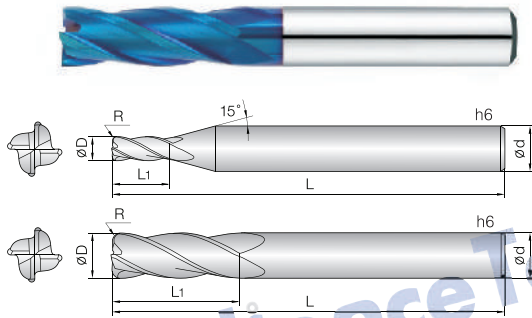


## 4 Flutes Hard Cut Standard Length Corner Radius End Mills For Hardened Steels



# 4HPR

- **Corner Radius Endmills for various work materials (HRC 52-68) Pre-hardened steels and Hardened steels.**
- Good wear resistance by high quality Si-based H coating.
- High-Precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Good surface finish.
- Outstanding performance at high speed machining by ultra fine (0.2µm) WC grade.



Unit(mm)

| Model Number      | Cutting Dia.<br>D | Corner Radius<br>R | Length Of Cut<br>L1 | Effective Length<br>L2 | Overall Length<br>L | Shank dia<br>d |
|-------------------|-------------------|--------------------|---------------------|------------------------|---------------------|----------------|
| 4HPR 005 0005 445 | 0.5               | R0.05              | 1                   | -                      | 45                  | 4              |
| 4HPR 005 001 445  | 0.5               | R0.1               | 1                   | -                      | 45                  | 4              |
| 4HPR 006 0005 445 | 0.6               | R0.05              | 1.2                 | -                      | 45                  | 4              |
| 4HPR 006 001 445  | 0.6               | R0.1               | 1.2                 | -                      | 45                  | 4              |
| 4HPR 007 0005 445 | 0.7               | R0.05              | 1.4                 | -                      | 45                  | 4              |
| 4HPR 007 001 445  | 0.7               | R0.1               | 1.4                 | -                      | 45                  | 4              |
| 4HPR 008 0005 445 | 0.8               | R0.05              | 1.6                 | -                      | 45                  | 4              |
| 4HPR 008 001 445  | 0.8               | R0.1               | 1.6                 | -                      | 45                  | 4              |
| 4HPR 009 0005 445 | 0.9               | R0.05              | 1.8                 | -                      | 45                  | 4              |
| 4HPR 009 001 445  | 0.9               | R0.1               | 1.8                 | -                      | 45                  | 4              |
| 4HPR 010 0005 445 | 1                 | R0.05              | 2.5                 | -                      | 45                  | 4              |
| 4HPR 010 001 445  | 1                 | R0.1               | 2.5                 | -                      | 45                  | 4              |
| 4HPR 010 002 445  | 1                 | R0.2               | 2.5                 | -                      | 45                  | 4              |
| 4HPR 010 003 445  | 1                 | R0.3               | 2.5                 | -                      | 45                  | 4              |
| 4HPR 015 0005 445 | 1.5               | R0.05              | 4                   | -                      | 45                  | 4              |
| 4HPR 015 001 445  | 1.5               | R0.1               | 4                   | -                      | 45                  | 4              |
| 4HPR 015 002 445  | 1.5               | R0.2               | 4                   | -                      | 45                  | 4              |
| 4HPR 015 003 445  | 1.5               | R0.3               | 4                   | -                      | 45                  | 4              |
| 4HPR 015 005 445  | 1.5               | R0.5               | 4                   | -                      | 45                  | 4              |
| 4HPR 020 0005 445 | 2                 | R0.05              | 6                   | -                      | 45                  | 4              |
| 4HPR 020 001 445  | 2                 | R0.1               | 6                   | -                      | 45                  | 4              |
| 4HPR 020 002 445  | 2                 | R0.2               | 6                   | -                      | 45                  | 4              |
| 4HPR 020 003 445  | 2                 | R0.3               | 6                   | -                      | 45                  | 4              |
| 4HPR 020 005 445  | 2                 | R0.5               | 6                   | -                      | 45                  | 4              |
| 4HPR 025 001 450  | 2.5               | R0.1               | 6                   | -                      | 50                  | 4              |
| 4HPR 025 002 450  | 2.5               | R0.2               | 6                   | -                      | 50                  | 4              |

