

DISCOVER OUR

# MILLING



# Milling

## NOMENCLATURE

CROMSON «ENDMILL»

# - FLUTES

DIAMETER

**CREM-Ti-5RC-0500-R010 Cr95**

### APPLICATIONS

AL- Aluminum  
ALR- Aluminum Roughing  
DM- Die & Mold  
HD- Hard Material  
HF- High Feed  
SA (SAX)- Super Alloy  
ST- Steel  
SST- Stainless Steel  
**Ti- Titanium**  
TiX- Titanium HP  
TP- Taper (NPT)

### TOOL TYPE

S- Stub Length  
M- Medium Length  
**R- Reg. Length**  
L- Long Length  
E- Extended Length  
N- Necking  
  
**C- Cylindrical Shank**  
W- Weldon Shank

### RADIUS/CHAMFER

BN- Ball Nose  
C- Chamfer  
**R- Radius**  
SQ- Square

### COATING

Cr20- Uncoated  
Cr35- AlCrN  
Cr55- TiAlN  
Cr75- TiAlN+  
**Cr95- TiAlCN**

# Summary application chart-Milling

| Work Material                                                        | Type of Cut                    | Axial DOC        | Radial DOC       | Speed (SFM) | RECORD ST                                                                             | STAR SST                                                                              | ALLIANCE TI                                                                           |
|----------------------------------------------------------------------|--------------------------------|------------------|------------------|-------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Low carbon steel <= 38HRc<br>1018, 12L14, 8620                       | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 350<br>425  |    |                                                                                       |                                                                                       |
| Medium carbon steels<br><= 38HRc<br>4140, 4340                       | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 325<br>375  |    |                                                                                       |                                                                                       |
| Tool & die steels<br><= 38HRc<br>A2, D2, O1, S7, P20, H13            | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 325<br>375  |    |    |                                                                                       |
| Tool steel<br>39HRc to 48HRc                                         | Slotting<br>Peripheral - Rough | .75 x D<br>1 x D | 1 x D<br>0.5 x D | 225<br>275  |                                                                                       |    |                                                                                       |
| Easy to machine stainless steel<br>416, 410, 302, 303                | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 300<br>375  |   |   |                                                                                       |
| Moderately difficult stainless steel<br>304, 316, invar, kovar       | Slotting<br>Peripheral - Rough | .75 x D<br>1 x D | 1 x D<br>0.5 x D | 275<br>350  |  |  |                                                                                       |
| Difficult to machine stainless steel<br>316L, 17-4PH, 15-5PH, 13-8Mo | Slotting<br>Peripheral - Rough | 0.5 x D<br>1 x D | 1 x D<br>0.5 x D | 250<br>300  |                                                                                       |  |  |
| Cast iron<br>Grey                                                    | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 400<br>500  |                                                                                       |  |                                                                                       |
| Cast iron<br>Ductile                                                 | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 300<br>400  |                                                                                       |  |                                                                                       |
| Cast iron<br>Malleable                                               | Slotting<br>Peripheral - Rough | .75 x D<br>1 x D | 1 x D<br>.75 x D | 250<br>325  |                                                                                       |  |                                                                                       |
| Aluminum alloys<br>2024, 6061, 7075                                  | Slotting                       | 1 x D            | 1 x D<br>0.5 x D | 800<br>1000 |                                                                                       |                                                                                       |                                                                                       |
| Titanium alloys<br>6Al4V                                             | Slotting<br>Peripheral - Rough | 0.5 x D<br>1 x D | 1 x D<br>0.5 x D | 250<br>300  |  |  |  |
| High temperature alloys<br>Inconel, haynes, stellite, hastelloy      | Slotting                       | .25 x D<br>1 x D | 1 x D<br>.25 x D | 70<br>95    |  |  |  |



