

# SwiftCARB High Performance Speeds & Feeds for Aluminum Cutters -Uncoated-

| <b>AR3</b> <small>Series</small> |       | <b>ISO</b> <b>AR3 Series Feeds and Speeds -Uncoated-</b>                     |          |          |          |           | <b>N</b>             |        |        |        |       |
|----------------------------------|-------|------------------------------------------------------------------------------|----------|----------|----------|-----------|----------------------|--------|--------|--------|-------|
|                                  |       | Aluminum Wrought Alloy & Aluminum Cast Alloy < 12% Si 6061-T6, 7075, Plastic |          |          |          |           |                      |        |        |        |       |
| Axial Depth                      |       | 1x DIA                                                                       | 1.5x DIA | 2x DIA   | 2x DIA   | 2x DIA    |                      |        |        |        |       |
| Radial Engagement                |       | 100-85%                                                                      | 85-50%   | 50-25%   | 25-10%   | 10-0%     | 100-85%              | 85-50% | 50-25% | 25-10% | 10-0% |
| Chip Load Range at TEA           |       | Full                                                                         | Heavy    | Medium   | Light    | Light     | Surface Feet Per Min |        |        |        |       |
| Diameter                         |       | Slotting                                                                     | Roughing | Roughing | Roughing | Finishing | MIN                  |        | MID    |        | MAX   |
| 1/4"                             | 0.250 | 0.0024                                                                       | 0.0033   | 0.0042   | 0.0051   | 0.0060    | 640                  | 880    | 1120   | 1360   | 1600  |
| 5/16"                            | 0.312 | 0.0028                                                                       | 0.0039   | 0.0049   | 0.0060   | 0.0070    | 720                  | 990    | 1260   | 1530   | 1800  |
| 3/8"                             | 0.375 | 0.0032                                                                       | 0.0044   | 0.0056   | 0.0068   | 0.0080    | 740                  | 1018   | 1295   | 1573   | 1850  |
| 7/16"                            | 0.437 | 0.0036                                                                       | 0.0050   | 0.0063   | 0.0077   | 0.0090    | 760                  | 1045   | 1330   | 1615   | 1900  |
| 1/2"                             | 0.500 | 0.0048                                                                       | 0.0066   | 0.0084   | 0.0102   | 0.0120    | 800                  | 1100   | 1400   | 1700   | 2000  |
| 5/8"                             | 0.625 | 0.0056                                                                       | 0.0077   | 0.0098   | 0.0119   | 0.0140    | 800                  | 1100   | 1400   | 1700   | 2000  |
| 3/4"                             | 0.750 | 0.0064                                                                       | 0.0088   | 0.0112   | 0.0136   | 0.0160    | 800                  | 1100   | 1400   | 1700   | 2000  |
| 7/8"                             | 0.875 | 0.0072                                                                       | 0.0099   | 0.0126   | 0.0153   | 0.0180    | 800                  | 1100   | 1400   | 1700   | 2000  |
| 1"                               | 1.000 | 0.0080                                                                       | 0.0110   | 0.0140   | 0.0170   | 0.0200    | 800                  | 1100   | 1400   | 1700   | 2000  |
| 1-1/4"                           | 1.250 | 0.0088                                                                       | 0.0121   | 0.0154   | 0.0187   | 0.0220    | 800                  | 1100   | 1400   | 1700   | 2000  |

