNGA TNMG
TNGM TNMM

| Part Number | Insert Size | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | Right Hand | Left Hand |
| LTJL-16-4 | 432 | 1.00 | 1.00 | 6.00 | 1.18 | 1.25 | - | **60243** |

**Spare Parts**

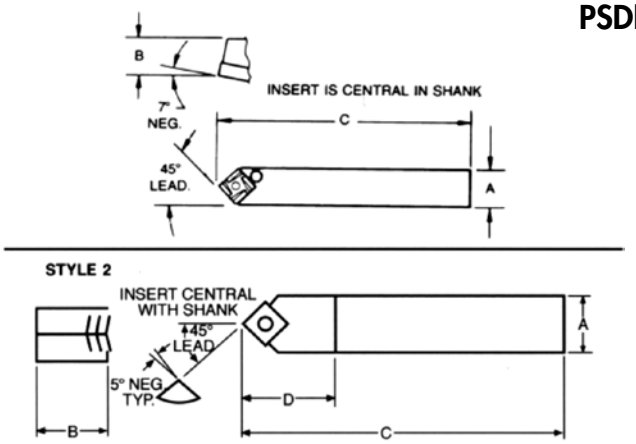
| Insert Size | Shim Seat | | Shim Seat Retainer Clip | | Pin | | Wedge Lock R.H./L.H. | | Wedge Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 432 | STN-43C | **09345** | 5103-21 | **57321** | LP-32 | **59207** | W-4 | **59150** | LS-30 | **59221** | |

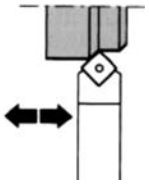
ValTURN™

**Square Insert**
Use Insert Style:
SNEA
SNFM
SNMA
SNMG
SNMM

## PSDNN SMALL SHANK ECONOMY

45° LEAD
NEGATIVE RAKE
TURNING



| Part Number | Insert Size | Dimensions | | | | | EDP# |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | F | |
| PSDNN-08-3U | 322 | .50 | .50 | 4.50 | .62 | - | **60910** |
| PSDNN-10-3U | 322 | .62 | .62 | 4.50 | .62 | - | **60911** |
| PSDNN-12-4U | 432 | .75 | .75 | 4.50 | 1.00 | - | **60913** |

**Spare Parts**

| Insert Size | Shim Seat | | Lock Pin | | Pin | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 322 | - | - | H-404-1 | **52852** | - | - | |
| 432 | SSN-43 | 09261 | H-508-1C | **52872** | - | - | |