*Highly recommended*



*Suitable for some applications*

| PISTON<br>HD                                                                        | TURBINE<br>SRGH                                                                     | OXYGEN<br>HF                                                                        | TAPER-<br>MILL<br>TP                                                                | DRIVER<br>DM                                                                      | MOTION<br>AL                                                                        | BOSS<br>ALR                                                                          | MAGNAT<br>STX                                                                         | PERFOR-<br>MANCE<br>TIX                                                               | BOOSTER<br>SA                                                                         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |    |    |    |                                                                                   |                                                                                     |                                                                                      |    |                                                                                       |                                                                                       |
|    |    |    |    |  |                                                                                     |                                                                                      |    |                                                                                       |    |
|    |    |    |    |                                                                                   |                                                                                     |                                                                                      |    |    |    |
|    |    |    |                                                                                     |  |                                                                                     |                                                                                      |    |                                                                                       |    |
|                                                                                     |   |   |   |                                                                                   |                                                                                     |                                                                                      |   |   |   |
|                                                                                     |  |  |  |                                                                                   |                                                                                     |                                                                                      |  |  |  |
|  |  |  |  |                                                                                   |                                                                                     |                                                                                      |  |  |  |
|                                                                                     |                                                                                     |  |                                                                                     |                                                                                   |                                                                                     |                                                                                      |  |                                                                                       |                                                                                       |
|                                                                                     |                                                                                     |  |                                                                                     |                                                                                   |                                                                                     |                                                                                      |  |                                                                                       |                                                                                       |
|                                                                                     |                                                                                     |  |                                                                                     |                                                                                   |                                                                                     |                                                                                      |  |                                                                                       |                                                                                       |
|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                   |  |  |                                                                                       |                                                                                       |                                                                                       |
|                                                                                     |  |                                                                                     |                                                                                     |                                                                                   |                                                                                     |                                                                                      |  |  |  |
|  |                                                                                     |                                                                                     |                                                                                     |                                                                                   |                                                                                     |                                                                                      |  |  |  |

\*\* The machining values shown are guidelines.

The optimum data for a particular machining process should be determined in trials or during machining.

# Explanation of Milling symbols



Stub Length



Ramping



Trochoidal milling Opt.



Finishing



Regular Length



Trochoidal plunging



Center Cutting



Channel



Long/ Extra Length



Shallow ramping



Square end



Corner Radius

## Grades chart & Milling application

**CROMSON** offers a variety of coating upon special request to meet the demands of every customer's needs and unique application demands. Through extensive testing, research and real world applications, CROMSON has worked to develop a full range of high performance coatings. These coating options allow us to address a multitude of situations with optimal results.

Please refer to the chart below for the various coatings available.

### CROMSON GRADE

|                                   | Cr20     | Cr35                                                                                                                                                                                              | Cr55                                                                                                                                                                                      | Cr75                                                                                                                                                                                                                | Cr95                                                                                                                                                                                                           |
|-----------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Proprietary                       | Uncoated | AlCrN                                                                                                                                                                                             | TiAlN                                                                                                                                                                                     | TiAlN+                                                                                                                                                                                                              | TiAlCN                                                                                                                                                                                                         |
| Coating process                   |          | PVD                                                                                                                                                                                               | PVD                                                                                                                                                                                       | PVD                                                                                                                                                                                                                 | PVD                                                                                                                                                                                                            |
| Layer structure                   |          | Nano structure                                                                                                                                                                                    | Nano structure                                                                                                                                                                            | Nano structure                                                                                                                                                                                                      | Nano structure                                                                                                                                                                                                 |
| Hardness (HV)                     |          | 3000                                                                                                                                                                                              | 3300                                                                                                                                                                                      | 3300                                                                                                                                                                                                                | 3060                                                                                                                                                                                                           |
| Coefficient of friction (fetting) |          | 0.25                                                                                                                                                                                              | 0.30-0.35                                                                                                                                                                                 | 0.25                                                                                                                                                                                                                | 0.35                                                                                                                                                                                                           |
| Thermal stability (C)             |          | 1100                                                                                                                                                                                              | 900                                                                                                                                                                                       | 900                                                                                                                                                                                                                 | 1000                                                                                                                                                                                                           |
| General Information               |          | New generation PVD coating providing a high level of wear and abrasion resistance in combination with a micro grain carbide substrate for use in all ferrous materials at elevated cutting speed. | A thick PVD coating on a balanced wear resistance/tough fine grain carbide substrate provides users with predictable consistent results in general purpose applications in all materials. | In combination with a tough submicron grain carbide sustrate and advanced PVD coating technology a high level of security and wear resistance is seen in demanding applications in titanium and steel up to 52 HRC. | New generation PVD coating providing a high level of wear. lower coefficient of friction combination with a micro grain carbide substrate for use in stainless steel and nickel-based high temperature alloys. |