| <b>AF4</b> <small>Series</small> |       | <b>ISO</b> <b>AF4 Series Feeds and Speeds -Uncoated-</b>                     |          |          |          |           | <b>N</b>             |        |        |        |       |
|----------------------------------|-------|------------------------------------------------------------------------------|----------|----------|----------|-----------|----------------------|--------|--------|--------|-------|
|                                  |       | Aluminum Wrought Alloy & Aluminum Cast Alloy < 12% Si 6061-T6, 7075, Plastic |          |          |          |           |                      |        |        |        |       |
| Axial Depth                      |       | 1x DIA                                                                       | 1.5x DIA | 2x DIA   | 2x DIA   | 2x DIA    |                      |        |        |        |       |
| Radial Engagement                |       | 100-85%                                                                      | 85-50%   | 50-25%   | 25-10%   | 10-0%     | 100-85%              | 85-50% | 50-25% | 25-10% | 10-0% |
| Chip Load Range at TEA           |       | Full                                                                         | Heavy    | Medium   | Light    | Light     | Surface Feet Per Min |        |        |        |       |
| Diameter                         |       | Slotting                                                                     | Roughing | Roughing | Roughing | Finishing | MIN                  |        | MID    |        | MAX   |
| 1/4"                             | 0.250 | Not Advised                                                                  | 0.0022   | 0.0028   | 0.0034   | 0.0040    | 672                  | 924    | 1176   | 1428   | 1680  |
| 5/16"                            | 0.312 | Not Advised                                                                  | 0.0028   | 0.0035   | 0.0043   | 0.0050    | 720                  | 990    | 1260   | 1530   | 1800  |
| 3/8"                             | 0.375 | Not Advised                                                                  | 0.0033   | 0.0042   | 0.0051   | 0.0060    | 768                  | 1056   | 1344   | 1632   | 1920  |
| 7/16"                            | 0.437 | Not Advised                                                                  | 0.0044   | 0.0056   | 0.0068   | 0.0080    | 864                  | 1188   | 1512   | 1836   | 2160  |
| 1/2"                             | 0.500 | Not Advised                                                                  | 0.0055   | 0.0070   | 0.0085   | 0.0100    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 5/8"                             | 0.625 | Not Advised                                                                  | 0.0061   | 0.0077   | 0.0094   | 0.0110    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 3/4"                             | 0.750 | Not Advised                                                                  | 0.0066   | 0.0084   | 0.0102   | 0.0120    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 7/8"                             | 0.875 | Not Advised                                                                  | 0.0072   | 0.0091   | 0.0111   | 0.0130    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 1"                               | 1.000 | Not Advised                                                                  | 0.0077   | 0.0098   | 0.0119   | 0.0140    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 1-1/4"                           | 1.250 | Not Advised                                                                  | 0.0088   | 0.0112   | 0.0136   | 0.0160    | 960                  | 1320   | 1680   | 2040   | 2400  |

| <b>AF5</b> <small>Series</small> |       | <b>ISO</b> <b>AF5 Series Feeds and Speeds -Uncoated-</b>                     |             |          |          |           | <b>N</b>             |        |        |        |       |
|----------------------------------|-------|------------------------------------------------------------------------------|-------------|----------|----------|-----------|----------------------|--------|--------|--------|-------|
|                                  |       | Aluminum Wrought Alloy & Aluminum Cast Alloy < 12% Si 6061-T6, 7075, Plastic |             |          |          |           |                      |        |        |        |       |
| Axial Depth                      |       | 1x DIA                                                                       | 1.5x DIA    | 2x DIA   | 2x DIA   | 2x DIA    |                      |        |        |        |       |
| Radial Engagement                |       | 100-85%                                                                      | 85-50%      | 50-25%   | 25-10%   | 10-0%     | 100-85%              | 85-50% | 50-25% | 25-10% | 10-0% |
| Chip Load Range at TEA           |       | Full                                                                         | Heavy       | Medium   | Light    | Light     | Surface Feet Per Min |        |        |        |       |
| Diameter                         |       | Slotting                                                                     | Roughing    | Roughing | Roughing | Finishing | MIN                  |        | MID    |        | MAX   |
| 1/4"                             | 0.250 | Not Advised                                                                  | Not Advised | 0.0028   | 0.0034   | 0.0040    | 672                  | 924    | 1176   | 1428   | 1680  |
| 5/16"                            | 0.312 | Not Advised                                                                  | Not Advised | 0.0035   | 0.0043   | 0.0050    | 720                  | 990    | 1260   | 1530   | 1800  |
| 3/8"                             | 0.375 | Not Advised                                                                  | Not Advised | 0.0042   | 0.0051   | 0.0060    | 768                  | 1056   | 1344   | 1632   | 1920  |
| 7/16"                            | 0.437 | Not Advised                                                                  | Not Advised | 0.0056   | 0.0068   | 0.0080    | 864                  | 1188   | 1512   | 1836   | 2160  |
| 1/2"                             | 0.500 | Not Advised                                                                  | Not Advised | 0.0070   | 0.0085   | 0.0100    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 5/8"                             | 0.625 | Not Advised                                                                  | Not Advised | 0.0077   | 0.0094   | 0.0110    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 3/4"                             | 0.750 | Not Advised                                                                  | Not Advised | 0.0084   | 0.0102   | 0.0120    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 7/8"                             | 0.875 | Not Advised                                                                  | Not Advised | 0.0091   | 0.0111   | 0.0130    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 1"                               | 1.000 | Not Advised                                                                  | Not Advised | 0.0098   | 0.0119   | 0.0140    | 960                  | 1320   | 1680   | 2040   | 2400  |
| 1-1/4"                           | 1.250 | Not Advised                                                                  | Not Advised | 0.0112   | 0.0136   | 0.0160    | 960                  | 1320   | 1680   | 2040   | 2400  |

