Jobber Length

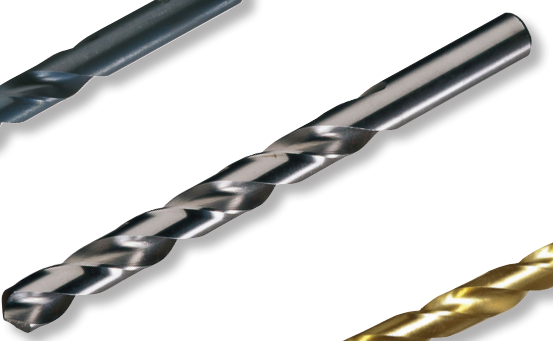
General Purpose
Styles 150, 150D, 150-TN (150T)

Features/Benefits:
- General-purpose geometry for drilling in a wide range of operating conditions and materials.
- Manufactured from premium high-speed steel.
- 118° point.
- The most popular drill for general-purpose applications.
- Metric sizes are manufactured to DIN 338 specifications.
- Bright, black oxide and titanium nitride (TiN) finishes standard from stock; alternate coatings available as stock modifications.

Application Information:
- carbon steel (TiN, black oxide)
- cast iron (TiN, black oxide)
- non-ferrous materials (bright)

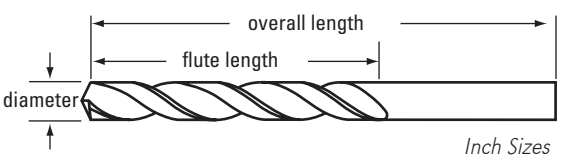
Surface Treatment Information:
- Black oxide surface finish increases wear resistance and adds lubricity, improving chip flow.
- Titanium nitride (TiN) PVD coating adds lubricity and hardness which enhances chip flow, finish hole quality, and drill life.

Style 150 Black Oxide

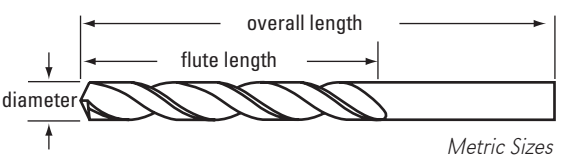


Style 150D Bright Finish

Style 150-TN TiN-Coated



Inch Sizes



Metric Sizes

INCH AND METRIC SIZES

Drill Diameter					Overall Length		Flute Length		Style 150	Style 150D	Style 150-TN
Fract	Wire/Let	Metric	Decimal	mm	Inch	mm	Inch	mm	Black Oxide	Bright*	TiN
	80		.0135	0.34	.7500	19.05	.1250	3.18	44150	44350	70180
		0.35	.0138		.7480	19.00	.1575	4.00	—	47210	—
	79		.0145	0.37	.7500	19.05	.1250	3.18	44149	44349	70179
1/64			.0156	0.40	.7500	19.05	.1875	4.76	44001	44201	70201
		0.40	.0157		.7874	20.00	.1969	5.00	—	47211	—
	78		.0160	0.41	.8750	22.23	.1875	4.76	44148	44348	70178
		0.45	.0177		.7874	20.00	.1969	5.00	—	47212	—
	77		.0180	0.46	.8750	22.23	.1875	4.76	44147	44347	70177
		0.50	.0197		.8661	22.00	.2362	6.00	—	47213	—
	76		.0200	0.51	.8750	22.23	.1875	4.76	44146	44346	70176
	75		.0210	0.53	1.0000	25.40	.2500	6.35	44145	44345	70175
		0.55	.0217		.9449	24.00	.2756	7.00	—	47214	—
	74		.0225	0.57	1.0000	25.40	.2500	6.35	44144	44344	70174
		0.60	.0236		.9449	24.00	.2756	7.00	—	47215	—
	73		.0240	0.61	1.1250	28.58	.3125	7.94	44143	44343	70173
	72		.0250	0.64	1.1250	28.58	.3125	7.94	44142	44342	70172
		0.65	.0256		1.0236	26.00	.3150	8.00	—	47216	—

