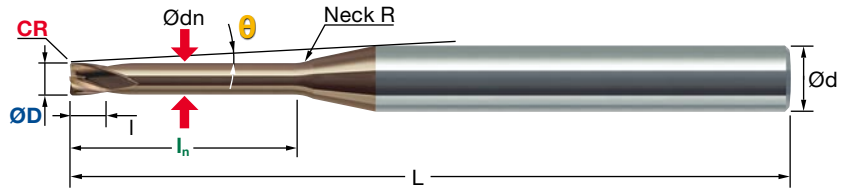
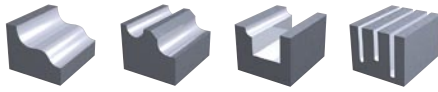


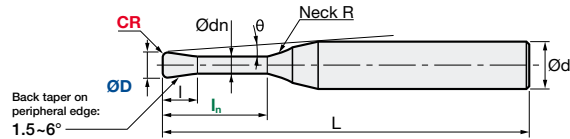
Micro Grain Solid Carbide End Mill

EPDRF-TH | Epoch Deep Radius F

|                            |                                |                      |                             |                         |                  |                          |
|----------------------------|--------------------------------|----------------------|-----------------------------|-------------------------|------------------|--------------------------|
| <b>V max</b><br>High Speed | <b>Q max</b><br>High Efficient | <b>▽</b><br>Roughing | <b>▽▽</b><br>Semi-Finishing | <b>▽▽▽</b><br>Finishing | <b>HRC</b><br>70 | <b>No. of Teeth</b><br>4 |
|----------------------------|--------------------------------|----------------------|-----------------------------|-------------------------|------------------|--------------------------|

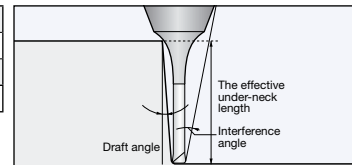


A



|                               |                                  |                               |
|-------------------------------|----------------------------------|-------------------------------|
| <b>Carbide</b><br>Micro Grain | <b>TH45+</b><br>Nano-PVD Coating | <b>Rake Angle</b><br>Positive |
|-------------------------------|----------------------------------|-------------------------------|

|             |           |
|-------------|-----------|
| D           | 0 / -0.01 |
| CR          | ± 0.005   |
| ød          | h5        |
| Helix angle | 20°       |



