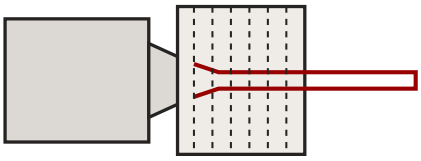
Tube Fitting Thread Sizes

jandesupply.com/reference-tube-fitting-sizes.php

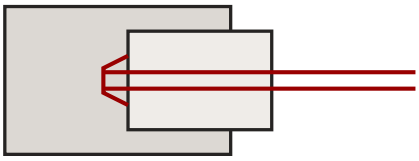
J & E Supply & FASTENER CO.

Tube fitting threads by tube OD, 1/8″ to 1″: SAE 45° flare, inverted flare, compression, self-aligning compression and air brake, with the dash size.

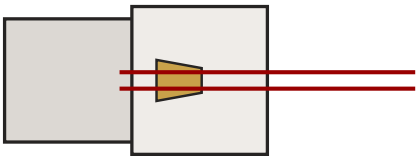
A **tube fitting** is sized by the **outside diameter of the tube** it takes, not by a pipe size: a 1/4″ flare fitting is for 1/4″ OD tube. The nut and the body it screws onto carry a straight thread, and that thread depends on the fitting type — a 1/4″ 45° flare is 7/16-20, a 1/4″ compression 7/16-24. The pipe end of an adapter is a taper pipe thread: see the pipe thread chart.



45° flare
body cone + flared tube + nut



Inverted flare
male nut screws into the body



Compression
nut squeezes a sleeve onto the tube

How each end seals. Not to scale. The thread in each table is the nut / body thread for that tube size.

SAE 45° flare thread sizes — by tube OD (SAE J513)

TUBE OD	DASH SIZE	THREAD
1/8″	-2	5/16-24
3/16″	-3	3/8-24
1/4″	-4	7/16-20
5/16″	-5	1/2-20
3/8″	-6	5/8-18
7/16″	-7	11/16-16
1/2″	-8	3/4-16
5/8″	-10	7/8-14
3/4″	-12	1-1/16-14
7/8″	-14	1-1/4-12
1″	-16	1-3/8-12

Nut and body thread, inches – threads per inch, per the Anderson Metals, Parker (41FS nut) and JB Industries catalogs. A dash: our sources differ or only one lists it — give us a call.

Inverted flare thread sizes — by tube OD

TUBE OD	DASH SIZE	THREAD
1/8″	-2	5/16-28
3/16″	-3	3/8-24
1/4″	-4	7/16-24
5/16″	-5	1/2-20
3/8″	-6	5/8-18
7/16″	-7	—
1/2″	-8	3/4-18
5/8″	-10	7/8-18
3/4″	-12	—
7/8″	-14	—
1″	-16	—

Tube nut thread, per the Anderson Metals and Parker (41IF nut) catalogs. A dash: only one of our sources lists it — give us a call.

Compression fitting thread sizes — brass, by tube OD

TUBE OD	DASH SIZE	THREAD
1/8″	-2	5/16-24
3/16″	-3	3/8-24
1/4″	-4	7/16-24
5/16″	-5	1/2-24
3/8″	-6	9/16-24
7/16″	-7	5/8-24
1/2″	-8	11/16-20
5/8″	-10	13/16-18
3/4″	-12	1-18
7/8″	-14	1-1/8-18
1″	-16	—

Nut thread of brass sleeve-type compression fittings, per the Anderson Metals and Parker (61C nut) catalogs. Not for instrument (two-ferrule) or air brake fittings. A dash: only one of our sources lists it.

Self-aligning compression thread sizes — captive sleeve, by tube OD

TUBE OD	DASH SIZE	THREAD
1/8″	-2	5/16-24
3/16″	-3	3/8-24
1/4″	-4	7/16-24
5/16″	-5	1/2-24
3/8″	-6	9/16-24
7/16″	-7	—
1/2″	-8	11/16-20
5/8″	-10	13/16-18
3/4″	-12	1-18
7/8″	-14	1-1/8-18
1″	-16	—

Nut with the sleeve attached, per the Anderson Metals (self-aligning) and Parker (61CA Compress-Align) catalogs. A dash: our sources differ (1″) or only one lists it.

Air brake compression nut threads — copper and nylon, by tube OD

TUBE OD	DASH SIZE	THREAD
3/16″	-3	—
1/4″	-4	7/16-24
3/8″	-6	17/32-24
1/2″	-8	11/16-20
5/8″	-10	13/16-18
3/4″	-12	1-18

Nut and body thread of brass air brake (DOT) compression fittings, the same for copper and for nylon tube, per the Anderson Metals (copper + nylon air brake) and Parker (61AB + 61NTA nut) catalogs. A dash: only one of our sources lists it (3/16″) — give us a call.

Good to know

Size by the tube OD. Measure across the outside of the tube; the fitting size and the dash number follow from it (the dash number is the OD in sixteenths). Copper water tube is named by a nominal size smaller than its OD — measure it.

45° flare. The flared end of the tube is clamped between the fitting's cone and the flare nut; the metal-to-metal flare makes the seal and the thread only holds it together.

Inverted flare. The tube nut is male and screws into the fitting body, so the flare seat sits inside the fitting — the common brake line fitting. Its threads differ from a 45° flare at some sizes.

Compression. No flaring: the nut squeezes a sleeve (ferrule) onto the plain tube. Plastic tube needs the maker's tube insert. A self-aligning fitting has the sleeve attached to the nut.

Air brake (DOT). An air brake compression fitting seals like a compression fitting: the nut squeezes a sleeve onto the tube. Copper and nylon air brake fittings share the nut thread at each tube size, but their nuts and sleeves are made for one tube or the other — use the parts made for the tube you have.

Nylon air brake tube. Nylon tube takes a tube support (insert) inside its end, so the sleeve can grip it without crushing it; some bodies have the insert built in.

Same diameter, different thread. A flare, inverted flare and compression fitting for the same tube can share a thread diameter but not the threads per inch or the seat — match the fitting type, not just the size.

Ratings come from the maker. Working pressure depends on the fitting's material and size, the tube and the maker — use the maker's rating for that exact fitting. This chart gives sizes only.

Quick answers

What thread is a 1/4 inch flare fitting?
A 1/4″ SAE 45° flare fitting (1/4″ tube OD) is **7/16-20**; 3/8″ is 5/8-18 and 1/2″ is 3/4-16.

What thread is a 3/8 compression fitting?
A 3/8″ brass compression nut is **9/16-24**; 1/4″ is 7/16-24.

What thread is a 3/16 inverted flare brake line fitting?
3/8-24 for 3/16″ tube; 1/4″ tube is 7/16-24.

Is a 1/4 flare fitting the same thread as a 1/4 compression fitting?
No. A 1/4″ 45° flare is 7/16-20 and a 1/4″ compression is 7/16-24 — same diameter, different threads per inch, and the seats are different too.

What does -6 mean on a tube fitting?
The dash number is the tube OD in sixteenths of an inch: **-6 = 3/8″** tube OD.

What thread is a 3/8 air brake fitting?
A 3/8″ air brake (DOT) compression nut is **17/32-24**, for copper and for nylon tube; 1/4″ is 7/16-24 and 1/2″ is 11/16-20.

Is an air brake fitting the same thread as a compression fitting?
Not at every size. A 3/8″ air brake nut is 17/32-24, a 3/8″ brass compression nut is 9/16-24 — match the fitting type, not just the tube size.

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