

**METRIC****SKS Extreme****Recommended Cutting Conditions - Metric**

| Work Materials                                                | Insert Grade    | Overhung Length $l$ (mm) | Tool Diameter (mm) |                        |             |         |                 |                        |             |         |                 |                        |             |         |
|---------------------------------------------------------------|-----------------|--------------------------|--------------------|------------------------|-------------|---------|-----------------|------------------------|-------------|---------|-----------------|------------------------|-------------|---------|
|                                                               |                 |                          | 50/52              |                        |             |         | 63/66           |                        |             |         | 80              |                        |             |         |
|                                                               |                 |                          | No. of Teeth 4N    |                        |             |         | No. of Teeth 5N |                        |             |         | No. of Teeth 6N |                        |             |         |
|                                                               |                 |                          | AP (mm)            | N (min <sup>-1</sup> ) | Vf (mm/min) | Pc (kW) | AP (mm)         | N (min <sup>-1</sup> ) | Vf (mm/min) | Pc (kW) | AP (mm)         | N (min <sup>-1</sup> ) | Vf (mm/min) | Pc (kW) |
| Carbon Steel (C50, C55) (S50, S55C) Below 250HB               | JC7560 (JC8118) | 150                      | 2                  | 950                    | 7,600       | 12.4    | 2               | 750                    | 7,500       | 15.4    | 2               | 600                    | 7,200       | 18.7    |
|                                                               |                 | 200                      | 1.5                | 800                    | 6,400       | 7.8     | 1.8             | 680                    | 6,800       | 12.5    | 1.8             | 540                    | 6,480       | 15.2    |
|                                                               |                 | 250                      | 1                  | 650                    | 3,900       | 3.2     | 1.5             | 600                    | 6,000       | 9.2     | 1.8             | 480                    | 5,760       | 13.5    |
|                                                               |                 | 300                      | 0.6                | 650                    | 2,600       | 1.3     | 1               | 550                    | 5,500       | 5.6     | 1.5             | 440                    | 5,280       | 10.3    |
|                                                               |                 | 350                      | -                  | -                      | -           | -       | 0.6             | 550                    | 4,125       | 2.5     | 1               | 440                    | 5,280       | 6.9     |
|                                                               |                 | 400                      | -                  | -                      | -           | -       | 0.4             | 550                    | 2,750       | 1.1     | 0.6             | 440                    | 3,960       | 3.1     |
| Die Steel (1.2344, 1.2379) (SKD61, SKD11) Below 255HB         | JC7560 (JC8118) | 150                      | 2                  | 950                    | 7,600       | 12.4    | 2               | 750                    | 7,500       | 15.4    | 2               | 600                    | 7,200       | 18.7    |
|                                                               |                 | 200                      | 1.5                | 800                    | 6,400       | 7.8     | 1.8             | 680                    | 6,800       | 12.5    | 1.8             | 540                    | 6,480       | 15.2    |
|                                                               |                 | 250                      | 1                  | 650                    | 3,900       | 3.2     | 1.5             | 600                    | 6,000       | 9.2     | 1.8             | 480                    | 5,760       | 13.5    |
|                                                               |                 | 300                      | 0.6                | 650                    | 2,600       | 1.3     | 1               | 550                    | 5,500       | 5.6     | 1.5             | 440                    | 5,280       | 10.3    |
|                                                               |                 | 350                      | -                  | -                      | -           | -       | 0.6             | 550                    | 4,125       | 2.5     | 1               | 440                    | 5,280       | 6.9     |
|                                                               |                 | 400                      | -                  | -                      | -           | -       | 0.4             | 550                    | 2,750       | 1.1     | 0.6             | 440                    | 3,960       | 3.1     |
| Mold Steel (1.2311, P20) (HPM7, PX5, P20) 30-35HRC            | JC7560 (JC8118) | 150                      | 2                  | 830                    | 6,640       | 12.3    | 2               | 650                    | 6,500       | 15.2    | 2               | 520                    | 6,240       | 18.5    |
