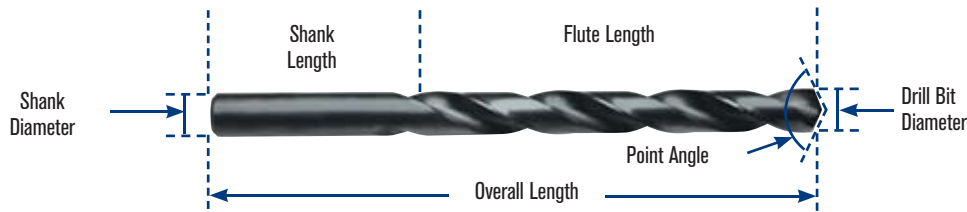


# IRWIN®

## Metal Drilling



## Engineered for Controlled Precision and Speed



**Overall Length:** The length from the point to the end of the drill bit

**Point Angle:** The angle of the cutting edges

**Drill Diameter:** The cutting diameter of the drill bit

**Shank Length:** The end of the drill bit that is secured by the drill

**Flute Length:** The length from the point to the end of the flutes

### Tip Geometry

METAL DRILLING

**118° Conventional Point**

- General use
- Not self-centering
- Best for stationary drills
- Performs better in softer materials vs. hard metal

118° Point Angle

**135° Split Point**

- Self-centering (won't "walk")
- Best for portable drills
- Requires less force than 118°

135° Point Angle

**TURBOMAX® Tip**

- Self-centering (won't "walk")
- Precision-ground to stay sharp longer and drill faster
- Best for portable drills
- Requires less force than 118°

### Drill Bit Selection

Material	Point Angle	Black & Gold (135°)	TURBOMAX® (TURBOMAX)	Heavy-Duty (135°)	Titanium Nitride (TiN) Coated (135°)	Cobalt (135°)	General Purpose (118°)
Wood/Drywall		●	●	●	●	●	●
Sheet Metal		●	●	●	●	●	●
Mild Steel		●	●	●	●	●	●
High Alloy Steels		●	●	●	●	●	●
Stainless Steel		●	●	●	●	●	●
Cast Iron		●	●	●	●	●	●
Aluminum, Brass & Copper		●	●	●	●	●	●
Plastic		●	●	●	●	●	●

Key: ● Recommended ● Acceptable ● Not Recommended

### Cutting Speeds (by Working Material)

Speeds for High Speed Steel Drills	SFM*
Aluminum and its Alloys	200 - 300
Brass and Bronze (Ordinary)	150 - 300
Bronze (High Tensile)	70 - 150
Die Castings (Zinc Base)	300 - 400
Iron-Cast (Soft)	100 - 150
Cast (Medium hard)	70 - 100
Hard Chilled	30 - 40
Malleable	80 - 90
Magnesium and its Alloys	250 - 400
Monel Metal or High-Nickel Steel	30 - 50
Plastics or Similar Materials (Bakelite)	100 - 300
Steel - Mild (.2 carbon to .3 carbon)	80 - 110
Steel (.4 carbon to .5 carbon)	70 - 80
Tool (1.2 carbon)	50 - 60
Forgings	40 - 50
Alloy - 300 to 400 Brinell	20 - 30
High Tensile (Heat-Treated)	
35 to 40 Rockwell C	30 - 40
40 to 45 Rockwell C	25 - 35
45 to 50 Rockwell C	15 - 25
50 to 55 Rockwell C	7 - 15
Stainless Steel	
Free Machining Grades	30 - 80
Work Hardening Grades	15 - 50
Wood	300 - 400

\*Surface Feet per Minute (SFM)

$$\text{RPM} = \frac{\text{SFM} \times 3.82}{\text{Drill Diameter}}$$

### TURBOMAX® Titanium HSS Fractional Jobber Length Drill Bits (Series 3015)



3015012

- Titanium nitride (TiN) coating resists heat and friction, providing up to six times longer life than standard high speed steel bits.
- Self-centering, precision-ground TURBOMAX® feature-point tip eliminates "walking" on flat and curved surfaces, stays sharp longer, and drills faster than standard high speed steel bits.
- 3-flatted shank on 3/16" and above sizes for exceptional grip on chuck.

#### Sets:

Pro Set Cases: 3018008, 3018009, 3018010, 3018011

### Speeds and Feeds for Deep-Hole Drilling

Holes that qualify as "deep-hole drilling" are three or more drill bit diameters deep. When drilling this deep, the speed and feed rate must be adjusted to reduce friction. Friction creates heat, and heat build-up in the drill bit can cause failure and breakage. Lubricants help dissipate heat from the tip of the drill bit, prolonging drill life, and should always be used when deep-hole drilling.

Another technique that should be used when deep-hole drilling is "pecking." Pecking is the process whereby the user drills a short distance, then backs the drill out of the hole before progressing. Pecking reduces the possibility of chips getting lodged in the flute, and allows for the reintroduction of lubricant into the hole.

#### Speed and Feed Reduction (Based on the hole depth)

Hole Depth to Dia. (times drill dia.)	Speed Reduction	Feed Reduction
3	10%	10%
4	20%	10%
5	30%	20%
6	35 - 40%	20%

#### Feed Per Drill Revolution

Drill Dia. Range	Light	Medium	Heavy
1/16" to 1/8"	.0005 - .0010	.0010 - .0020	.0020 - .0040
1/8" to 1/4"	.0010 - .0030	.0030 - .0050	.0040 - .0050
1/4" to 3/8"	.0030 - .0050	.0050 - .0070	.0060 - .0100
3/8" to 1/2"	.0040 - .0060	.0050 - .0080	.0080 - .0120
1/2" to 3/4"	.0050 - .0070	.0070 - .0100	.0090 - .0140
3/4" to 1"	.0070 - .0100	.0090 - .0140	.0140 - .0200

See pages 175-176 for Tap & Drill Selection Chart

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/16"	.0625	7/8"	1-7/8"	3015004*	—
5/64"	.0781	1"	2"	3015005*	—
3/32"	.0938	1-1/8"	2-1/4"	3015006*	—
7/64"	.1094	1-1/2"	2-5/8"	3015007*	—
1/8"	.1250	1-5/8"	2-3/4"	3015008	—
9/64"	.1406	1-3/4"	2-7/8"	3015009	—
5/32"	.1563	2"	3-1/8"	3015010	—
11/64"	.1719	2-1/8"	3-1/4"	3015011	—
3/16"	.1875	2-5/16"	3-1/2"	3015012	—
13/64"	.2031	2-7/16"	3-5/8"	3015013	—
7/32"	.2188	2-1/2"	3-3/4"	3015014	—
15/64"	.2344	2-5/8"	3-7/8"	3015015	—
1/4"	.2500	2-3/4"	4"	3015016	—
17/64"	.2656	2-7/8"	4-1/8"	3015017	—
9/32"	.2813	2-15/16"	4-1/4"	3015018	—
19/64"	.2969	3-1/16"	4-3/8"	3015019	—
5/16"	.3125	3-3/16"	4-1/2"	3015020	—
21/64"	.3281	3-5/16"	4-5/8"	3015021	—
11/32"	.3438	3-7/16"	4-3/4"	3015022	—
23/64"	.3594	3-1/2"	4-7/8"	3015023	—
3/8"	.3750	3-5/8"	5"	3015024	—
25/64"***	.3906	3-3/4"	5-1/8"	3015025	—
13/32"***	.4063	3-7/8"	5-1/4"	3015026	—
27/64"***	.4219	3-15/16"	5-3/8"	3015027	—
7/16"***	.4375	4-1/16"	5-1/2"	3015028	—
29/64"***	.4531	4-3/16"	5-5/8"	3015029	—
15/32"***	.4688	4-5/16"	5-3/4"	3015030	—
31/64"***	.4844	4-3/8"	5-7/8"	3015031	—
1/2"***	.5000	4-1/2"	6"	3015032	—

\*Note: 2 bits per Card \*\*Note: 3/8" reduced shank

# Metal Drilling

## Jobber Length Drill Bits

### TURBOMAX® HSS Fractional Straight Shank Jobber Length Drill Bits (Series 733/731)



73124

- Self-centering, precision-ground TURBOMAX® feature-point tip eliminates “walking” on flat and curved surfaces, stays sharp longer, and drills faster than standard high speed steel bits.
- Manufactured with premium high speed steel with black and gold oxide coating for maximum corrosion resistance.
- 3-flatted shank on 3/16” and above sizes for exceptional grip on chuck.

