Jig Bore Style, Right Hand, Single End
33UN59

Bell Tip, Right Hand, Double End
33UM96

5-Pc. Set, Plain Tip, Right Hand, Double End
1DBT6

Center Drills

KEO

Center drills consist of a pilot drill and a countersink and are used to create holes at the center of a piece of stock so it can be turned between centers on a lathe in metal-working tasks. Drills with a **plain tip** are the standard choice for creating center holes. Drills with a **radius tip** have a tapered flute that allows them to create more accurate holes than other styles of center drills. Drills with a **bell tip** have a 120° chamfer on their tip that bevels the outer edge of the center hole to strengthen it and protect it from damage in applications where the piece of stock will go through multiple machining passes. **Jig-bore** drills have a flat on the shank for securing them to a jig borer machine with a set screw.

High-Speed Steel—Provides good wear resistance in a wide range of machining applications.

Cobalt Steel—Provides good wear resistance when machining hard materials at high speeds and is harder than high-speed steel.

Powdered Metal—Stronger than high-speed steel and cobalt steel.

Solid Carbide—Provides excellent wear resistance when machining the toughest materials, such as stainless steel.

Drill Size	Countersink Angle	Body Dia.	Drill Point Dia.	Overall Length	Bright (Uncoated) Item No.	TiN Item No.
Radius Tip, Right Hand, Double End						
High-Speed Steel						
#2	60 °	3/16 in	5/64 in	1 7/8 in	33UM22	—
#3	60 °	1/4 in	7/64 in	2 in	33UL56	—
Plain Tip, Right Hand, Double End						
Carbide						
#0	60 °	1/8 in	1/32 in	1 1/2 in	1DBJ5	—
#1	60 °	1/8 in	3/64 in	1 1/2 in	1DBJ6	—
#2	60 °	3/16 in	5/64 in	2 in	1DBJ7	—
#3	60 °	1/4 in	7/64 in	2 in	1DBJ8	—
#4	60 °	5/16 in	1/8 in	2 1/8 in	1DBJ9	—
#4-0	60 °	1/8 in	0.0150 in	1 1/2 in	33UN80	—
#5	60 °	7/16 in	3/16 in	2 3/4 in	1DBK1	—
#6	60 °	1/2 in	7/32 in	3 in	1DBK2	—
#7	60 °	5/8 in	1/4 in	3 3/4 in	1DBK3	—
#8	82 °	3/4 in	5/16 in	4 in	33UP11	—
Cobalt						
#0	60 °	1/8 in	1/32 in	1 1/4 in	1DBF7	—
#1	60 °	1/8 in	3/64 in	1 1/4 in	1DBF8	—
#2	60 °	3/16 in	5/64 in	1 7/8 in	1DBF9	—
#2-0	60 °	1/8 in	0.0250 in	1 1/4 in	1DBF6	—
#3	60 °	1/4 in	7/64 in	2 in	1DBG1	—
#4	60 °	5/16 in	1/8 in	2 1/8 in	1DBG2	—
#4-1/2	60 °	3/8 in	9/64 in	2 1/2 in	33UN75	—
#5	60 °	7/16 in	3/16 in	2 3/4 in	1DBG3	—
#6	60 °	1/2 in	7/32 in	3 in	1DBG4	—
#7	60 °	5/8 in	1/4 in	3 1/4 in	1DBG5	—
#10	60 °	1 in	3/8 in	3 3/4 in	1DBG8	—
High-Speed Steel						
#0	60 °	1/8 in	1/32 in	1 1/4 in	3P277	1DBE4
#0	82 °	1/8 in	1/32 in	1 1/4 in	2RTW2	—
#0	90 °	1/8 in	1/32 in	1 1/4 in	1DBH1	—
#1	60 °	1/8 in	3/64 in	1 1/4 in	3P279	1DBE5
#1	60 °	1/8 in	3/64 in	3 in	1DBK5	—
#1	60 °	1/8 in	3/64 in	4 in	1DBK6	—
#1	60 °	1/8 in	3/64 in	5 in	1DBK7	—
#1	60 °	1/8 in	3/64 in	6 in	1DBK8	—
#1	82 °	1/8 in	3/64 in	1 1/4 in	2RTW3	—
#1	90 °	1/8 in	3/64 in	1 1/4 in	1DBH2	2RTX7