|                                                               |                 | 200                      | 1.5                | 700                    | 5,600       | 7.8     | 1.8             | 580                    | 5,800       | 12.2    | 1.8             | 470                    | 5,640       | 15.1    |
|                                                               |                 | 250                      | 1                  | 570                    | 3,420       | 3.2     | 1.5             | 520                    | 5,200       | 9.1     | 1.8             | 420                    | 5,040       | 13.5    |
|                                                               |                 | 300                      | 0.6                | 570                    | 2,280       | 1.3     | 1               | 460                    | 4,600       | 5.4     | 1.5             | 360                    | 4,320       | 9.6     |
|                                                               |                 | 350                      | -                  | -                      | -           | -       | 0.6             | 460                    | 3,450       | 2.4     | 1               | 360                    | 4,320       | 6.4     |
|                                                               |                 | 400                      | -                  | -                      | -           | -       | 0.4             | 460                    | 2,300       | 1.1     | 0.6             | 360                    | 3,240       | 2.9     |
| Mold Steel (1.2311, P20) (NAK80, HPM1, P21) 38-43HRC          | JC8118          | 150                      | 1.5                | 700                    | 2,800       | 6.8     | 1.5             | 550                    | 2,750       | 8.4     | 1.5             | 430                    | 2,580       | 10.1    |
|                                                               |                 | 200                      | 1                  | 600                    | 2,400       | 3.9     | 1.2             | 500                    | 2,500       | 6.1     | 1.2             | 390                    | 2,340       | 7.3     |
|                                                               |                 | 250                      | 0.7                | 490                    | 1,960       | 2.2     | 1               | 440                    | 2,200       | 4.5     | 1.2             | 340                    | 2,040       | 6.4     |
|                                                               |                 | 300                      | 0.4                | 490                    | 980         | .06     | 0.7             | 380                    | 1,900       | 2.7     | 1               | 300                    | 1,800       | 4.7     |
|                                                               |                 | 350                      | -                  | -                      | -           | -       | 0.5             | 380                    | 1,900       | 1.9     | 0.7             | 300                    | 1,800       | 3.3     |
|                                                               |                 | 400                      | -                  | -                      | -           | -       | -               | -                      | -           | 0.4     | 300             | 1,800                  | 1.9         |         |
| Mold Steel (1.2311, P20) (SKD61, DAC, DHA) 42-52HRC           | JC8118          | 150                      | 1.5                | 510                    | 2,040       | 6.6     | 1.5             | 400                    | 2,000       | 8.2     | 1.5             | 320                    | 1,920       | 10      |
|                                                               |                 | 200                      | 1                  | 460                    | 1,840       | 4.0     | 1.2             | 360                    | 1,800       | 5.9     | 1.2             | 290                    | 1,740       | 7.2     |
|                                                               |                 | 250                      | 0.7                | 420                    | 1,980       | 2.5     | 1               | 320                    | 1,600       | 4.4     | 1.2             | 260                    | 1,560       | 6.5     |
|                                                               |                 | 300                      | 0.4                | 420                    | 840         | 0.7     | 0.7             | 280                    | 1,400       | 2.7     | 1               | 220                    | 1,320       | 4.6     |
|                                                               |                 | 350                      | -                  | -                      | -           | -       | 0.5             | 280                    | 1,400       | 1.9     | 0.7             | 220                    | 1,320       | 3.2     |
|                                                               |                 | 400                      | -                  | -                      | -           | -       | -               | -                      | -           | 0.4     | 220             | 1,320                  | 1.8         |         |