## ValTURN Tool Kits

| Kit Number | ProGRIP Holder | Shank Size | Insert Style | Grade | EDP No. |
|---|---|---|---|---|---|
| VALTURNKIT01 | DWLNR164D | 1.0″ X 1.0″ | WNMG432R3 | VP1510 | **62618** |
| VALTURNKIT02 | DWLNR164D | 1.0″ X 1.0″ | WNMG432M5 | VP8535 | **62619** |
| VALTURNKIT03 | DWLNR164D | 1.0″ X 1.0″ | WNMG432R3 | VP5525 | **62620** |
| VALTURNKIT04 | DWLNR164D | 1.0″ X 1.0″ | WNMG432M5 | VP5515 | **62621** |
| VALTURNKIT05 | DCLNR164D | 1.0″ X 1.0″ | CNMG432R3 | VP1510 | **62622** |
| VALTURNKIT06 | DCLNR164D | 1.0″ X 1.0″ | CNMA432 | VP1510 | **62623** |
| VALTURNKIT07 | DCLNR164D | 1.0″ X 1.0″ | CNMG432M5 | VP5515 | **62624** |
| VALTURNKIT08 | DCLNR164D | 1.0″ X 1.0″ | CNMG432R3 | VP5515 | **62625** |
| VALTURNKIT09 | DCLNR164D | 1.0″ X 1.0″ | CNMG432M5 | VP5525 | **62626** |
| VALTURNKIT10 | DCLNR164D | 1.0″ X 1.0″ | CNMG432R3 | VP5525 | **62627** |
| VALTURNKIT11 | DCLNR164D | 1.0″ X 1.0″ | CNMG432R3 | VP5535 | **62628** |
| VALTURNKIT12 | DCLNR164D | 1.0″ X 1.0″ | CNMG432M5 | VP8535 | **62629** |
| VALTURNKIT13 | DCLNR124B | 0.75″ X 0.75″ | CNMA432 | VP1510 | **62577** |
| VALTURNKIT14 | DCLNL164D | 1.0″ X 1.0″ | CNMA432 | VP1510 | **62578** |
| VALTURNKIT15 | DCLNR124B | 0.75 X 0.75 | CNMA433 | VP1510 | **62579** |
| VALTURNKIT16 | DCLNR164D | 1.0″ X 1.0″ | CNMA433 | VP1510 | **62580** |
| VALTURNKIT17 | DCLNL164D | 1.0″ X 1.0″ | CNMA433 | VP1510 | **62581** |
| VALTURNKIT18 | DCLNR164D | 1.0″ X 1.0″ | CNMG432M2 | VP8535 | **62582** |
| VALTURNKIT19 | DCLNL164D | 1.0″ X 1.0″ | CNMG432M2 | VP8535 | **62583** |
| VALTURNKIT20 | DCLNR164D | 1.0″ X 1.0″ | CNMG432M3 | VP5515 | **62584** |
| VALTURNKIT21 | DCLNL164D | 1.0″ X 1.0″ | CNMG432M3 | VP5515 | **62585** |
| VALTURNKIT22 | DCLNR124B | 0.75″ X 0.75″ | CNMG432M5 | VP1510 | **62586** |
| VALTURNKIT23 | DCLNR164D | 1.0″ X 1.0″ | CNMG432M5 | VP1510 | **62587** |
| VALTURNKIT24 | DCLNL164D | 1.0″ X 1.0″ | CNMG432M5 | VP1510 | **62588** |
| VALTURNKIT25 | DCLNR124B | 0.75″ X 0.75″ | CNMG432M5 | VP5515 | **62589** |
| VALTURNKIT26 | DCLNL164D | 1.0″ X 1.0″ | CNMG432M5 | VP5515 | **62590** |
| VALTURNKIT27 | DCLNL164D | 1.0″ X 1.0″ | CNMG432M5 | VP5525 | **62591** |
| VALTURNKIT28 | DCLNL164D | 1.0″ X 1.0″ | CNMG432M5 | VP8535 | **62630** |
| VALTURNKIT29 | DCLNR124B | 0.75″ X 0.75″ | CNMG432R3 | VP1510 | **62592** |
| VALTURNKIT30 | DCLNL164D | 1.0″ X 1.0″ | CNMG432R3 | VP1510 | **62593** |
| VALTURNKIT31 | DCLNR124B | 0.75″ X 0.75″ | CNMG432R3 | VP5515 | **62594** |
| VALTURNKIT32 | DCLNL164D | 1.0″ X 1.0″ | CNMG432R3 | VP5515 | **62595** |
| VALTURNKIT33 | DCLNL164D | 1.0″ X 1.0″ | CNMG432R3 | VP5525 | **62596** |
| VALTURNKIT34 | DCLNL164D | 1.0″ X 1.0″ | CNMG432R3 | VP5535 | **62597** |
| VALTURNKIT35 | DDJNR164D | 1.0″ X 1.0″ | DNMA432 | VP1510 | **62631** |
| VALTURNKIT36 | DDJNR164D | 1.0″ X 1.0″ | DNMG432M5 | VP5515 | **62598** |
| VALTURNKIT37 | DDJNR164D | 1.0″ X 1.0″ | DNMG432M5 | VP5525 | **62599** |
| VALTURNKIT38 | DTJNR164D | 1.0″ X 1.0″ | TNMG432M5 | VP5515 | **62600** |
| VALTURNKIT39 | DTJNR164D | 1.0″ X 1.0″ | TNMG432M5 | VP5525 | **62601** |
| VALTURNKIT40 | DTJNR164D | 1.0″ X 1.0″ | TNMG432M5 | VP8535 | **62602** |
| VALTURNKIT41 | DTJNR164D | 1.0″ X 1.0″ | TNMG432R3 | VP5525 | **62603** |
| VALTURNKIT42 | DWLNR164D | 1.0″ X 1.0″ | WNMA432 | VP1510 | **62604** |
| VALTURNKIT43 | DWLNR164D | 1.0″ X 1.0″ | WNMG432F5 | VP8535 | **62632** |
| VALTURNKIT44 | DWLNR164D | 1.0″ X 1.0″ | WNMG432M5 | VP5525 | **62605** |

Notes: Each TURNING Kit consists of 1 tool holder and 10 inserts.

Wrench comes with the tool holder.

## BORING BARS


| | |
|---|---|
| Common Hardware | 100-104 |
| ISO Screw Down | 104-107 |
| Carbide | 108-109 |
| Small Hole | 109-110 |

## Inch Straight Shank Boring Bar Nomenclature

ValTURN™

**S 16 U M T F N R 3**

### Type of Bar
S = Steel
A = Steel with coolant hole
C = Carbide
E = Carbide wth coolant hole

### Shank Diameter
Indicates bar diameter in sixteenths of an inch. Consult catalog for minimum bore diameter capability

### Boring Bar Length
F = 3"
G = 3.5"
H = 4"
J = 4.5"
K = 5"
L = 5.5"
M = 6"
N = 6.5"
P = 6.75
Q = 7"
R = 8"
S = 10"
T = 12"
U = 14"
V = 16"
W = 18"
Y = 20"
X = Special Length

### Method of Holding Insert
M = Clamp and lock pin
P = Lock Pin
C = Clamp
S = Screw

### INSERT SHAPE
C = 80° Diamond
D = 55° Diamond
V = 35° Diamond
R = Round
S = Square
T = Triangle
W = Trigon

### Bar Style
U = Offset shank with negative 3° (93°) end or side cutting edge angle
F = Offset shank with 0° (90°) end cutting edge angle
G = Offset shank side/end cutting (round insert)
K = Offset Shank with 15° (75°) end cutting edge angle
L = Offset shank with negative 5° (95°) end or side cutting edge angle
Q = Offset shank with negative 17.5° (107.5°) cutting edge angle
LX = Offset shank with negative 5° (95°) end cutting edge angle, back boring
X = Offset shank with negative 27.5° (117.5°) side or end cutting edge angle

### Bar Rake Angle
C = Positive 7°
P = Positive
N = Negative
O = Neutral

### Hand of Bar
R = Right
L = Left

### Insert Size (I.C.)
1.2 = .1562"
1.5 = .1875"
1.8 = .2187"
2 = .250"
2.5 = .3125"
3 = .375"
4 = .500"
5 = .625"
6 = .750"
8 = 1.000"

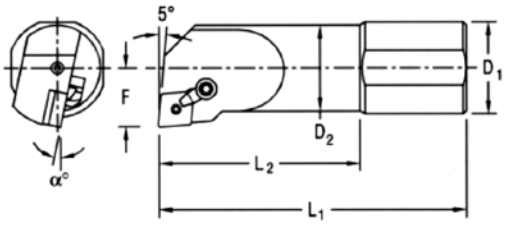
All dimesions are in inches.