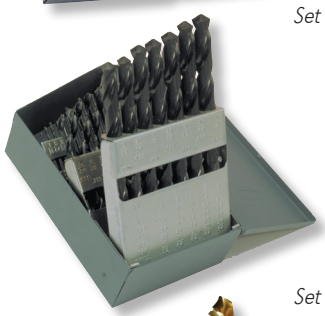
**Bright metric sizes are non-stocked standards (minimum order quantity required).*

continued on next page

General Purpose (continued)
Styles 150, 150D, 150-TN (150T)

INCH AND METRIC SETS

Set 57713



Set 57714

Set 69861

Sets in Metal Index Cases

Number of Tools	Size Range	Style 150 Black Oxide	Style 150D Bright	Style 150-TN TiN
13	1/16 - 1/4 X 1/64	57711	49911	—
15	1/16 - 1/2 X 1/32	57713	49913	69862
21	1/16 - 3/8 X 1/64	57712	49912	—
29	1/16 - 1/2 X 1/64	57714	49914	69861
26	Letters A - Z	57718	49918	69883
60	#1 - #60 wire gauge	57716	49916	69863
80	#1 - #80 wire gauge	57717	—	—
20	#61 - #80 wire gauge	57720	57715	69897
115	1/16 - 1/2 X 1/64, A - Z, #1 - #60	57728	49928	—
114	1/16 - 1/2 X 1/64, #1 - #60, 1mm - 13mm X 0.5mm	57726	—	—
11	1mm - 6mm X 0.5mm	57723	—	—
13	1mm - 7mm X 0.5mm	57729	—	—
25	1mm - 13mm X 0.5mm	57725	—	—
118	1mm - 13mm X 0.1mm	57727	—	—

TECH TIP

DRILL REGRINDING

Good tool management is knowing how to recognize drill wear in preparation for resharpening. Signs of wear start as soon as the drill starts to cut. All tool regrinding should be done by machine.

1. Removal of Worn Section: Wear on the outer corners will appear as a slight rounding. You will see wear on the cutting lips and on the chisel-edge. If the drill is used at this point, it will only rub in the hole rather than cut.

With this condition of wear on the point, the horsepower and thrust increases, which in turn increases wear at a faster rate. Wear will appear along the margins. This could result in loss of size. To resharpen a tool in this condition, you will have to remove all of this worn section. Assuming that you are cutting off 1/4" to1/2" of worn material with an abrasive cutoff wheel, care is needed not to burn the high-speed steel. If this happens you will lower the hardness by about 5Rc points, softening the steel and resulting in a dramatic loss of performance.

2. Web Thinning: Most standard drills have webs, which increase in diameter all the way to the shank end. As the drill is resharpened, the web will get thicker, and web thinning is necessary. Web thinning is done on a tool and cutter grinder or CNC for accurate control. The same amount of stock should be removed from both sides to ensure web centrality. If web centrality is incorrect you can cause rapid wear failure and an out-of-round hole. Free cutting wheels should be used to not burn the cutting edges. The contour of the flute should be blended in with the original web shape to not hinder chip flow.

3. Drill Pointing: This is the most critical operation in drill re-sharpening. The two cutting lips of a drill should be accurately ground to equal angles and equal length. If your drill point has lips of equal length but at unequal angles, or vise versa, one cutting edge will do most of the cutting and will cause an oversize condition, excessive wear, and short tool life.

4. Lip Relief Angles: The lip relief angle is the angle measured across the margin at the periphery of the drill. This angle has a bearing on the amount of clearance to obtain the correct chisel edge angle. When grinding the lip relief angle, both sides should be on the same plane. In general, the diameter of the tool dictates what that angle should be. Fragile, small diameter tools require larger clearance angles to help them penetrate. For instance, a #80-#61 would have an angle of 24°, a 3/4" tool would be about 8° to 10°. Material hardness also plays here. If drilling harder materials, reduce angles by 2° and increase for softer materials by 2°.

