

1. Introduction.

1.1 Scope. This standard establishes the mechanical and performance requirements for bulbing structural blind rivets suitable for use in joining the component parts of assemblies of varying grip range where maximum shear strength values are a design requirement. This standard covers sizes 3/16 (4.8 mm), 1/4 (6.4 mm), 5/16 (8 mm), and 3/8 (10 mm) in the following body/mandrel combinations; steel/steel, stainless steel/stainless steel, aluminum/aluminum.

1.2 Definitions.

1.2.1 Bulbing Blind Rivet. A bulbing blind rivet is a blind fastener which has a self-contained feature which permits the formation of a round enlarged bearing area on the blind end of the rivet. The round enlarged formation on the backside provides bearing area to the component parts of an assembly during the rivet setting. The bearing area of the body head and the formation of an enlarged backside bearing area (bulb) prevent axial movement of the mating components. Bulb formation can be achieved either through thermally softening of the body or through mechanically crimping the body wall in the bulb area.

1.2.2 Structural Blind Rivet - are blind rivets which leave a portion of the mandrel securely locked within the rivet body such that the body and remaining mandrel are in the shear plane(s) of the fastened assembly components after rivet installation. These rivets usually have a grip length adjustment feature which allows the mandrel to be securely locked in the shear plane throughout the whole grip range of the rivet. Structural blind rivets have a rolled (heat treated or non-heat treated) mandrel. See IFI Glossary of rivet terms for additional definitions.

1.2.3 Bulbing structural flush break positive lock blind rivets are pull mandrel type blind rivets where during the setting operation the mandrel is pulled into the rivet body and breaks essentially flush with the top of the rivet head. Because the break plane of the mandrel occurs above the junction of the rivet shank and head, the shear plane(s) of the joint will occur through rivet shank and mandrel. This rivet design has the capability to join component parts having a broad range of thicknesses. Positive lock means that during rivet setting an intentional deformation occurs in the rivet mandrel and/or body, which provides a mechanical resistance to mandrel removal from the rivet body.