| ID Code | Item Code            | Z  | Size |       |                |       |       |       |    | Actual Effective Length in Incline Angles |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
|---------|----------------------|----|------|-------|----------------|-------|-------|-------|----|---|-------|-------|-------|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|------|---|-------|-------|-------|-------|-------|------|
|         |                      |    | ØD   | CR    | I <sub>n</sub> | l     | dn    | L     | ød | Neck R                                    | θ°    | 0.5°  | 1°    | 1.5°  | 2°    | 3°    |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP716   | EPDRF-4010-4-005-TH  | 4  | 1    | 0.05  | 4              | 0.8   | 0.94  | 50    | 60 | 4   | 4     | 7.67  | 4.75  | 4.95  | 5.13  | 5.28  | 5.56  |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP717   | EPDRF-4010-6-005-TH  |    |      |       | 6              |       |       |       |    |   |       | 6.51  | 6.84  | 7.09  | 7.30  | 7.49  | 8.13  |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP718   | EPDRF-4010-8-005-TH  |    |      |       | 8              |       |       |       |    |   |       | 5.66  | 8.92  | 9.21  | 9.46  | 9.73  | 10.78 |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP719   | EPDRF-4010-10-005-TH |    |      |       | 10             |       |       |       |    |   |       | 5.00  | 10.99 | 11.32 | 11.59 | 12.12 | 13.44 |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP720   | EPDRF-4010-12-005-TH |    |      |       | 12             |       |       |       |    |   |       | 4.48  | 13.06 | 13.42 | 13.84 | 14.51 | 16.09 |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP721   | EPDRF-4010-16-005-TH |    |      |       | 16             |       |       |       |    |   |       | 3.71  | 17.18 | 17.60 | 18.40 | 19.30 | 21.40 |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP722   | EPDRF-4010-20-005-TH |    |      |       | 20             |       |       |       |    |   |       | 3.17  | 21.29 | 21.93 | 22.96 | 24.09 | 26.71 |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP723   | EPDRF-4010-4-01-TH   |    |      |       | 4              |       |       |       |    |   |       | 0.1   | 4     | 1.35  | 1.42  | 50    | 60    | 4     | 4 | 7.70  | 4.74  | 4.95  | 5.12  | 5.28  | 5.55 |   |       |       |       |       |       |      |
| EP724   | EPDRF-4010-6-01-TH   |    |      |       | 6              |       |       |       |    |   |       |       | 6.54  |       |       |       |       |       |   | 6.83  | 7.09  | 7.30  | 7.49  | 8.11  |      |   |       |       |       |       |       |      |
| EP725   | EPDRF-4010-8-01-TH   |    |      |       | 8              |       |       |       |    |   |       |       | 5.68  |       |       |       |       |       |   | 8.91  | 9.21  | 9.45  | 9.72  | 10.77 |      |   |       |       |       |       |       |      |
| EP726   | EPDRF-4010-10-01-TH  |    |      |       | 10             |       |       |       |    |   |       |       | 5.02  |       |       |       |       |       |   | 10.99 | 11.32 | 11.59 | 12.11 | 13.42 |      |   |       |       |       |       |       |      |
| EP727   | EPDRF-4010-12-01-TH  |    |      |       | 12             |       |       |       |    |   |       |       | 4.50  |       |       |       |       |       |   | 13.06 | 13.42 | 13.83 | 14.50 | 16.08 |      |   |       |       |       |       |       |      |
| EP728   | EPDRF-4010-16-01-TH  |    |      |       | 16             |       |       |       |    |   |       |       | 3.72  |       |       |       |       |       |   | 17.18 | 17.60 | 18.39 | 19.29 | 21.39 |      |   |       |       |       |       |       |      |
| EP729   | EPDRF-4010-20-01-TH  |    |      |       | 20             |       |       |       |    |   |       |       | 3.17  |       |       |       |       |       |   | 21.29 | 21.93 | 22.95 | 24.08 | 26.70 |      |   |       |       |       |       |       |      |
| EP730   | EPDRF-4015-4-01-TH   |    |      |       | 4              |       |       |       |    |   |       |       | 1.5   |       |       |       |       |       |   | 4     | 1.7   | 1.92  | 50    | 60    | 4    | 4 | 7.15  | 4.80  | 4.99  | 5.16  | 5.31  | 5.58 |
| EP731   | EPDRF-4015-8-01-TH   |    |      |       | 8              |       |       |       |    |   |       | 5.12  |       | 8.96  | 9.24  | 9.48  | 9.77  | 10.83 |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP732   | EPDRF-4015-12-01-TH  |    |      |       | 12             |       |       |       |    |   |       | 3.98  |       | 13.09 | 13.45 | 13.88 | 14.56 | 16.14 |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP733   | EPDRF-4015-15-01-TH  |    |      |       | 15             |       |       |       |    |   |       | 3.42  |       | 16.18 | 16.58 | 17.30 | 18.15 | 20.12 |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP734   | EPDRF-4015-20-01-TH  |    |      |       | 20             |       |       |       |    |   |       | 2.76  |       | 21.32 | 21.98 | 23.01 | 24.13 | x     |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP735   | EPDRF-4020-4-005-TH  |    |      |       | 4              |       |       |       |    |   |       | 0.05  |       | 4     | 2     | 2.4   | 50    | 60    | 4 | 4     |       |       |       |       |      |   | 6.46  | 4.80  | 4.99  | 5.16  | 5.31  | 5.59 |
