

WM 961**Performance Testing for the Retaining Features on Plastic Fasteners**

1. SCOPE. This standard covers the test methods for establishing the performance of panel retaining features for various fasteners.

Fir Tree/Bayonet and other push-in types.

"T" Weld Stud type.

Weld Stud type

Panel Edge type.

The standard also covers the test methods for establishing the performance of pipe retaining features for various plastic pipe clips.

Latch type

Push-in type

2. APPLICATION. This standard will normally be applied to plastic fasteners with a feature designed to retain the part in a panel hole, on welded "T" stud attached to a panel, on a welded stud attached to a panel, or on the edge of a panel in a specially designed hole. It may also be applied to plastic plugs or trim retaining buttons.

The standard can also be applied to plastic pipe clips such as latch and push-in (this includes spacer and swivel) type features.

3. PERFORMANCE TEST METHODS.

- 3.1 PANEL RETAINING FEATURE.

- 3.1.1 FIR TREE/BAYONET AND OTHER PUSH-IN TYPE FEATURES.

Figure 1 -- Typical Fir Tree, Bayonet and Other Push-in Type Features



The feature shall be pushed into a hole in a steel test plate and the force measured. The feature shall then be pulled out of the test plate and the force measured.

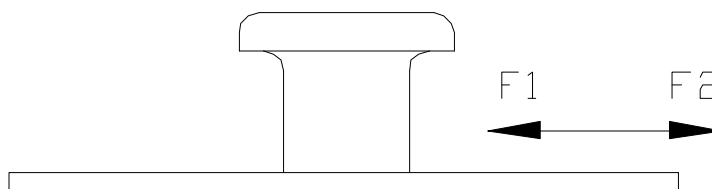
The diameter of the hole in the test plate, the thickness of the test plate, the maximum push-in force and the minimum pull-out force shall be as specified on the Ford drawing for the part.

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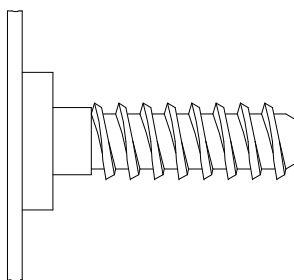
3.1.2 "T" Weld Stud Type Feature

Figure 2 -- Typical "T" Weld Stud



The feature shall be pushed on to a steel "T" welded stud in direction F_1 which meets the dimensional requirements of Ford part number W700569 and the force measured. The feature shall then be pulled off the "T" welded stud in direction F_2 and the force measured. The maximum push-on and the minimum pull-off forces shall be as specified on the Ford drawing for the part.

Figure 3 -- Typical Weld Stud

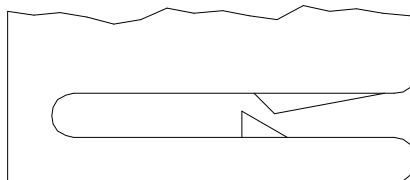


3.1.3 Special Thread Weld Stud Type Feature

The retaining feature molded into plastic parts to be used on special thread weld studs is optional provided when tested on a stud with the dimensional requirements of W700121 (pushed-on and pulled-off) the maximum push-on force and the minimum pull-off forces are specified on the Ford drawing.

3.1.4 Panel Edge Type Feature

Figure 4 -- Typical Panel Edge Feature



The feature shall be pushed on to a steel test plate until securely fitted in the retaining hole and the force measured. The feature shall then be pulled off the test plate and the force measured. The hole in the test plate, the thickness of the test plate, the maximum push-on force and the minimum pull-off force shall be as specified on the Ford drawing for the part.