# PERFORMANCE

## TIX SERIES

- ⊙ Dominates in stainless steels, super alloys and titanium
- ⊙ Performs exceptionally in High Speed Machining (HSM) and full diameter milling
- ⊙ Tool versatility that results in higher productivity, less tool changes and longer tool life
- ⊙ Produces excellent surface finishes
- ⊙ Cr95 coating significantly lowers operating cutting temperatures compared to other coatings
- ⊙ Available in stub and standard lengths



| Work Material                                                        | Type of Cut                    | Axial<br>DOC     | Radial<br>DOC    | Speed<br>(SFM) |
|----------------------------------------------------------------------|--------------------------------|------------------|------------------|----------------|
| Tool & die steel ≤ 38HRC<br>A2, D2, O1, S7, P20, H13                 | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 325<br>375     |
| Easy to machine stainless steel<br>416, 410, 302, 303                | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 300<br>375     |
| Moderately difficult stainless steel<br>304, 316, Invar, kovar       | Slotting<br>Peripheral - Rough | .75 x D<br>1 x D | 1 x D<br>0.5 x D | 275<br>350     |
| Difficult to machine stainless steel<br>316L, 17-4PH, 15-5PH, 13-8Mo | Slotting<br>Peripheral - Rough | 0.5 x D<br>1 x D | 1 x D<br>0.5 x D | 250<br>300     |
| Titanium alloy<br>6Al4V                                              | Slotting<br>Peripheral - Rough | 0.5 x D<br>1 x D | 1 x D<br>0.5 x D | 250<br>300     |
| High temperature alloy<br>Inconel, haynes, stellite, hastelloy       | Slotting                       | .25 x D<br>1 x D | 1 x D<br>.25 x D | 70<br>95       |

| Property       | Value |
|----------------|-------|
| HARDNESS (HRC) | 40    |

70  
40  
HARDNESS (HRC)