| EP736   | EPDRF-4020-8-005-TH  |    |      |       | 8              |       |       |       |    |   |       |       |       | 4.46  |       |       |       |       |   |       |       |       |       |       |      |   | 8.96  | 9.25  | 9.48  | 9.78  | 10.85 |      |
| EP737   | EPDRF-4020-12-005-TH |    |      |       | 12             |       |       |       |    |   |       |       |       | 3.40  |       |       |       |       |   |       |       |       |       |       |      |   | 13.09 | 13.45 | 13.89 | 14.57 | 16.16 |      |
| EP738   | EPDRF-4020-16-005-TH |    |      |       | 16             |       |       |       |    |   |       |       | 2.75  | 17.21 |       |       |       |       |   |       | 17.63 | 18.45 | 19.36 | x     |      |   |       |       |       |       |       |      |
| EP739   | EPDRF-4020-20-005-TH |    |      |       | 20             |       |       |       |    |   |       |       | 2.31  | 21.32 |       |       |       |       |   |       | 21.98 | 23.01 | 24.14 | x     |      |   |       |       |       |       |       |      |
| EP740   | EPDRF-4020-4-01-TH   | 4  | 0.1  | 4     | 2.5            | 2.86  | 50    | 60    | 4  | 4   | 6.49  |       | 4.80  | 4.99  |       |       |       |       |   |       | 5.16  | 5.31  | 5.58  |       |      |   |       |       |       |       |       |      |
| EP741   | EPDRF-4020-8-01-TH   | 8  |      | 4.47  |                |       |       |       |    |   | 8.96  |       | 9.24  | 9.48  |       |       |       |       |   |       | 9.77  | 10.83 |       |       |      |   |       |       |       |       |       |      |
| EP742   | EPDRF-4020-12-01-TH  | 12 |      | 3.41  |                |       |       |       |    |   | 13.09 |       | 13.45 | 13.88 |       |       |       |       |   |       | 14.56 | 16.14 |       |       |      |   |       |       |       |       |       |      |
| EP743   | EPDRF-4020-16-01-TH  | 16 |      | 2.76  |                |       |       |       |    |   | 17.21 | 17.62 | 18.44 | 19.35 | x     |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP744   | EPDRF-4020-20-01-TH  | 20 |      | 2.31  |                |       |       |       |    |   | 21.32 | 21.98 | 23.01 | 24.13 | x     |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP745   | EPDRF-4025-8-01-TH   | 8  |      | 3.68  |                |       |       |       |    |   | 9.00  | 9.27  | 9.51  | 9.83  | 10.89 |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP746   | EPDRF-4025-16-01-TH  | 16 |      | 2.19  |                |       |       |       |    |   | 17.24 | 17.67 | 18.50 | 19.40 | x     |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP747   | EPDRF-4025-20-01-TH  | 20 |      | 1.82  |                |       |       |       |    |   | 21.35 | 22.03 | 23.06 | x     | x     |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP748   | EPDRF-4025-8-02-TH   | 8  | 3.72 | 8.99  | 9.27           | 9.50  | 9.81  | 10.86 |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP749   | EPDRF-4025-16-02-TH  | 16 | 2.20 | 17.24 | 17.67          | 18.48 | 19.38 | x     |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP750   | EPDRF-4025-20-02-TH  | 20 | 1.83 | 21.34 | 22.02          | 23.05 | x     | x     |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP751   | EPDRF-4030-8-02-TH   | 8  | 5.65 | 9.07  | 9.33           | 9.55  | 9.92  | 10.99 |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP752   | EPDRF-4030-12-02-TH  | 12 | 4.48 | 13.19 | 13.52          | 14.03 | 14.71 | 16.30 |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP753   | EPDRF-4030-16-02-TH  | 16 | 3.71 | 17.30 | 17.77          | 18.59 | 19.50 | 21.60 |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP754   | EPDRF-4030-20-02-TH  | 20 | 3.16 | 21.40 | 22.13          | 23.15 | 24.28 | 26.91 |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP755   | EPDRF-4030-25-02-TH  | 25 | 2.67 | 26.51 | 27.57          | 28.86 | 30.27 | x     |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP756   | EPDRF-4030-30-02-TH  | 30 | 2.31 | 31.62 | 33.02          | 34.56 | 36.25 | x     |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP757   | EPDRF-4040-12-02-TH  | 12 | 3.42 | 13.12 | 13.47          | 13.92 | 14.60 | 16.17 |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP758   | EPDRF-4040-20-02-TH  | 20 | 2.32 | 21.34 | 22.02          | 23.05 | 24.17 | x     |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP759   | EPDRF-4040-30-02-TH  | 30 | 1.65 | 31.57 | 32.92          | 34.45 | x     | x     |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |
| EP760   | EPDRF-4040-40-02-TH  | 40 | 1.29 | 41.94 | 43.81          | x     | x     | x     |    |   |       |       |       |       |       |       |       |       |   |       |       |       |       |       |      |   |       |       |       |       |       |      |

x = no contact