| Gray Cast Iron (GG25, GG30) (FC250, FC300) Below 300HB        | JC7560 (JC8118) | 150                      | 2.5                | 950                    | 7,600       | 12.4    | 2.5             | 750                    | 7,500       | 15.4    | 2.5             | 600                    | 7,200       | 18.7    |
|                                                               |                 | 200                      | 2                  | 800                    | 6,400       | 8.3     | 2               | 680                    | 6,800       | 11.1    | 2               | 540                    | 6,480       | 13.5    |
|                                                               |                 | 250                      | 1.5                | 650                    | 3,900       | 3.8     | 1.5             | 600                    | 6,000       | 7.4     | 2               | 480                    | 5,760       | 12      |
|                                                               |                 | 300                      | 1                  | 650                    | 2,600       | 1.7     | 1               | 550                    | 5,500       | 4.5     | 1.5             | 440                    | 5,280       | 8.2     |
|                                                               |                 | 350                      | -                  | -                      | -           | -       | 0.6             | 550                    | 4,125       | 2.0     | 1               | 440                    | 5,280       | 5.5     |
|                                                               |                 | 400                      | -                  | -                      | -           | -       | 0.4             | 550                    | 2,750       | 0.9     | 0.6             | 440                    | 3,960       | 2.5     |
| Nodular Cast Iron (GGG50, GGG70) (FCD500, FCD700) Below 300HB | JC8118          | 150                      | 2.5                | 950                    | 7,600       | 12.4    | 2.5             | 750                    | 7,500       | 15.4    | 2.5             | 600                    | 7,200       | 18.7    |
|                                                               |                 | 200                      | 2                  | 800                    | 6,400       | 8.3     | 2               | 680                    | 6,800       | 11.1    | 2               | 540                    | 6,480       | 13.5    |
|                                                               |                 | 250                      | 1.5                | 650                    | 3,900       | 3.8     | 1.5             | 600                    | 6,000       | 7.4     | 2               | 480                    | 5,760       | 12      |
|                                                               |                 | 300                      | 1                  | 650                    | 260         | 1.7     | 1               | 550                    | 5,500       | 4.5     | 1.5             | 440                    | 5,280       | 8.2     |
|                                                               |                 | 350                      | -                  | -                      | -           | -       | 0.6             | 550                    | 4,125       | 2.0     | 1               | 440                    | 5,280       | 5.5     |
|                                                               |                 | 400                      | -                  | -                      | -           | -       | 0.4             | 550                    | 2,750       | 0.9     | 0.6             | 440                    | 3,960       | 2.5     |
| Stainless Steel (SUS304) Below 250HB                          | JC7560          | 150                      | 2                  | 950                    | 5,700       | 14.8    | 2               | 750                    | 5,625       | 18.4    | 2               | 600                    | 5,400       | 22.5    |
|                                                               |                 | 200                      | 1.5                | 800                    | 4,800       | 9.4     | 1.8             | 680                    | 5,100       | 15.0    | 1.8             | 540                    | 4,860       | 18.2    |
|                                                               |                 | 250                      | 1                  | 650                    | 2,600       | 3.4     | 1.5             | 600                    | 4,500       | 11.1    | 1.8             | 480                    | 4,320       | 16.2    |
|                                                               |                 | 300                      | 0.6                | 650                    | 2,600       | 2.0     | 1               | 550                    | 3,300       | 5.4     | 1.5             | 440                    | 3,960       | 12.4    |
|                                                               |                 | 350                      | -                  | -                      | -           | -       | 0.6             | 550                    | 2,750       | 2.7     | 1               | 440                    | 3,168       | 6.6     |
|                                                               |                 | 400                      | -                  | -                      | -           | -       | 0.4             | 550                    | 2,750       | 1.8     | 0.6             | 440                    | 2,640       | 3.3     |

