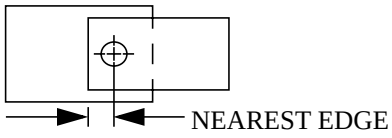
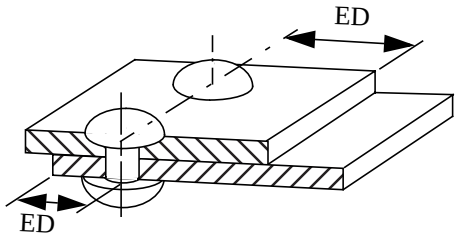
1.0 Edge Distance - General

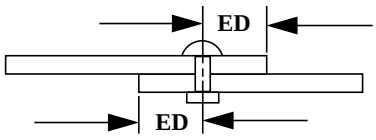
1.1 Edge Distance (ED) is the distance from the centre of a hole to the nearest edge of the material. See Figure 1 for examples.

FIGURE 1 - EDGE DISTANCE EXAMPLES

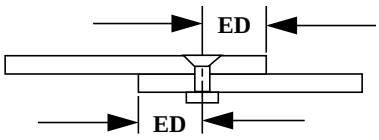




PROTRUDING HEAD RIVET INSTALLATION:



FLUSH HEAD RIVET INSTALLATION:



1.2 The edge distance to be specified by Engineering for the DHC-8 Series 400 for solid rivets, blind rivets, permanent two piece fasteners, etc. are shown in Table 1

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TABLE 1: EDGE DISTANCE - METALLIC STRUCTURE

NOMINAL FASTENER DIA. (D)	FASTENER DIA. DASH NO.	STANDARD FASTENERS ⊕ SYMBOL		CRITICAL STRESS FASTENERS ⊕ SYMBOL	
		CNC	MANUAL	CNC	MANUAL
3/32	-3	.170	.190	.200	.220
1/8	-4	.220	.240	.260	.280
5/32	-5	.280	.300	.330	.350
3/16	-6	.340	.360	.380	.400
1/4	-8	.450	.470	.510	.530
5/16	-10	.560	.580	.640	.660
3/8	-12	.670	.690	.760	.780

NOTES:
- ALL DIMENSIONS IN INCHES
- D = FASTENER DIAMETER
- THE STANDARD ED FOR CASTINGS IS 3D - SEE 1.3.8
- THE STANDARD ED FOR NON-METALLIC MATERIALS IS 3D - SEE 1.3.9

1.3 The following points should be noted when determining the edge distance:

1.3.1 **"CNC"** edge distances apply fasteners which will be located using CNC equipment. This includes, for example, assemblies where pilot holes have been drilled in the detail part using CNC equipment (eg. Zenford Ziegler or Cincinati drill/router) or where the assembly is drilled on CNC equipment (eg. Drivmatic drill/riveter).

1.3.2 **"Manual"** edge distances apply to all fasteners drilled manually, including Spacematic drillmotors and manual positioning automated riveters.

1.3.3 **"Critical stress"** fastener edge distances are to be used in fatigue critical areas. Typical applications include:

a) Pressurized fuselage skin edges and joint straps.

b) Lower wing skin edges and splice plates

c) Other areas as defined by Stress Engineering.

1.3.4 The **"Critical Stress"** fasteners symbol ⊕ shall be used on layout and assembly drawings. It is important that this symbol is used in order to alert Manufacturing and Inspection that the critical stress fastener edge distances apply.

1.3.5 **"Standard"** fastener edge distances are to be used for those fasteners not designated as "critical stress" fasteners.

1.3.6 The edge distances shown in Table 1 are to ensure that the minimum edge distances required by Engineering and Stress are obtained by Manufacturing.

1.3.7 When attaching stringer sections where the stresses are primarily longitudinal, lower edge distances (eg. 1.5D) should be considered, providing stress approval has been obtained. If a lower edge distance is used, the edge distance and tolerance (to be used by Manufacturing and Inspection) must be shown on the drawing, eg.: Edge Distance .375 ±.010".

1.3.8 The standard edge distance for castings is 3D. A lower edge distance can be used if Stress approval is obtained.

1.3.9 The standard edge distance for non-metallic materials is 3D. A lower edge distance can be used if Stress approval is obtained.

1.3.10 For fastener sizes not shown in Table 1, the following formulae may be used to calculate the edge distance:

	CNC	MANUAL
Standard Fastener	1.75D + .010"	1.75D + .030"
Critical Stress Fastener	2.0D + .010	2.0D + .030"

2.0 Engineering Drawing Notes:

2.1 The **engineering drawing** must note the manufacturing method to be used in order to highlight whether the edge distances were drawn with a .010" allowance for "CNC" manufacture or a .030" allowance for "manual" manufacture. One of the following notes shall be used:

The fastener edge distances of this component were drawn for CNC manufacture - per DS122

- or -

The fastener edge distances of this component were drawn for manual manufacture - per DS122