#### Sets:

Metal Index: 73136, 73137, 73138, 73149

Pro Set Cases: 318015, 318018

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/16"	.0625	7/8"	1-7/8"	73304*	73104
5/64"	.0781	1"	2"	73305*	73105ZR
3/32"	.0938	1-1/8"	2-1/4"	73306*	73106ZR
7/64"	.1094	1-1/2"	2-5/8"	73307*	73107
1/8"	.1250	1-5/8"	2-3/4"	73308*	73108
9/64"	.1406	1-3/4"	2-7/8"	73309	73109
5/32"	.1563	2"	3-1/8"	73310	73110
11/64"	.1719	2-1/8"	3-1/4"	73311	73111
3/16"	.1875	2-5/16"	3-1/2"	73312	73112
13/64"	.2031	2-7/16"	3-5/8"	73313	73113
7/32"	.2188	2-1/2"	3-3/4"	73314	73114
15/64"	.2344	2-5/8"	3-7/8"	73315	73115
1/4"	.2500	2-3/4"	4"	73316	73116
17/64"	.2656	2-7/8"	4-1/8"	73317	73117
9/32"	.2813	2-15/16"	4-1/4"	73318ZR	73118
19/64"	.2969	3-1/16"	4-3/8"	73319	73119
5/16"	.3125	3-3/16"	4-1/2"	73320	73120
21/64"	.3281	3-5/16"	4-5/8"	73321	73121
11/32"	.3438	3-7/16"	4-3/4"	73322	73122
23/64"	.3594	3-1/2"	4-7/8"	73323	73123
3/8"	.3750	3-5/8"	5"	73324	73124
25/64"	.3906	3-3/4"	5-1/8"	73325	73125
13/32"	.4063	3-7/8"	5-1/4"	73326	73126
27/64"	.4219	3-15/16"	5-3/8"	73327	73127
7/16"	.4375	4-1/16"	5-1/2"	73328	73128
29/64"	.4531	4-3/16"	5-5/8"	73329	73129
15/32"	.4688	4-5/16"	5-3/4"	73330	73130
31/64"	.4844	4-3/8"	5-7/8"	73331	73131
1/2"	.5000	4-1/2"	6"	73332	73132

\*Note: 2 bits per Card

METAL DRILLING

### TURBOMAX® HSS 3/8" Reduced Shank Jobber Length Drill Bits (Series 736/734)



73432

- Standard TURBOMAX bit with 3/8" reduced shank

#### Sets:

Metal Index: 3018006B

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
25/64"	.3906	3-3/4"	5-1/8"	73625ZR	73425
13/32"	.4063	3-7/8"	5-1/4"	73626	73426
27/64"	.4219	3-15/16"	5-3/8"	73627ZR	73427
7/16"	.4375	4-1/16"	5-1/2"	73628ZR	73428ZR
29/64"	.4531	4-3/16"	5-5/8"	73629ZR	73429ZR
15/32"	.4688	4-5/16"	5-3/4"	73630ZR	73430
31/64"	.4844	4-3/8"	5-7/8"	73631	73431ZR
1/2"	.5000	4-1/2"	6"	73632	73432ZR



### Cobalt HSS Fractional Straight Shank Jobber Length Drill Bits with 135° Point (Series 3016/631)



63124

- Engineered with Cobalt for high heat and abrasion resistance.
- 135° split-point tip starts drilling immediately and eliminates “walking.”
- Straight shank

#### Applications:

Tough metal drilling, including heavy-duty abrasive alloy metal drilling on hardened steel (heat-treated)

#### Sets:

Pro Set Case: 316015

Metal Index: 63137, 63221 (M35 grade, 5% Cobalt)

Pro Set Case: 316015

Metal Index: 3018002B (M42 grade, 8% Cobalt)

### Cobalt HSS Fractional 3/8" Reduced Shank Jobber Length Drill Bits with 135° Point (Series 30160)



3016228

- Standard Cobalt bit with 3/8" reduced shank

#### Applications:

Tough metal drilling, including heavy-duty abrasive alloy metal drilling on hardened steel (heat-treated)

#### Sets:

Pro Set Case: 316015 (M35 grade);

Metal Index: 63137, 63221 (M35 grade); 3018002B (M42 grade)

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/16"	.0625	7/8"	1-7/8"	3016004	63104
5/64"	.0781	1"	2"	3016005	63105ZR
3/32"	.0938	1-1/8"	2-1/4"	3016006	63106
7/64"	.1094	1-1/2"	2-5/8"	3016007	63107
1/8"	.1250	1-5/8"	2-3/4"	3016008	63108
9/64"	.1406	1-3/4"	2-7/8"	3016009	63109
5/32"	.1563	2"	3-1/8"	3016010	63110
11/64"	.1719	2-1/8"	3-1/4"	3016011	63111
3/16"	.1875	2-5/16"	3-1/2"	3016012	63112ZR
13/64"	.2031	2-7/16"	3-5/8"	3016013	63113ZR
7/32"	.2188	2-1/2"	3-3/4"	3016014	63114
15/64"	.2344	2-5/8"	3-7/8"	3016015	63115
1/4"	.2500	2-3/4"	4"	3016016	63116
17/64"	.2656	2-7/8"	4-1/8"	3016017	63117
9/32"	.2813	2-15/16"	4-1/4"	3016018	63118
19/64"	.2969	3-1/16"	4-3/8"	3016019	63119
5/16"	.3125	3-3/16"	4-1/2"	3016020	63120
21/64"	.3281	3-5/16"	4-5/8"	3016021	63121
11/32"	.3438	3-7/16"	4-3/4"	3016022	63122
23/64"	.3594	3-1/2"	4-7/8"	3016023	63123
3/8"	.3750	3-5/8"	5"	3016024	63124
25/64"	.3906	3-3/4"	5-1/8"	3016125	63125
13/32"	.4063	3-7/8"	5-1/4"	3016126	63126
27/64"	.4219	3-15/16"	5-3/8"	3016127	63127
7/16"	.4375	4-1/16"	5-1/2"	3016128	63128
29/64"	.4531	4-3/16"	5-5/8"	3016129	63129
15/32"	.4689	4-5/16"	5-3/4"	3016130	63130
31/64"	.4844	4-3/8"	5-7/8"	3016131ZR	63131
1/2"	.5000	4-1/2"	6"	3016132	63132

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
25/64"	.3906	7/8"	1-7/8"	3016025	3016225
13/32"	.4063	1"	2"	3016026	3016226
27/64"	.4219	1-1/8"	2-1/4"	3016027	3016227
7/16"	.4375	1-1/2"	2-5/8"	3016028	3016228
29/64"	.4531	1-5/8"	2-3/4"	3016029	3016229
15/32"	.4689	1-3/4"	2-7/8"	3016030	3016230
31/64"	.4844	2"	3-1/8"	3016031ZR	3016231
1/2"	.5000	2-1/8"	3-1/4"	3016032	3016232

# Metal Drilling

## Jobber Length Drill Bits

### Titanium Nitride (TiN) Coated HSS Fractional Straight Shank Jobber Length Drill Bits with 135° Split Point (Series 639/637)



63724

- Titanium Nitride coating resists heat and friction, providing up to six times longer life than standard high speed steel bits.
- 135° split-point tip starts drilling immediately and eliminates “walking.”
- Straight shank.

#### Sets:

Metal Index: 63737, 3018003

\*Note: 2 bits per card

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/16"	.0625	7/8"	1-7/8"	63904*	63704ZR
5/64"	.0781	1"	2"	63905*	63705ZR
3/32"	.0938	1-1/8"	2-1/4"	63906*	63706ZR
7/64"	.1094	1-1/2"	2-5/8"	63907*	63707ZR
1/8"	.1250	1-5/8"	2-3/4"	63908*	63708
9/64"	.1406	1-3/4"	2-7/8"	63909	63709ZR
5/32"	.1563	2"	3-1/8"	63910	63710
11/64"	.1719	2-1/8"	3-1/4"	63911	63711ZR
3/16"	.1875	2-5/16"	3-1/2"	63912	63712
13/64"	.1563	2-7/16"	3-5/8"	63913	63713ZR
7/32"	.2188	2-1/2"	3-3/4"	63914	63714ZR
15/64"	.2344	2-5/8"	3-7/8"	63915	63715ZR
1/4"	.2500	2-3/4"	4"	63916	63716
17/64"	.2656	2-7/8"	4-1/8"	—	63717
9/32"	.2812	2-15/16"	4-1/4"	63918	63718
19/64"	.2969	3-1/16"	4-3/8"	—	63719
5/16"	.3125	3-3/16"	4-1/2"	63920	63720ZR
21/64"	.3281	3-5/16"	4-5/8"	—	63721ZR
11/32"	.3438	3-7/16"	4-3/4"	63922	63722
23/64"	.3594	3-1/2"	4-7/8"	—	63723
3/8"	.3750	3-5/8"	5"	63924	63724
25/64"	.3906	3-3/4"	5-1/8"	—	63725
13/32"	.4063	3-7/8"	5-1/4"	63926	63726
27/64"	.4219	3-15/16"	5-3/8"	—	63727
7/16"	.4375	4-1/16"	5-1/2"	63928	63728
29/64"	.4531	4-3/16"	5-5/8"	—	63729
15/32"	.4689	4-5/16"	5-3/4"	63930	63730
31/64"	.4844	4-3/8"	5-7/8"	—	63731ZR
1/2"	.5000	4-1/2"	6"	63932	63732ZR

METAL DRILLING

### Black & Gold HSS Fractional Straight Shank Jobber Length Drill Bits with 135° Split Point (Series 30190)



3019016B

- 135° split-point tip starts drilling immediately and eliminates “walking.”
- Engineered with premium high speed steel with black and gold oxide coating for corrosion resistance.
- 3-flatted shank on 3/16" and above sizes for exceptional grip on chuck.