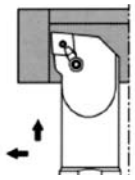
ValTURN™

## S-MCLN R/L COMMON HARDWARE BORING BAR

-5° LEAD
NEGATIVE RAKE
BORING & FACING

**80° Diamond Insert**
Use Insert Style:
CNFM
CNG
CNGA
CNGM
CNGP
CNMA
CNMG
CNMM



| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | Min. Bore | F | D2 | α° | L1 | L2 | Right Hand | Left Hand |
| S16T MCLN R/L 4 | 432 | 1.00 | 1.280 | 0.640 | - | 12° | 12.00 | - | **55037** | **55035** |
| S20U MCLN R/L 4 | 432 | 1.25 | 1.530 | 0.765 | 1.12 | 12° | 14.00 | 3.00 | **55061** | **55059** |
| S24U MCLN R/L 4 | 432 | 1.50 | 1.78 | 0.89 | 1.31 | 12° | 14.00 | 3.00 | **55085** | **55084** |
| S32V MCLN R/L 4 | 432 | 2.00 | 2.562 | 1.281 | 1.81 | 12° | 16.00 | 4.00 | **55112** | **55109** |
| S32V MCLN L 5 | 543 | 2.00 | 2.562 | 1.281 | 1.81 | 12° | 16.00 | 4.00 | - | **55110** |

### Spare Parts

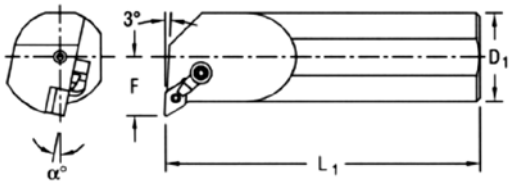
| D1 | Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 1.00 | 432 | - | - | NL 44 | **52958** | CLI 20 | **59048** | XNS 47 | **53057** | |
| 1.25 | 432 | CSN 433 | **09143** | NL 46 | **52959** | CLI 20 | **59048** | XNS 47 | **53057** | |
| all other | 543 | CSN 533 | **09147** | NL 58 | **52960** | CLI 12 | **59046** | XNS 510 | **53059** | |

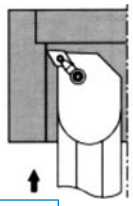
Contact Tecnical support for optional parts

## S-MDUN R/L COMMON HARDWARE BORING BAR

-3° LEAD
NEGATIVE RAKE
BORING & PROFILING

**55° Diamond Insert**
Use Insert Style:
DNFM
DNGA
DNGM
DNGP
DNMG
DNMM
DNMP



| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | Min.Bore | F | D2 | α° | L1 | L2 | Right Hand | Left Hand |
| S16T MDUN R 4 | 432 | 1.00 | 1.750 | 0.875 | - | 10° | 12.00 | - | **55037** | - |
| S20U MDUN R 4 | 432 | 1.250 | 2.000 | 1.000 | - | 12° | 14.00 | - | **55065** | - |
| S24U MDUN R/L 4 | 432 | 1.50 | 2.250 | 1.125 | - | 10° | 14.00 | - | **55087** | **55086** |
| S32V MDUN R 4 | 432 | 2.00 | 3.000 | 1.500 | - | 10° | 16.00 | - | **55117** | - |

### Spare Parts

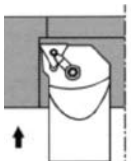
| D1 | Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 1.00 | 432 | - | - | NL 33L | **52956** | CLI 7 | **59054** | XNS 35 | **53060** | |
| all other | 432 | DSN 443 | **09160** | NL 46L | **59232** | CLI 12 | **59046** | XNS 59 | **53061** | |

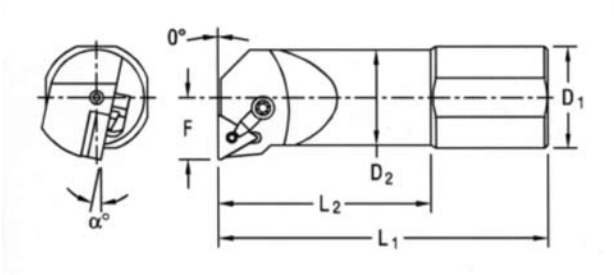
Contact Tecnical support for optional parts

ValTURN™

## S-MTFN R/L COMMON HARDWARE BORING BARS

0° LEAD
NEGATIVE RAKE
BORING






**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNG TNMG
TNGA TNMN
TNGM TNMN

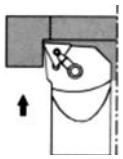
| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | Min.Bore | F | D2 | α° | L1 | L2 | Right Hand | Left Hand |
| S16T-MTFNR 32 | 322 | 1.000 | 1.250 | 0.625 | 0.88 | 12° | 12.00 | 2.50 | **55044** | - |
| S16T-MTFNR 33 | 332 | 1.000 | 1.280 | 0.640 | 0.88 | 12° | 12.00 | 2.50 | **55045** | - |
| S24U-MTFNR 4 | 432 | 1.500 | 2.062 | 1.031 | 1.31 | 10° | 14.00 | 3.00 | **55095** | - |

