

SPEED & FEED GUIDE



Optimum Performance

Series 1040, 1043

HGW7

| Material | Axial ↓ | Radial → | SFM | 1/8 | | 1/4 | | 3/8 | | 1/2 | | 5/8 | | 3/4 | | |
|----------|---|-------------|----------|------------------|-------|-----|-------|-----|------|-----|------|-----|------|-----|------|-----|
| | | | | RPM | IPM | RPM | IPM | RPM | IPM | RPM | IPM | RPM | IPM | RPM | IPM | |
| P | Carbon Steel 10XX, 11XX, 12XX, 13XX | 1 x D | 1 x D | 220 | 6723 | 24 | 3362 | 24 | 2241 | 28 | 1681 | 30 | 1345 | 28 | 1121 | 26 |
| | | 1.25 x D | .3 x D | 264 | 8068 | 34 | 4034 | 34 | 2689 | 41 | 2017 | 43 | 1614 | 41 | 1345 | 38 |
| | | 1.5 X D | .1 x D | 343 | 10488 | 73 | 5244 | 73 | 3496 | 88 | 2622 | 93 | 2098 | 89 | 1748 | 81 |
| | Alloy Steel 4140, 8620 | 1 x D | 1 x D | 180 | 5501 | 37 | 2750 | 27 | 1834 | 22 | 1375 | 23 | 1100 | 22 | 917 | 20 |
| | | 1.25 x D | .3 x D | 225 | 6876 | 55 | 3438 | 41 | 2292 | 33 | 1719 | 35 | 1375 | 33 | 1146 | 30 |
| | | 1.5 X D | .1 x D | 270 | 8251 | 110 | 4126 | 82 | 2750 | 66 | 2063 | 69 | 1650 | 66 | 1375 | 61 |
| | Tool Steel A2 ,A3, D2, H11, H13 | 1 x D | .5 x D | 180 | 5501 | 18 | 2750 | 18 | 1834 | 22 | 1375 | 23 | 1100 | 22 | 917 | 20 |
| | | 1.25 x D | .3 x D | 225 | 6876 | 27 | 3438 | 27 | 2292 | 33 | 1719 | 35 | 1375 | 33 | 1146 | 30 |
| | | 1.5 X D | .1 x D | 270 | 8251 | 55 | 4126 | 55 | 2750 | 66 | 2063 | 69 | 1650 | 66 | 1375 | 61 |
| M | SS 300 & 400 Series 303, 304, 316, 420, 417 | .75 x D | 1 x D | 140 | 4278 | 12 | 2139 | 12 | 1426 | 15 | 1070 | 15 | 856 | 15 | 713 | 14 |
| | | 1.25 x D | .3 x D | 185 | 5654 | 19 | 2827 | 19 | 1885 | 23 | 1413 | 24 | 1131 | 23 | 942 | 21 |
| | | 1.5 x D | .1 x D | 230 | 7039 | 40 | 3519 | 40 | 2346 | 48 | 1760 | 51 | 1408 | 49 | 1173 | 44 |
| | Precipitation SS 15-5, 16-6, 17-4, 17-6 | 2 X D | 0.07 X D | 393 - 800 | 12000 | 70 | 10696 | 107 | 7131 | 107 | 5348 | 107 | 4270 | 107 | 4075 | 107 |
| | | 1.5 X D | 0.15 X D | 393 - 800 | 12000 | 80 | 10696 | 122 | 7131 | 122 | 5348 | 122 | 4270 | 122 | 4075 | 122 |
| | | 1.0 X D | 0.25 X D | 393 - 800 | 12000 | 96 | 10696 | 146 | 7131 | 146 | 5348 | 146 | 4270 | 146 | 4075 | 146 |
| S | High Temp Alloys Inconel 718, Hastalloy, A286, Waspalloy, CoCr | 2 X D | 0.07 X D | 93 - 125 | 3820 | 10 | 1910 | 8 | 1273 | 5 | 955 | 8 | 764 | 8 | 477 | 6 |
| | | 1.5 X D | 0.15 X D | 84 - 112 | 3438 | 8 | 1719 | 6 | 1146 | 4 | 860 | 6 | 688 | 6 | 429 | 5 |
| | | 1.0 X D | 0.25 X D | 70-90 | 2865 | 6 | 1433 | 5 | 955 | 3 | 716 | 5 | 573 | 5 | 358 | 4 |