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
3/64"	.0469	3/4"	1-3/4"	—	3019003B
1/16"	.0625	7/8"	1-7/8"	—	3019004B
5/64"	.0781	1"	2"	—	3019005B
3/32"	.0938	1-1/8"	2-1/4"	—	3019006B
7/64"	.1094	1-1/2"	2-5/8"	—	3019007B
1/8"	.1250	1-5/8"	2-3/4"	—	3019008B
9/64"	.1406	1-3/4"	2-7/8"	—	3019009B
5/32"	.1563	2"	3-1/8"	—	3019010B
11/64"	.1719	2-1/8"	3-1/4"	—	3019011B
3/16"	.1875	2-5/16"	3-1/2"	—	3019012B
13/64"	.2031	2-7/16"	3-5/8"	—	3019013B
7/32"	.2188	2-1/2"	3-3/4"	—	3019014B
15/64"	.2344	2-5/8"	3-7/8"	—	3019015B
1/4"	.2500	2-3/4"	4"	—	3019016B
17/64"	.2656	2-7/8"	4-1/8"	—	3019017B
9/32"	.2813	2-15/16"	4-1/4"	—	3019018B
19/64"	.2969	3-1/16"	4-3/8"	—	3019019B
5/16"	.3125	3-3/16"	4-1/2"	—	3019020B
21/64"	.3281	3-5/16"	4-5/8"	—	3019021B
11/32"	.3438	3-7/16"	4-3/4"	—	3019022B
23/64"	.3594	3-1/2"	4-7/8"	—	3019023B
3/8"	.3750	3-5/8"	5"	—	3019024B
25/64"	.3906	3-3/4"	5-1/8"	—	3019025B
13/32"	.4063	3-7/8"	5-1/4"	—	3019026B
27/64"	.4219	3-15/16"	5-3/8"	—	3019027B
7/16"	.4375	4-1/16"	5-1/2"	—	3019028B
29/64"	.4531	4-3/16"	5-5/8"	—	3019029B
15/32"	.4688	4-5/16"	5-3/4"	—	3019030B
31/64"	.4844	4-3/8"	5-7/8"	—	3019031B
1/2"	.5000	4-1/2"	6"	—	3019032B

### Black & Gold HSS Fractional 3/8" Reduced Shank Jobber Length Drill Bits with 135° Split Point (Series 30191)



3019128B

- Standard Black & Gold bit with 3/8" reduced shank

**Set:**

Metal Index: 3018005

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
25/64"	.3906	3-3/4"	5-1/8"	—	3019125B
13/32"	.4063	3-7/8"	5-1/4"	—	3019126B
27/64"	.4219	3-15/16"	5-3/8"	—	3019127B
7/16"	.4375	4-1/16"	5-1/2"	—	3019128B
29/64"	.4531	4-3/16"	5-5/8"	—	3019129B
15/32"	.4688	4-5/16"	5-3/4"	—	3019130B
31/64"	.4844	4-3/8"	5-7/8"	—	3019131B
1/2"	.5000	4-1/2"	6"	—	3019132B

### Black Oxide HSS Fractional Straight Shank Jobber Length Drill Bits with 135° Split Point (Series 675/635)



63524ZR

- 135° split-point tip starts drilling immediately and eliminates "walking."
- Manufactured with premium high speed steel with black oxide coating for corrosion resistance.
- Straight shank

**Set:**

Pro Set Cases: 314015

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
3/64"	.0469	3/4"	1-3/4"	—	63503
1/16"	.0625	7/8"	1-7/8"	67504*	63504
5/64"	.0781	1"	2"	67505*	63505
3/32"	.0938	1-1/8"	2-1/4"	67506*	63506
7/64"	.1094	1-1/2"	2-5/8"	67507*	63507
1/8"	.1250	1-5/8"	2-3/4"	67508*	63508
9/64"	.1406	1-3/4"	2-7/8"	67509	63509
5/32"	.1563	2"	3-1/8"	67510	63510
11/64"	.1719	2-1/8"	3-1/4"	67511	63511
3/16"	.1875	2-5/16"	3-1/2"	67512	63512
13/64"	.2031	2-7/16"	3-5/8"	67513	63513
7/32"	.2188	2-1/2"	3-3/4"	67514	63514
15/64"	.2344	2-5/8"	3-7/8"	67515	63515
1/4"	.2500	2-3/4"	4"	67516	63516
17/64"	.2656	2-7/8"	4-1/8"	67517	63517
9/32"	.2813	2-15/16"	4-1/4"	67518	63518
19/64"	.2969	3-1/16"	4-3/8"	67519	63519
5/16"	.3125	3-3/16"	4-1/2"	67520	63520ZR
21/64"	.3281	3-5/16"	4-5/8"	67521	63521ZR
11/32"	.3438	3-7/16"	4-3/4"	67522	63522ZR
23/64"	.3594	3-1/2"	4-7/8"	67523	63523ZR
3/8"	.3750	3-5/8"	5"	67524	63524ZR
25/64"	.3906	3-3/4"	5-1/8"	67525	63525ZR
13/32"	.4063	3-7/8"	5-1/4"	67526	63526ZR
27/64"	.4219	3-15/16"	5-3/8"	67527	63527ZR
7/16"	.4375	4-1/16"	5-1/2"	67528	63528ZR
29/64"	.4531	4-3/16"	5-5/8"	67529	63529ZR
15/32"	.4688	4-5/16"	5-3/4"	67530	63530
31/64"	.4844	4-3/8"	5-7/8"	67531	63531
1/2"	.5000	4-1/2"	6"	67532	63532

\*Note: 2 bits per Card

### Black Oxide HSS Fractional 3/8" Reduced Shank Jobber Length Drill Bits with 135° Split Point (Series 678/634)



63432

- Standard Black Oxide bit with 3/8" reduced shank

**Sets:**

Pro Set Case: 314018

Metal Index: 3018004

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
25/64"	.3906	3-3/4"	5-1/8"	67825	63425
13/32"	.4063	3-7/8"	5-1/4"	67826	63426
27/64"	.4219	3-15/16"	5-3/8"	67827	63427
7/16"	.4375	4-1/16"	5-1/2"	67828	63428
29/64"	.4531	4-3/16"	5-5/8"	67829	63429
15/32"	.4688	4-5/16"	5-3/4"	67830	63430
31/64"	.4844	4-3/8"	5-7/8"	67831	63431
1/2"	.5000	4-1/2"	6"	67832	63432

# Metal Drilling

## Jobber Length Drill Bits

### Black Oxide 1/4" Hex Shank Drill Bits



4935636

- 135° split-point tip starts drilling immediately and eliminates “walking.”
- Engineered with high speed steel with black oxide coating for corrosion resistance.
- 1/4" hex shank works in all Lock-n-Load® quick-change extensions as well as all drill chucks.

#### Applications:

Automotive, maintenance and repair, portable drills, stationary drill press

#### Sets:

5-piece Set: 4935642

12-piece Pro Set: 4935643

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/16"	0.0625	3/4"	2-5/8"	4935632	—
5/64"	0.0781	1"	2-3/4"	4935633	—
3/32"	0.0938	1-5/16"	3"	4935634	—
7/64"	0.1094	1-1/2"	3-7/16"	4935635	—
1/8"	0.1250	1-5/8"	3-1/2"	4935636	—
9/64"	0.1406	1-7/8"	3-3/16"	4935637	—
5/32"	0.1563	2-1/16"	3-15/16"	4935638	—
3/16"	0.1875	2-3/8"	4-1/4"	4935639	—
7/32"	0.2188	2-5/8"	4-1/2"	4935640	—
1/4"	0.2500	2-7/8"	4-3/4"	4935641	—

### Left-Hand Heavy-Duty HSS Fractional Straight Shank Jobber Length Drill Bits (Series 623)



62324

- 135° split-point tip starts drilling immediately and eliminates “walking.”
- Manufactured with premium high speed steel with black oxide coating for corrosion resistance.
- Straight shank

#### Applications:

General metal drilling or creating pilot holes for screw extractors.