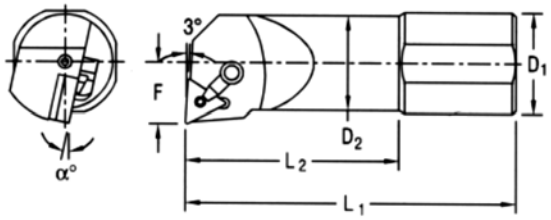
**Spare Parts**

| D1 | Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 1.000 | 322 | - | - | NL 33 | **59230** | CLI 7 | **59054** | XNS 35 | **53054** | |
| 1.000 | 332 | - | - | NL 33L | **52956** | CLI 7 | **59054** | XNS 35 | **53054** | |
| 1.500 | 432 | ITSN 433 | **09173** | NL 46 | **52959** | CLI 9 | **59055** | XNS 59 | **53061** | |

## S-MTUN R/L COMMON HARDWARE BORING BARS

-3° LEAD
NEGATIVE RAKE
BORING






**Triangular Insert**
Use Insert Style:
TNEA TNGX
TNFM TNMA
TNG TNMG
TNGA TNMN
TNGM TNMN

| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | Min.Bore | F | D2 | α° | L1 | L2 | Right Hand | Left Hand |
| S16T-MTUNR 33 | 332 | 1.000 | 1.280 | 0.640 | 0.88 | 12° | 12.00 | 2.50 | **55049** | - |

**Spare Parts**

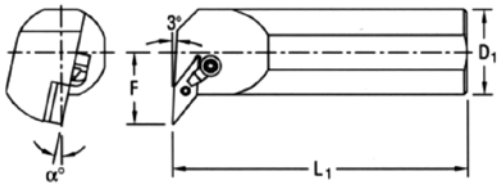
| D1 | Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 1.00 | 332 | - | - | NL-33L | **52956** | CLI-7 | **59054** | XNS-35 | **53054** | |

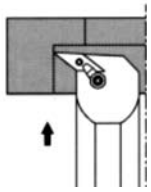
ValTURN™

## S-MVUNR/L COMMON HARDWARE BORING BARS

-3° LEAD
NEGATIVE RAKE
BORING & PROFILING

**35˚ Diamond Insert**
Use Insert Style:
VNFM
VNGA
VNGM
VNGP
VNMA
VNMG
VNMP



| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | Min.Bore | F | D2 | α˚ | L1 | L2 | Right Hand | Left Hand |
| S16T MVUN R 3 | 332 | 1.000 | 2.000 | 1.000 | - | 10˚ | 12.00 | - | **55051** | - |
| S20U MVUN R/L 3 | 332 | 1.250 | 2.250 | 1.125 | - | 12˚ | 14.00 | - | **55075** | **55074** |
| S24U MVUN R 3 | 332 | 1.500 | 2.500 | 1.250 | - | 12˚ | 14.00 | - | **55101** | - |

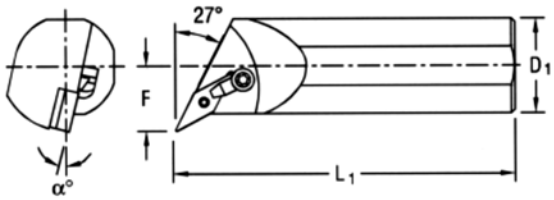
### Spare Parts

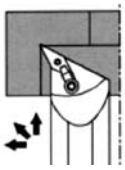
| D1 | Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 1.00 | 332 | IVSN-324 | **09177** | NL-34L | **52957** | CLI-30 | **59051** | XNS-59 | **53061** | |
| 1.25-1.50 | 332 | IVSN-324 | **09177** | NL-34L | **52957** | CLI-30 | **59051** | XNS-510 | **53059** | |

## S-MVXNR/L COMMON HARDWARE BORING BARS

-27° LEAD
NEGATIVE RAKE
BORING & PROFILING

**35˚ Diamond Insert**
Use Insert Style:
VNFM
VNGA
VNGM
VNGP
VNMA
VNMG
VNMP



| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | Min.Bore | F | D2 | α˚ | L1 | L2 | Right Hand | Left Hand |
| S20U MVXN R/L 3 | 332 | 1.250 | 1.750 | 0.875 | - | 13˚ | 14.00 | - | **55077** | **55076** |
| S32V MVXN R 3 | 332 | 2.000 | 2.500 | 1.250 | - | 13˚ | 16.00 | - | **55133** | - |

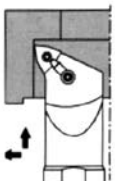
### Spare Parts

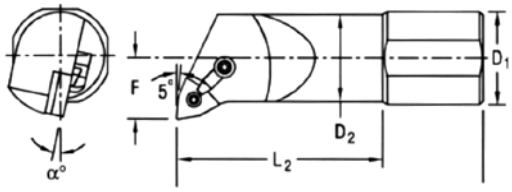
| D1 | Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 1.25-2.00 | 332 | IVSN-324 | **09177** | NL-34L | **52957** | CLI-30 | **59051** | XNS-58 | **53060** | |