#2	60 °	3/16 in	5/64 in	1 7/8 in	3P281	1DBE6
#2	60 °	3/16 in	5/64 in	3 in	1DBK9	—
#2	60 °	3/16 in	5/64 in	4 in	1DBL1	—
#2	60 °	3/16 in	5/64 in	5 in	1DBL2	—
#2	60 °	3/16 in	5/64 in	6 in	1DBL3	—
#2	82 °	3/16 in	5/64 in	1 7/8 in	2RTW4	4FVX3
#2	90 °	3/16 in	5/64 in	1 7/8 in	1DBH3	2RTX8
#2-0	60 °	1/8 in	0.0200 in	1 1/4 in	3P275	—
#2-0	60 °	1/8 in	0.0250 in	1 1/4 in	—	1DBE3
#3	60 °	1/4 in	7/64 in	2 in	3P283	1DBE7
#3	60 °	1/4 in	7/64 in	3 in	1DBL4	—
#3	60 °	1/4 in	7/64 in	4 in	1DBL5	—
#3	60 °	1/4 in	7/64 in	5 in	1DBL6	—
#3	60 °	1/4 in	7/64 in	6 in	1DBL7	—
#3	82 °	1/4 in	7/64 in	2 in	2RTW5	—
#3	90 °	1/4 in	7/64 in	2 in	1DBH4	2RTX9
#4	60 °	5/16 in	1/8 in	2 1/8 in	3P285	1DBE8
#4	60 °	5/16 in	1/8 in	3 in	1DBL8	—
#4	60 °	5/16 in	1/8 in	4 in	1DBL9	—
#4	60 °	5/16 in	1/8 in	5 in	1DBN1	—
#4	60 °	5/16 in	1/8 in	6 in	1DBN2	—
#4	82 °	5/16 in	1/8 in	2 1/8 in	2RTW6	4FVX5
#4	90 °	5/16 in	1/8 in	2 1/8 in	1DBH5	2RTY1
#4-1/2	60 °	3/8 in	9/64 in	2 1/2 in	33UN71	33UN72
#4-1/2	60 °	3/8 in	9/64 in	4 in	1DBN3	—
#4-1/2	60 °	3/8 in	9/64 in	5 in	1DBN4	—
#4-1/2	60 °	3/8 in	9/64 in	6 in	1DBN5	—
#4-1/2	82 °	3/8 in	9/64 in	2 1/2 in	2RTW7	4FVX6
#4-1/2	90 °	3/8 in	3/16 in	2 1/2 in	1DBH6	—
#5	60 °	7/16 in	3/16 in	2 3/4 in	3P287	1DBE9
#5	60 °	7/16 in	3/16 in	4 in	1DBN6	—
#5	60 °	7/16 in	3/16 in	5 in	1DBN7	—
#5	60 °	7/16 in	3/16 in	6 in	1DBN8	—
#5	82 °	7/16 in	3/16 in	2 3/4 in	2RTW8	4FVX7
#5	90 °	7/16 in	7/32 in	2 3/4 in	1DBH7	—
#6	60 °	1/2 in	7/32 in	3 in	3P289	1DBF1
#6	60 °	1/2 in	7/32 in	4 in	1DBN9	—
#6	60 °	1/2 in	7/32 in	5 in	1DBP1	—
#6	60 °	1/2 in	7/32 in	6 in	1DBP2	—
#6	82 °	1/2 in	7/32 in	3 in	2RTW9	4FVX8
#6	90 °	1/2 in	7/32 in	3 in	—	2RTY4
#6	90 °	1/2 in	1/4 in	3 in	1DBH8	—
#7	60 °	5/8 in	1/4 in	3 1/4 in	3P291	1DBF2
#7	60 °	5/8 in	1/4 in	6 in	1DBP3	—
#7	82 °	5/8 in	1/4 in	3 1/4 in	2RTX1	—
#7	90 °	5/8 in	1/4 in	3 1/4 in	1DBH9	—
#8	60 °	3/4 in	5/16 in	3 1/2 in	3P293	1DBF3
#8	82 °	3/4 in	5/16 in	3 1/2 in	2RTX2	—
#8	90 °	3/4 in	11/32 in	3 1/2 in	1DBJ1	—
#9	60 °	7/8 in	11/32 in	3 5/8 in	3P295	1DBF4
#9	82 °	7/8 in	11/32 in	3 5/8 in	2RTX3	—
#10	60 °	1 in	3/8 in	3 3/4 in	3P297	1DBF5
#10	82 °	1 in	3/8 in	3 3/4 in	2RTX4	—
Powdered Metal						
#4	60 °	5/16 in	1/8 in	2 1/8 in	33UM36	—
#5	60 °	7/16 in	3/16 in	2 3/4 in	33UM42	—
#6	60 °	1/2 in	7/32 in	3 in	33UM48	—
Plain Tip, Left Hand, Double End						
High-Speed Steel						
#2	60 °	3/16 in	5/64 in	1 7/8 in	33UL55	—
#3	60 °	1/4 in	7/64 in	2 in	33UL57	—
#4	60 °	5/16 in	1/8 in	2 1/8 in	33UL59	—
#6	60 °	1/2 in	7/32 in	3 in	33UM53	—
Jig-Bore Style, Right Hand, Single End						
High-Speed Steel						
1/4 in	60 °	1/2 in	1/4 in	3 1/2 in	33UN59	—
Bell Tip, Right Hand, Double End						
Carbide						
#15	60 °	7/16 in	5/32 in	2 3/4 in	33UN96	—
Cobalt						
#12	60 °	3/16 in	1/16 in	1 7/8 in	33UL63	—
High-Speed Steel						
#13	60 °	1/4 in	3/32 in	2 in	33UM95	33UM96
#17	60 °	5/8 in	7/32 in	3 1/4 in	33UN31	33UN32