Size	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/16"	7/8"	1-7/8"	—	62304
5/64"	1"	2"	—	62305
3/32"	1-1/8"	2-1/4"	—	62306
7/64"	1-1/2"	2-5/8"	—	62307
1/8"	1-5/8"	2-3/4"	—	62308
9/64"	1-3/4"	2-7/8"	—	62309ZR
5/32"	2"	3-1/8"	—	62310
11/64"	2-1/8"	3-1/4"	—	62311
3/16"	2-5/16"	3-1/2"	—	62312
13/64"	2-7/16"	3-5/8"	—	62313
7/32"	2-1/2"	3-3/4"	—	62314
15/64"	2-5/8"	3-7/8"	—	62315
1/4"	2-3/4"	4"	—	62316
17/64"	2-7/8"	4-1/8"	—	62317
9/32"	2-15/16"	4-1/4"	—	62318
19/64"	3-1/16"	4-3/8"	—	62319
5/16"	3-3/16"	4-1/2"	—	62320
21/64"	3-5/16"	4-5/8"	—	62321
11/32"	3-7/16"	4-3/4"	—	62322
23/64"	3-1/2"	4-7/8"	—	62323
3/8"	3-5/8"	5"	—	62324
25/64"	3-3/4"	5-1/8"	—	62325
13/32"	3-7/8"	5-1/4"	—	62326
27/64"	3-15/16"	5-3/8"	—	62327
7/16"	4-1/16"	5-1/2"	—	62328
29/64"	4-3/16"	5-5/8"	—	62329
15/32"	4-5/16"	5-3/4"	—	62330
31/64"	4-3/8"	5-7/8"	—	62331
1/2"	4-1/2"	6"	—	62332



### Black Oxide HSS Metric Straight Shank Jobber Length Drill Bits (Series 681)



68950

- 135° split-point tip starts drilling immediately and eliminates "walking."
- Manufactured with premium high speed steel with black oxide coating for corrosion resistance.
- Straight shank

#### Applications:

Automotive, maintenance and repair, portable drills, stationary drill press

### General Purpose HSS Fractional Straight Shank Jobber Length Drill Bits with 118° Point (Series 605/601)



60124

- 118° chisel tip point is perfect for general purpose applications.
- Engineered with premium high speed steel in bright finish.
- Recommended for drilling in metal, wood, and plastic.
- Straight shank

#### Applications:

Automotive, maintenance and repair, stationary drill press

#### Sets:

Metal Index: 60136, 60137, 60138, 60221

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1.00 mm	0.0394	11/16"	1-5/8"	—	68100
1.50 mm	0.0591	7/8"	1-7/8"	—	68150
2.00 mm	0.0787	1"	2"	—	68200
2.50 mm	0.0984	1-3/8"	2-3/8"	—	68250ZR
3.00 mm	0.1181	1-5/8"	2-3/4"	—	68300
3.50 mm	0.1378	1-3/4"	2-7/8"	—	68350
4.00 mm	0.1575	2-1/8"	3-1/4"	—	68400
4.50 mm	0.1772	2-3/16"	3-3/8"	—	68450
5.00 mm	0.1969	2-7/16"	3-5/8"	—	68500
5.50 mm	0.2165	2-1/2"	3-3/4"	—	68550ZR
6.00 mm	0.2362	2-3/4"	4"	—	68600
6.50 mm	0.2559	2-7/8"	4-1/8"	—	68650
7.00 mm	0.2756	2-7/8"	4-1/8"	—	68700
7.50 mm	0.2953	3-1/16"	4-3/8"	—	68750
8.00 mm	0.3150	3-3/16"	4-1/2"	—	68800
8.50 mm	0.3346	3-7/16"	4-3/4"	—	68850
9.00 mm	0.3543	3-1/2"	4-7/8"	—	68900
9.50 mm	0.3740	3-5/8"	5"	—	68950
10.00 mm	0.3937	3-3/4"	5-1/8"	—	69010
10.50 mm	0.4134	3-7/8"	5-1/4"	—	69015
11.00 mm	0.4331	4-1/16"	5-1/2"	—	69110ZR
11.50 mm	0.4528	4-3/16"	5-5/8"	—	69115ZR
12.00 mm	0.4724	4-3/8"	5-7/8"	—	69120ZR
12.50 mm	0.4921	4-1/2"	6"	—	69125ZR
13.00 mm	0.5118	4-1/2"	6"	—	69130ZR

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/64"	.0156	3/16"	3/4"	—	60101ZR
1/32"	.0313	1/2"	1-3/8"	—	60102ZR
3/64"	.0469	3/4"	1-3/4"	—	60103ZR
1/16"	.0625	7/8"	1-7/8"	60504*	60104ZR
5/64"	.0781	1"	2"	60505*	60105
3/32"	.0938	1-1/8"	2-1/4"	60506*	60106ZR
7/64"	.1094	1-1/2"	2-5/8"	60507*	60107
1/8"	.1250	1-5/8"	2-3/4"	60508*	60108ZR
9/64"	.1406	1-3/4"	2-7/8"	60509	60109
5/32"	.1563	2"	3-1/8"	60510ZR	60110
11/64"	.1719	2-1/8"	3-1/4"	60511	60111
3/16"	.1875	2-5/16"	3-1/2"	60512	60112
13/64"	.2031	2-7/16"	3-5/8"	60513	60113
7/32"	.2188	2-1/2"	3-3/4"	60514	60114
15/64"	.2344	2-5/8"	3-7/8"	60515	60115ZR
1/4"	.2500	2-3/4"	4"	60516	60116
17/64"	.2656	2-7/8"	4-1/8"	60517	60117ZR
9/32"	.2813	2-15/16"	4-1/4"	60518	60118
19/64"	.2969	3-1/16"	4-3/8"	60519	60119
5/16"	.3125	3-3/16"	4-1/2"	60520	60120
21/64"	.3281	3-5/16"	4-5/8"	60521	60121
11/32"	.3438	3-7/16"	4-3/4"	60522	60122
23/64"	.3594	3-1/2"	4-7/8"	60523	60123
3/8"	.3750	3-5/8"	5"	60524	60124
25/64"	.3906	3-3/4"	5-1/8"	60525	60125
13/32"	.4063	3-7/8"	5-1/4"	60526	60126ZR
27/64"	.4219	3-15/16"	5-3/8"	60527	60127
7/16"	.4375	4-1/16"	5-1/2"	60528	60128
29/64"	.4531	4-3/16"	5-5/8"	60529	60129
15/32"	.4688	4-5/16"	5-3/4"	60530	60130
31/64"	.4844	4-3/8"	5-7/8"	60531	60131
1/2"	.5000	4-1/2"	6"	60532	60132

\*Note: 2 bits per Card

# Metal Drilling

## Jobber Length Drill Bits

### General Purpose HSS Fractional 3/8" Reduced Shank Jobber Length Drill Bits with 118° Point (Series 738/718)



71832

- Standard general purpose bit with 3/8" reduced shank

#### Applications:

Automotive, maintenance and repair, stationary drill press

#### Sets:

Metal Index: 60147, 60148

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
25/64"	.3906	3-3/4"	5-1/8"	73825	71825
13/32"	.4063	3-7/8"	5-1/4"	73826	71826
27/64"	.4219	3-15/16"	5-3/8"	73827	71827
7/16"	.4375	4-1/16"	5-1/2"	73828	71828
29/64"	.4531	4-3/16"	5-5/8"	73829	71829
15/32"	.4688	4-5/16"	5-3/4"	73830	71830
31/64"	.4844	4-3/8"	5-7/8"	73831	71831
1/2"	.5000	4-1/2"	6"	73832ZR	71832

### General Purpose HSS Letter Size Straight Shank Jobber Length Drill Bits (Series 401)



40101ZR

- 135° split-point tip starts drilling immediately and eliminates "walking."
- Engineered with premium high speed steel in bright finish.
- Ideal for use when large, precisely-sized holes are required. Drills exact-sized hole for tapping applications.
- Straight shank

#### Applications:

Automotive, maintenance and repair, portable drills, stationary drill press

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
Letter A	0.2340	2-5/8"	3-7/8"	—	40101ZR
Letter B	0.2380	2-3/4"	4"	—	40102
Letter C	0.2420	2-3/4"	4"	—	40103ZR
Letter D	0.2460	2-3/4"	4"	—	40104ZR
Letter E	0.2500	2-3/4"	4"	—	40105
Letter F	0.2570	2-7/8"	4-1/8"	—	40106
Letter G	0.2610	2-7/8"	4-1/8"	—	40107
Letter H	0.2660	2-7/8"	4-1/8"	—	40108ZR
Letter I	0.2720	2-7/8"	4-1/8"	—	40109ZR
Letter J	0.2770	2-7/8"	4-1/8"	—	40110ZR
Letter K	0.2810	2-15/16"	4-1/4"	—	40111ZR
Letter L	0.2900	2-15/16"	4-1/4"	—	40112
Letter M	0.2950	3-1/16"	4-3/8"	—	40113
Letter N	0.3020	3-1/16"	4-3/8"	—	40114
Letter O	0.3160	3-3/16"	4-1/2"	—	40115
Letter P	0.3230	3-5/16"	4-5/8"	—	40116
Letter Q	0.3320	3-7/16"	4-3/4"	—	40117
Letter R	0.3390	3-7/16"	4-3/4"	—	40118
Letter S	0.3480	3-1/2"	4-7/8"	—	40119ZR
Letter T	0.3580	3-1/2"	4-7/8"	—	40120
Letter U	0.3680	3-5/8"	5"	—	40121
Letter V	0.3770	3-5/8"	5"	—	40122
Letter W	0.3860	3-3/4"	5-1/8"	—	40123
Letter X	0.3970	3-3/4"	5-1/8"	—	40124
Letter Y	0.4040	3-7/8"	5-1/4"	—	40125
Letter Z	0.4130	3-7/8"	5-1/4"	—	40126

### General Purpose HSS Wire Gauge Straight Shank Jobber Length Drill Bits (Series 811)



80128

- 118° chisel point tip is perfect for general purpose applications.
- Engineered with premium high speed steel in bright finish.
- Ideal for use when non-fractional-sized holes are required. Drills exact-sized hole for tapping applications.
- Straight shank