## S-MWLN R/L COMMON HARDWARE BORING BARS

-5° LEAD
NEGATIVE RAKE
BORING & PROFILING

**80° Trigon Insert**
Use Insert Style:
WNMG
WNMM






| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | Min.Bore | F | D2 | α° | L1 | L2 | Right Hand | Left Hand |
| S16T MWLN R 4 | 432 | 1.000 | 1.280 | 0.640 | - | 12° | 12.00 | - | **55055** | - |
| S20U MWLN R 4 | 432 | 1.250 | 1.530 | 0.765 | 1.06 | 14° | 14.00 | 3.00 | **55081** | - |
| S24U MWLN R 4 | 432 | 1.500 | 1.780 | 0.890 | 1.31 | 14° | 14.00 | 3.00 | **55103** | - |

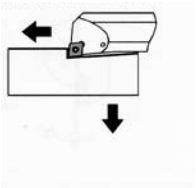
**Spare Parts**

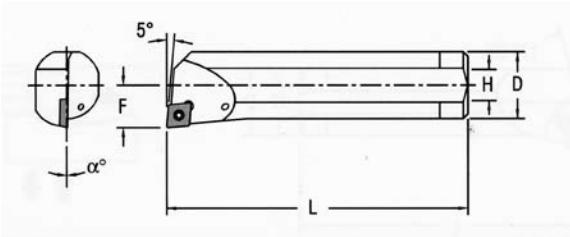
| D1 | Insert Size | Shim Seat | | Lock Pin | | Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| 1.00 | 432 | - | - | NL-44 | **52958** | CLI-20 | **59048** | XNS-47 | **53057** | |
| 1.25-1.50 | 432 | IWSN-433 | **09180** | NL-46 | **52959** | CLI-20 | **59048** | XNS-48 | **53058** | |

## A-SCLP R/L ISO SCREW DOWN BORING BARS

-5° LEAD
BORING & PROFILING

**80° Diamond Insert**
Use Insert Style:
CPGT
CPMT
CPMW






| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D | Min.Bore | F | H | L | NPT | α° | Right Hand | Left Hand |
| A16T-SCLPR 3 | 32.52 | 1.00 | 1.190 | .625 | .250 | 12.00 | 18 | 1° | **54792** | - |

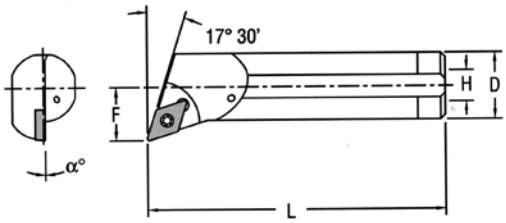
**Spare Parts**

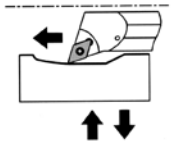
| Insert Size | Lock Pin | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| 32.52 | PT700T | **52307** | T-15 Torx Wrench | **50087** | |

ValTURN™

## A-SDQP R/L ISO SCREW DOWN BORING BARS
-17-1/2° LEAD PROFILING

**55˚ Diamond Insert**
Use Insert Style:
DPGT
DPMT
DPMW



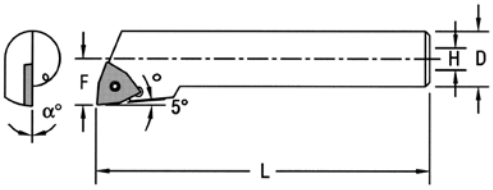
| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D | Min.Bore | F | H | L | NPT | α˚ | Right Hand | Left Hand |
| A12S-SDQPR 3 | 32.52 | .750 | 1.125 | .562 | .1875 | 10.00 | - | 0° | **54785** | - |

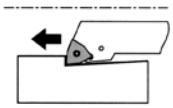
### Spare Parts

| Insert Size | Lock Pin | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| 32.52 | PT-559T | **52292** | T-15 Torx Wrench | **50087** | |

## A-SWLP R/L ISO SCREW DOWN BORING BARS
-5° LEAD TURNING

**80˚ Trigon Insert**
Use Insert Style:
WPGT



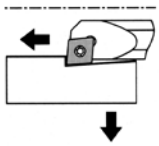
| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D | Min.Bore | F | H | L | NPT | α˚ | Right Hand | Left Hand |
| A10S SWLPR 3 | 32.52 | .625 | .770 | .406 | .125 | 10.00 | 27 | 0° | **54781** | - |
| A12S SWLPR 3 | 32.52 | .750 | .930 | .500 | .125 | 10.00 | 27 | 0° | **54789** | - |
| A16T SWLPL 3 | 32.52 | 1.00 | 1.20 | .640 | .250 | 12.00 | 18 | 0° | - | **54810** |

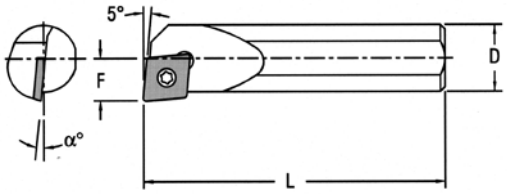
### Spare Parts

| Insert Size | Lock Pin | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| 32.52 | PT-559T | **52292** | T-15 Torx Wrench | **50087** | |