| <b>A53</b> <small>Series</small> |       | <b>ISO</b> <b>A53 Series Feeds and Speeds -Uncoated-</b>                     |          |          |          |           | <b>N</b>             |        |        |        |       |
|----------------------------------|-------|------------------------------------------------------------------------------|----------|----------|----------|-----------|----------------------|--------|--------|--------|-------|
|                                  |       | Aluminum Wrought Alloy & Aluminum Cast Alloy < 12% Si 6061-T6, 7075, Plastic |          |          |          |           |                      |        |        |        |       |
| Axial Depth                      |       | 1x DIA                                                                       | 1.5x DIA | 2x DIA   | 2x DIA   | 2x DIA    |                      |        |        |        |       |
| Radial Engagement                |       | 100-85%                                                                      | 85-50%   | 50-25%   | 25-10%   | 10-0%     | 100-85%              | 85-50% | 50-25% | 25-10% | 10-0% |
| Chip Load Range at TEA           |       | Full                                                                         | Heavy    | Medium   | Light    | Light     | Surface Feet Per Min |        |        |        |       |
| Diameter                         |       | Slotting                                                                     | Roughing | Roughing | Roughing | Finishing | MIN                  |        | MID    |        | MAX   |
| 1/8"                             | 0.125 | 0.0010                                                                       | 0.0014   | 0.0018   | 0.0021   | 0.0025    | 480                  | 660    | 840    | 1020   | 1200  |
| 3/16"                            | 0.187 | 0.0012                                                                       | 0.0017   | 0.0021   | 0.0026   | 0.0030    | 576                  | 792    | 1008   | 1224   | 1440  |
| 1/4"                             | 0.250 | 0.0020                                                                       | 0.0028   | 0.0035   | 0.0043   | 0.0050    | 640                  | 880    | 1120   | 1360   | 1600  |
| 5/16"                            | 0.312 | 0.0026                                                                       | 0.0036   | 0.0046   | 0.0055   | 0.0065    | 720                  | 990    | 1260   | 1530   | 1800  |
| 3/8"                             | 0.375 | 0.0030                                                                       | 0.0041   | 0.0053   | 0.0064   | 0.0075    | 760                  | 1045   | 1330   | 1615   | 1900  |
| 7/16"                            | 0.437 | 0.0040                                                                       | 0.0055   | 0.0070   | 0.0085   | 0.0100    | 800                  | 1100   | 1400   | 1700   | 2000  |
| 1/2"                             | 0.500 | 0.0048                                                                       | 0.0066   | 0.0084   | 0.0102   | 0.0120    | 880                  | 1210   | 1540   | 1870   | 2200  |
| 5/8"                             | 0.625 | 0.0052                                                                       | 0.0072   | 0.0091   | 0.0111   | 0.0130    | 880                  | 1210   | 1540   | 1870   | 2200  |
| 3/4"                             | 0.750 | 0.0056                                                                       | 0.0077   | 0.0098   | 0.0119   | 0.0140    | 880                  | 1210   | 1540   | 1870   | 2200  |
| 7/8"                             | 0.875 | 0.0060                                                                       | 0.0083   | 0.0105   | 0.0128   | 0.0150    | 880                  | 1210   | 1540   | 1870   | 2200  |
| 1"                               | 1.000 | 0.0064                                                                       | 0.0088   | 0.0112   | 0.0136   | 0.0160    | 880                  | 1210   | 1540   | 1870   | 2200  |
| 1 1/4"                           | 1.250 | 0.0072                                                                       | 0.0099   | 0.0126   | 0.0153   | 0.0180    | 880                  | 1210   | 1540   | 1870   | 2200  |

