

Factor Affecting Interference Fitted Joint

The grip efficiency is directly proportional to

1. Stresses as determined by the dimensions of the mating parts.
2. Pressure intensity between surfaces; in actual assembly, the pressure intensity cannot be made uniform as assumed in theory by Lamé.
3. Co-efficient of friction between surfaces in contact.
4. Area of surfaces in contact.

Thus, a low separating force may be due to:-

- (a) An out-of-roundness (ovality) effect and an out-of-straightness (conical) effect of hub and shaft due to machine shop error.
These affect a great deal for small interferences.
- (b) Nature of surface in contact, such as cleanliness, roughness.
- (c) Properties of materials, such as E, ν , hardness.
- (d) Number of re-assembly. It was found by many investigators that the increase in number of re-assembly tends to increase the grip ability.
- (e) Length of setting time after assembly. For 2 days setting time the increase in grip force is about 25% from that of right after assembly*, there is small effect at more than 2 days.
- (f) Kind of loading when disassembling.
- (g) Method of assembly.
- (h) Lubricant.
- (i) Service condition.

* Ref. 1 p. A 35.