**Applications:** Automotive, maintenance and repair, portable drills, stationary drill press

**Sets:**

Metal index: 80181, 80183

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
No. 1	.2280	2-5/8"	3-7/8"	81101	80101
No. 2	.2210	2-5/8"	3-7/8"	81102	80102ZR
No. 3	.2130	2-1/2"	3-3/4"	81103	80103ZR
No. 4	.2090	2-1/2"	3-3/4"	81104	80104
No. 5	.2055	2-1/2"	3-3/4"	81105	80105
No. 6	.2040	2-1/2"	3-3/4"	81106	80106
No. 7	.2010	2-7/16"	3-5/8"	81107	80107
No. 8	.1990	2-7/16"	3-5/8"	81108	80108
No. 9	.1960	2-7/16"	3-5/8"	81109	80109
No. 10	.1935	2-7/16"	3-5/8"	81110ZR	80110
No. 11	.1910	2-5/16"	3-1/2"	81111	80111
No. 12	.1890	2-5/16"	3-1/2"	81112	80112
No. 13	.1850	2-5/16"	3-1/2"	81113	80113
No. 14	.1820	2-3/16"	3-3/8"	81114	80114
No. 15	.1800	2-3/16"	3-3/8"	81115	80115
No. 16	.1770	2-3/16"	3-3/8"	81116	80116
No. 17	.1730	2-3/16"	3-3/8"	81117	80117
No. 18	.1695	2-1/8"	3-1/4"	81118	80118
No. 19	.1660	2-1/8"	3-1/4"	81119	80119
No. 20	.1610	2-1/8"	3-1/4"	81120ZR	80120
No. 21	.1590	2-1/8"	3-1/4"	81121	80121
No. 22	.1570	2"	3-1/8"	81122ZR	80122
No. 23	.1540	2"	3-1/8"	81123ZR	80123
No. 24	.1520	2"	3-1/8"	81124ZR	80124
No. 25	.1495	1-7/8"	3"	81125	80125ZR
No. 26	.1470	1-7/8"	3"	81126	80126
No. 27	.1440	1-7/8"	3"	81127ZR	80127
No. 28	.1405	1-3/4"	2-7/8"	81128ZR	80128
No. 29	.1360	1-3/4"	2-7/8"	81129	80129
No. 30	.1285	1-5/8"	2-3/4"	81130ZR	80130
No. 31	.1200	1-5/8"	2-3/4"	81131	80131
No. 32	.1160	1-5/8"	2-3/4"	81132	80132
No. 33	.1130	1-1/2"	2-5/8"	81133	80133
No. 34	.1110	1-1/2"	2-5/8"	81134	80134
No. 35	.1100	1-1/2"	2-5/8"	81135	80135
No. 36	.1065	1-7/16"	2-1/2"	81136	80136
No. 37	.1040	1-7/16"	2-1/2"	81137	80137
No. 38	.1015	1-7/16"	2-1/2"	81138	80138
No. 39	.0995	1-3/8"	2-3/8"	81139	80139
No. 40	.0980	1-3/8"	2-3/8"	81140	80140

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
No. 41	.0960	1-3/8"	2-3/8"	81141	80141
No. 42	.0935	1-1/8"	2-1/4"	81142	80142
No. 43	.0890	1-1/8"	2-1/4"	81143	80143
No. 44	.0860	1-1/8"	2-1/8"	81144	80144
No. 45	.0820	1-1/8"	2-1/8"	81145	80145
No. 46	.0810	1-1/8"	2-1/8"	81146	80146
No. 47	.0785	1"	2"	81147	80147
No. 48	.0760	1"	2"	81148	80148
No. 49	.0730	1"	2"	81149	80149
No. 50	.0700	1"	2"	81150	80150
No. 51	.0670	1"	2"	81151	80151
No. 52	.0635	7/8"	1-7/8"	81152	80152ZR
No. 53	.0595	7/8"	1-7/8"	81153ZR	80153
No. 54	.0550	7/8"	1-7/8"	81154	80154
No. 55	.0520	7/8"	1-7/8"	81155	80155
No. 56	.0465	3/4"	1-3/4"	81156	80156
No. 57	.0430	3/4"	1-3/4"	81157ZR	80157
No. 58	.0420	11/16"	1-5/8"	81158	80158
No. 59	.0410	11/16"	1-5/8"	81159ZR	80159
No. 60	.0400	11/16"	1-5/8"	81160	80160
No. 61	.0390	11/16"	1-5/8"	—	80161
No. 62	.0380	5/8"	1-1/2"	—	80162
No. 63	.0370	5/8"	1-1/2"	—	80163
No. 64	.0360	5/8"	1-1/2"	—	80164
No. 65	.0350	5/8"	1-1/2"	—	80165
No. 66	.0330	1/2"	1-3/8"	—	80166
No. 67	.0320	1/2"	1-3/8"	—	80167
No. 68	.0310	1/2"	1-3/8"	—	80168
No. 69	.0292	1/2"	1-3/8"	—	80169
No. 70	.0280	3/8"	1-1/4"	—	80170
No. 71	.0260	3/8"	1-1/4"	—	80171
No. 72	.0250	5/16"	1-1/8"	—	80172
No. 73	.0240	5/16"	1-1/8"	—	80173
No. 74	.0225	1/4"	1"	—	80174ZR
No. 75	.0210	1/4"	1"	—	80175
No. 76	.0200	3/16"	7/8"	—	80176
No. 77	.0180	3/16"	7/8"	—	80177
No. 78	.0160	3/16"	7/8"	—	80178
No. 79	.0145	1/8"	3/4"	—	80179
No. 80	.0135	1/8"	3/4"	—	80180

# Metal Drilling

## Mechanics Length / Screw Machine Length Drill Bits

### Left-Hand Cobalt HSS Fractional Mechanics Length Drill Bits with 135° Split Point (Series 305)



30524

- 8% Cobalt alloyed for higher heat and abrasion resistance.
- Shorter drill for additional strength.
- Drill into fasteners without tightening them.
- Can often remove broken fasteners without an extractor.

#### Sets:

5-piece Set: 30520

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
5/64"	.0781	1"	2"	—	30505ZR
7/64"	.1094	1"	2-3/16"	—	30507
1/8"	.1250	1-1/16"	2-1/4"	—	30508
5/32"	.1563	1-1/4"	2-9/16"	—	30510
3/16"	.1875	1-1/2"	2-7/8"	—	30512ZR
7/32"	.2188	1-5/8"	3-1/8"	—	30514
1/4"	.2500	1-3/4"	3-5/16"	—	30516
9/32"	.2812	2"	3-9/16"	—	30518ZR
19/64"	.2969	2-1/16"	3-5/8"	—	30519
5/16"	.3125	2-1/8"	3-3/4"	—	31520
11/32"	.3438	2-1/4"	3-15/16"	—	30522
3/8"	.3750	2-3/8"	4-1/8"	—	30524
13/32"	.4062	2-1/2"	4-3/8"	—	30526ZR
7/16"	.4375	2-5/8"	4-9/16"	—	30528
15/32"	.4688	2-3/4"	4-3/4"	—	30530
1/2"	.5000	2-7/8"	5"	—	30532

### HSS Fractional Screw Machine Length Drill Bits (Series 301)



30132

- 135° split-point tip starts drilling immediately and eliminates "walking."
- Engineered with premium high speed steel with black oxide coating for corrosion resistance.
- Shorter length for increased strength and rigidity (commonly known as "stubbies").
- Straight shank

#### Applications:

Industrial applications, maintenance and repair, automotive, machine shop

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/16"	.0625	5/8"	1-5/8"	—	30104
5/64"	.0781	11/16"	1-11/16"	—	30105
3/32"	.0938	3/4"	1-3/4"	—	30106
7/64"	.1094	13/16"	1-13/16"	—	30107
1/8"	.1250	7/8"	1-7/8"	—	30108
9/64"	.1406	15/16"	1-15/16"	—	30109
5/32"	.1562	1"	2-1/16"	—	30110
11/64"	.1719	1-1/16"	2-1/8"	—	30111
3/16"	.1875	1-1/8"	2-3/16"	—	30112ZR
13/64"	.2031	1-3/16"	2-1/4"	—	30113
7/32"	.2188	1-1/4"	2-3/8"	—	30114
15/64"	.2344	1-5/16"	2-7/16"	—	30115
1/4"	.2500	1-3/8"	2-1/2"	—	30116
17/64"	.2656	1-7/16"	2-5/8"	—	30117
9/32"	.2813	1-1/2"	2-11/16"	—	30118
19/64"	.2969	1-9/16"	2-3/4"	—	30119
5/16"	.3125	1-5/8"	2-13/16"	—	30120
21/64"	.3281	1-11/16"	2-15/16"	—	30121
11/32"	.3438	1-11/16"	3"	—	30122ZR
23/64"	.3594	1-3/4"	3-1/16"	—	30123
3/8"	.3750	1-13/16"	3-1/8"	—	30124
25/64"	.3906	1-7/8"	3-1/4"	—	30125
13/32"	.4063	1-15/16"	3-5/16"	—	30126
27/64"	.4219	2"	3-3/8"	—	30127ZR
7/16"	.4375	2-1/16"	3-7/16"	—	30128ZR
29/64"	.4531	2-1/8"	3-9/16"	—	30129ZR
15/32"	.4689	2-1/8"	3-5/8"	—	30130
31/64"	.4844	2-3/16"	3-11/16"	—	30131
1/2"	.5000	2-1/4"	3-3/4"	—	30132ZR

### HSS Wire Gauge Screw Machine Length Drill Bits (Series 201)



20120

- Engineered with premium high speed steel with black oxide coating for corrosion resistance.
- Numbered from 1 to 55 (large to small).
- Ideal for use when non-fractional-sized holes are required. Drills exact-sized hole for tapping applications.
- Shorter length for increased strength and rigidity.