# SwiftCARB High Performance Speeds & Feeds for Aluminum Cutters -Uncoated-

| <b>A53</b> Series      |       | <b>A53 Series Feeds and Speeds -Uncoated-</b>       |          |          |          |           |                      |        |        |        |       | <b>N</b> |  |
|------------------------|-------|-----------------------------------------------------|----------|----------|----------|-----------|----------------------|--------|--------|--------|-------|----------|--|
|                        |       | Aluminum > 12% Si and Copper Alloys, Brass & Bronze |          |          |          |           |                      |        |        |        |       |          |  |
| Axial Depth            |       | 1x DIA                                              | 1.5x DIA | 2x DIA   | 2x DIA   | 2x DIA    |                      |        |        |        |       |          |  |
| Radial Engagement      |       | 100-85%                                             | 85-50%   | 50-25%   | 25-10%   | 10-0%     | 100-85%              | 85-50% | 50-25% | 25-10% | 10-0% |          |  |
| Chip Load Range at TEA |       | Full                                                | Heavy    | Medium   | Light    | Light     | Surface Feet Per Min |        |        |        |       |          |  |
| Diameter               |       | Slotting                                            | Roughing | Roughing | Roughing | Finishing | MIN                  | MID    |        |        | MAX   |          |  |
| 1/8"                   | 0.125 | 0.0010                                              | 0.0014   | 0.0018   | 0.0021   | 0.0025    | 240                  | 330    | 420    | 510    | 600   |          |  |
| 3/16"                  | 0.187 | 0.0012                                              | 0.0017   | 0.0021   | 0.0026   | 0.0030    | 288                  | 396    | 504    | 612    | 720   |          |  |
| 1/4"                   | 0.250 | 0.0020                                              | 0.0028   | 0.0035   | 0.0043   | 0.0050    | 336                  | 462    | 588    | 714    | 840   |          |  |
| 5/16"                  | 0.312 | 0.0026                                              | 0.0036   | 0.0046   | 0.0055   | 0.0065    | 384                  | 528    | 672    | 816    | 960   |          |  |
| 3/8"                   | 0.375 | 0.0030                                              | 0.0041   | 0.0053   | 0.0064   | 0.0075    | 432                  | 594    | 756    | 918    | 1080  |          |  |
| 7/16"                  | 0.437 | 0.0040                                              | 0.0055   | 0.0070   | 0.0085   | 0.0100    | 440                  | 605    | 770    | 935    | 1100  |          |  |
| 1/2"                   | 0.500 | 0.0048                                              | 0.0066   | 0.0084   | 0.0102   | 0.0120    | 480                  | 660    | 840    | 1020   | 1200  |          |  |
| 5/8"                   | 0.625 | 0.0052                                              | 0.0072   | 0.0091   | 0.0111   | 0.0130    | 480                  | 660    | 840    | 1020   | 1200  |          |  |
| 3/4"                   | 0.750 | 0.0056                                              | 0.0077   | 0.0098   | 0.0119   | 0.0140    | 480                  | 660    | 840    | 1020   | 1200  |          |  |
| 7/8"                   | 0.875 | 0.0060                                              | 0.0083   | 0.0105   | 0.0128   | 0.0150    | 480                  | 660    | 840    | 1020   | 1200  |          |  |
| 1"                     | 1.000 | 0.0064                                              | 0.0088   | 0.0112   | 0.0136   | 0.0160    | 480                  | 660    | 840    | 1020   | 1200  |          |  |
| 1 1/4"                 | 1.250 | 0.0072                                              | 0.0099   | 0.0126   | 0.0153   | 0.0180    | 480                  | 660    | 840    | 1020   | 1200  |          |  |

