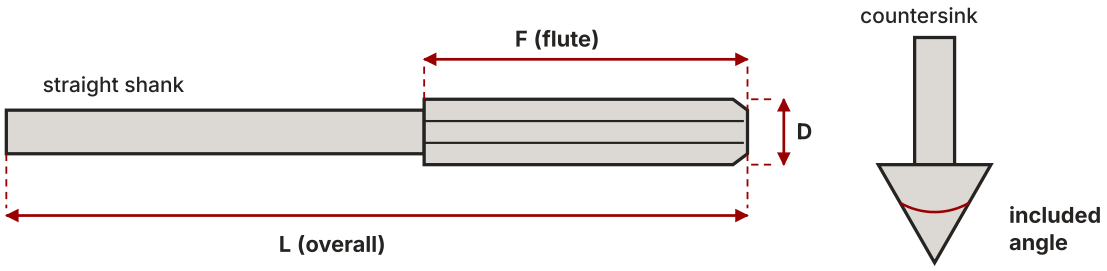
Reamer & Countersink Sizes

jandesupply.com/reference-reamer-countersink-sizes.php

J & E Supply & FASTENER CO.

Chucking reamer lengths, taper pin reamer sizes, center drill (combined drill and countersink) sizes, and which screws each countersink angle fits.

A **reamer** finishes a drilled hole to an exact size with a smooth wall: drill a little under size, then ream. A **chucking reamer** is the machine reamer with a straight shank; a **taper pin reamer** cuts the tapered hole a taper pin drives into. A **countersink** cuts the cone a flat head screw sits flush in — its **included angle** must match the screw head. A **center drill** (combined drill and countersink) drills a small pilot and its 60° cone in one pass, the seat a lathe center runs in.



The letters match the table columns. Not to scale.

Chucking reamer lengths — ASME B94.2 (inches)

REAMER	DECIMAL	FLUTE F	OVERALL L
3/64″	0.0469	1/2	2-1/2
1/16″	0.0625	1/2	2-1/2
5/64″	0.0781	3/4	3
3/32″	0.0938	3/4	3
7/64″	0.1094	7/8	3-1/2
1/8″	0.1250	7/8	3-1/2
9/64″	0.1406	1	4
5/32″	0.1562	1	4
11/64″	0.1719	1-1/8	4-1/2
3/16″	0.1875	1-1/8	4-1/2
13/64″	0.2031	1-1/4	5
7/32″	0.2188	1-1/4	5
15/64″	0.2344	1-1/2	6
1/4″	0.2500	1-1/2	6
17/64″	0.2656	1-1/2	6
9/32″	0.2812	1-1/2	6
19/64″	0.2969	1-1/2	6
5/16″	0.3125	1-1/2	6
21/64″	0.3281	1-1/2	6
11/32″	0.3438	1-1/2	6
23/64″	0.3594	1-3/4	7
3/8″	0.3750	1-3/4	7
25/64″	0.3906	1-3/4	7
13/32″	0.4062	1-3/4	7
27/64″	0.4219	1-3/4	7
7/16″	0.4375	1-3/4	7
29/64″	0.4531	1-3/4	7
15/32″	0.4688	1-3/4	7
31/64″	0.4844	2	8
1/2″	0.5000	2	8

REAMER	DECIMAL	FLUTE F	OVERALL L
17/32″	0.5312	2	8
9/16″	0.5625	2	8
19/32″	0.5938	2	8
5/8″	0.6250	2-1/4	9
21/32″	0.6562	2-1/4	9
11/16″	0.6875	2-1/4	9
23/32″	0.7188	2-1/4	9
3/4″	0.7500	2-1/2	9-1/2
25/32″	0.7812	2-1/2	9-1/2
13/16″	0.8125	2-1/2	9-1/2
27/32″	0.8438	2-1/2	9-1/2
7/8″	0.8750	2-5/8	10
29/32″	0.9062	2-5/8	10
15/16″	0.9375	2-5/8	10
31/32″	0.9688	2-5/8	10
1″	1.0000	2-3/4	10-1/2
1-1/16″	1.0625	2-3/4	10-1/2
1-1/8″	1.1250	2-7/8	11
1-3/16″	1.1875	2-7/8	11
1-1/4″	1.2500	3	11-1/2
1-3/8″	1.3750	3-1/4	12
1-1/2″	1.5000	3-1/2	12-1/2

Straight shank, high-speed steel, nominal. Decimal from our conversion chart. Sizes our two sources both list; for any other size, give us a call.