## 4 Flutes Hard Cut Standard Length Corner Radius End Mills For Hardened Steels



| Model Number     | Cutting Dia.<br>D | Corner Radius<br>CR | Length Of Cut<br>L1 | Effective Length<br>L2 | Overall Length<br>L | Shank dia<br>d |
|------------------|-------------------|---------------------|---------------------|------------------------|---------------------|----------------|
| 4HPR 025 003 450 | 2.5               | R0.3                | 6                   | -                      | 50                  | 4              |
| 4HPR 025 005 450 | 2.5               | R0.5                | 6                   | -                      | 50                  | 4              |
| 4HPR 030 001 360 | 3                 | R0.1                | 8                   | -                      | 60                  | 3              |
| 4HPR 030 001 460 | 3                 | R0.1                | 8                   | -                      | 60                  | 4              |
| 4HPR 030 001 660 | 3                 | R0.1                | 8                   | -                      | 60                  | 6              |
| 4HPR 030 002 360 | 3                 | R0.2                | 8                   | -                      | 60                  | 3              |
| 4HPR 030 002 460 | 3                 | R0.2                | 8                   | -                      | 60                  | 4              |
| 4HPR 030 002 660 | 3                 | R0.2                | 8                   | -                      | 60                  | 6              |
| 4HPR 030 003 360 | 3                 | R0.3                | 8                   | -                      | 60                  | 3              |
| 4HPR 030 003 460 | 3                 | R0.3                | 8                   | -                      | 60                  | 4              |
| 4HPR 030 003 660 | 3                 | R0.3                | 8                   | -                      | 60                  | 6              |
| 4HPR 030 005 360 | 3                 | R0.5                | 8                   | -                      | 60                  | 3              |
| 4HPR 030 005 460 | 3                 | R0.5                | 8                   | -                      | 60                  | 4              |
| 4HPR 030 005 660 | 3                 | R0.5                | 8                   | -                      | 60                  | 6              |
| 4HPR 030 010 360 | 3                 | R1                  | 8                   | -                      | 60                  | 3              |
| 4HPR 030 010 460 | 3                 | R1                  | 8                   | -                      | 60                  | 4              |
| 4HPR 030 010 660 | 3                 | R1                  | 8                   | -                      | 60                  | 6              |
| 4HPR 035 001 660 | 3.5               | R0.1                | 9                   | -                      | 60                  | 6              |
| 4HPR 035 002 660 | 3.5               | R0.2                | 9                   | -                      | 60                  | 6              |
| 4HPR 035 003 660 | 3.5               | R0.3                | 9                   | -                      | 60                  | 6              |
| 4HPR 035 005 660 | 3.5               | R0.5                | 9                   | -                      | 60                  | 6              |
| 4HPR 035 010 660 | 3.5               | R1                  | 9                   | -                      | 60                  | 6              |
| 4HPR 040 001 460 | 4                 | R0.1                | 9                   | -                      | 60                  | 4              |
| 4HPR 040 001 660 | 4                 | R0.1                | 10                  | -                      | 60                  | 6              |
| 4HPR 040 002 460 | 4                 | R0.2                | 9                   | -                      | 60                  | 4              |
| 4HPR 040 002 660 | 4                 | R0.2                | 10                  | -                      | 60                  | 6              |
| 4HPR 040 003 460 | 4                 | R0.3                | 9                   | -                      | 60                  | 4              |
| 4HPR 040 003 660 | 4                 | R0.3                | 10                  | -                      | 60                  | 6              |
| 4HPR 040 005 460 | 4                 | R0.5                | 9                   | -                      | 60                  | 4              |
| 4HPR 040 005 660 | 4                 | R0.5                | 10                  | -                      | 60                  | 6              |
| 4HPR 040 010 460 | 4                 | R1                  | 9                   | -                      | 60                  | 4              |
| 4HPR 040 010 660 | 4                 | R1                  | 10                  | -                      | 60                  | 6              |
| 4HPR 045 002 675 | 4.5               | R0.2                | 11                  | -                      | 75                  | 6              |
| 4HPR 045 003 675 | 4.5               | R0.3                | 11                  | -                      | 75                  | 6              |
| 4HPR 045 005 675 | 4.5               | R0.5                | 11                  | -                      | 75                  | 6              |
| 4HPR 045 010 675 | 4.5               | R1                  | 11                  | -                      | 75                  | 6              |
| 4HPR 050 001 675 | 5                 | R0.1                | 13                  | -                      | 75                  | 6              |
| 4HPR 050 002 675 | 5                 | R0.2                | 13                  | -                      | 75                  | 6              |