Sizes Incl.	Bright (Uncoated) Item No.	TiN Item No.
5-Pc. Sets, Plain Tip, Right Hand, Double End		
High-Speed Steel		
#1, #2, #3, #4, #5	1DBT6	4FUA2
Cobalt		
#1, #2, #3, #4, #5	4FUA3	—
Carbide		
#1, #2, #3, #4, #5	4FUA4	—

Fast-Cut 1-Flute
21MK99

7-Pc. Set
21ML39

WESTWARD

High-Speed Steel Countersinks

- 82° countersink angle
- Bright finish

Countersinks expand the top of an existing hole in a workpiece to allow countersinking screws to install flush with the surface of the workpiece. This helps prevent the workpiece material from swelling when a screw is inserted in the hole and tightened down.

Fast-Cut 1-Flute—Leaves clean edges on holes and has a high, positive rake that reduces vibration.

3-Flute—Typically provides better chip clearance and performs better when machining stringy materials than countersinks with more flutes.

6-Flute—Provides fast material removal and leaves a smooth finish. Removes more material with each revolution and typically provides more wear resistance than countersinks with fewer flutes.

Body Dia.	Shank Dia.	Shank Length	Overall Length	Item No.
Fast Cut 1-Flute				
1/4 in	1/4 in	—	1 1/2 in	21ML02
3/8 in	1/4 in	7/8 in	1 3/4 in	21MK98
1/2 in	1/4 in	1 in	2 in	21MK97
5/8 in	3/8 in	1 in	2 1/4 in	21ML01
3/4 in	1/2 in	1 1/4 in	2 5/8 in	21MK99
1 in	1/2 in	1 1/4 in	2 3/4 in	21ML03
1 1/4 in	1/2 in	1 1/4 in	2 3/4 in	21ML04
3-Flute				
1/4 in	1/4 in	—	1 1/2 in	21ML12
3/8 in	1/4 in	7/8 in	1 3/4 in	21ML08
1/2 in	1/4 in	1 in	2 in	21ML07
5/8 in	3/8 in	1 in	2 1/4 in	21ML10
3/4 in	1/2 in	1 1/4 in	2 5/8 in	21ML09
1 in	1/2 in	1 1/4 in	2 3/4 in	21ML11
6-Flute				
1/4 in	1/4 in	—	1 1/2 in	21ML19
1/2 in	1/4 in	1 in	2 in	21ML27
	3/8 in	1 in	2 in	21ML34
5/8 in	3/8 in	1 in	2 1/4 in	21ML30
3/4 in	1/2 in	1 1/4 in	2 5/8 in	21ML28
7/8 in	1/2 in	1 1/4 in	2 3/4 in	21ML36
1 in	1/2 in	1 1/4 in	2 3/4 in	21ML31
1 1/4 in	1/2 in	1 1/4 in	2 3/4 in	21ML38

No. of Pieces	No. of Flutes	Sizes Included	Item No.
Countersink Sets			
5	1	1/4", 3/8", 1/2", 3/4", 1"	21ML06
5	3	1/4", 3/8", 1/2", 3/4", 1"	21ML13
7	6	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1"	21ML26
7	6	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1"	21ML39