AP: Depth of cut, N: Spindle speed, Vf: Speed feed, Pc: Net power consumption

Notes:

1. The figures should be adjusted according to the machine and work rigidity.
2. If chattering occurs, reduce the DOC (AP) or RPM by 30% and keep the feed per tooth the same.
3. If machine does not have enough power, the DOC (AP) or spindle speed should be reduced by 30%.
4. Use air instead of coolant.



# SKS Extreme

**METRIC**

## Recommended Cutting Conditions - Metric

| Work Materials                                                | Insert Grade    | Overhung Length $l$ (mm) | Tool Diameter (mm) |                        |             |         |                 |                        |             |         |                 |                        |             |         |
|---------------------------------------------------------------|-----------------|--------------------------|--------------------|------------------------|-------------|---------|-----------------|------------------------|-------------|---------|-----------------|------------------------|-------------|---------|
|                                                               |                 |                          | 100                |                        |             |         | 125             |                        |             |         | 160             |                        |             |         |
|                                                               |                 |                          | No. of Teeth 7N    |                        |             |         | No. of Teeth 8N |                        |             |         | No. of Teeth 9N |                        |             |         |
|                                                               |                 |                          | AP (mm)            | N (min <sup>-1</sup> ) | Vf (mm/min) | Pc (kW) | AP (mm)         | N (min <sup>-1</sup> ) | Vf (mm/min) | Pc (kW) | AP (mm)         | N (min <sup>-1</sup> ) | Vf (mm/min) | Pc (kW) |
| Carbon Steel (C50, C55) (S50, S55C) Below 250HB               | JC7560 (JC8118) | 150                      | 2                  | 480                    | 6,720       | 21.8    | 2               | 380                    | 6,080       | 24.7    | 2               | 300                    | 5,400       | 28.1    |
|                                                               |                 | 200                      | 2                  | 430                    | 6,020       | 19.3    | 2               | 340                    | 5,440       | 22.1    | 2               | 270                    | 4,860       | 25.3    |
|                                                               |                 | 250                      | 2                  | 380                    | 5,320       | 17.3    | 2               | 300                    | 4,800       | 19.5    | 2               | 240                    | 4,320       | 22.5    |
|                                                               |                 | 300                      | 1.5                | 350                    | 4,900       | 11.9    | 2               | 280                    | 4,480       | 18.2    | 2               | 220                    | 3,960       | 20.6    |
|                                                               |                 | 350                      | 1.5                | 350                    | 4,900       | 11.9    | 1.5             | 280                    | 4,480       | 13.7    | 2               | 220                    | 3,960       | 20.6    |
|                                                               |                 | 400                      | 1                  | 350                    | 4,900       | 8.0     | 1.5             | 280                    | 4,480       | 13.7    | 1.5             | 220                    | 3,960       | 15.4    |
| Die Steel (1.2344, 1.2379) (SKD61, SKD11) Below 255HB         | JC7560 (JC8118) | 150                      | 2                  | 480                    | 6,720       | 21.8    | 2               | 380                    | 6,080       | 24.7    | 2               | 300                    | 5,400       | 28.1    |
|                                                               |                 | 200                      | 2                  | 430                    | 6,020       | 19.6    | 2               | 340                    | 5,440       | 22.1    | 2               | 270                    | 4,860       | 25.3    |
|                                                               |                 | 250                      | 2                  | 380                    | 5,320       | 17.3    | 2               | 300                    | 4,800       | 19.5    | 2               | 240                    | 4,320       | 22.5    |
|                                                               |                 | 300                      | 1.5                | 350                    | 4,900       | 11.9    | 2               | 280                    | 4,480       | 18.2    | 2               | 220                    | 3,960       | 20.6    |
|                                                               |                 | 350                      | 1.5                | 350                    | 4,900       | 11.9    | 1.5             | 280                    | 4,480       | 13.7    | 2               | 220                    | 3,960       | 20.6    |
|                                                               |                 | 400                      | 1                  | 350                    | 4,900       | 8.0     | 1.5             | 280                    | 4,480       | 13.7    | 1.5             | 220                    | 3,960       | 15.4    |