ULTIMATE PERFORMANCE

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Series 1040 HGW7 | 7FL | Square & Radius

| Diameter | Shank Dia. | LOC | OAL | Radius | EDP |
|----------|------------|-------|-------|--------|--------|
| 1/8 | 1/8 | 1/4 | 1-1/2 | - | 122664 |
| 1/8 | 1/8 | 1/4 | 1-1/2 | 0.005 | 122612 |
| 1/8 | 1/8 | 1/4 | 1-1/2 | 0.015 | 122613 |
| 1/8 | 1/8 | 1/4 | 1-1/2 | 0.030 | 122614 |
| 1/8 | 1/8 | 1/2 | 2 | - | 122876 |
| 1/8 | 1/8 | 1/2 | 2 | 0.005 | 122798 |
| 1/8 | 1/8 | 1/2 | 2 | 0.015 | 122799 |
| 1/8 | 1/8 | 1/2 | 2 | 0.030 | 122800 |
| 3/16 | 3/16 | 5/16 | 2 | - | 122665 |
| 3/16 | 3/16 | 5/16 | 2 | 0.005 | 122615 |
| 3/16 | 3/16 | 5/16 | 2 | 0.015 | 122616 |
| 3/16 | 3/16 | 5/16 | 2 | 0.030 | 122617 |
| 3/16 | 3/16 | 5/8 | 2 | - | 122877 |
| 3/16 | 3/16 | 5/8 | 2 | 0.005 | 122801 |
| 3/16 | 3/16 | 5/8 | 2 | 0.015 | 122802 |
| 3/16 | 3/16 | 5/8 | 2 | 0.030 | 122803 |
| 3/16 | 3/16 | 3/4 | 2 | - | 122930 |
| 3/16 | 3/16 | 3/4 | 2 | 0.005 | 122885 |
| 3/16 | 3/16 | 3/4 | 2 | 0.015 | 122886 |
| 3/16 | 3/16 | 3/4 | 2 | 0.030 | 122887 |
| 3/16 | 3/16 | 3/4 | 2 | 0.060 | 122888 |
| 1/4 | 1/4 | 5/16 | 2 | - | 122666 |
| 1/4 | 1/4 | 5/16 | 2 | 0.005 | 122618 |
| 1/4 | 1/4 | 5/16 | 2 | 0.010 | 122619 |
| 1/4 | 1/4 | 5/16 | 2 | 0.015 | 122620 |
| 1/4 | 1/4 | 5/16 | 2 | 0.030 | 122621 |
| 1/4 | 1/4 | 5/16 | 2 | 0.060 | 122622 |
| 1/4 | 1/4 | 1/2 | 2-1/2 | - | 122667 |
| 1/4 | 1/4 | 1/2 | 2-1/2 | 0.005 | 122623 |
| 1/4 | 1/4 | 1/2 | 2-1/2 | 0.010 | 122624 |
| 1/4 | 1/4 | 1/2 | 2-1/2 | 0.015 | 122625 |
| 1/4 | 1/4 | 1/2 | 2-1/2 | 0.030 | 122626 |
| 1/4 | 1/4 | 1/2 | 2-1/2 | 0.060 | 122627 |
| 1/4 | 1/4 | 3/4 | 2-1/2 | - | 122878 |
| 1/4 | 1/4 | 3/4 | 2-1/2 | 0.005 | 122804 |
| 1/4 | 1/4 | 3/4 | 2-1/2 | 0.010 | 122805 |
| 1/4 | 1/4 | 3/4 | 2-1/2 | 0.015 | 122806 |
| 1/4 | 1/4 | 3/4 | 2-1/2 | 0.030 | 122807 |
| 1/4 | 1/4 | 3/4 | 2-1/2 | 0.060 | 122808 |
| 1/4 | 1/4 | 1-1/8 | 3 | - | 122931 |



