

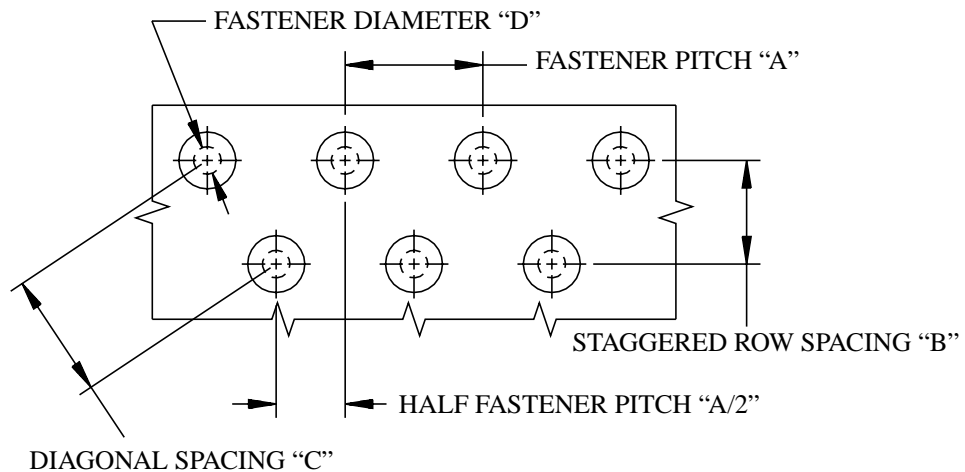
1.0 Row Spacing - General

This standard specifies the staggered and aligned row spacing for solid rivets, blind rivets, and permanent two piece fasteners.

2.0 Staggered Row Spacing

Refer to Table 1 for the Minimum Staggered Row Spacing (based on the minimum fastener pitch specified in DS123) and to Table 2 for the Standard Staggered Row Spacing (based on the standard fastener pitch specified in DS123).

FIGURE 1 - STAGGERED ROW SPACING "B"



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TABLE 1 - MINIMUM STAGGERED ROW SPACING "B"

FASTENER HEAD STYLE	NOMINAL FASTENER DIAMETER "D"						
	3/32	1/8	5/32	3/16	1/4	5/16	3/8
PROTRUDING HEAD	.25	.33	.41	.49	.66	.82	.98
FLUSH HEAD	.35	.47	.59	.70	.94	1.17	1.41

NOTE: • ALL DIMENSIONS IN INCHES

- STRESS APPROVAL IS REQUIRED FOR A SMALLER ROW SPACING
- STRESS MAY REQUIRE A LARGER ROW SPACING FOR HIGHLY LOADED STRUCTURE
- FOR TWO ROWS OF DIFFERENT FASTENER DIAMETERS, USE THE MEAN ROW SPACING
- FOR INFORMATION - THE MINIMUM STAGGERED ROW SPACING "B" IS BASED ON 75% OF THE MINIMUM PITCH SPECIFIED IN DS 123

TABLE 2 - STANDARD STAGGERED ROW SPACING "B"

BASED ON	NOMINAL FASTENER DIAMETER "D"						
	3/32	1/8	5/32	3/16	1/4	5/16	3/8
6D PITCH	0.42	0.56	0.70	0.84	1.13	1.41	1.69
8D PITCH	0.56	0.75	0.94	1.13	1.50	1.88	2.25

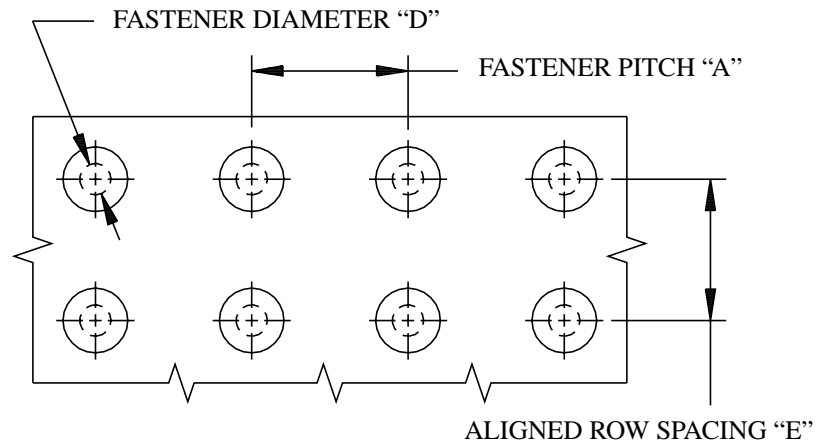
NOTE: • ALL DIMENSIONS IN INCHES

- FOR TWO ROWS OF DIFFERENT FASTENER DIAMETERS, USE THE MEAN ROW SPACING
- FOR INFORMATION - THE STANDARD STAGGERED ROW SPACING "B" IS BASED ON 75% OF THE STANDARD PITCH (6D OR 8D) SPECIFIED IN DS 123
- APPLIES TO BOTH PROTRUDING HEAD AND FLUSH HEAD STYLES, THIS TABLE IS INTENDED AS A GUIDE FOR THE STANDARD STAGGERED ROW SPACING TO BE USED WITH A 6D AND 8D FASTENER PITCH.

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3.0**Aligned Row Spacing**

Refer to Table 3 for the Minimum Aligned Row Spacing (based on the minimum fastener pitch specified in DS123) and to Table 4 for the Standard Aligned Row Spacing (based on the standard fastener pitch specified in DS123)

FIGURE 2 - ALIGNED ROW SPACING "E"

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TABLE 3 - MINIMUM ALIGNED ROW SPACING "E"

FASTENER HEAD STYLE	NOMINAL FASTENER DIAMETER "D"						
	3/32	1/8	5/32	3/16	1/4	5/16	3/8
PROTRUDING HEAD	0.30	0.39	0.49	0.59	0.79	0.99	1.18
FLUSH HEAD	0.42	0.56	0.70	0.85	1.13	1.41	1.69

NOTE: ● ALL DIMENSIONS IN INCHES

- STRESS APPROVAL IS REQUIRED FOR A SMALLER ROW SPACING
- STRESS MAY REQUIRE A LARGER ROW SPACING FOR HIGHLY LOADED STRUCTURE
- FOR TWO ROWS OF DIFFERENT FASTENER DIAMETERS, USE THE MEAN ROW SPACING
- FOR INFORMATION - THE MINIMUM ALIGNED ROW SPACING "E" IS EQUAL TO THE DIAGONAL ROW SPACING "C" IN FIGURE 1

TABLE 4 - STANDARD ALIGNED ROW SPACING "E"

BASED ON	NOMINAL FASTENER DIAMETER "D"						
	3/32	1/8	5/32	3/16	1/4	5/16	3/8
6D PITCH	0.51	0.68	0.85	1.01	1.35	1.69	2.03
8D PITCH	0.68	0.90	1.13	1.35	1.80	2.25	2.70

NOTE: ● ALL DIMENSIONS IN INCHES

- FOR TWO ROWS OF DIFFERENT FASTENER DIAMETERS, USE THE MEAN ROW SPACING
- FOR INFORMATION - THE STANDARD ALIGNED ROW SPACING "E" IS EQUAL TO THE DIAGONAL ROW SPACING "C" IN FIGURE 1
- APPLIES TO BOTH PROTRUDING HEAD AND FLUSH HEAD STYLES, THIS TABLE IS INTENDED AS A GUIDE FOR THE STANDARD ALIGNED ROW SPACING TO BE USED WITH A 6D AND 8D FASTENER PITCH.

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