## S-SCFP R/L ISO SCREW DOWN BORING BARS

0° LEAD
BORING






**80° Diamond Insert**
Use Insert Style:
CPGT
CPMT
CPMW

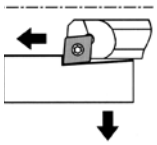
| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D | Min. Bore | F | H | L | NPT | α° | Right Hand | Left Hand |
| S12S SCFPR3 | 32.52 | .750 | 1.00 | .500 | - | 10.00 | - | 6° | **54917** | - |

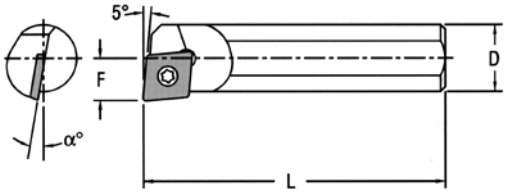
### Spare Parts

| Insert Size | Lock Pin | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| 32.52 | PT-559T | **52292** | T-15 Torx Wrench | **50087** | |

## S-SCLP R/L ISO SCREW DOWN BORING BARS

-5° LEAD
BORING & FACING






**80° Diamond Insert**
Use Insert Style:
CPGT
CPMT
CPMW

| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D | Min. Bore | F | H | L | NPT | α° | Right Hand | Left Hand |
| S04H-SCLPR 1512 | 1.51.21 | .250 | .312 | .156 | - | 4.00 | - | 9° | **54856** | - |
| S05H-SCLPR 1815 | 1.81.51 | .312 | .375 | .188 | - | 4.00 | - | 8.5° | **54857** | - |
| S08275 SCLPR 2 | 21.51 | .500 | .625 | .312 | - | 8.00 | - | 6 | **54871** | - |
| S08R SCLPR 2 | 21.51 | .500 | .625 | .312 | - | 8.00 | - | 6 | **54881** | - |
| S10S SCLPR 2 | 21.51 | .625 | .812 | .406 | - | 10.00 | - | 2 | **54902** | - |
| S12S SCLPR 3 | 32.52 | .750 | 1.00 | .500 | - | 10.00 | - | 2° | **54919** | - |

### Spare Parts

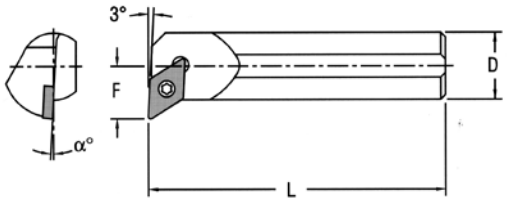
| Insert Size | Lock Pin | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| 1.51.21 | PT-670T | **52305** | T-6 Torx Wrench | **50098** | |
| 1.81.51 | PT-718T | **52309** | T-7 Torx Wrench | **50101** | |
| 32.52 | PT-559T | **52292** | T-15 Torx Wrench | **50087** | |

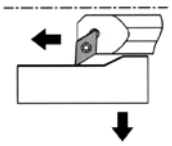
ValTURN™

## S-SDUP R/L ISO SCREW DOWN BORING BARS

-3° LEAD
BORING & PROFILING

**55° Diamond Insert**
Use Insert Style:
DPGT
DPMT
DPMW



| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D | Min. Bore | F | H | L | NPT | α° | Right Hand | Left Hand |
| S06M SDUPR 2 | 21.51 | .375 | .750 | .375 | - | 6.00 | - | 3° | **54867** | - |
| S08R SDUPR 2 | 21.51 | .500 | .812 | .406 | - | 8.00 | - | 3° | **54883** | - |
| S10S SDUPR/L 2 | 21.51 | .625 | 1.00 | .500 | - | 10.00 | - | 3° | **54904** | **54903** |
| S12S SDUPR/L 3 | 32.52 | .750 | 1.50 | .750 | - | 10.00 | - | 0° | **54921** | **54920** |

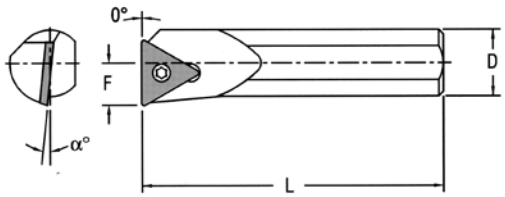
### Spare Parts

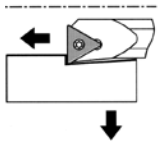
| Insert Size | Lock Pin | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| 21.51 | PT-589T | **52295** | T-7 Torx Wrench | **50101** | |
| 32.52 | PT-544T | **52288** | T-15 Torx Wrench | **50087** | |

## S-STFP R/L ISO SCREW DOWN BORING BARS

-3° LEAD
BORING & PROFILING

**Triangular Insert**
Use Insert Style:
TPGT
TPMT
TPMW



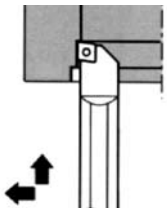
| Part Number | Insert IC | Dimensions | | | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | D | Min. Bore | F | H | L | NPT | α° | Right Hand | Left Hand |
| S06 (237) STFPR 2 | 21.51 | .375 | .500 | .250 | - | 2.38 | - | 6° | **54861** | - |
| S06M STFPR/L 2 | 21.51 | .375 | .500 | .250 | - | 6.00 | - | 6° | **54869** | **54868** |
| S08R STFPR/L 2 | 21.51 | .500 | .625 | .312 | - | 8.00 | - | 6° | **54885** | **54884** |
| S10S STFPR/L 2 | 21.51 | .625 | .812 | .406 | - | 10.00 | - | 2° | **54906** | **54905** |
| S12S STFPR/L 3 | 32.52 | .750 | 1.00 | .500 | - | 10.00 | - | 2° | **54923** | **54922** |