| <b>AC2/3</b> Series    |       | <b>AC2/ AC3 Series Feeds and Speeds -Uncoated-</b>  |          |          |          |           |                      |        |        |        |       | <b>N</b> |  |
|------------------------|-------|-----------------------------------------------------|----------|----------|----------|-----------|----------------------|--------|--------|--------|-------|----------|--|
|                        |       | Aluminum > 12% Si and Copper Alloys, Brass & Bronze |          |          |          |           |                      |        |        |        |       |          |  |
| Axial Depth            |       | 1x DIA                                              | 1.5x DIA | 2x DIA   | 2x DIA   | 2x DIA    |                      |        |        |        |       |          |  |
| Radial Engagement      |       | 100-85%                                             | 85-50%   | 50-25%   | 25-10%   | 10-0%     | 100-85%              | 85-50% | 50-25% | 25-10% | 10-0% |          |  |
| Chip Load Range at TEA |       | Full                                                | Heavy    | Medium   | Light    | Light     | Surface Feet Per Min |        |        |        |       |          |  |
| Diameter               |       | Slotting                                            | Roughing | Roughing | Roughing | Finishing | MIN                  | MID    |        |        | MAX   |          |  |
| 1/8"                   | 0.125 | 0.0010                                              | 0.0014   | 0.0018   | 0.0021   | 0.0025    | 240                  | 330    | 420    | 510    | 600   |          |  |
| 3/16"                  | 0.187 | 0.0012                                              | 0.0017   | 0.0021   | 0.0026   | 0.0030    | 288                  | 396    | 504    | 612    | 720   |          |  |
| 1/4"                   | 0.250 | 0.0018                                              | 0.0025   | 0.0032   | 0.0038   | 0.0045    | 320                  | 440    | 560    | 680    | 800   |          |  |
| 5/16"                  | 0.312 | 0.0022                                              | 0.0030   | 0.0038   | 0.0047   | 0.0055    | 360                  | 495    | 630    | 765    | 900   |          |  |
| 3/8"                   | 0.375 | 0.0028                                              | 0.0039   | 0.0049   | 0.0060   | 0.0070    | 380                  | 523    | 665    | 808    | 950   |          |  |
| 7/16"                  | 0.437 | 0.0036                                              | 0.0050   | 0.0063   | 0.0077   | 0.0090    | 400                  | 550    | 700    | 850    | 1000  |          |  |
| 1/2"                   | 0.500 | 0.0040                                              | 0.0055   | 0.0070   | 0.0085   | 0.0100    | 440                  | 605    | 770    | 935    | 1100  |          |  |
| 5/8"                   | 0.625 | 0.0048                                              | 0.0066   | 0.0084   | 0.0102   | 0.0120    | 440                  | 605    | 770    | 935    | 1100  |          |  |
| 3/4"                   | 0.750 | 0.0052                                              | 0.0072   | 0.0091   | 0.0111   | 0.0130    | 440                  | 605    | 770    | 935    | 1100  |          |  |
| 7/8"                   | 0.875 | 0.0056                                              | 0.0077   | 0.0098   | 0.0119   | 0.0140    | 440                  | 605    | 770    | 935    | 1100  |          |  |
| 1"                     | 1.000 | 0.0060                                              | 0.0083   | 0.0105   | 0.0128   | 0.0150    | 440                  | 605    | 770    | 935    | 1100  |          |  |
| 1 1/4"                 | 1.250 | 0.0064                                              | 0.0088   | 0.0112   | 0.0136   | 0.0160    | 440                  | 605    | 770    | 935    | 1100  |          |  |