| EDP Cromson | Cromson Description          | Diam. | Length of cut | Overall length | Chamfer / radius | Cromson Grade | # Flutes |
|-------------|------------------------------|-------|---------------|----------------|------------------|---------------|----------|
| 73000595    | CREM-TiX-4MC-0375-R0010-Cr95 | .375  | .750          | 2.500          | .010             | Cr95          | 4        |
| 73000600    | CREM-TiX-4RC-0375-R0010-Cr95 | .375  | 1.000         | 3.000          | .010             | Cr95          | 4        |
| 73000605    | CREM-TiX-4LC-0375-R0010-Cr95 | .375  | 1.500         | 3.500          | .010             | Cr95          | 4        |
| 73000610    | CREM-TiX-4SC-0375-R0020-Cr95 | .375  | .500          | 2.500          | .020             | Cr95          | 4        |
| 73000615    | CREM-TiX-4MC-0375-R0020-Cr95 | .375  | .750          | 2.500          | .020             | Cr95          | 4        |
| 73000620    | CREM-TiX-4RC-0375-R0020-Cr95 | .375  | 1.000         | 3.000          | .020             | Cr95          | 4        |
| 73000625    | CREM-TiX-4LC-0375-R0030-Cr95 | .375  | .500          | 2.500          | .030             | Cr95          | 4        |
| 73000630    | CREM-TiX-4RC-0375-R0030-Cr95 | .375  | 1.000         | 3.000          | .030             | Cr95          | 4        |
| 73000635    | CREM-TiX-4RC-0375-R0060-Cr95 | .375  | 1.000         | 3.000          | .060             | Cr95          | 4        |
| 73000660    | CREM-TiX-4SC-0500-R0010-Cr95 | .500  | .625          | 2.500          | .010             | Cr95          | 4        |
| 73000665    | CREM-TiX-4MC-0500-R0010-Cr95 | .500  | 1.000         | 3.000          | .010             | Cr95          | 4        |
| 73000670    | CREM-TiX-4RC-0500-R0010-Cr95 | .500  | 1.250         | 3.000          | .010             | Cr95          | 4        |
| 73000675    | CREM-TiX-4LC-0500-R0010-Cr95 | .500  | 1.625         | 4.000          | .010             | Cr95          | 4        |
| 73000680    | CREM-TiX-4SC-0500-SQ-Cr95    | .500  | .625          | 2.500          | ---              | Cr95          | 4        |
| 73000685    | CREM-TiX-4RC-0500-SQ-Cr95    | .500  | 1.000         | 3.000          | ---              | Cr95          | 4        |
| 73000690    | CREM-TiX-4SC-0500-R0020-Cr95 | .500  | .625          | 2.500          | .020             | Cr95          | 4        |
| 73000695    | CREM-TiX-4RC-0500-R0020-Cr95 | .500  | 1.000         | 3.000          | .020             | Cr95          | 4        |
| 73000700    | CREM-TiX-4RC-0500-SQ-Cr95    | .500  | 1.250         | 3.000          | ---              | Cr95          | 4        |
| 73000705    | CREM-TiX-4RC-0500-R0020-Cr95 | .500  | 1.250         | 3.000          | .020             | Cr95          | 4        |
| 73000710    | CREM-TiX-4LC-0500-R0020-Cr95 | .500  | 1.625         | 4.000          | .020             | Cr95          | 4        |
| 73000715    | CREM-TiX-4SC-0500-R0030-Cr95 | .500  | .625          | 2.500          | .030             | Cr95          | 4        |
| 73000720    | CREM-TiX-4MC-0500-R0030-Cr95 | .500  | 1.000         | 3.000          | .030             | Cr95          | 4        |
| 73000725    | CREM-TiX-4RC-0500-R0030-Cr95 | .500  | 1.250         | 3.000          | .030             | Cr95          | 4        |
| 73000730    | CREM-TiX-4LC-0500-R0030-Cr95 | .500  | 1.625         | 4.000          | .030             | Cr95          | 4        |
| 73000735    | CREM-TiX-4EC-0500-R0030-Cr95 | .500  | 2.000         | 4.000          | .030             | Cr95          | 4        |
| 73000740    | CREM-TiX-4MC-0500-R0060-Cr95 | .500  | 1.000         | 3.000          | .060             | Cr95          | 4        |
| 73000745    | CREM-TiX-4RC-0500-R0060-Cr95 | .500  | 1.250         | 3.000          | .060             | Cr95          | 4        |
| 73000750    | CREM-TiX-4LC-0500-R0060-Cr95 | .500  | 1.625         | 4.000          | .060             | Cr95          | 4        |
| 73000755    | CREM-TiX-4MC-0500-R0120-Cr95 | .500  | 1.000         | 3.000          | .120             | Cr95          | 4        |
| 73000760    | CREM-TiX-4RC-0500-R0120-Cr95 | .500  | 1.250         | 3.000          | .120             | Cr95          | 4        |
| 73000765    | CREM-TiX-4LC-0500-R0120-Cr95 | .500  | 1.625         | 4.000          | .120             | Cr95          | 4        |
| 73000770    | CREM-TiX-4MC-0625-SQ-Cr95    | .625  | 1.250         | 3.500          | ---              | Cr95          | 4        |
| 73000775    | CREM-TiX-4RC-0625-SQ-Cr95    | .625  | 2.000         | 4.000          | ---              | Cr95          | 4        |
| 73000780    | CREM-TiX-4LC-0625-R0030-Cr95 | .625  | .750          | 3.500          | .030             | Cr95          | 4        |
| 73000785    | CREM-TiX-4MC-0625-R0030-Cr95 | .625  | 1.250         | 3.500          | .030             | Cr95          | 4        |
| 73000790    | CREM-TiX-4RC-0625-R0030-Cr95 | .625  | 1.625         | 3.500          | .030             | Cr95          | 4        |
| 73000795    | CREM-TiX-4LC-0625-R0030-Cr95 | .625  | 2.000         | 4.000          | .030             | Cr95          | 4        |
| 73000800    | CREM-TiX-4SC-0750-R0030-Cr95 | .750  | 1.000         | 3.000          | .030             | Cr95          | 4        |
| 73000805    | CREM-TiX-4MC-0750-R0030-Cr95 | .750  | 1.500         | 4.000          | .030             | Cr95          | 4        |
| 73000810    | CREM-TiX-4RC-0750-R0030-Cr95 | .750  | 2.000         | 5.000          | .030             | Cr95          | 4        |
| 73000815    | CREM-TiX-4LC-0750-R0030-Cr95 | .750  | 3.250         | 6.000          | .030             | Cr95          | 4        |
| 73000820    | CREM-TiX-4RC-0750-SQ-Cr95    | .750  | 1.500         | 4.000          | ---              | Cr95          | 4        |
| 73000825    | CREM-TiX-4SC-0750-R0060-Cr95 | .750  | 1.000         | 3.000          | .060             | Cr95          | 4        |
| 73000830    | CREM-TiX-4MC-0750-R0120-Cr95 | .750  | 1.500         | 4.000          | .120             | Cr95          | 4        |
| 73000835    | CREM-TiX-4RC-1000-R0060-Cr95 | 1.000 | 2.000         | 4.500          | .060             | Cr95          | 4        |
| 73000840    | CREM-TiX-4LC-1000-R0250-Cr95 | 1.000 | 3.250         | 6.000          | .250             | Cr95          | 4        |
| 73000845    | CREM-TiX-4LC-3-SQ-Cr95       | 3.00  | 10.00         | 38.00          | ---              | Cr95          | 4        |
| 73000850    | CREM-TiX-4RC-3-R025-Cr95     | 3.00  | 6.00          | 38.00          | .250             | Cr95          | 4        |
| 73000860    | CREM-TiX-4RC-4-R025-Cr95     | 4.00  | 12.00         | 50.00          | .250             | Cr95          | 4        |