## 4 Flutes Hard Cut Standard Length Corner Radius End Mills For Hardened Steels



| Model Number      | Cutting Dia.<br>D | Corner Radius<br>R | Length Of Cut<br>L1 | Effective Length<br>L2 | Overall Length<br>L | Shank dia<br>d |
|-------------------|-------------------|--------------------|---------------------|------------------------|---------------------|----------------|
| 4HPR 050 003 675  | 5                 | R0.3               | 13                  | -                      | 75                  | 6              |
| 4HPR 050 005 675  | 5                 | R0.5               | 13                  | -                      | 75                  | 6              |
| 4HPR 050 010 675  | 5                 | R1                 | 13                  | -                      | 75                  | 6              |
| 4HPR 060 0005 650 | 6                 | R0.05              | 11                  | -                      | 50                  | 6              |
| 4HPR 060 0005 675 | 6                 | R0.05              | 13                  | -                      | 75                  | 6              |
| 4HPR 060 001 650  | 6                 | R0.1               | 11                  | -                      | 50                  | 6              |
| 4HPR 060 001 675  | 6                 | R0.1               | 13                  | -                      | 75                  | 6              |
| 4HPR 060 002 650  | 6                 | R0.2               | 11                  | -                      | 50                  | 6              |
| 4HPR 060 002 675  | 6                 | R0.2               | 13                  | -                      | 75                  | 6              |
| 4HPR 060 002 6A0  | 6                 | R0.2               | 13                  | -                      | 100                 | 6              |
| 4HPR 060 002 6C0  | 6                 | R0.2               | 13                  | -                      | 120                 | 6              |
| 4HPR 060 003 650  | 6                 | R0.3               | 11                  | -                      | 50                  | 6              |
| 4HPR 060 003 675  | 6                 | R0.3               | 13                  | -                      | 75                  | 6              |
| 4HPR 060 003 6A0  | 6                 | R0.3               | 13                  | -                      | 100                 | 6              |
| 4HPR 060 003 6C0  | 6                 | R0.3               | 13                  | -                      | 120                 | 6              |
| 4HPR 060 005 650  | 6                 | R0.5               | 11                  | -                      | 50                  | 6              |
| 4HPR 060 005 675  | 6                 | R0.5               | 13                  | -                      | 75                  | 6              |
| 4HPR 060 005 6A0  | 6                 | R0.5               | 13                  | -                      | 100                 | 6              |
| 4HPR 060 005 6C0  | 6                 | R0.5               | 13                  | -                      | 120                 | 6              |
| 4HPR 060 010 650  | 6                 | R1                 | 11                  | -                      | 50                  | 6              |
| 4HPR 060 010 675  | 6                 | R1                 | 13                  | -                      | 75                  | 6              |
| 4HPR 060 010 6A0  | 6                 | R1                 | 13                  | -                      | 100                 | 6              |
| 4HPR 060 010 6C0  | 6                 | R1                 | 13                  | -                      | 120                 | 6              |
| 4HPR 060 015 650  | 6                 | R1.5               | 11                  | -                      | 50                  | 6              |
| 4HPR 060 015 675  | 6                 | R1.5               | 13                  | -                      | 75                  | 6              |
| 4HPR 060 020 650  | 6                 | R2                 | 11                  | -                      | 50                  | 6              |
| 4HPR 060 020 675  | 6                 | R2                 | 13                  | -                      | 75                  | 6              |
| 4HPR 070 002 875  | 7                 | R0.2               | 16                  | -                      | 75                  | 8              |
| 4HPR 070 003 875  | 7                 | R0.3               | 16                  | -                      | 75                  | 8              |
| 4HPR 070 005 875  | 7                 | R0.5               | 16                  | -                      | 75                  | 8              |
| 4HPR 070 010 875  | 7                 | R1                 | 16                  | -                      | 75                  | 8              |
| 4HPR 080 001 860  | 8                 | R0.1               | 16                  | -                      | 60                  | 8              |
| 4HPR 080 001 8A0  | 8                 | R0.1               | 19                  | -                      | 100                 | 8              |
| 4HPR 080 002 860  | 8                 | R0.2               | 16                  | -                      | 60                  | 8              |
| 4HPR 080 002 8A0  | 8                 | R0.2               | 19                  | -                      | 100                 | 8              |
| 4HPR 080 003 860  | 8                 | R0.3               | 16                  | -                      | 60                  | 8              |
| 4HPR 080 003 8A0  | 8                 | R0.3               | 19                  | -                      | 100                 | 8              |
| 4HPR 080 005 860  | 8                 | R0.5               | 16                  | -                      | 60                  | 8              |