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Series 1040 HGW7 | 7FL | Square & Radius

| Diameter | Shank Dia. | LOC | OAL | Radius | EDP |
|----------|------------|-------|-------|--------|--------|
| 1/4 | 1/4 | 1-1/8 | 3 | 0.005 | 122889 |
| 1/4 | 1/4 | 1-1/8 | 3 | 0.010 | 122890 |
| 1/4 | 1/4 | 1-1/8 | 3 | 0.015 | 122891 |
| 1/4 | 1/4 | 1-1/8 | 3 | 0.030 | 122892 |
| 1/4 | 1/4 | 1-1/8 | 3 | 0.060 | 122893 |
| 5/16 | 5/16 | 1/2 | 2 | - | 122668 |
| 5/16 | 5/16 | 1/2 | 2 | 0.010 | 122628 |
| 5/16 | 5/16 | 1/2 | 2 | 0.015 | 122629 |
| 5/16 | 5/16 | 1/2 | 2 | 0.030 | 122630 |
| 5/16 | 5/16 | 1/2 | 2 | 0.060 | 122631 |
| 5/16 | 5/16 | 13/16 | 2-1/2 | - | 122879 |
| 5/16 | 5/16 | 13/16 | 2-1/2 | 0.010 | 122809 |
| 5/16 | 5/16 | 13/16 | 2-1/2 | 0.015 | 122810 |
| 5/16 | 5/16 | 13/16 | 2-1/2 | 0.030 | 122811 |
| 5/16 | 5/16 | 13/16 | 2-1/2 | 0.060 | 122812 |
| 5/16 | 5/16 | 1-1/8 | 3 | - | 122932 |
| 5/16 | 5/16 | 1-1/8 | 3 | 0.010 | 122894 |
| 5/16 | 5/16 | 1-1/8 | 3 | 0.015 | 122895 |
| 5/16 | 5/16 | 1-1/8 | 3 | 0.030 | 122896 |
| 5/16 | 5/16 | 1-1/8 | 3 | 0.060 | 122897 |
| 3/8 | 3/8 | 7/16 | 2 | - | 122670 |
| 3/8 | 3/8 | 7/16 | 2 | 0.015 | 122632 |
| 3/8 | 3/8 | 7/16 | 2 | 0.030 | 122633 |
| 3/8 | 3/8 | 7/16 | 2 | 0.060 | 122634 |
| 3/8 | 3/8 | 5/8 | 2 | - | 122669 |
| 3/8 | 3/8 | 5/8 | 2 | 0.015 | 122635 |
| 3/8 | 3/8 | 5/8 | 2 | 0.030 | 122636 |
| 3/8 | 3/8 | 5/8 | 2 | 0.060 | 122637 |
| 3/8 | 3/8 | 7/8 | 2-1/2 | - | 122880 |
| 3/8 | 3/8 | 7/8 | 2-1/2 | 0.010 | 122813 |
| 3/8 | 3/8 | 7/8 | 2-1/2 | 0.015 | 122814 |
| 3/8 | 3/8 | 7/8 | 2-1/2 | 0.030 | 122815 |
| 3/8 | 3/8 | 7/8 | 2-1/2 | 0.060 | 122816 |
| 3/8 | 3/8 | 1-1/8 | 3 | - | 122933 |
| 3/8 | 3/8 | 1-1/8 | 3 | 0.010 | 122898 |
| 3/8 | 3/8 | 1-1/8 | 3 | 0.015 | 122899 |
| 3/8 | 3/8 | 1-1/8 | 3 | 0.030 | 122900 |
| 3/8 | 3/8 | 1-1/8 | 3 | 0.060 | 122901 |
| 3/8 | 3/8 | 1-1/8 | 3 | 0.090 | 122902 |
| 3/8 | 3/8 | 1-1/8 | 3 | 0.120 | 122903 |



More About the Series 1040

Ideal for Tool Steels and Hard Alloys

Variable helix/variable index design reduces vibration and enables higher metal removal rates