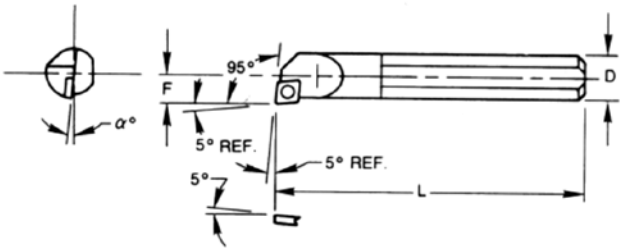
### Spare Parts

| Insert Size | Lock Pin | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| 21.51 | PT-589T | **52295** | T-7 Torx Wrench | **50101** | |
| 21.51 | PT-542T | **52286** | T-7 Torx Wrench | **50101** | |
| 32.52 | PT-544T | **52288** | T-15 Torx Wrench | **50087** | |

## C-SCLP R/L CARBIDE BORING BARS

-5° LEAD
POSITIVE RAKE
BORE & FACE






**80° Diamond Insert**
Use Insert Style:
CPMT
CPMW

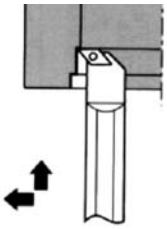
| Part Number | Insert IC | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | D | Min. Bore | F | L | α° | Right Hand | Left Hand |
| C06M-SCLPR 2 | 21.51 | .375 | .500 | .250 | 6.00 | 6° | **55260** | - |
| C08R-SCLPR 2 | 21.51 | .500 | .625 | .312 | 8.50 | 6° | **55265** | - |
| C10S-SCLPR 2 | 21.51 | .625 | .812 | .406 | 10.00 | 2° | **55271** | - |
| C12S-SCLPR/L 3 | 32.52 | .750 | 1.000 | .500 | 10.00 | 2° | **55275** | **55274** |

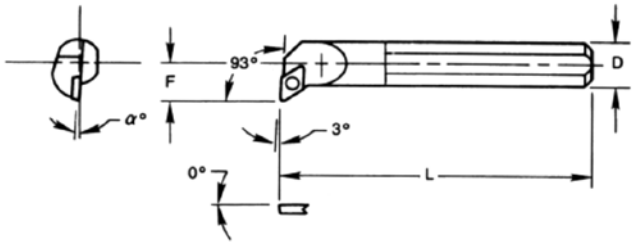
### Spare Parts

| D | Insert Size | Lock Screw | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | |
| all other | 21.51 | PT-589T | **52295** | T-7 Torx Wrench | **50101** | |
| .750 | 32.52 | PT-559T | **52292** | T-15 Torx Wrench | **50087** | |

## C-SDUP R/L CARBIDE BORING BARS

-3° LEAD
POSITIVE RAKE
BORE & PROFILE






**55° Diamond Insert**
Use Insert Style:
DPMT
DPMW

| Part Number | Insert IC | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | D | Min.Bore | F | L | α° | Right Hand | Left Hand |
| C08R-SDUPR2 | 21.51 | .500 | .812 | .406 | 8.50 | 3° | **55267** | - |

### Spare Parts

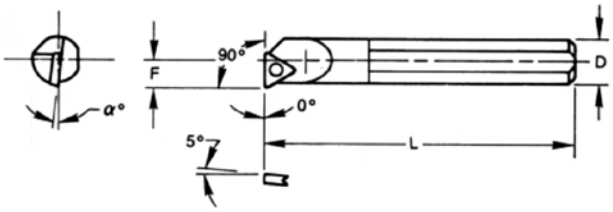
| D | Insert Size | Lock Screw | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | |
| .500 | 21.51 | PT-589T | **52295** | T-7 Torx Wrench | **50101** | |

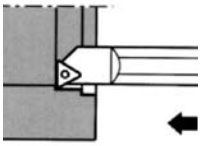
ValTURN™

## C-STFP R/L CARBIDE BORING BARS

0° LEAD
POSITIVE RAKE
BORING

**Triangular Insert**
Use Insert Style:
TPMT
TPMW



| Part Number | Insert IC | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | D | Min.Bore | F | L | α° | Right Hand | Left Hand |
| C06M STFPR2 | 21.51 | .375 | .500 | .250 | 6.00 | 6° | **55263** | - |
| C08R STFPR2 | 21.51 | .500 | .625 | .312 | 8.00 | 6° | **55269** | - |

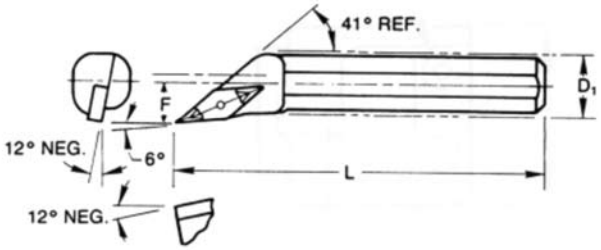
### Spare Parts

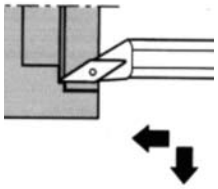
| D | Insert Size | Lock Screw | | Torx Wrench® Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | |
| ALL | 21.51 | PT 589T | **52295** | T-7 Torx Wrench | **50101** | |