ECO-CUT

WIDE-CUT

HARD-CUT

ALU-CUT

D-CUT

SUS CUT

MAGIC DRILLS

## 4 Flutes Hard Cut Standard Length Corner Radius End Mills For Hardened Steels



| Model Number     | Cutting Dia.<br>D | Corner Radius<br>R | Length Of Cut<br>L1 | Effective Length<br>L2 | Overall Length<br>L | Shank dia<br>d |
|------------------|-------------------|--------------------|---------------------|------------------------|---------------------|----------------|
| 4HPR 080 005 8A0 | 8                 | R0.5               | 19                  | -                      | 100                 | 8              |
| 4HPR 080 005 8A0 | 8                 | R0.5               | 19                  | -                      | 100                 | 8              |
| 4HPR 080 005 8F0 | 8                 | R0.5               | 19                  | -                      | 150                 | 8              |
| 4HPR 080 010 860 | 8                 | R1                 | 16                  | -                      | 60                  | 8              |
| 4HPR 080 010 8A0 | 8                 | R1                 | 19                  | -                      | 100                 | 8              |
| 4HPR 080 010 8A0 | 8                 | R1                 | 19                  | -                      | 100                 | 8              |
| 4HPR 080 010 8F0 | 8                 | R1                 | 19                  | -                      | 150                 | 8              |
| 4HPR 080 015 860 | 8                 | R1.5               | 16                  | -                      | 60                  | 8              |
| 4HPR 080 015 8A0 | 8                 | R1.5               | 19                  | -                      | 100                 | 8              |
| 4HPR 080 020 860 | 8                 | R2                 | 16                  | -                      | 60                  | 8              |
| 4HPR 080 020 8A0 | 8                 | R2                 | 19                  | -                      | 100                 | 8              |
| 4HPR 090 002 AA0 | 9                 | R0.2               | 20                  | -                      | 100                 | 10             |
| 4HPR 090 003 AA0 | 9                 | R0.3               | 20                  | -                      | 100                 | 10             |
| 4HPR 090 005 AA0 | 9                 | R0.5               | 20                  | -                      | 100                 | 10             |
| 4HPR 090 010 AA0 | 9                 | R1                 | 20                  | -                      | 100                 | 10             |
| 4HPR 100 001 A75 | 10                | R0.1               | 19                  | -                      | 75                  | 10             |
| 4HPR 100 001 AA0 | 10                | R0.1               | 22                  | -                      | 100                 | 10             |
| 4HPR 100 002 A75 | 10                | R0.2               | 19                  | -                      | 75                  | 10             |
| 4HPR 100 002 AA0 | 10                | R0.2               | 22                  | -                      | 100                 | 10             |
| 4HPR 100 003 A75 | 10                | R0.3               | 19                  | -                      | 75                  | 10             |
| 4HPR 100 003 AA0 | 10                | R0.3               | 22                  | -                      | 100                 | 10             |
| 4HPR 100 005 A75 | 10                | R0.5               | 19                  | -                      | 75                  | 10             |
| 4HPR 100 005 AA0 | 10                | R0.5               | 22                  | -                      | 100                 | 10             |
| 4HPR 100 005 AC0 | 10                | R0.5               | 22                  | -                      | 120                 | 10             |
| 4HPR 100 005 AF0 | 10                | R0.5               | 22                  | -                      | 150                 | 10             |
| 4HPR 100 010 A75 | 10                | R1                 | 19                  | -                      | 75                  | 10             |
| 4HPR 100 010 AA0 | 10                | R1                 | 22                  | -                      | 100                 | 10             |
| 4HPR 100 010 AC0 | 10                | R1                 | 22                  | -                      | 120                 | 10             |
| 4HPR 100 010 AF0 | 10                | R1                 | 22                  | -                      | 150                 | 10             |
| 4HPR 100 015 A75 | 10                | R1.5               | 19                  | -                      | 75                  | 10             |
| 4HPR 100 015 AA0 | 10                | R1.5               | 22                  | -                      | 100                 | 10             |
| 4HPR 100 020 A75 | 10                | R2                 | 19                  | -                      | 75                  | 10             |
| 4HPR 100 020 AA0 | 10                | R2                 | 22                  | -                      | 100                 | 10             |
| 4HPR 100 020 AC0 | 10                | R2                 | 22                  | -                      | 120                 | 10             |
| 4HPR 100 020 AF0 | 10                | R2                 | 22                  | -                      | 150                 | 10             |
| 4HPR 100 025 A75 | 10                | R2.5               | 19                  | -                      | 75                  | 10             |
| 4HPR 100 025 AA0 | 10                | R2.5               | 22                  | -                      | 100                 | 10             |
| 4HPR 110 003 CA0 | 11                | R0.3               | 24                  | -                      | 100                 | 12             |