#### Applications:

Industrial applications, maintenance and repair, automotive, machine shop

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
No. 1	.2280	1-5/16"	2-7/16"	—	20101ZR
No. 2	.2210	1-5/16"	2-7/16"	—	20102
No. 3	.2130	1-1/4"	2-3/8"	—	20103
No. 4	.2090	1-1/4"	2-3/8"	—	20104
No. 5	.2055	1-1/4"	2-3/8"	—	20105
No. 6	.2040	1-1/4"	2-3/8"	—	20106
No. 7	.2010	1-3/16"	2-1/4"	—	20107
No. 8	.1190	1-3/16"	2-1/4"	—	20108
No. 9	.1960	1-3/16"	2-1/4"	—	20109
No. 10	.1935	1-3/16"	2-1/4"	—	20110
No. 11	.1910	1-3/16"	2-1/4"	—	20111
No. 12	.1890	1-3/16"	2-1/4"	—	20112
No. 13	.1850	1-1/8"	2-3/16"	—	20113
No. 14	.1820	1-1/8"	2-3/16"	—	20114
No. 15	.1800	1-1/8"	2-3/16"	—	20115
No. 16	.1770	1-1/8"	2-3/16"	—	20116
No. 17	.1730	1-1/8"	2-3/16"	—	20117
No. 18	.1695	1-1/16"	2-1/8"	—	20118
No. 19	.1660	1-1/16"	2-1/8"	—	20119
No. 20	.1610	1-1/16"	2-1/8"	—	20120
No. 21	.1590	1-1/16"	2-1/8"	—	20121
No. 22	.1570	1-1/16"	2-1/8"	—	20122
No. 23	.1540	1"	2-1/16"	—	20123
No. 24	.1520	1"	2-1/16"	—	20124
No. 25	.1495	1"	2-1/16"	—	20125
No. 26	.1470	1"	2-1/16"	—	20126
No. 27	.1440	1"	2-1/16"	—	20127ZR
No. 28	.1405	15/16"	1-15/16"	—	20128ZR
No. 29	.1360	15/16"	1-15/16"	—	20129
No. 30	.1285	15/16"	1-15/16"	—	20130
No. 31	.1200	7/8"	1-7/8"	—	20131
No. 32	.1160	7/8"	1-7/8"	—	20132
No. 33	.1130	7/8"	1-7/8"	—	20133
No. 34	.1110	7/8"	1-7/8"	—	20134
No. 35	.1100	7/8"	1-7/8"	—	20135
No. 36	.1065	13/16"	1-13/16"	—	20136
No. 37	.1040	13/16"	1-13/16"	—	20137ZR
No. 38	.1015	13/16"	1-13/16"	—	20138ZR
No. 39	.0995	13/16"	1-13/16"	—	20139ZR
No. 40	.0980	13/16"	1-13/16"	—	20140
No. 41	.0960	13/16"	1-13/16"	—	20141
No. 42	.0935	3/4"	1-3/4"	—	20142ZR
No. 43	.0890	3/4"	1-3/4"	—	20143
No. 44	.0860	3/4"	1-3/4"	—	20144
No. 45	.0820	3/4"	1-3/4"	—	20145
No. 46	.0810	3/4"	1-3/4"	—	20146
No. 47	.0785	11/16"	1-11/16"	—	20147
No. 48	.0760	11/16"	1-11/16"	—	20148
No. 49	.0730	11/16"	1-11/16"	—	20149
No. 50	.0700	11/16"	1-11/16"	—	20150
No. 51	.0670	11/16"	1-11/16"	—	20151
No. 52	.0635	11/16"	1-11/16"	—	20152
No. 53	.0595	5/8"	1-5/8"	—	20153
No. 54	.0550	5/8"	1-5/8"	—	20154
No. 55	.0520	5/8"	1-5/8"	—	20155



# Metal Drilling

## Silver & Deming Drill Bits

### Silver and Deming (S&D) HSS Fractional 1/2" Reduced Shank Drill Bits with 118° Point (Series 911/901)



91148

- 118° chisel point tip is perfect for general purpose applications.
- Engineered with premium high speed steel with black oxide coating for corrosion resistance.
- Ideal for heavy-duty metal drilling, automotive, body shop, and fabrication applications.
- 1/2" reduced shank with 3-flats grips securely.

#### Applications:

Heavy-duty metal drilling, automotive, body shop, metal fabrication

#### Sets:

8-Piece Set: 90108

Size	Decimal Equivalent.	Flute Length	Overall Length	Tubed Item #
33/64"	.5156	3"	6"	91133
17/32"	.5313	3"	6"	91134
35/64"	.5469	3"	6"	91135
9/16"	.5625	3"	6"	91136
37/64"	.5781	3"	6"	91137
19/32"	.5938	3"	6"	91138
39/64"	.6094	3"	6"	91139
5/8"	.6250	3"	6"	91140
41/64"	.6406	3"	6"	91141
21/32"	.6563	3"	6"	91142
43/64"	.6719	3"	6"	91143
11/16"	.6875	3"	6"	91144
45/64"	.7031	3"	6"	91145
23/32"	.7188	3"	6"	91146
47/64"	.7344	3"	6"	91147
3/4"	.7500	3"	6"	91148
49/64"	.7656	3"	6"	91149
25/32"	.7812	3"	6"	91150
51/64"	.7969	3"	6"	91151
13/16"	.8125	3"	6"	91152
53/64"	.8281	3"	6"	91153
27/32"	.8438	3"	6"	91154
55/64"	.8594	3"	6"	91155ZR
7/8"	.8750	3"	6"	91156
57/64"	.8906	3"	6"	91157
29/32"	.9062	3"	6"	91158
59/64"	.9219	3"	6"	91159
15/16"	.9375	3"	6"	91160
61/64"	.9531	3"	6"	91161
31/32"	.9688	3"	6"	91162
63/64"	.9844	3"	6"	91163
1"	1.000	3"	6"	91164
1-1/64"	1.0156	3"	6"	90165
1-1/32"	1.0313	3"	6"	90166
1-1/16"	1.0625	3"	6"	90168
1-3/32"	1.0938	3"	6"	90170
1-1/8"	1.1250	3"	6"	90172
1-5/32"	1.1563	3"	6"	90174
1-3/16"	1.1875	3"	6"	90176
1-1/4"	1.2500	3"	6"	90180
1-5/16"	1.3125	3"	6"	90184
1-3/8"	1.3750	3"	6"	90188
1-7/16"	1.4375	3"	6"	90192
1-1/2"	1.5000	3"	6"	90196

### 12" Aircraft Extension HSS Fractional Straight Shank Drill Bits with 135° Split Point (Series 621/612)



61224

- 135° split-point tip starts drilling immediately and eliminates "walking."
- Engineered with premium high speed steel with black oxide coating for corrosion resistance.
- Ideal for applications requiring an extended reach. Not recommended for deep drilling applications.
- Straight shank

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/16"	.0625	7/8"	12"	62104ZR	61204
3/32"	.0938	1-1/4"	12"	—	61206
1/8"	.1250	1-5/8"	12"	62108	61208
5/32"	.1563	2"	12"	—	61210
3/16"	.1875	2-5/16"	12"	62112ZR	61212
7/32"	.2188	2-1/2"	12"	—	61214
1/4"	.2500	2-3/4"	12"	62116	61216
9/32"	.2813	2-15/16"	12"	—	61218
5/16"	.3125	3-3/16"	12"	62120	61220
11/32"	.3438	3-7/16"	12"	—	61222
3/8"	.3750	3-5/8"	12"	62124	61224
13/32"	.4063	3-7/8"	12"	—	61226
7/16"	.4375	4-1/16"	12"	62128	61228
15/32"	.4688	4-5/16"	12"	—	61230
1/2"	.5000	4-1/2"	12"	62132	61232ZR

### 6" Aircraft Extension HSS Fractional Straight Shank Drill Bits with 135° Split Point (Series 667/666)



66624

- 135° split-point tip starts drilling immediately and eliminates "walking."
- Engineered with premium high speed steel with black oxide coating for corrosion resistance.
- Ideal for applications requiring an extended reach. Not recommended for deep drilling applications.
- Straight shank

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/16"	.0625	7/8"	6"	66704ZR	66604ZR
5/64"	.0781	1"	6"	—	66605
3/32"	.0938	1-1/4"	6"	—	66606
7/64"	.1094	1-1/2"	6"	—	66607
1/8"	.1250	1-5/8"	6"	66708	66608
9/64"	.1406	1-3/4"	6"	—	66609
5/32"	.1563	2"	6"	66710	66610
11/64"	.1719	2-1/8"	6"	—	66611
3/16"	.1875	2-5/16"	6"	66712	66612
13/64"	.2031	2-7/16"	6"	—	66613
7/32"	.2188	2-1/2"	6"	66714	66614
15/64"	.2344	2-5/8"	6"	—	66615
1/4"	.2500	2-3/4"	6"	66716	66616
17/64"	.2656	2-7/8"	6"	—	66617ZR
9/32"	.2813	2-15/16"	6"	—	66618
19/64"	.2969	3-1/16"	6"	—	66619
5/16"	.3125	3-3/16"	6"	66720ZR	66620
21/64"	.3281	3-5/16"	6"	—	66621
11/32"	.3438	3-7/16"	6"	—	66622
23/64"	.3594	3-1/2"	6"	—	66623
3/8"	.3750	3-5/8"	6"	66724	66624
25/64"	.3906	3-3/4"	6"	—	66625
13/32"	.4063	3-7/8"	6"	—	66626
27/64"	.4219	3-15/16"	6"	—	66627
7/16"	.4375	4-1/16"	6"	66728	66628
15/32"	.4688	4-5/16"	6"	—	66630
1/2"	.5000	4-1/2"	6"	66732	66632

# Metal Drilling

## Special Purpose Drilling

### Double-End HSS Drill Bits (Series 606/616)



10228

- 135° split-point tip starts drilling immediately and eliminates "walking."
- Engineered with premium high speed steel with black oxide coating for corrosion resistance.
- Drills twice as many holes as a single-end drill bit.