1.2.4 Definitions of other terms used in this standard are given in IFI-110, Glossary of Terms Relating to Blind Rivets.

2. Designations.

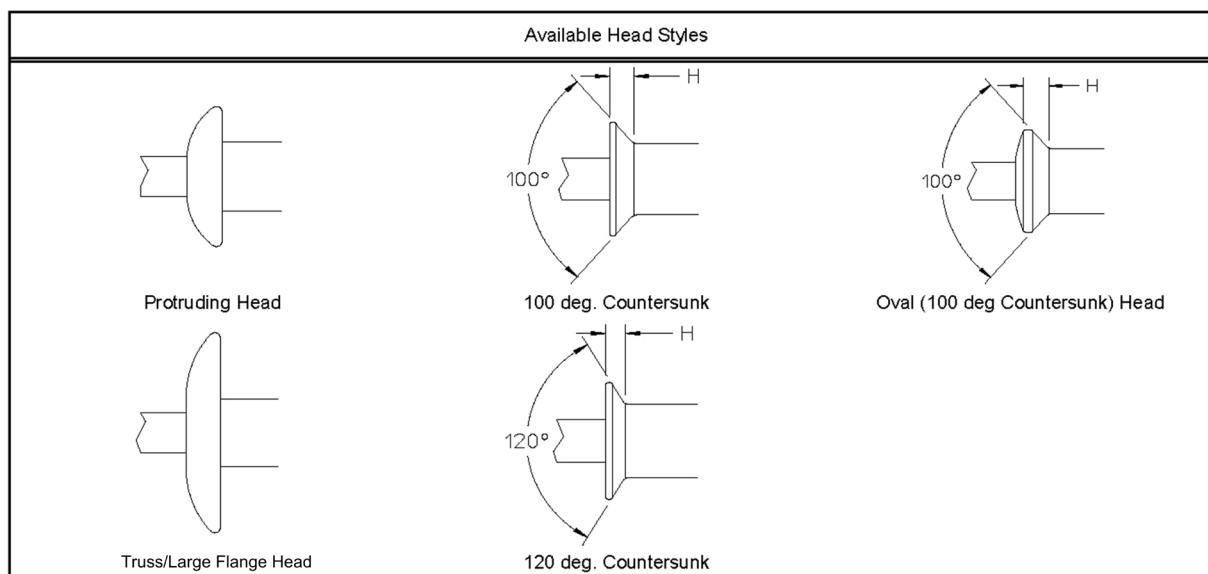
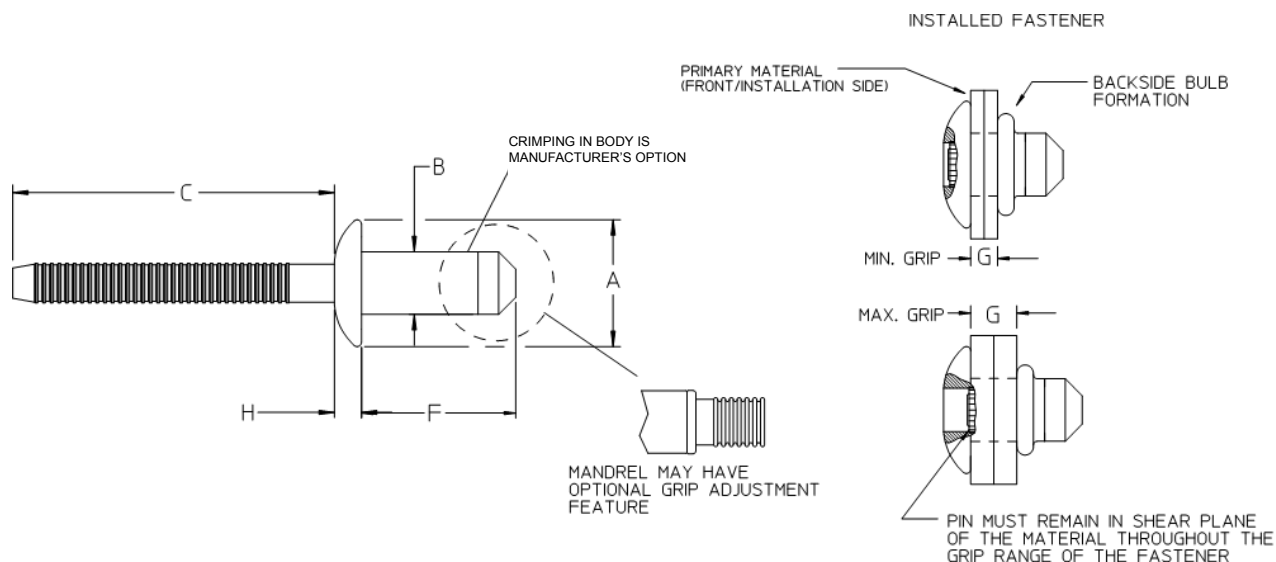
2.1 Styles. There are several head styles of flush break pull mandrel self-plugging blind rivets that are designated typically as dome head, truss head and countersunk head (100 degree and 120 degree). See the illustrations on Page 2.

2.2 Grades. The material combinations of bulbing structural flush break pull mandrel self-plugging blind rivets have designated material grades, with each material combination representing a different combination of rivet body material and mandrel material as given in Table 3.

2.3 Design. The design of bulbing structural flush break pull mandrel self-plugging blind rivets shall be supplied in accordance with the practice of the manufacturer. IFI-158 Bulbing Structural Blind Fasteners are produced by numerous manufacturers whose design may differ slightly. Because of this, geometry, hole size and grip range may vary from manufacturer to manufacturer. The information in the following charts are for reference/guidance only and actual dimensional data, hole size, and *grip range should be obtained for the specific manufacturer's data sheets and is not confined to information presented in this specification.

* Grip is defined as the material thickness being fastened. Grip Range is defined to be the difference between the maximum material to be fastened and the minimum material thickness to be fastened.

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