## SwiftCARB Speeds & Feeds for Industry Standard Tools AITiN Coated

| <b>SS SM SF SD SH GM TM TB</b> Series |       | <b>SS, SM, SF, SD, SH, GM TM, TB Feeds and Speeds -AITiN Coated-</b>  |          |           |          |           |                      |        |        |        |       | <b>P</b> |  |
|---------------------------------------|-------|-----------------------------------------------------------------------|----------|-----------|----------|-----------|----------------------|--------|--------|--------|-------|----------|--|
|                                       |       | Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8620 |          |           |          |           |                      |        |        |        |       |          |  |
| Axial Depth                           |       | .5x DIA                                                               | .75x DIA | 1.25x DIA | 1.5x DIA | 2x DIA    |                      |        |        |        |       |          |  |
| Radial Engagement                     |       | 100-85%                                                               | 85-50%   | 50-25%    | 25-10%   | 10-0%     | 100-85%              | 85-50% | 50-25% | 25-10% | 10-0% |          |  |
| Chip Load Range at TEA                |       | Full                                                                  | Heavy    | Medium    | Light    | Light     | Surface Feet Per Min |        |        |        |       |          |  |
| Diameter                              |       | Slotting                                                              | Roughing | Roughing  | Roughing | Finishing | MIN                  | MID    |        |        | MAX   |          |  |
| 1/8"                                  | 0.125 | 0.0006                                                                | 0.0009   | 0.0011    | 0.0014   | 0.0016    | 184                  | 253    | 322    | 391    | 460   |          |  |
| 5/32"                                 | 0.156 | 0.0007                                                                | 0.0010   | 0.0013    | 0.0015   | 0.0018    | 216                  | 297    | 378    | 459    | 540   |          |  |
| 3/16"                                 | 0.187 | 0.0008                                                                | 0.0012   | 0.0015    | 0.0018   | 0.0021    | 232                  | 319    | 406    | 493    | 580   |          |  |
| 7/32"                                 | 0.218 | 0.0010                                                                | 0.0013   | 0.0017    | 0.0020   | 0.0024    | 240                  | 330    | 420    | 510    | 600   |          |  |
| 1/4"                                  | 0.250 | 0.0011                                                                | 0.0015   | 0.0018    | 0.0022   | 0.0026    | 256                  | 352    | 448    | 544    | 640   |          |  |
| 9/32"                                 | 0.281 | 0.0012                                                                | 0.0017   | 0.0021    | 0.0026   | 0.0030    | 264                  | 363    | 462    | 561    | 660   |          |  |
| 5/16"                                 | 0.312 | 0.0013                                                                | 0.0018   | 0.0022    | 0.0027   | 0.0032    | 272                  | 374    | 476    | 578    | 680   |          |  |
| 11/32"                                | 0.343 | 0.0014                                                                | 0.0019   | 0.0024    | 0.0029   | 0.0034    | 280                  | 385    | 490    | 595    | 700   |          |  |
| 3/8"                                  | 0.375 | 0.0014                                                                | 0.0020   | 0.0025    | 0.0031   | 0.0036    | 288                  | 396    | 504    | 612    | 720   |          |  |
| 7/16"                                 | 0.437 | 0.0016                                                                | 0.0022   | 0.0028    | 0.0034   | 0.0040    | 296                  | 407    | 518    | 629    | 740   |          |  |
| 1/2"                                  | 0.500 | 0.0018                                                                | 0.0025   | 0.0032    | 0.0038   | 0.0045    | 304                  | 418    | 532    | 646    | 760   |          |  |
| 5/8"                                  | 0.625 | 0.0022                                                                | 0.0030   | 0.0039    | 0.0047   | 0.0055    | 304                  | 418    | 532    | 646    | 760   |          |  |
| 3/4"                                  | 0.750 | 0.0024                                                                | 0.0033   | 0.0042    | 0.0051   | 0.0060    | 304                  | 418    | 532    | 646    | 760   |          |  |
| 7/8"                                  | 0.875 | 0.0026                                                                | 0.0036   | 0.0046    | 0.0055   | 0.0065    | 304                  | 418    | 532    | 646    | 760   |          |  |
| 1"                                    | 1.000 | 0.0028                                                                | 0.0039   | 0.0049    | 0.0060   | 0.0070    | 304                  | 418    | 532    | 646    | 760   |          |  |
| 1 1/4"                                | 1.250 | 0.0030                                                                | 0.0041   | 0.0052    | 0.0063   | 0.0074    | 304                  | 418    | 532    | 646    | 760   |          |  |

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