For more information, see the USCTI brochure, "Tolerances for Twist Drills and Reamers."

Jobber Drill Sets
High-Speed Steel and Cobalt

HIGH-SPEED STEEL SETS IN METAL INDEX CASES

			General Purpose			Left-Hand	Heavy-Duty				Parabolic
		Style	**150**	**150D**	**150-TN**	**150L**	**150ASP**	**150ASP-TN**	**150ASP-TC**	**150ASP-TA**	**150DH-TN**
No of Tools	Sizes in Set		Blk Oxide	Bright	TiN	Bright	Blk Oxide	TiN	TiCN	TiAlN	TiN
Inch Sizes											
13	1/16 - 1/4 x 1/64		57711	49911			69847	41798	43638	42801	
15	1/16 - 1/2 x 1/32		57713	49913	69862	69881	69850	41797	43637	42800	
21	1/16 - 3/8 x 1/64		57712	49912		69882	69851	41799	43639		
29	1/16 - 1/2 x 1/64		57714	49914	69861	69876	45640	41800	43640		57734
26	Let A - Let Z		57718	49918	69883		45638	41801			
60	#1 - #60		57716	49916	69863		45639	41802			
20	#61 - #80		57720	57715	69897		45656	41803			
80	#1 - #80		57717								
115	1/16 - 1/2 x 1/64, Let A - Let Z, #1 - #60		57728	49928			45650	41804			
114	1/16 - 1/2 x 1/64, #1 - #60, 1mm - 13mm x .5mm		57726								
Metric Sizes											
11	1mm - 6mm x .5mm		57723								
13	1mm - 7mm x .5mm		57729								
25	1mm - 13mm x .5mm		57725				45925				
118	1mm - 13mm x .1mm		57727								

COBALT SETS IN METAL INDEX CASES

		Heavy-Duty		
		Style **550**	**550-TN**	**550ASP**
No of Tools	Sizes in Set	Straw	TiN	Straw
Inch Sizes				
13	1/16 - 1/4 x 1/64	57851	69891	
15	1/16 - 1/2 x 1/32	57852	69871	47795
21	1/16 - 3/8 x 1/64	69887	69892	
29	1/16 - 1/2 x 1/64	57850	69870	47796
26	Let A - Let Z	69886		
60	#1 - #60	57853		
20	#61 - #80	45657		
115	1/16 - 1/2 x 1/64, Let A - Let Z, #1 - #60	46650		
Metric Sizes				
11	1mm - 6mm x .5mm	54126		
19	1mm - 10mm x .5mm			47924
25	1mm - 13mm x .5mm	54127		47925

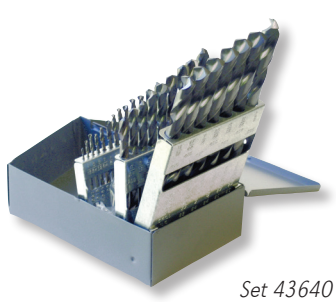
JOBBER DRILL SETS STYLE SUMMARY

Drill Style	Material	Point	Finish	Description
150	HSS	118°	Black Oxide	General Purpose
150D	HSS	118°	Bright	General Purpose
150T	HSS	118°	TiN-coated	General Purpose
150L	HSS	118°	Bright	Left-Hand Spiral
150ASP	HSS	135° Split	Black Oxide	Heavy-duty
150ASP-TN	HSS	135° Split	TiN-coated	Heavy-duty
150ASP-TC	HSS	135° Split	TiCN-coated	Heavy-duty
150ASP-TA	HSS	135° Split	TiAlN-coated	Heavy-duty
150DHT	HSS	135° K-Notch	TiN-coated	Parabolic Deep-Hole
550	Cobalt	135° Split	Straw	Heavy-duty
2550	Cobalt	135° Split	TiN-coated	Heavy-duty
550ASP	Cobalt	135° Split	Straw	Heavy-duty


Set 57725


Set 69883


Set 47795


Set 43640

more sets on next page