## BHP-EC SMALL HOLE BORING BARS

6° LEAD
NEGATIVE RAKE
PROFILING

**35° Diamond Insert**
Use Insert Style:
VNFM
VNMG
VNMM



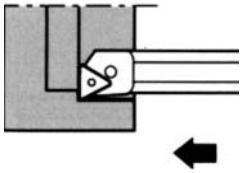
| Part Number | Insert IC | Dimensions | | | | EDP# | |
|---|---|---|---|---|---|---|---|
| | | D1 | Min.Bore | F | L | Right Hand | Left Hand |
| BHP-EC-600 R/L | 332 | .62 | .750 | .362 | 8.00 | **54846** | **54847** |

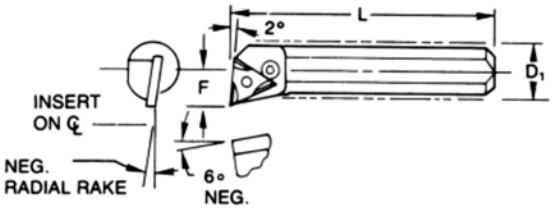
### Spare Parts

| D1 | Insert Size | Lock Screw | | Torque (ft-lbs) |
|---|---|---|---|---|
| | | Part # | EDP# | |
| .62 | 332 | H-404-1D | **52857** | |

## BHP-EC SMALL HOLE BORING BARS

-2° LEAD
NEGATIVE RAKE
BORING






**Triangular Insert**
Use Insert Style:
TNFK
TNFM

| Part Number | Insert IC | Dimensions | | | | | EDP# | |
|---|---|---|---|---|---|---|---|---|
| | | D1 | Min.Bore | F | L | Radial Rake | Right Hand | Left Hand |
| BHP EC 610 | TNFK-731 EL | .38 | .500 | .250 | 4.00 | 14° | **54848** | - |
| BHP EC 611 | TNFM-221 EL | .50 | .625 | .312 | 5.00 | 14° | **54850** | - |
| BHP EC 612 | TNFM-2.5.22 EL | .62 | .750 | .375 | 6.00 | 12° | **54852** | - |
| BHP EC 613 R/L | TNFM-2.522 EL/ER | .75 | 1.00 | .500 | 7.00 | 12° | **54854** | **54855** |

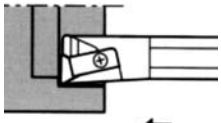
Note: LH bars to use "ER" inserts

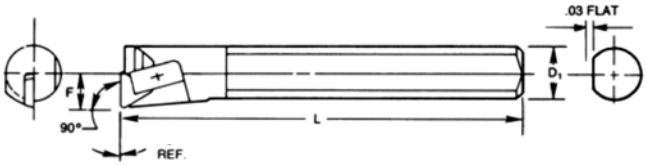
### Spare Parts

| D1 | Lock Screw | | Pin No. | | Torque (ft-lbs) |
|---|---|---|---|---|---|
| | Part # | EDP# | Part # | EDP# | |
| .38 | PT-325 | **52998** | LP-11 | **59200** | |
| .50 | PT-325 | **52998** | LP-12 | **59201** | |
| .62 | H-402-1B | **52851** | - | - | |
| .75 | H-402-1B | **52851** | - | - | |

## VNCD SMALL HOLE BORING BARS

0°& 3° LEADS
POSITIVE RAKE
BORING






**Triangular Insert**
Use Insert Style:
TBEE
TBMU
TPE
TPEE
TPMR
TPMU

### 0° Lead Relief Angle

| Part Number | Insert IC | Dimensions | | | | | | EDP# |
|---|---|---|---|---|---|---|---|---|
| | | D1 | Min.Bore | F | L | Radial Rake | Axial Rake | |
| VNCD-7462 | 731 | .500 | .625 | .312 | 8.00 | 2°45'Neg | 0° | **55288** |
| VNCD-7460 | 321 | .750 | 1.000 | .500 | 9.50 | 0° | 5° Pos | **55284** |

### 3° Lead Relief Angle

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| VNCD 7463 3 | 521 | .375 | .500 | .250 | 6.00 | 7°4'Neg. | 0° | - |
| VNCD 7462 3 | 731 | .500 | .625 | .312 | 8.50 | 2°45'Neg. | 0° | **55300** |
| VNCD 7461 3 | 221 | .625 | .812 | .406 | 9.50 | 0° | 5° Pos | **55287** |
| VNCD 7460 3 | 321 | .750 | 1.000 | .500 | 9.50 | 0° | 5° Pos | **55285** |
| VNCD 7459 3 | 321 | 1.000 | 1.250 | .625 | 10.88 | 0° | 5° Pos | **55298** |

### Spare Parts

| D1 | Insert Size | R.H. Clamp | | L.H. Clamp | | Clamp Screw | | Torque (ft-lbs) |
|---|---|---|---|---|---|---|---|---|
| | | Part # | EDP# | Part # | EDP# | Part # | EDP# | |
| | 221 | AC 6 2 | **59035** | AC 6 2 | **59035** | CS 8D | **52816** | |
| | 321 | AC 6 2 | **59035** | AC 6 2 | **59035** | CS 8D | **52816** | |
| | 521 | FDC 37 | **62200** | FDC 37 LH | **52754** | 3-48X1/4SHCS | **52046** | |
| | 731 | AC-6-2 | **59035** | AC 6 2 | **59035** | CS 8B | **52815** | |