| EDP Cromson | Cromson Description       | Diam. | Length of cut | Overall length | Chamfer / radius | Cromson Grade | # Flutes |
|-------------|---------------------------|-------|---------------|----------------|------------------|---------------|----------|
| 73000875    | CREM-TiX-4LC-6-R025-Cr95  | 6.00  | 20.00         | 64.000         | 3.000            | Cr95          | 4        |
| 73000880    | CREM-TiX-4SC-6-R05-Cr95   | 6.00  | 10.00         | 50.000         | .500             | Cr95          | 4        |
| 73000895    | CREM-TiX-4RC-10-R025-Cr95 | 10.00 | 25.00         | 64.000         | .250             | Cr95          | 4        |
| 73000900    | CREM-TiX-4RC-10-R05-Cr95  | 10.00 | 25.00         | 64.000         | .500             | Cr95          | 4        |
| 73000905    | CREM-TiX-4RC-10-R075-Cr95 | 10.00 | 32.00         | 76.000         | .750             | Cr95          | 4        |
| 73000910    | CREM-TiX-4RC-10-R025-Cr95 | 10.00 | 32.00         | 76.000         | .250             | Cr95          | 4        |
| 73000925    | CREM-TiX-4MC-12-R025-Cr95 | 12.00 | 26.00         | 84.000         | .250             | Cr95          | 4        |
| 73000930    | CREM-TiX-4RC-12-R025-Cr95 | 12.00 | 32.00         | 84.000         | .250             | Cr95          | 4        |
| 73000935    | CREM-TiX-4SC-12-R05-Cr95  | 12.00 | 14.00         | 63.000         | .500             | Cr95          | 4        |
| 73000940    | CREM-TiX-4MC-12-R05-Cr95  | 12.00 | 26.00         | 84.000         | .500             | Cr95          | 4        |
| 73000945    | CREM-TiX-4RC-12-R05-Cr95  | 12.00 | 32.00         | 84.000         | .500             | Cr95          | 4        |
| 73000950    | CREM-TiX-4RC-12-R075-Cr95 | 12.00 | 26.00         | 84.000         | .750             | Cr95          | 4        |
| 73000955    | CREM-TiX-4SC-12-R1-Cr95   | 12.00 | 14.00         | 63.000         | 1.000            | Cr95          | 4        |
| 73000960    | CREM-TiX-4RC-12-R3-Cr95   | 12.00 | 26.00         | 84.000         | 3.000            | Cr95          | 4        |
| 73000965    | CREM-TiX-4LC-12-R3-Cr95   | 12.00 | 40.00         | 100.000        | 3.000            | Cr95          | 4        |