Taper pin reamers — ASME B94.2 (inches)

REAMER	SMALL END	LARGE END	FLUTE F	OVERALL L
No. 8/0	—	—	—	—
No. 7/0	0.0497	0.0666	13/16	1-13/16
No. 6/0	0.0611	0.0806	15/16	1-15/16
No. 5/0	0.0719	0.0966	1-3/16	2-3/16
No. 4/0	0.0869	0.1142	1-5/16	2-5/16
No. 3/0	0.1029	0.1302	1-5/16	2-5/16
No. 2/0	0.1137	0.1462	1-9/16	2-9/16
No. 0	0.1287	0.1638	1-11/16	2-15/16
No. 1	0.1447	0.1798	1-11/16	2-15/16
No. 2	0.1605	0.2008	1-15/16	3-3/16
No. 3	0.1813	0.2294	2-5/16	3-11/16
No. 4	0.2071	0.2604	2-9/16	4-1/16
No. 5	0.2409	0.2994	2-13/16	4-5/16
No. 6	0.2773	0.3540	3-11/16	5-7/16
No. 7	0.3297	0.4220	4-7/16	6-5/16
No. 8	0.3971	0.5050	5-3/16	7-3/16
No. 9	0.4805	0.6066	6-1/16	8-5/16
No. 10	0.5799	0.7216	6-13/16	9-5/16

Reference diameters, inches. Taper pin reamers taper 1/4″ per foot, the same as the pins. A dash: only one of our sources lists it.

Center drills (combined drill and countersink), plain 60° (inches)

SIZE	DRILL DIA.	DRILL LENGTH	BODY DIA.	OVERALL
#0	1/32″	—	1/8″	1-1/4″

SIZE	DRILL DIA.	DRILL LENGTH	BODY DIA.	OVERALL
#1	3/64″	3/64″	1/8″	1-1/4″
#2	5/64″	5/64″	3/16″	1-7/8″
#3	7/64″	7/64″	1/4″	2″
#4	1/8″	1/8″	5/16″	2-1/8″
#5	3/16″	3/16″	7/16″	2-3/4″
#6	7/32″	7/32″	1/2″	3″
#7	1/4″	1/4″	5/8″	3-1/4″
#8	5/16″	5/16″	3/4″	3-1/2″

Nominal, inches. A dash: our sources differ, or only one lists it — give us a call.

Countersink angles — what each one fits

INCLUDED ANGLE	FITS
60°	Center holes — the 60° seat a lathe or grinder center runs in (center drills)
82°	Inch flat head screws: machine, socket, wood and tapping screws
90°	Metric flat head screws
100°	100° flat head screws and rivets — aircraft and sheet metal work
120°	—

The angle is the full angle across the cone. A dash: our sources don't tie that angle to a screw head. See our machine screw and flat head socket charts for the heads.

Good to know

Match the countersink to the screw, not the other way round. An 82° inch flat head in a 90° metric countersink (or the reverse) touches on one edge and won't sit flush or bear evenly.

A reamer only takes a skim. Drill a little under the reamer size, and run the reamer slower than you would the drill.

Quick answers

How long is a 1/4 inch chucking reamer?
Flute **1-1/2″**, overall **6″** (ASME B94.2, straight shank). A 1/2″ is 2″ flute, 8″ overall.

What size is a No. 5 taper pin reamer?
0.2409″ at the small end to **0.2994″** at the large end; taper pin reamers taper 1/4″ per foot.

What countersink angle do I use for flat head screws?
82° for inch flat head screws, **90°** for metric flat heads.

What size is a #3 center drill?
A #3 combined drill and countersink has a **7/64″** drill and a 1/4″ body (plain type, 60°).

What is a 100 degree countersink for?
100° flat head screws and rivets, used in aircraft and sheet metal work.

Reference values drawn from the governing standards. For critical applications, confirm against the standard and the manufacturer's published data. Technical information disclaimer →