

Hole saw and pipe size chart

Conduit knockouts, pipe and tube outside diameters, and bi-metal hole saw speeds.

Electrical knockout hole sizes by conduit trade size (Klein knockout punches/dies)

Conduit trade size	Knockout hole	Klein part
1/2 in	0.875 in (22.2 mm)	53820 die
3/4 in	1.115 in (28.3 mm)	53828 die
1 in	1.362 in (34.6 mm)	53837 punch
1-1/4 in	1.701 in (43.2 mm)	53850 die
1-1/2 in	1.951 in (49.6 mm)	53858 die
2 in	2.416 in (61.4 mm)	53868 die

Single source. Which hole saw to use for each knockout was not confirmed on a fetched page (see unverified_fields).

Steel pipe outside diameters (for sizing pass-through holes)

Nominal pipe size	Outside diameter
1/8 in NPS	0.405 in (10.3 mm)
1/4 in NPS	0.540 in (13.7 mm)
3/8 in NPS	0.675 in (17.1 mm)
1/2 in NPS	0.840 in (21.3 mm)
3/4 in NPS	1.050 in (26.7 mm)
1 in NPS	1.315 in (33.4 mm)
1 1/4 in NPS	1.660 in (42.2 mm)
1 1/2 in NPS	1.900 in (48.3 mm)
2 in NPS	2.375 in (60.3 mm)
2 1/2 in NPS	2.875 in (73.0 mm)
3 in NPS	3.500 in (88.9 mm)
3 1/2 in NPS	4.000 in (101.6 mm)
4 in NPS	4.500 in (114.3 mm)
5 in NPS	5.563 in (141.3 mm)
6 in NPS	6.625 in (168.3 mm)

Single source. OD is the same across schedules for a given NPS. Allow clearance when choosing a hole saw.

Copper water tube outside diameters (ASTM B88)

Nominal size	Outside diameter
1/4 in	3/8 in (0.375 in, 9.5 mm)
3/8 in	1/2 in (0.500 in, 12.7 mm)
1/2 in	5/8 in (0.625 in, 15.9 mm)
5/8 in	3/4 in (0.750 in, 19.1 mm)
3/4 in	7/8 in (0.875 in, 22.2 mm)
1 in	1-1/8 in (1.125 in, 28.6 mm)

Nominal size	Outside diameter
1-1/4 in	1-3/8 in (1.375 in, 34.9 mm)
1-1/2 in	1-5/8 in (1.625 in, 41.3 mm)
2 in	2-1/8 in (2.125 in, 54.0 mm)
2-1/2 in	2-5/8 in (2.625 in, 66.7 mm)
3 in	3-1/8 in (3.125 in, 79.4 mm)
4 in	4-1/8 in (4.125 in, 104.8 mm)

Single source; same OD for types K, L and M (wall thickness differs). mm values calculated. Allow clearance when picking a hole saw.

Schedule 40 PVC pipe outside diameters (ASTM D1785)

Nominal size	Outside diameter
1/2 in	0.840 in (21.3 mm)
3/4 in	1.050 in (26.7 mm)
1 in	1.315 in (33.4 mm)
1-1/4 in	1.660 in (42.2 mm)
1-1/2 in	1.900 in (48.3 mm)
2 in	2.375 in (60.3 mm)
3 in	3.500 in (88.9 mm)
4 in	4.500 in (114.3 mm)

Finolex confirms 1/2, 3/4, 1, 1-1/2 and 4 in; other rows Engineering ToolBox only. Same ODs as steel pipe of the same NPS (see steel_pipe_od).

Starrett bi-metal hole saw speeds (RPM)

Saw diameter	Mild steel	Stainless & tool steel	Cast iron	Brass, copper, aluminium	Wood & plastic
9/16 - 1 in (14-25 mm)	580-350	300-175	400-235	790-470	800-500
1-1/16 - 2 in (27-51 mm)	325-170	160-85	215-115	435-230	500-200
2-1/16 - 3 in (52-76 mm)	165-115	80-55	110-75	220-150	200-150
3-1/8 - 4 in (79-102 mm)	110-85	55-40	70-55	140-110	150-100
4-1/8 - 5 in (105-127 mm)	80-65	40-30	55-25	110-85	100-85
5-1/4 - 6 in (133-152 mm)	55	25	55-25	75	75
6-5/16 - 8-9/32 in (160-210 mm)	40	20	55-25	60	60

Starrett FCH and DCH hole saws, catalogue p.24. Ranges run from the small to the large end of each diameter band.

Sources: Engineering ToolBox; Finolex Industries; Klein Tools; L.S. Starrett (UK). Checked 22 October 2026. Always confirm against your tool and accessory manuals. Free to share under CC BY 4.0 with credit to AccessoryFit (accessoryfit.com/printables/).