

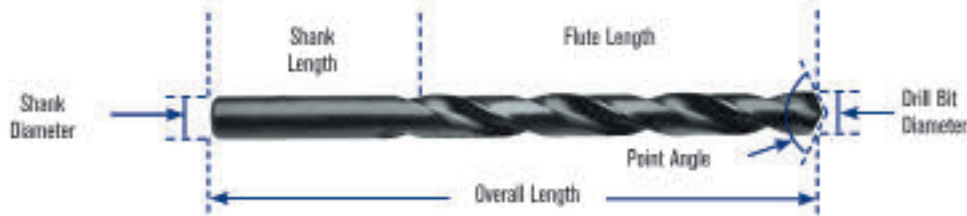
IRWIN®

Metal Drilling



www.irwin.com

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
- For stationary drills
- Performs better in softer materials than hard metal

118° Point Angle

135° Split Point

- Self-centering (won't "walk")
- 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
- 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 coating for 6X longer life
- TURBOMAX tip for burr-free holes. Exact centering / no walking on straight and curved surfaces
- Reinforced web for added strength and durability
- 3-flatted shank on 3/16" and above for better chuck grip

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 lessens the possibility of chips getting lodged in the flute, and allows for the reintroduction of lubricant into the hole.

Speed and Feed Reduction (Based upon 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 144-145 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

- High speed steel features a black body and gold flute
- TURBOMAX tip for burr-free holes. Exact centering / no walking on straight and curved surfaces
- 3-fluted shank on 3/16" and above for better chuck grip

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 shanks

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 135° Point (Series 3016/631)



63124

- 5% Cobalt for higher heat and abrasion resistance
- Heavy-duty web construction for strength and durability
- 135° split point begins drilling immediately, minimizing bit "walk"

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, 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

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



3016228

- Standard Cobalt bit with 3/8" reduced shanks

Applications:

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

Sets:

Pro Set Case: 316015

Metal Index: 3018002 (M35 grade)

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 135° Split Point (Series 639/637)



63724

- Titanium Nitride coated bits last up to six times longer than standard high speed steel drill bits
- Cutting edge stays sharper longer
- Titanium Nitride coating reduces friction
- Repetitive metal drilling with Portable Drills, Stationary Drill Press

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 135° Split Point (Series 30190)



3019016B

- High Speed Steel features a black shank and gold flute
- Heavy-duty web construction for strength and durability
- 135° split point begins drilling immediately, minimizing bit "walk"
- 3-flatted shank on 3/16" and above for better chuck grip

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 135° Split Point (Series 30191)



3019128B

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

Set:

Metal Index: 3018005

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



63524ZR

- Black Oxide finish for corrosion resistance
- Heavy-duty web construction for strength and durability
- 135° split point begins drilling immediately, minimizing bit "walk"

Set:

Pro Set Cases: 314015

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



63432

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

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"	-	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

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

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

Metal Drilling

Jobber Length Drill Bits

Black Oxide 1/4" Hex Shank Drill Bits



4935636

- 1/4" Hex Shank works in Lock-N-Load Extensions as well as all drill chucks
- Black Oxide coating to reduce corrosion

Applications:

Automotive, MRO, portable drills, stationary drill press

Sets:

5-pc Set: 4935642

12-pc 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

- Black Oxide finish for corrosion resistance
- Heavy-duty web construction for strength and durability
- 135° split point begins drilling immediately, minimizing bit "walk"

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

- Black Oxide finish for corrosion resistance
- Economical High Speed Steel for general drilling
- Recommended for use in mild steel, wood, and plastic

Applications:

Automotive, MRO, portable drills, stationary drill press

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



60124

- Recommended for use in metal, wood & plastic
- 118° conventional point, bright finish

Applications:

Automotive, MRO, 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 118° Point (Series 738/718)



71832

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

Applications:

Automotive, MRO, 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

- Lettered from A to Z (small to large)
- Used where more precisely-sized holes are required in larger sizes than number drills
- Drills exact size holes for tapping

Applications:

Automotive, MRO, 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

- Numbered from 1 to 60 (large to small)
- Drills exact size hole for tapping
- Use where non-fractional-sized holes are required

Applications: Automotive, MRO, 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	.1260	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

Metal Drilling

Mechanics Length / Screw Machine Length Drill Bits

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



30524

- 8% Cobalt alloyed for higher heat and abrasion resistance
- Shorter drill for additional strength
- Heavy-duty web construction for strength and durability
- 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

- Black Oxide finish for corrosion resistance
- Shorter length for increased strength and rigidity
- Also known as "stubbies"

Applications:

Industrial applications, MRO, 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

- Black Oxide finish for corrosion resistance
- Numbered from 1 to 55 (large to small)
- Drills exact size hole for tapping (used where more precisely-sized holes are required)
- Shorter length for increased strength and rigidity

Applications:

Industrial applications, MRO, 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

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



91148

- 6" overall length
- For use in 1/2" drill chucks
- 3-flatted shank for secure grip

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" Longboy HSS Fractional 1/2" Reduced Shank Drill Bits (Series 604)



60448

- For use in 1/2" drill chucks
- 3-flatted shank for secure grip

Applications:

Deep drilling into wood and metal beams

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



61224

- Black Oxide finish for corrosion resistance
- Heavy-duty web construction for strength and durability

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



66624

- Black Oxide finish for corrosion resistance
- Heavy-duty web construction for strength and durability

