# CXDSS / CXDSR Series Recommended Cutting Data - **Inch**
## 3xD & 5xD, Solid Drilling

| Material Group | ISO | Hardness | Vc - SFM | | | Drill Diameter (inch) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1/8 | 3/16 | 1/4 | 5/16 |
| | | | Low | Mid | High | Feed (in/rev) | | | |
| Low Carbon Steels 12L14, 1018, A36 | P | ≤ 180 HB | 280 | **350** | 420 | .0031 - .0044 | .0047 - .0066 | .0063 - .0088 | .0078 - .0109 |
| Med Carbon / Alloy Steels 1045, 1050, 4140, 4340 | P | ≤ 38 HRC | 230 | **290** | 350 | .0031 - .0044 | .0047 - .0066 | .0063 - .0088 | .0078 - .0109 |
| Die / Tool Steels A2, D2, H13, P20 | P | ≤ 45 HRC | 140 | **180** | 220 | .0019 - .0031 | .0028 - .0047 | .0038 - .0063 | .0047 - .0078 |
| Ferritic / Martensitic Stainless 400 Series | M | ≤ 28 HRC | 200 | **250** | 300 | .0025 - .0038 | .0038 - .0056 | .0050 - .0075 | .0063 - .0094 |
| Austenitic Stainless 300 Series | M | ≤ 28 HRC | 100 | **120** | 140 | .0025 - .0038 | .0038 - .0056 | .0050 - .0075 | .0063 - .0094 |
| PH Stainless 15-5 PH, 17-4 PH, 17-7 PH | M | ≤ 45 HRC | 90 | **110** | 130 | .0019 - .0031 | .0028 - .0047 | .0038 - .0063 | .0047 - .0078 |
| High Temp Alloys Inconel, Hastelloy, Monel | S | ≤ 42 HRC | 50 | **60** | 70 | .0013 - .0019 | .0019 - .0028 | .0025 - .0038 | .0031 - .0047 |
| Titanium Alloys 6Al-4V | S | ≤ 42 HRC | 80 | **100** | 120 | .0019 - .0025 | .0028 - .0038 | .0038 - .0050 | .0047 - .0063 |
| Cast Iron - Gray | K | ≤ 240 HB | 320 | **400** | 480 | .0038 - .0050 | .0056 - .0075 | .0075 - .0100 | .0094 - .0125 |
| Cast Iron - Ductile & Malleable | K | > 240 HB | 180 | **230** | 280 | .0031 - .0044 | .0047 - .0066 | .0063 - .0088 | .0078 - .0109 |

| Material Group | ISO | Hardness | Vc - SFM | | | Drill Diameter (inch) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 3/8 | 1/2 | 5/8 | 3/4 |
| | | | Low | Mid | High | Feed (in/rev) | | | |
| Low Carbon Steels 12L14, 1018, A36 | P | ≤ 180 HB | 280 | **350** | 420 | .0094 - .0131 | .0125 - .0175 | .0156 - .0219 | .0188 - .0263 |
| Med Carbon / Alloy Steels 1045, 1050, 4140, 4340 | P | ≤ 38 HRC | 230 | **290** | 350 | .0094 - .0131 | .0125 - .0175 | .0156 - .0219 | .0188 - .0263 |
| Die / Tool Steels A2, D2, H13, P20 | P | ≤ 45 HRC | 140 | **180** | 220 | .0056 - .0094 | .0075 - .0125 | .0094 - .0156 | .0113 - .0188 |
| Ferritic / Martensitic Stainless 400 Series | M | ≤ 28 HRC | 200 | **250** | 300 | .0075 - .0113 | .0100 - .0150 | .0125 - .0188 | .0150 - .0225 |
| Austenitic Stainless 300 Series | M | ≤ 28 HRC | 100 | **120** | 140 | .0075 - .0113 | .0100 - .0150 | .0125 - .0188 | .0150 - .0225 |
| PH Stainless 15-5 PH, 17-4 PH, 17-7 PH | M | ≤ 45 HRC | 90 | **110** | 130 | .0056 - .0094 | .0075 - .0125 | .0094 - .0156 | .0113 - .0188 |
| High Temp Alloys Inconel, Hastelloy, Monel | S | ≤ 42 HRC | 50 | **60** | 70 | .0038 - .0056 | .0050 - .0075 | .0063 - .0094 | .0075 - .0113 |
| Titanium Alloys 6Al-4V | S | ≤ 42 HRC | 80 | **100** | 120 | .0056 - .0075 | .0075 - .0100 | .0094 - .0125 | .0113 - .0150 |
| Cast Iron - Gray | K | ≤ 240 HB | 320 | **400** | 480 | .0113 - .0150 | .0150 -.0200 | .0188 - .0250 | .0225 - .0300 |
| Cast Iron - Ductile & Malleable | K | > 240 HB | 180 | **230** | 280 | .0094 - .0131 | .0125 - .0175 | .0156 - .0219 | .0188 - .0263 |



Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

# CXDSS / CXDSR Series Recommended Cutting Data - **Metric**
## 3xD & 5xD, Solid Drilling

| Material Group | ISO | Hardness | Vc - M/Min | | | Drill Diameter (mm) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 3 | 5 | 6 | 8 |
| | | | Low | Mid | High | Feed (mm/rev) | | | |
| Low Carbon Steels 12L14, 1018, A36 | P | ≤ 180 HB | 85 | **105** | 125 | 0.075 - 0.105 | 0.125 - 0.175 | 0.150 - 0.210 | 0.200 - 0.280 |
| Med Carbon / Alloy Steels 1045, 1050, 4140, 4340 | P | ≤ 38 HRC | 70 | **90** | 110 | 0.075 - 0.105 | 0.125 - 0.175 | 0.150 - 0.210 | 0.200 - 0.280 |
| Die / Tool Steels A2, D2, H13, P20 | P | ≤ 45 HRC | 45 | **55** | 65 | 0.045 - 0.075 | 0.075 - 0.125 | 0.090 - 0.150 | 0.120 - 0.200 |
| Ferritic / Martensitic Stainless 400 Series | M | ≤ 28 HRC | 60 | **75** | 90 | 0.060 - 0.090 | 0.100 - 0.150 | 0.120 - 0.180 | 0.160 - 0.240 |
| Austenitic Stainless 300 Series | M | ≤ 28 HRC | 30 | **35** | 40 | 0.060 - 0.090 | 0.100 - 0.150 | 0.120 - 0.180 | 0.160 - 0.240 |
| PH Stainless 15-5 PH, 17-4 PH, 17-7 PH | M | ≤ 45 HRC | 30 | **35** | 40 | 0.045 - 0.075 | .0.075 - 0.125 | 0.090 - 0.150 | 0.120 - 0.200 |
| High Temp Alloys Inconel, Hastelloy, Monel | S | ≤ 42 HRC | 15 | **20** | 25 | 0.030 - 0.045 | 0.050 - 0.075 | 0.060 - 0.090 | 0.080 - 0.120 |
| Titanium Alloys 6Al-4V | S | ≤ 42 HRC | 25 | **30** | 35 | 0.045 - 0.060 | 0.075 - 0.100 | 0.090 - 0.120 | 0.120 - 0.160 |
| Cast Iron - Gray | K | ≤ 240 HB | 95 | **120** | 145 | 0.090 - 0.120 | 0.150 - 0.200 | 0.180 - 0.240 | 0.240 - 0.320 |
| Cast Iron - Ductile & Malleable | K | > 240 HB | 55 | **70** | 85 | 0.075 - 0.105 | 0.125 - 0.175 | 0.150 - 0.210 | 0.200 - 0.280 |

| Material Group | ISO | Hardness | Vc - M/Min | | | Drill Diameter (mm) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 10 | 12 | 16 | 20 |
| | | | Low | Mid | High | Feed (mm/rev) | | | |
| Low Carbon Steels 12L14, 1018, A36 | P | ≤ 180 HB | 85 | **105** | 125 | 0.250 - 0.350 | 0.300 - 0.420 | 0.400 - 0.560 | 0.500 - 0.700 |
| Med Carbon / Alloy Steels 1045, 1050, 4140, 4340 | P | ≤ 38 HRC | 70 | **90** | 110 | 0.250 - 0.350 | 0.300 - 0.420 | 0.400 - 0.560 | 0.500 - 0.700 |
| Die / Tool Steels A2, D2, H13, P20 | P | ≤ 45 HRC | 45 | **55** | 65 | 0.150 - 0.250 | 0.180 - 0.300 | 0.240 - 0.400 | 0.300 - 0.500 |
| Ferritic / Martensitic Stainless 400 Series | M | ≤ 28 HRC | 60 | **75** | 90 | 0.200 - 0.300 | 0.240 - 0.360 | 0.320 - 0.480 | 0.400 - 0.600 |
| Austenitic Stainless 300 Series | M | ≤ 28 HRC | 30 | **35** | 40 | 0.200 - 0.300 | 0.240 - 0.360 | 0.320 - 0.480 | 0.400 - 0.600 |
| PH Stainless 15-5 PH, 17-4 PH, 17-7 PH | M | ≤ 45 HRC | 30 | **35** | 40 | 0.150 - 0.250 | 0.180 - 0.300 | 0.240 - 0.400 | 0.300 - 0.500 |
| High Temp Alloys Inconel, Hastelloy, Monel | S | ≤ 42 HRC | 15 | **20** | 25 | 0.100 - 0.150 | 0.120 - 0.180 | 0.160 - 0.240 | 0.200 - 0.300 |
| Titanium Alloys 6Al-4V | S | ≤ 42 HRC | 25 | **30** | 35 | 0.150 - 0.200 | 0.180 - 0.240 | 0.240 - 0.320 | 0.300 - 0.400 |
| Cast Iron - Gray | K | ≤ 240 HB | 95 | **120** | 145 | 0.300 - 0.400 | 0.360 - 0.480 | 0.480 - 0.640 | 0.600 - 0.800 |
| Cast Iron - Ductile & Malleable | K | > 240 HB | 55 | **70** | 85 | 0.250 - 0.350 | 0.300 - 0.420 | 0.400 - 0.560 | 0.500 - 0.700 |



Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.