| Mold Steel (1.2311, P20) (HPM7, PX5, P20) 30-35HRC            | JC7560 (JC8118) | 150                      | 2                  | 410                    | 5,740       | 21.3    | 2               | 330                    | 5,280       | 24.5    | 2               | 260                    | 4,680       | 27.8    |
|                                                               |                 | 200                      | 2                  | 370                    | 5,180       | 19.2    | 2               | 300                    | 4,800       | 22.3    | 2               | 230                    | 4,140       | 24.6    |
|                                                               |                 | 250                      | 2                  | 330                    | 4,620       | 17.2    | 2               | 260                    | 4,160       | 19.3    | 2               | 210                    | 3,780       | 22.5    |
|                                                               |                 | 300                      | 1.5                | 280                    | 3,920       | 10.9    | 2               | 230                    | 3,680       | 17.1    | 2               | 180                    | 3,240       | 19.3    |
|                                                               |                 | 350                      | 1.5                | 280                    | 3,920       | 10.9    | 1.5             | 230                    | 3,680       | 12.8    | 2               | 180                    | 3,240       | 19.3    |
|                                                               |                 | 400                      | 1                  | 280                    | 3,920       | 7.3     | 1.5             | 230                    | 3,680       | 12.8    | 1.5             | 180                    | 3,240       | 14.4    |
| Mold Steel (1.2311, P20) (NAK80, HPM1, P21) 38-43HRC          | JC8118          | 150                      | 1.5                | 350                    | 2,450       | 11.9    | 1.5             | 280                    | 2,240       | 13.7    | 1.5             | 220                    | 1,980       | 15.4    |
|                                                               |                 | 200                      | 1.5                | 310                    | 3,170       | 10.6    | 1.5             | 250                    | 2,000       | 12.2    | 1.5             | 200                    | 1,800       | 14      |
|                                                               |                 | 250                      | 1.2                | 280                    | 1,960       | 7.6     | 1.5             | 220                    | 1,760       | 10.7    | 1.5             | 180                    | 1,620       | 12.6    |
|                                                               |                 | 300                      | 1                  | 250                    | 1,750       | 5.7     | 1.5             | 200                    | 1,600       | 9.8     | 1.5             | 150                    | 1,350       | 10.5    |
|                                                               |                 | 350                      | 1                  | 250                    | 1,750       | 5.7     | 1               | 200                    | 1,600       | 6.5     | 1.5             | 150                    | 1,350       | 10.5    |
|                                                               |                 | 400                      | 0.7                | 250                    | 1,750       | 4.0     | 1               | 200                    | 1,600       | 6.5     | 1               | 150                    | 1,350       | 7       |
| Mold Steel (1.2311, P20) (SKD61, DAC, DHA) 42-52HRC           | JC8118          | 150                      | 1.5                | 250                    | 1,750       | 11.4    | 1.5             | 200                    | 1,600       | 13.0    | 1.5             | 160                    | 1,440       | 15      |
|                                                               |                 | 200                      | 1.5                | 230                    | 1,610       | 10.5    | 1.5             | 180                    | 1,440       | 11.7    | 1.5             | 150                    | 1,350       | 14      |
|                                                               |                 | 250                      | 1.2                | 200                    | 1,400       | 7.3     | 1.5             | 160                    | 1,280       | 10.4    | 1.5             | 130                    | 1,170       | 12.2    |
|                                                               |                 | 300                      | 1                  | 180                    | 1,260       | 5.5     | 1.5             | 140                    | 1,120       | 9.1     | 1.5             | 110                    | 990         | 10.3    |
|                                                               |                 | 350                      | 1                  | 180                    | 1,260       | 5.5     | 1               | 140                    | 1,120       | 6.1     | 1.5             | 110                    | 990         | 10.3    |
|                                                               |                 | 400                      | 0.7                | 180                    | 1,260       | 3.8     | 1               | 140                    | 1,120       | 6.1     | 1               | 110                    | 990         | 6.9     |