Special corner radii available upon request



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Series 1040 HGW7 | 7FL | Square & Radius

| Diameter | Shank Dia. | LOC | OAL | Radius | EDP |
|----------|------------|-------|-------|--------|--------|
| 1/2 | 1/2 | 5/8 | 2-1/2 | - | 122671 |
| 1/2 | 1/2 | 5/8 | 2-1/2 | 0.015 | 122638 |
| 1/2 | 1/2 | 5/8 | 2-1/2 | 0.030 | 122639 |
| 1/2 | 1/2 | 5/8 | 2-1/2 | 0.060 | 122640 |
| 1/2 | 1/2 | 5/8 | 2-1/2 | 0.090 | 121901 |
| 1/2 | 1/2 | 5/8 | 2-1/2 | 0.120 | 122641 |
| 1/2 | 1/2 | 1 | 3 | - | 121242 |
| 1/2 | 1/2 | 1 | 3 | 0.015 | 124462 |
| 1/2 | 1/2 | 1 | 3 | 0.020 | 122823 |
| 1/2 | 1/2 | 1 | 3 | 0.030 | 122824 |
| 1/2 | 1/2 | 1 | 3 | 0.060 | 122825 |
| 1/2 | 1/2 | 1 | 3 | 0.090 | 122826 |
| 1/2 | 1/2 | 1 | 3 | 0.120 | 122827 |
| 1/2 | 1/2 | 1-1/4 | 3 | - | 122268 |
| 1/2 | 1/2 | 1-1/4 | 3 | 0.015 | 122828 |
| 1/2 | 1/2 | 1-1/4 | 3 | 0.030 | 122829 |
| 1/2 | 1/2 | 1-1/4 | 3 | 0.060 | 122830 |
| 1/2 | 1/2 | 1-1/4 | 3 | 0.090 | 122831 |
| 1/2 | 1/2 | 1-1/4 | 3 | 0.120 | 122832 |
| 1/2 | 1/2 | 1-1/2 | 3 | - | 122881 |
| 1/2 | 1/2 | 1-1/2 | 3 | 0.015 | 122833 |
| 1/2 | 1/2 | 1-1/2 | 3 | 0.030 | 122835 |
| 1/2 | 1/2 | 1-1/2 | 3 | 0.060 | 122836 |
| 1/2 | 1/2 | 1-1/2 | 3 | 0.090 | 122837 |
| 1/2 | 1/2 | 1-1/2 | 3 | 0.120 | 122838 |
| 1/2 | 1/2 | 1-3/4 | 4 | - | 122934 |
| 1/2 | 1/2 | 1-3/4 | 4 | 0.015 | 122904 |
| 1/2 | 1/2 | 1-3/4 | 4 | 0.030 | 122905 |
| 1/2 | 1/2 | 1-3/4 | 4 | 0.060 | 122906 |
| 1/2 | 1/2 | 1-3/4 | 4 | 0.090 | 122907 |
| 1/2 | 1/2 | 1-3/4 | 4 | 0.120 | 122908 |
| 1/2 | 1/2 | 2 | 4 | - | 122935 |
| 1/2 | 1/2 | 2 | 4 | 0.015 | 122909 |
| 1/2 | 1/2 | 2 | 4 | 0.030 | 122910 |
| 1/2 | 1/2 | 2 | 4 | 0.060 | 122911 |
| 1/2 | 1/2 | 2 | 4 | 0.090 | 122912 |
| 1/2 | 1/2 | 2 | 4 | 0.120 | 122913 |
| 5/8 | 5/8 | 3/4 | 3 | - | 122715 |
| 5/8 | 5/8 | 3/4 | 3 | 0.015 | 122642 |
| 5/8 | 5/8 | 3/4 | 3 | 0.020 | 122643 |



