

| Series<br>301M<br>Metric |                                                                                     | Hardness<br>BRINELL | Vc<br>(m/min) | Diameter (D <sub>1</sub> )<br>(mm) |       |       |       |       |       |       |
|--------------------------|-------------------------------------------------------------------------------------|---------------------|---------------|------------------------------------|-------|-------|-------|-------|-------|-------|
|                          |                                                                                     |                     |               | 0.5                                | 1     | 1.6   | 2.5   | 4     | 5     |       |
| P                        | CARBON STEELS<br>1018, 1040, 1080, 1090,<br>10L50, 1140, 1212, 12L15,<br>1525, 1536 | ≤ 200               | 84            | RPM                                | 53318 | 26659 | 16662 | 10664 | 6665  | 5332  |
|                          |                                                                                     |                     | (67-101)      | Fr                                 | 0.005 | 0.011 | 0.014 | 0.024 | 0.038 | 0.048 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 267   | 293   | 233   | 256   | 253   | 256   |
|                          |                                                                                     | ≥ 200<br>≤ 300      | 46            | RPM                                | 29082 | 14541 | 9088  | 5816  | 3635  | 2908  |
|                          |                                                                                     |                     | (37-55)       | Fr                                 | 0.005 | 0.009 | 0.014 | 0.022 | 0.034 | 0.043 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 145   | 131   | 127   | 128   | 124   | 125   |
|                          |                                                                                     | ≥ 300<br>≤ 420      | 32            | RPM                                | 20358 | 10179 | 6362  | 4072  | 2545  | 2036  |
|                          |                                                                                     |                     | (26-38)       | Fz                                 | 0.003 | 0.006 | 0.010 | 0.014 | 0.023 | 0.030 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 61    | 61    | 64    | 57    | 59    | 61    |
| P                        | ALLOY STEELS<br>4140, 4150, 4320, 5120,<br>5150, 8630, 86L20, 50100                 | ≤ 270               | 70            | RPM                                | 44593 | 22297 | 13935 | 8919  | 5574  | 4459  |
|                          |                                                                                     |                     | (56-84)       | Fz                                 | 0.005 | 0.009 | 0.012 | 0.020 | 0.032 | 0.041 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 223   | 201   | 167   | 178   | 178   | 183   |
|                          |                                                                                     | ≥ 275<br>≤ 375      | 43            | RPM                                | 27144 | 13572 | 8482  | 5429  | 3393  | 2714  |
|                          |                                                                                     |                     | (34-51)       | Fr                                 | 0.005 | 0.009 | 0.012 | 0.020 | 0.032 | 0.041 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 136   | 122   | 102   | 109   | 109   | 111   |
|                          |                                                                                     | ≥ 375<br>≤ 450      | 27            | RPM                                | 17449 | 8725  | 5453  | 3490  | 2181  | 1745  |
|                          |                                                                                     |                     | (22-33)       | Fr                                 | 0.003 | 0.006 | 0.008 | 0.014 | 0.021 | 0.027 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 52    | 52    | 44    | 49    | 46    | 47    |
| P                        | TOOL STEELS<br>A2, D2, H13, L2, M2,<br>P20, S7, T15, W2                             | ≤ 250               | 26            | RPM                                | 16480 | 8240  | 5150  | 3296  | 2060  | 1648  |
|                          |                                                                                     |                     | (21-31)       | Fr                                 | 0.003 | 0.006 | 0.008 | 0.014 | 0.021 | 0.027 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 49    | 49    | 41    | 46    | 43    | 44    |
|                          |                                                                                     | ≥ 250<br>≤ 330      | 15            | RPM                                | 9694  | 4847  | 3029  | 1939  | 1212  | 969   |
|                          |                                                                                     |                     | (12-18)       | Fr                                 | 0.002 | 0.005 | 0.007 | 0.010 | 0.017 | 0.021 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 19    | 24    | 21    | 19    | 21    | 20    |
|                          |                                                                                     | ≥ 330<br>≤ 450      | 12            | RPM                                | 7755  | 3878  | 2424  | 1551  | 969   | 776   |
|                          |                                                                                     |                     | (10-15)       | Fr                                 | 0.002 | 0.004 | 0.006 | 0.008 | 0.013 | 0.016 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 16    | 16    | 15    | 12    | 13    | 12    |
| K                        | CAST IRONS<br>Gray, Malleable, Ductile                                              | ≤ 200               | 76            | RPM                                | 48471 | 24235 | 15147 | 9694  | 6059  | 4847  |
|                          |                                                                                     |                     | (61-91)       | Fr                                 | 0.007 | 0.011 | 0.018 | 0.028 | 0.045 | 0.057 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 339   | 267   | 273   | 271   | 273   | 276   |
|                          |                                                                                     | ≥ 200<br>≤ 330      | 56            | RPM                                | 35868 | 17934 | 11209 | 7174  | 4484  | 3587  |
|                          |                                                                                     |                     | (45-68)       | Fr                                 | 0.007 | 0.011 | 0.018 | 0.028 | 0.045 | 0.057 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 251   | 197   | 202   | 201   | 202   | 204   |
| M                        | STAINLESS STEELS<br>(FREE MACHINING)<br>303, 416, 420F, 430F 440F                   | < 250               | 47            | RPM                                | 30052 | 15026 | 9391  | 6010  | 3756  | 3005  |
|                          |                                                                                     |                     | (38-57)       | Fr                                 | 0.003 | 0.004 | 0.008 | 0.012 | 0.019 | 0.025 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 90    | 60    | 75    | 72    | 71    | 75    |
|                          |                                                                                     | ≥ 250<br>≤ 330      | 34            | RPM                                | 21327 | 10664 | 6665  | 4265  | 2666  | 2133  |
|                          |                                                                                     |                     | (27-40)       | Fr                                 | 0.002 | 0.004 | 0.008 | 0.012 | 0.019 | 0.023 |
|                          |                                                                                     |                     |               | Feed (mm/min)                      | 43    | 43    | 53    | 51    | 51    | 49    |

continued on next page

