How to use the tables on this page:

It is possible for a wire bundle to contain wires of all the same size diameter, or a variety of mixed diameters. The gauge provides only the diameter of the conductor, and this information alone is not sufficient to determine required tubing size. Referring to the appropriate wire specification is necessary to establish the overall diameter over the insulation and/or braids.

Step	All Wires Same Diameter	Two Different Wire Diameters
1. A bundle containing 30 wires	30 wires @ .045 dia	15 wires @ .045 dia 15 wires @ .135 dia
2. Determine average wire diameter	30 × .045 = 1.35 1.35 ÷ 30 = .045 average wire diameter	15 × .045 = .68 15 × .135 = 2.03 2.71 2.71 ÷ 30 = .090 average wire diameter
3. Using Table I, find factor for 30 wires (6.7) and multiply by average wire diameter	.045 × 6.7 = .3015 wire bundle diameter	.090 × 6.7 = .603 wire bundle diameter
4. Tubing size is determined on Table II. 70% fill is recommended	Size 12 (.305 dia = 70% fill)	Size 24 (.607 dia = 70% fill)

Table I

Number of Wires	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	32
Factor	1.0	2.0	2.2	2.4	2.7	2.9	3.0	3.3	3.8	4.0	4.3	4.6	5.0	5.3	5.6	6.0	6.5	6.9
Number of Wires	36	40	45	50	55	60	65	70	75	80	90	100	125	150	175	200	250	300
Factor	7.4	7.7	8.1	8.5	8.9	9.3	9.7	10.1	10.5	10.9	11.6	12.2	13.7	15.0	16.1	17.2	19.3	21.0

Table II

Tubing Size	Tubing I.D.	50% Fill	60% Fill	70% Fill	80% Fill
06	.187 (4.7)	.128 (3.3)	.140 (3.6)	.151 (3.8)	.162 (4.1)
09	.281 (7.1)	.193 (4.9)	.211 (5.4)	.229 (5.8)	.244 (6.2)
10	.312 (7.9)	.217 (5.5)	.237 (6.0)	.256 (6.5)	.274 (7.0)
12	.375 (9.5)	.257 (6.5)	.282 (7.2)	.305 (7.7)	.326 (8.3)
14	.437 (11.1)	.302 (7.7)	.331 (8.4)	.357 (9.1)	.382 (9.7)
16	.500 (12.7)	.343 (8.7)	.376 (9.6)	.406 (10.3)	.434 (11.0)
20	.625 (15.9)	.426 (10.8)	.467 (11.9)	.505 (12.8)	.539 (13.7)
24	.750 (19.1)	.513 (13.0)	.562 (14.3)	.607 (15.4)	.649 (16.5)
28	.875 (22.2)	.608 (15.4)	.666 (16.9)	.720 (18.3)	.769 (19.5)
32	1.000 (25.4)	.686 (17.4)	.751 (19.1)	.812 (20.6)	.868 (22.0)
40	1.250 (31.8)	.852 (21.6)	.933 (23.7)	1.008 (25.6)	1.078 (27.4)

Bulk Conduit Length Tolerances

The following tolerances apply to the lengths of bulk conduit

Inches	
Length	**Tolerance**
12 - 144	+ 2.0
145 - 600	+4.0
601 - up	+ 6.0
Centimeters	
Lenth	**Tolerance**
31 - 366	+5.0
367 - 1524	+10.2
1525 - up	+15.2

Catalog Notes

For all parts in this catalog:
All parts will be identified with manufacturer's name and part number, space permitting.
Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.