Size	Decimal Equiv.	Flute Length	Overall Length	Carded Item #	Bulk Item #
1/2"	.5000	9"	12"	-	60432
9/16"	.5625	9"	12"	-	60436
5/8"	.6250	9"	12"	-	60440
11/16"	.6875	9"	12"	-	60444
3/4"	.7500	9"	12"	-	60448
13/16"	.8125	9"	12"	-	60452
7/8"	.8750	9"	12"	-	60456
15/16"	.9375	9"	12"	-	60460
1"	1.000	9"	12"	-	60464
1-1/16"	1.0625	9"	12"	-	60468
1-1/8"	1.1250	9"	12"	-	60472
1-1/4"	1.2500	9"	12"	-	60480

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

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

- Black Oxide finish for corrosion resistance
- Drills twice as many holes as a single end drill bit
- Heavy-duty web for strength and durability

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

- 1/4" round shank
- Milled and precision-ground to 82° for countersinking into most machinable materials
- 5 flutes

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 & Remove a Cartridge



Slide Latch



Open Case



Remove Cartridge

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

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



3018009

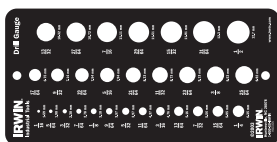


3018010

METAL DRILLING

Description	Type	Contents	Point	Finish	Item #
15-pc Set	Black Oxide HSS Fractional Straight Shank Jobber Length	1/16" - 3/8"	135°	Black Oxide	314015
18-pc Set	Black Oxide HSS Fractional Jobber Length	1/16" - 1/2" with 3/8" Reduced Shank	135°	Black Oxide	314018
20-pc 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-pc Set	Cobalt HSS Fractional Straight Shank Jobber Length	1/16" - 3/8"	135°	Cobalt	316015
15-pc Set	TURBOMAX® HSS Fractional Straight Shank Jobber	Length 1/16"-3/8"	TURBOMAX	Gold Oxide	318015
18-pc Set	TURBOMAX HSS Fractional Jobber	Length 1/16"-1/2" with 3/8" Reduced Shank	TURBOMAX	Gold Oxide	3018024SM
12-pc 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-pc Set	Titanium Coated HSS Fractional Straight Shank Jobber	1/16"-3/8"	135°	TiN	4935607
15-pc Set	Titanium Turbomax	1/16" - 3/8"	TURBOMAX	TiN	3018009
18-pc Set	Titanium Turbomax	1/16" - 1/2"	TURBOMAX	TiN	3018010
9-pc Set	Titanium Turbomax & Unibit	1/16" - 3/8" Unibit #1 & #4	TURBOMAX	TiN	3018008

Drill Bit Gauge & Stand



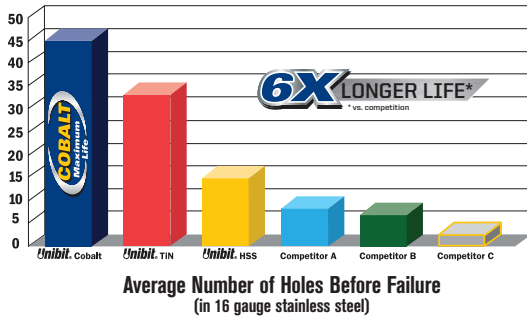
12092

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

UNIBIT® Step Drill Bits – Maximum Life in Tough Steel

UNIBIT is the most recognized brand for electrical, automotive and plumbing professionals. UNIBIT fits the IRWIN tradition of providing reliable, high-quality professional tools. IRWIN UNIBIT has been the most innovative and trusted name in step drill bits since its invention in 1972. The IRWIN UNIBIT Cobalt is the latest addition to the step drill bit category. Made of cobalt high speed steel, this step drill bit will last longer in the toughest of materials. From stainless steel to aluminum or PVC pipe, the UNIBIT Cobalt is the most versatile and longest lasting step drill bit in the market.

Comparative Life Test in Stainless Steel



M35 Grade Cobalt HSS

- High heat & abrasion resistance
- Longest cutting edge life

Radial Concave Flute

- True round holes
- Greatest control
- Minimizes vibration

3-Flatted Shank

- Won't slip in chuck

Speedpoint® Tip

- Fast starting
- 6X faster than original Unibit

Laser Marked Sizes

- Permanent
- Won't wear off with use



METAL DRILLING

UNIBIT Cobalt HSS



10231

- M35 grade Cobalt HSS
- Longest cutting edge life
- 6X longer life*

*versus competition

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



15101

- Titanium Nitride coating extends cutting edge life up to 6X
- Single-fluted cutting edge for greater control & rounder holes

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 7/16" - 1" (hole enlarging)	8	7/16"	15200
#21T 13/16" - 1-3/8" (hole enlarging)	10	7/16"	15221

▲ - SpeedPoint™ Tip

Metal Drilling

Step Drill Bits / Sets

UNIBIT® HSS Metric Titanium Nitride (TiN) Coated



16103

- Titanium Nitride coating extends cutting edge life up to 6X
- Single-fluted cutting edge for greater control & rounder holes

UNIBIT HSS Fractional



10234

- Single-fluted cutting edge for greater control & rounder holes
- Ideal for drilling holes in thin materials such as mild steel, copper, brass, aluminum, plexiglass, wood and laminates

Sets: 10225, 10228, 10502

UNIBIT HSS Metric



11101

- Single-fluted cutting edge for greater control & rounder holes
- Ideal for drilling holes in thin materials such as mild steel, copper, brass, aluminum, plexiglass, wood and laminates

UNIBIT Sets



10502CB

▲ - SpeedPoint™ Tip

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

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

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

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