0 HARDNESS (HRC)

## CARBIDE END MILL - BALL NOSE 4 FLUTES



### TECHNICAL DETAILS

|                     |                                 |
|---------------------|---------------------------------|
| Tool Diameter Range | 0.125-0.500 in<br>4.00-12.00 mm |
| Shank tolerance     | h6                              |
| Cutter tolerance    | (+0.00-0.002 in) +0.00-0.05 mm  |
| Number of flutes    | 4                               |
| Coating             | TiAlCN (PVD)                    |
| Center cutting      | Yes                             |
| Variable pitch      | Variable                        |
| Variable helix      | Variable                        |
| Helix angle         | 38°                             |



| EDP Cromson | Cromson Description       | Diam. | Length of cut | Overall length | Chamfer / radius | Cromson Grade | # Flutes |
|-------------|---------------------------|-------|---------------|----------------|------------------|---------------|----------|
| 73000400    | CREM-TiX-4RC-0125-BN-Cr95 | .125  | .250          | 1.500          | .063             | Cr95          | 4        |
| 73000455    | CREM-TiX-4SC-0250-BN-Cr95 | .250  | .375          | 2.000          | .125             | Cr95          | 4        |
| 73000460    | CREM-TiX-4RC-0250-BN-Cr95 | .250  | .750          | 2.500          | .125             | Cr95          | 4        |
| 73000465    | CREM-TiX-4LC-0250-BN-Cr95 | .250  | 1.000         | 3.000          | .125             | Cr95          | 4        |
| 73000550    | CREM-TiX-4SC-0375-BN-Cr95 | .375  | .750          | 2.500          | .156             | Cr95          | 4        |
| 73000555    | CREM-TiX-4MC-0375-BN-Cr95 | .375  | 1.000         | 3.000          | .156             | Cr95          | 4        |
| 73000560    | CREM-TiX-4RC-0375-BN-Cr95 | .375  | 1.250         | 3.000          | .156             | Cr95          | 4        |
| 73000565    | CREM-TiX-4LC-0375-BN-Cr95 | .375  | 1.500         | 3.500          | .156             | Cr95          | 4        |
| 73000640    | CREM-TiX-4SC-0500-BN-Cr95 | .500  | .625          | 2.500          | .250             | Cr95          | 4        |
| 73000645    | CREM-TiX-4MC-0500-BN-Cr95 | .500  | 1.000         | 3.000          | .250             | Cr95          | 4        |
| 73000650    | CREM-TiX-4RC-0500-BN-Cr95 | .500  | 1.250         | 3.000          | .250             | Cr95          | 4        |
| 73000655    | CREM-TiX-4LC-0500-BN-Cr95 | .500  | 2.000         | 4.000          | .250             | Cr95          | 4        |
| 73000855    | CREM-TiX-4RC-4-BN-Cr95    | 4.00  | 12.00         | 50.000         | 2.00             | Cr95          | 4        |
| 73000865    | CREM-TiX-4RC-5-BN-Cr95    | 5.00  | 16.00         | 64.000         | 3.00             | Cr95          | 4        |
| 73000870    | CREM-TiX-4LC-6-BN-Cr95    | 6.00  | 20.00         | 64.000         | 3.00             | Cr95          | 4        |
| 73000885    | CREM-TiX-4RC-8-BN-Cr95    | 8.00  | 25.00         | 76.000         | 4.00             | Cr95          | 4        |
| 73000890    | CREM-TiX-4LC-8-BN-Cr95    | 8.00  | 32.00         | 100.000        | 4.00             | Cr95          | 4        |
| 73000915    | CREM-TiX-4RC-12-BN-Cr95   | 12.00 | 26.00         | 84.000         | 6.00             | Cr95          | 4        |
| 73000920    | CREM-TiX-4LC-12-BN-Cr95   | 12.00 | 50.00         | 100.000        | 6.00             | Cr95          | 4        |