#### Applications:

General metal drilling in tight spaces, drilling sheet metal for rivets and fasteners

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
7/64"	.1094	5/8"	1-7/8"	—	60607
1/8"	.1250	5/8"	2"	—	60608
9/64"	.1406	5/8"	2"	—	60609
5/32"	.1563	5/8"	2-1/16"	—	60610
3/16"	.1875	5/8"	2-3/16"	—	60612
7/32"	.2188	11/16"	2-3/8"	—	60614
1/4"	.2500	7/8"	2-1/2"	—	60616
#11	.1910	11/16"	2-1/4"	—	61611
#20	.1600	5/8"	2-1/8"	—	61620
#30	.1285	5/8"	2"	—	61630

### High Speed Steel Countersinks



12413

- Tip is milled and precision-ground to 82-degrees for countersinking into most machinable materials.
- Engineered with premium high speed steel with black oxide coating for corrosion resistance.
- Features five flutes for reduced vibration.
- 1/4" round shank

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/2"	.5000	3/8"	1-5/8"	12411	—
5/8"	.6250	7/16"	1-3/4"	12412	—
3/4"	.7500	1/2"	1-13/16"	12413	—

## 29-piece Metal Index Drill Bit Sets

### Automatic Indexing

- For easy bit access and identification

### Removable Cartridges

- Allows for easy transport to worksite

### Rubber Over-Molded Case

- Protects case if dropped



3018003

### 3 Easy Steps to Open Case and Remove a Cartridge



Slide Latch



Open Case



Remove Cartridge

Description	Type	Contents	Point	Finish	Item #
29-Piece Set	Cobalt M42 HSS Fractional	1/16" - 1/2" by 64ths	135°	Cobalt	3018002B
29-Piece Set*	Cobalt M35 HSS Fractional	1/16" - 1/2" by 64ths	135°	Cobalt	3018002
29-Piece Set*	TiN HSS Fractional	1/16" - 1/2" by 64ths	135°	TiN Coated	3018003
29-Piece Set*	Heavy-Duty HSS Fractional	1/16" - 1/2" by 64ths	135°	Black Oxide	3018004
29-Piece Set*	Black & Gold HSS Fractional	1/16" - 1/2" by 64ths	135°	Black & Gold Oxide	3018005
29-Piece Set*	TURBOMAX HSS Fractional	1/16" - 1/2" by 64ths	TURBOMAX	Black & Gold Oxide	3018006B
29-Piece Set*	TURBOMAX Titanium Fractional	1/16" - 1/2" by 64ths	TURBOMAX	TiN Coated	3018011
29-Piece Set*	29-Piece Set Empty Case	-	-	-	3018006MT

\*Note: 3/8" Reduced Shank

### 29-piece Metal Index Drill Bit Set



73138

### 21-piece Metal Index Drill Bit Set



73149

### 13-piece Metal Index Drill Bit Set



73136

Description	Type	Contents	Point	Finish	Item #
<b>Straight Shank Sets</b>					
13-Piece Set	Gen. Purp. HSS Fractional	1/16" - 1/4" by 64ths	118°	Bright	60136
15-Piece Set	Gen. Purp. HSS Fractional	1/16" - 1/2" by 32nds	118°	Bright	60137
21-Piece Set	Gen. Purp. HSS Fractional	1/16" - 3/8" by 64ths	118°	Bright	60221
29-Piece Set	Gen. Purp. HSS Fractional	1/16" - 1/2" by 64ths	118°	Bright	60138
60-Piece Set	Gen. Purp. HSS Wire Gauge	#1 - #60	118°	Bright	80181
20-Piece Set	Gen. Purp. HSS Wire Gauge	#61 - #80	118°	Bright	80183
15-Piece Set	Heavy Duty HSS Fractional	1/16" - 1/2" by 32nds	135°	Black Oxide	63537
15-Piece Set	Cobalt HSS Fractional	1/16" - 1/2" by 32nds	135°	Cobalt	63137
21-Piece Set	Cobalt HSS Fractional	1/16" - 3/8" by 64ths	135°	Cobalt	63221
15-Piece Set	TiN HSS Fractional	1/16" - 1/2" by 32nds	135°	TiN Coated	63737
13-Piece Set	TURBOMAX HSS Fractional	1/16" - 1/4" by 64ths	TURBOMAX	Black & Gold Oxide	73136
15-Piece Set	TURBOMAX HSS Fractional	1/16" - 1/2" by 32nds	TURBOMAX	Black & Gold Oxide	73137
29-Piece Set	TURBOMAX HSS Fractional	1/16" - 1/2" by 64ths	TURBOMAX	Black & Gold Oxide	73138
21-Piece Set	TURBOMAX HSS Fractional	1/16" - 3/8" by 64ths	TURBOMAX	Black & Gold Oxide	73149
<b>Reduced Shank Sets</b>					
15-Piece Set	Gen. Purp. HSS Fractional 3/8"	1/16" - 1/2" by 32nds	118°	Bright	60147
29-Piece Set	Gen. Purp. HSS Fractional 3/8"	1/16" - 1/2" by 64ths	118°	Bright	60148
8-Piece Set	Silver & Deming (S&D) HSS Fractional 1/2"	9/16" - 1" by 32nds	118°	Black Oxide & Bright	90108
<b>1/4" Hex Shank Sets</b>					
5-Piece Set	Heavy Duty HSS Fractional	3/32", 7/64", 1/8", 6/64", & 5/32"	135°	Black Oxide	4935642

# Metal Drilling

## Drill Bit Sets / Gauges

### Pro Set Cases



314018



318015



316015



4935643

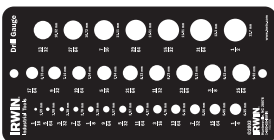


3018009

METAL DRILLING

Description	Type	Contents	Point	Finish	Item #
15-Piece Set	Black Oxide HSS Fractional Straight Shank Jobber Length	1/16" - 3/8"	135°	Black Oxide	314015
18-Piece Set	Black Oxide HSS Fractional Jobber Length	1/16" - 1/2" with 3/8" Reduced Shank	135°	Black Oxide	314018
20-Piece Set	Drill/Drive Set with Black Oxide HSS Drills and Screwdriver Bits	1/16" (2), 3/32", 1/8" (2), 5/32", 3/16", 1/4" Drills and 12 Screwdriver and Nutdriver Bits	135°	Black Oxide	357020
15-Piece Set	Cobalt HSS Fractional Straight Shank Jobber Length	1/16" - 3/8"	135°	Cobalt	316015
15-Piece Set	TURBOMAX® HSS Fractional Straight Shank Jobber	Length 1/16"-3/8"	TURBOMAX	Black & Gold Oxide	318015
18-Piece Set	TURBOMAX HSS Fractional Jobber	Length 1/16"-1/2" with 3/8" Reduced Shank	TURBOMAX	Black & Gold Oxide	3018024SM
12-Piece Set	Black Oxide HSS 1/4" Hex Shank Jobber Length	1/16", 5/64", 3/32", 7/64", 1/8" (2), 9/64", 5/32", 3/16", 7/32", 1/4" Drills and Lock-N-Load® Quick-Change	135°	Black Oxide	4935643
15-Piece Set	Titanium Coated HSS Fractional Straight Shank Jobber	1/16"-3/8"	135°	TiN	4935607
15-Piece Set	Titanium Turbomax	1/16" - 3/8"	TURBOMAX	TiN	3018009
18-Piece Set	Titanium Turbomax	1/16" - 1/2"	TURBOMAX	TiN	3018010
9-Piece Set	Titanium Turbomax & Unibit	1/16" - 3/8" Unibit #1 & #4	TURBOMAX	TiN	3018008