| Gray Cast Iron (GG25, GG30) (FC250, FC300) Below 300HB        | JC7560 (JC8118) | 150                      | 2.5                | 480                    | 6,720       | 21.8    | 2.5             | 380                    | 6,080       | 24.7    | 2.5             | 300                    | 5,400       | 28.1    |
|                                                               |                 | 200                      | 2.5                | 430                    | 5,020       | 19.6    | 2.5             | 340                    | 5,440       | 22.1    | 2.5             | 270                    | 4,860       | 25.3    |
|                                                               |                 | 250                      | 2                  | 380                    | 5,320       | 13.8    | 2.5             | 300                    | 4,800       | 19.5    | 2.5             | 240                    | 4,320       | 22.5    |
|                                                               |                 | 300                      | 2                  | 350                    | 4,900       | 12.7    | 2               | 280                    | 4,480       | 14.6    | 2.5             | 220                    | 3,960       | 20.6    |
|                                                               |                 | 350                      | 1.5                | 350                    | 4,900       | 9.6     | 1.5             | 280                    | 4,480       | 10.9    | 2               | 220                    | 3,960       | 16.5    |
|                                                               |                 | 400                      | 1                  | 350                    | 4,900       | 6.4     | 1.5             | 280                    | 4,480       | 10.9    | 1.5             | 220                    | 3,960       | 12.4    |
| Nodular Cast Iron (GGG50, GGG70) (FCD500, FCD700) Below 300HB | JC8118          | 150                      | 2.5                | 480                    | 6,720       | 21.8    | 2.5             | 380                    | 6,080       | 24.7    | 2.5             | 300                    | 5,400       | 28.1    |
|                                                               |                 | 200                      | 2.5                | 430                    | 6,020       | 19.6    | 2.5             | 340                    | 5,440       | 22.1    | 2.5             | 270                    | 4,860       | 25.3    |
|                                                               |                 | 250                      | 2                  | 380                    | 5,320       | 13.8    | 2.5             | 300                    | 4,800       | 19.5    | 2.5             | 240                    | 4,320       | 22.5    |
|                                                               |                 | 300                      | 2                  | 350                    | 4,900       | 12.7    | 2               | 280                    | 4,480       | 14.6    | 2.5             | 220                    | 3,960       | 20.6    |
|                                                               |                 | 350                      | 1.5                | 350                    | 4,900       | 9.6     | 1.5             | 280                    | 4,480       | 10.9    | 2               | 220                    | 3,960       | 16.5    |
|                                                               |                 | 400                      | 1                  | 350                    | 4,900       | 6.4     | 1.5             | 280                    | 4,480       | 10.9    | 1.5             | 220                    | 3,960       | 12.4    |
| Stainless Steel (SUS304) Below 250HB                          | JC7560          | 150                      | 2                  | 480                    | 5,040       | 26.2    | 2               | 380                    | 4,560       | 29.6    | 2               | 300                    | 4,050       | 33.7    |
|                                                               |                 | 200                      | 2                  | 430                    | 4,515       | 23.5    | 2               | 340                    | 4,080       | 26.5    | 2               | 270                    | 3,645       | 30.3    |
|                                                               |                 | 250                      | 2                  | 380                    | 3,990       | 20.7    | 2               | 300                    | 3,600       | 23.4    | 2               | 240                    | 3,240       | 27      |
|                                                               |                 | 300                      | 1.5                | 350                    | 3,678       | 14.3    | 2               | 280                    | 3,360       | 21.8    | 2               | 220                    | 3,970       | 24.7    |
|                                                               |                 | 350                      | 1.5                | 350                    | 3,675       | 14.3    | 1.5             | 280                    | 3,360       | 16.4    | 2               | 220                    | 2,970       | 24.7    |
|                                                               |                 | 400                      | 1                  | 350                    | 3,675       | 9.6     | 1.5             | 280                    | 3,360       | 16.4    | 1.5             | 220                    | 2,970       | 18.5    |

AP: Depth of cut, N: Spindle speed, Vf: Speed feed, Pc: Net power consumption

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**DIJET, INC.**  
 45807 Helm Street, Plymouth, MI 48170  
 Phone: 1-800-743-4538 Fax: 1-734-454-9395  
[www.dijetusa.com](http://www.dijetusa.com)