## 4 Flutes Hard Cut Standard Length Corner Radius End Mills For Hardened Steels



| Model Number     | Cutting Dia.<br>D | Corner Radius<br>R | Length Of Cut<br>L1 | Effective Length<br>L2 | Overall Length<br>L | Shank dia<br>d |
|------------------|-------------------|--------------------|---------------------|------------------------|---------------------|----------------|
| 4HPR 110 005 CA0 | 11                | R0.5               | 24                  | -                      | 100                 | 12             |
| 4HPR 110 010 CA0 | 11                | R1                 | 24                  | -                      | 100                 | 12             |
| 4HPR 120 001 C75 | 12                | R0.1               | 22                  | -                      | 75                  | 12             |
| 4HPR 120 001 CA0 | 12                | R0.1               | 26                  | -                      | 100                 | 12             |
| 4HPR 120 002 C75 | 12                | R0.2               | 22                  | -                      | 75                  | 12             |
| 4HPR 120 002 CA0 | 12                | R0.2               | 26                  | -                      | 100                 | 12             |
| 4HPR 120 003 C75 | 12                | R0.3               | 22                  | -                      | 75                  | 12             |
| 4HPR 120 003 CA0 | 12                | R0.3               | 26                  | -                      | 100                 | 12             |
| 4HPR 120 005 C75 | 12                | R0.5               | 22                  | -                      | 75                  | 12             |
| 4HPR 120 005 CA0 | 12                | R0.5               | 26                  | -                      | 100                 | 12             |
| 4HPR 120 005 CF0 | 12                | R0.5               | 26                  | -                      | 150                 | 12             |
| 4HPR 120 005 CF0 | 12                | R0.5               | 26                  | -                      | 150                 | 12             |
| 4HPR 120 010 C75 | 12                | R1                 | 22                  | -                      | 75                  | 12             |
| 4HPR 120 010 CA0 | 12                | R1                 | 26                  | -                      | 100                 | 12             |
| 4HPR 120 010 CF0 | 12                | R1                 | 26                  | -                      | 150                 | 12             |
| 4HPR 120 010 CF0 | 12                | R1                 | 26                  | -                      | 150                 | 12             |
| 4HPR 120 015 C75 | 12                | R1.5               | 22                  | -                      | 75                  | 12             |
| 4HPR 120 015 CA0 | 12                | R1.5               | 26                  | -                      | 100                 | 12             |
| 4HPR 120 020 C75 | 12                | R2                 | 22                  | -                      | 75                  | 12             |
| 4HPR 120 020 CA0 | 12                | R2                 | 26                  | -                      | 100                 | 12             |
| 4HPR 120 020 CF0 | 12                | R2                 | 26                  | -                      | 150                 | 12             |
| 4HPR 120 020 CF0 | 12                | R2                 | 26                  | -                      | 150                 | 12             |
| 4HPR 120 025 C75 | 12                | R2.5               | 22                  | -                      | 75                  | 12             |
| 4HPR 120 025 CA0 | 12                | R2.5               | 26                  | -                      | 100                 | 12             |
| 4HPR 120 030 C75 | 12                | R3                 | 22                  | -                      | 75                  | 12             |
| 4HPR 120 030 CA0 | 12                | R3                 | 26                  | -                      | 100                 | 12             |
| 4HPR 140 005 EA0 | 14                | R0.5               | 30                  | -                      | 100                 | 14             |
| 4HPR 140 010 EA0 | 14                | R1                 | 30                  | -                      | 100                 | 14             |
| 4HPR 140 020 EA0 | 14                | R2                 | 30                  | -                      | 100                 | 14             |
| 4HPR 160 005 GA0 | 16                | R0.5               | 32                  | -                      | 100                 | 16             |
| 4HPR 160 005 GF0 | 16                | R0.5               | 32                  | -                      | 150                 | 16             |
| 4HPR 160 010 GA0 | 16                | R1                 | 32                  | -                      | 100                 | 16             |
| 4HPR 160 010 GF0 | 16                | R1                 | 32                  | -                      | 150                 | 16             |

ECO-CUT

WIDE-CUT

HARD-CUT

ALU-CUT

D-CUT

SUS CUT

MAGIC DRILLS