### Drill Bit Gauge & Stand



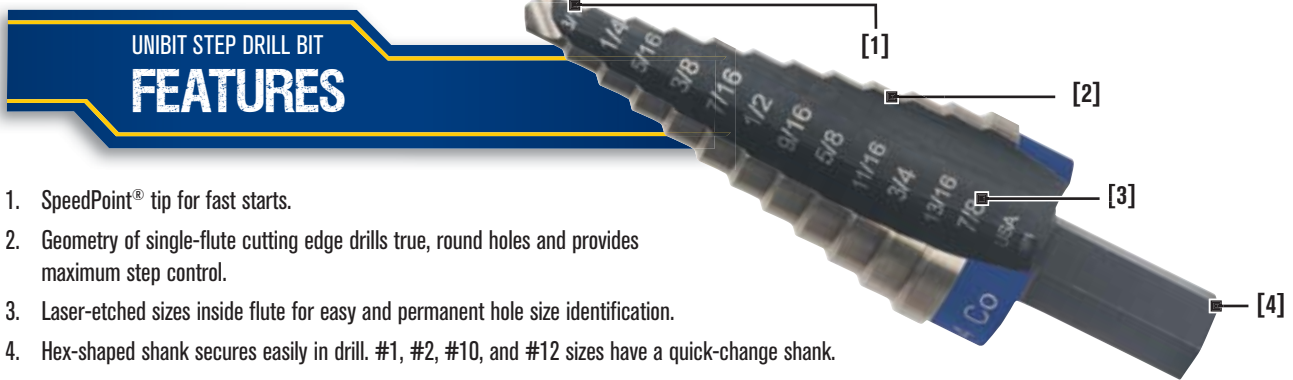
12092

Description	Carded Item #	Bulk Item #
Fractional Drill Gauge	12092	-
Drill Stand 1/16" - 1/2"	60172	-



## UNIBIT Step Drill Bits – Drill Multiple Hole Sizes with One Bit

IRWIN® UNIBIT® step drill bits are ideal for drilling holes in just about any type of thin material. General purpose high speed steel UNIBIT step drill bits are perfect for use in mild steel, copper, brass, aluminum, plexiglass, wood, and laminate. Our Titanium Nitride-coated (TiN) bits resist heat and friction, which extends the life of the cutting edge six times longer than standard step drills. And, our Cobalt step drill bits are engineered with M35 Cobalt steel for maximum life when drilling in the toughest steel, including stainless steel. Most UNIBIT step drills are designed with a SpeedPoint® tip that guarantees fast starts. They're manufactured with a single-flute cutting edge that drills multiple sizes of true, round holes with precise step control. Plus, the hole sizes are permanently laser-etched on the inside of the flute, so they can be easily identified throughout the life of the bit.



### UNIBIT STEP DRILL BIT FEATURES

1. SpeedPoint® tip for fast starts.
2. Geometry of single-flute cutting edge drills true, round holes and provides maximum step control.
3. Laser-etched sizes inside flute for easy and permanent hole size identification.
4. Hex-shaped shank secures easily in drill. #1, #2, #10, and #12 sizes have a quick-change shank.

## UNIBIT Application Guide

Cobalt	Titanium Nitride (TiN)	High Speed Steel (HSS)
Stainless Steel or Other Tough Materials	Repetitive Drilling	General Use

### UNIBIT Cobalt HSS



10231CB

- Engineered with M35 Cobalt steel for maximum life when drilling in tough steel.
- SpeedPoint® tip for fast starts.\*

Description	# of Hole Sizes	Hex Shank Size	Carded Item #
#1 1/8"-1/2" (1/32" steps)	13	1/4"	10231CB
#2 3/16"-1/2" (1/16" steps)	6	1/4"	10232CB
#3 1/4"-3/4" (1/16" steps)	9	3/8"	10233CB
#4 3/16"-7/8" (1/16" steps)	12	3/8"	10234CB
#9 7/8" and 1-1/8" for (1/2" and 3/4") KO	2	7/16"	10239CB
#20 9/16"-1" (1/16") Inc - Hole Enlarging	8	7/16"	10220CB
#1M 4 mm-12 mm (1 mm steps)	9	1/4"	11101CB
#2M 4 mm - 12 mm (2 mm steps)	5	1/4"	11102CB
#3M 6 mm - 18 mm (2 mm steps)	7	3/8"	11103CB
#4M 4 mm - 22 mm (2 mm steps)	10	3/8"	11104CB

### UNIBIT HSS Fractional Titanium Nitride (TiN) Coated



15101ZR

- Titanium Nitride coating resists heat and friction, extending the cutting edge life up to six times longer than other high speed steel step drill bits.
- SpeedPoint® tip for fast starts.\*

Set: 15502

Description	# of Hole Sizes	Hex Shank Size	Carded Item #
#1T 1/8" - 1/2" (1/32" steps)	13	1/4"	15101ZR
#2T 3/16" - 1/2" (1/16" steps)	6	1/4"	15102ZR
#3T 1/4" - 3/4" (1/16" steps)	9	3/8"	15103ZR
#4T 3/16" - 7/8" (1/16" steps)	12	3/8"	15104
#13T 1-1/8" (single hole)	1	7/16"	15313
#20T 9/16" - 1" (hole enlarging)	8	7/16"	15200
#21T 13/16" - 1-3/8" (hole enlarging)	10	7/16"	15221

▲ – SpeedPoint™ Tip

\*included on all self-starting sizes except for #1

# Metal Drilling

## Step Drill Bits / Sets

### UNIBIT® HSS Metric Titanium Nitride (TiN) Coated



16103

- Titanium Nitride coating resists heat and friction, extending the cutting edge life up to six times longer than other high speed steel step drill bits.
- SpeedPoint® tip for fast starts.\*

Description	# of Hole Sizes	Hex Shank Size	Carded Item #
▲ #1MT 4 mm - 12 mm (1 mm steps)	9	1/4"	16101
▲ #2MT 4 mm - 12 mm (2 mm steps)	5	1/4"	16102
▲ #3MT 6 mm - 18 mm (2 mm steps)	7	3/8"	16103
▲ #4MT 4 mm - 22 mm (2 mm steps)	10	3/8"	16104
▲ #5MT 5 mm - 35 mm (2 - 3 mm steps)	13	7/16"	16105

### UNIBIT HSS Fractional



10234

- SpeedPoint® tip for fast starts.\*
- Geometry of single-flute cutting edge drills true, round holes and provides maximum step control.

**Sets:** 10225, 10228, 10502

Description	# of Hole Sizes	Hex Shank Size	Carded Item #
▲ #1 1/8" - 1/2" (1/32" steps)	13	1/4"	10231
▲ #2 3/16" - 1/2" (1/16" steps)	6	1/4"	10232
▲ #3 1/4" - 3/4" (1/16" steps)	9	3/8"	10233
▲ #4 3/16" - 7/8" (1/16" steps)	12	3/8"	10234
▲ #5 1/4" - 1-3/8" (1/8" steps)	10	7/16"	10235
▲ #9 7/8" and 1-1/8" (1/2" and 3/4" Knock-Out)	2	7/16"	10239
#10 1/2" (single hole)	1	1/4"	10310
#11 7/8" (single hole)	1	3/8"	10311ZR
#12 3/8" (single hole)	1	1/4"	10312ZR
#13 1-1/8" (single hole)	1	7/16"	10313ZR
#14 1-7/32" (single hole)	1	7/16"	10314
#20 9/16" - 1" (hole enlarging)	8	7/16"	10220
#21 13/16" - 1-3/8" (hole enlarging)	10	7/16"	10221

### UNIBIT HSS Metric



11101ZR

- SpeedPoint® tip for fast starts.\*
- Geometry of single-flute cutting edge drills true, round holes and provides maximum step control.

Description	# of Hole Sizes	Hex Shank Size	Carded Item #
▲ #1M 4 mm - 12 mm (1 mm steps)	9	1/4"	11101ZR
▲ #2M 4 mm - 12 mm (2 mm steps)	5	1/4"	11102
▲ #3M 6 mm - 18 mm (2 mm steps)	7	3/8"	11103
▲ #4M 4 mm - 22 mm (2 mm steps)	10	3/8"	11104
▲ #5M 5 mm - 35 mm (2-3 mm steps)	13	7/16"	11105ZR
#20M 14 mm - 24 mm (hole enlarging)	6	7/16"	11580
#21M 20 mm - 34 mm (hole enlarging)	8	7/16"	11581
PG29M 5 mm - 28.3 mm	10	7/16"	11194
29 mm 5 mm - 29 mm	10	7/16"	11195

### UNIBIT Sets



10502CB

Description	Type	Contents	Item #
4-Piece Set	High Speed Steel Set	#1, 2, 4 & 21	10225
4-Piece Set	High Speed Steel Set w/#1 TiN	#1, 2 & 3 plus #1T	10228
3-Piece Set	High Speed Steel Set	#1, 2 & 3	10502ZR
3-Piece Set	Titanium Nitride Coated Set	#1T, 2T & 3T	15502
3-Piece Set	Cobalt Set	#1C, 2C & 3C	10502CB
9-Piece Set	Unibit/TiN Turbomax Set	#1, #4 & 7-Piece TiN (1/16", 3/32", 1/8", 3/16", 7/32", 1/4", 3/8")	3018008

▲ - SpeedPoint™ Tip

\*included on all self-starting sizes except for #1