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| Diameter | Shank Dia. | LOC | OAL | Radius | EDP |
|----------|------------|-------|-------|--------|--------|
| 5/8 | 5/8 | 3/4 | 3 | 0.030 | 122644 |
| 5/8 | 5/8 | 3/4 | 3 | 0.060 | 122645 |
| 5/8 | 5/8 | 3/4 | 3 | 0.090 | 122646 |
| 5/8 | 5/8 | 3/4 | 3 | 0.120 | 122647 |
| 5/8 | 5/8 | 1-1/4 | 3-1/2 | - | 122882 |
| 5/8 | 5/8 | 1-1/4 | 3-1/2 | 0.015 | 122839 |
| 5/8 | 5/8 | 1-1/4 | 3-1/2 | 0.020 | 122840 |
| 5/8 | 5/8 | 1-1/4 | 3-1/2 | 0.030 | 122841 |
| 5/8 | 5/8 | 1-1/4 | 3-1/2 | 0.060 | 122851 |
| 5/8 | 5/8 | 1-1/4 | 3-1/2 | 0.090 | 122852 |
| 5/8 | 5/8 | 1-1/4 | 3-1/2 | 0.120 | 122853 |
| 5/8 | 5/8 | 2-1/4 | 5 | - | 122936 |
| 5/8 | 5/8 | 2-1/4 | 5 | 0.015 | 122914 |
| 5/8 | 5/8 | 2-1/4 | 5 | 0.020 | 122915 |
| 5/8 | 5/8 | 2-1/4 | 5 | 0.030 | 122916 |
| 5/8 | 5/8 | 2-1/4 | 5 | 0.060 | 122917 |
| 5/8 | 5/8 | 2-1/4 | 5 | 0.090 | 122918 |
| 5/8 | 5/8 | 2-1/4 | 5 | 0.120 | 122919 |
| 3/4 | 3/4 | 7/8 | 3 | - | 122716 |
| 3/4 | 3/4 | 7/8 | 3 | 0.015 | 122648 |
| 3/4 | 3/4 | 7/8 | 3 | 0.030 | 122651 |
| 3/4 | 3/4 | 7/8 | 3 | 0.060 | 122654 |
| 3/4 | 3/4 | 7/8 | 3 | 0.090 | 122655 |
| 3/4 | 3/4 | 7/8 | 3 | 0.120 | 122656 |
| 3/4 | 3/4 | 1-1/2 | 4 | - | 122883 |
| 3/4 | 3/4 | 1-1/2 | 4 | 0.020 | 122854 |
| 3/4 | 3/4 | 1-1/2 | 4 | 0.030 | 122866 |
| 3/4 | 3/4 | 1-1/2 | 4 | 0.060 | 122867 |
| 3/4 | 3/4 | 1-1/2 | 4 | 0.090 | 122868 |
| 3/4 | 3/4 | 1-1/2 | 4 | 0.120 | 122761 |
| 3/4 | 3/4 | 2-1/4 | 5 | - | 122937 |
| 3/4 | 3/4 | 2-1/4 | 5 | 0.015 | 122920 |
| 3/4 | 3/4 | 2-1/4 | 5 | 0.030 | 122921 |
| 3/4 | 3/4 | 2-1/4 | 5 | 0.060 | 122922 |
| 3/4 | 3/4 | 2-1/4 | 5 | 0.090 | 122923 |
| 3/4 | 3/4 | 2-1/4 | 5 | 0.120 | 122924 |
| 1 | 1 | 1 | 4 | - | 122797 |
| 1 | 1 | 1 | 4 | 0.015 | 122659 |
| 1 | 1 | 1 | 4 | 0.030 | 122660 |
| 1 | 1 | 1 | 4 | 0.060 | 122661 |



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| Diameter | Shank Dia. | LOC | OAL | Radius | EDP |
|----------|------------|-------|-----|--------|--------|
| 1 | 1 | 1 | 4 | 0.090 | 122662 |
| 1 | 1 | 1 | 4 | 0.120 | 122663 |
| 1 | 1 | 1-1/2 | 4 | - | 122884 |
| 1 | 1 | 1-1/2 | 4 | 0.015 | 122869 |
| 1 | 1 | 1-1/2 | 4 | 0.030 | 122871 |
| 1 | 1 | 1-1/2 | 4 | 0.060 | 122872 |
| 1 | 1 | 1-1/2 | 4 | 0.090 | 122873 |
| 1 | 1 | 1-1/2 | 4 | 0.120 | 122875 |
| 1 | 1 | 2-1/4 | 5 | - | 122938 |
| 1 | 1 | 2-1/4 | 5 | 0.015 | 122925 |
| 1 | 1 | 2-1/4 | 5 | 0.030 | 122926 |
| 1 | 1 | 2-1/4 | 5 | 0.060 | 122927 |
| 1 | 1 | 2-1/4 | 5 | 0.090 | 122928 |
| 1 | 1 | 2-1/4 | 5 | 0.120 | 122929 |



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