| PERFORMANCE-TIX                                                      |                                |                  |                  |                 |                |                | Feed (inches Per Tooth) |                |                |                |                |  |
|----------------------------------------------------------------------|--------------------------------|------------------|------------------|-----------------|----------------|----------------|-------------------------|----------------|----------------|----------------|----------------|--|
| Work Material                                                        | Type of Cut                    | Axial<br>DOC     | Radial<br>DOC    | Vitess<br>(SFM) | 1/8            | 1/4            | 3/8                     | 1/2            | 5/8            | 3/4            | 1              |  |
| Low carbon steel <= 38HRc<br>1018, 12L14, 8620                       | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D |                 |                |                |                         |                |                |                |                |  |
|                                                                      |                                |                  |                  |                 |                |                |                         |                |                |                |                |  |
| Medium carbon steel <= 38HRc<br>4140, 4340                           | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D |                 |                |                |                         |                |                |                |                |  |
|                                                                      |                                |                  |                  |                 |                |                |                         |                |                |                |                |  |
| Tool & die steel <= 38HRc<br>A2, D2, O1, S7, P20, H13                | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 325<br>375      | .0006<br>.0008 | .0013<br>.0017 | .0020<br>.0026          | .0027<br>.0035 | .0034<br>.0044 | .0040<br>.0053 | .0054<br>.0070 |  |
|                                                                      |                                |                  |                  |                 |                |                |                         |                |                |                |                |  |
| Tool steel<br>39HRc to 48HRc                                         | Slotting<br>Peripheral - Rough | .75 x D<br>1 x D | 1 x D<br>0.5 x D |                 |                |                |                         |                |                |                |                |  |
|                                                                      |                                |                  |                  |                 |                |                |                         |                |                |                |                |  |
| Easy to machine stainless steel<br>416, 410, 302, 303                | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D | 300<br>375      | .0006<br>.0008 | .0012<br>.0016 | .0018<br>.0024          | .0025<br>.0032 | .0031<br>.0040 | .0037<br>.0048 | .0050<br>.0064 |  |
|                                                                      |                                |                  |                  |                 |                |                |                         |                |                |                |                |  |
| Moderately difficult stainless steel<br>304, 316, invar, kovar       | Slotting<br>Peripheral - Rough | .75 x D<br>1 x D | 1 x D<br>0.5 x D | 275<br>350      | .0005<br>.0007 | .0011<br>.0015 | .0016<br>.0023          | .0022<br>.0032 | .0027<br>.0037 | .0033<br>.0045 | .0044<br>.0064 |  |
|                                                                      |                                |                  |                  |                 |                |                |                         |                |                |                |                |  |
| Difficult to machine stainless steel<br>316L, 17-4PH, 15-5PH, 13-8Mo | Slotting<br>Peripheral - Rough | 0.5 x D<br>1 x D | 1 x D<br>0.5 x D | 250<br>300      | .0004<br>.0005 | .0009<br>.0011 | .0012<br>.0016          | .0018<br>.0022 | .0022<br>.0028 | .0027<br>.0033 | .0036<br>.0044 |  |
|                                                                      |                                |                  |                  |                 |                |                |                         |                |                |                |                |  |
| Cast iron<br>Grey                                                    | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D |                 |                |                |                         |                |                |                |                |  |
| Cast iron<br>Ductile                                                 | Slotting<br>Peripheral - Rough | 1 x D<br>1.5 x D | 1 x D<br>0.5 x D |                 |                |                |                         |                |                |                |                |  |
| Cast iron<br>Malleable                                               | Slotting<br>Peripheral - Rough | .75 x D<br>1 x D | 1 x D<br>.75 x D |                 |                |                |                         |                |                |                |                |  |
| Aluminum alloy<br>2024, 6061, 7075                                   | Slotting                       | 1 x D            | 1 x D<br>0.5 x D |                 |                |                |                         |                |                |                |                |  |
| Titanium alloy<br>6Al4V                                              | Slotting<br>Peripheral - Rough | 0.5 x D<br>1 x D | 1 x D<br>0.5 x D | 250<br>300      | .0005<br>.0006 | .0010<br>.0012 | .0015<br>.0017          | .0020<br>.0023 | .0025<br>.0029 | .0030<br>.0035 | .0040<br>.0046 |  |
| High temperature alloy<br>Inconel, haynes, stellite, hastelloy       | Slotting                       | .25 x D<br>1 x D | 1 x D<br>.25 x D | 70<br>95        | .0004<br>.0005 | .0008<br>.0009 | .0012<br>.0014          | .0015<br>.0018 | .0019<br>.0022 | .0024<br>.0028 | .0030<br>.0036 |  |

\*\* The machining values shown are guidelines. The optimum data for a particular machining process should be determined in trials or during machining.