

# Safety Bulletin

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Description: Ring Spring Handling Caution



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## BACKGROUND INFORMATION & EFFECTED COMPONENTS

These instructions apply to Topdrive models 900/1350 ECI(S) and HCI(S). The Ringfeder ring spring is part #7362.

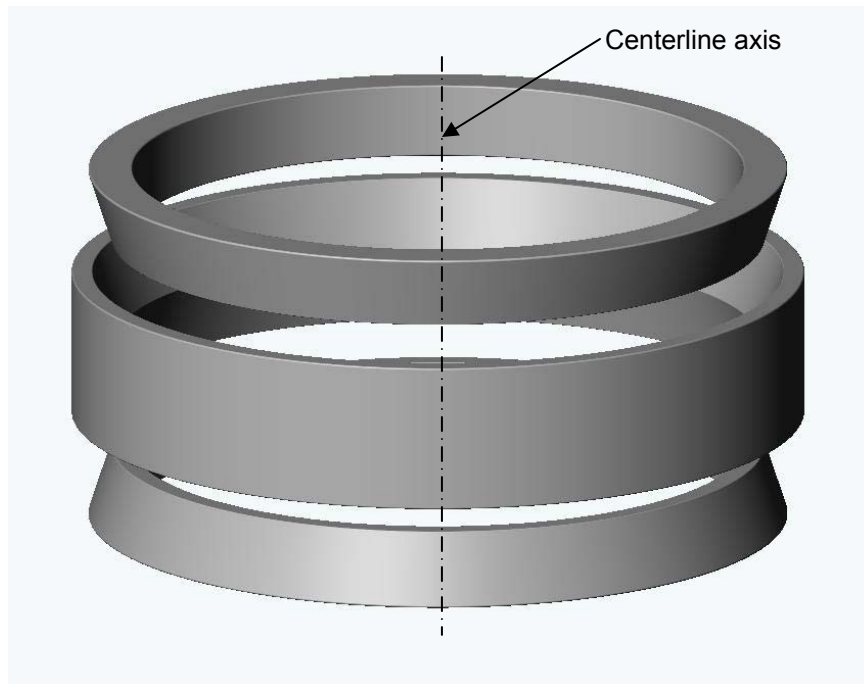


Figure 1 – Ringfeder Ring Spring Exploded View

It has been noted that the quill preload assembly Ringfeder ring springs can become seized during service, in a partially compressed state. This may occur as the result of loss of lubricant, incorrect lubricant or inadequate lubricant application during assembly or service. Inadequate lubrication will permit corrosion, and increase the friction between the spring components, causing them to lock when compressed, or in their preloaded state. **If Ringfeder springs have seized, considerable energy may be stored in the spring assembly, which can cause the ring segments to separate with considerable velocity and energy with the potential to seriously injure personnel.**

## ACTION REQUIRED

Service personnel **MUST** follow the approved maintenance procedures for disassembling the preload assembly. The following handling procedures apply to the preload assembly springs:

1. If Ringfeder spring ring segments are loose at the time of disassembly, no special handling is required.
2. If Ringfeder spring elements have seized, personnel must use appropriate caution to avoid bumping the seized ring spring while removing from the topdrive quill. **In addition a Job Safety Analysis (JSA) must be completed, with consideration of the contents of this bulletin, prior to the commencement of related maintenance activities.** When the rings separate, they will tend to travel along a line defined by the centerline axis of the spring assembly (see figure 1). Personnel **MUST** use care to ensure this axis is not pointing at themselves or other personnel until the ring spring components are disassembled. Personnel must avoid handling the rings with their hands wrapped around the ring assembly - Tesco recommends handling the seized ring assemblies with slings or rope. Personnel must be very careful to avoid bumping or dropping the spring assembly until it is restrained (see note 3).
3. The spring disassembly process **MUST** start by adequately restraining the ring assembly to prevent the loose parts from becoming projectiles when the stored energy is released. This usually cannot be performed until the rings are separated from the quill, and may be accomplished by loosely wrapping the ring assembly in at least three places around its circumference using rope, slings, light chains or clamps (see figure 2). Disassembly should take place in a location removed from other personnel or critical equipment.

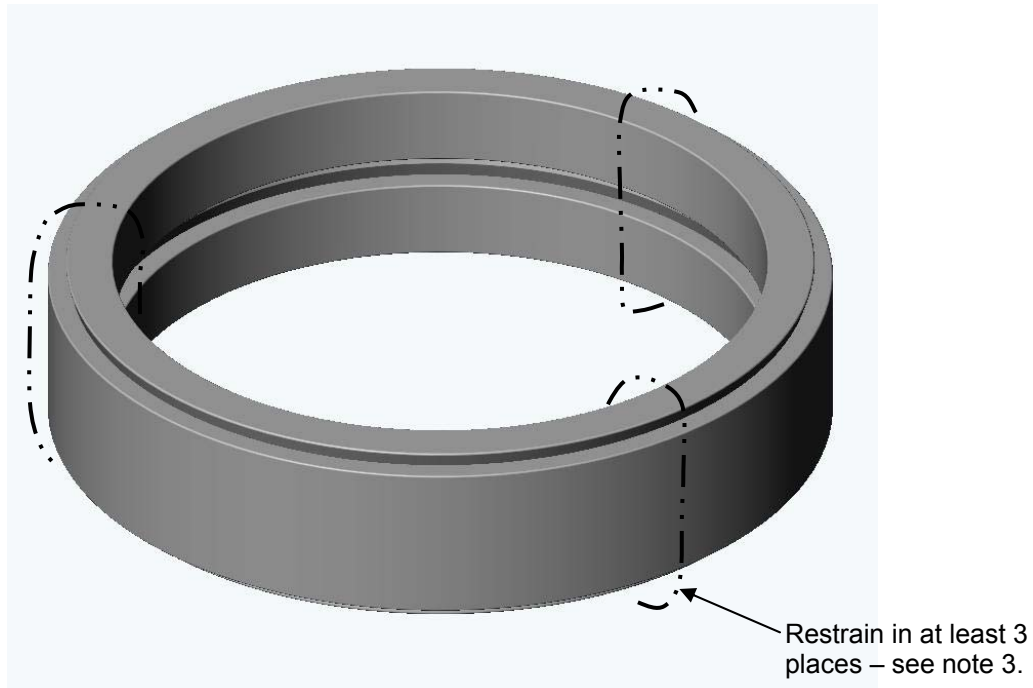


Figure 2 – Seized Ringfeder Spring Assembly

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4. Once the ring assembly is adequately restrained, the ring may be tapped around the perimeter with a brass or dead-blow hammer until the rings separate. A steel ball-peen hammer may be used as long as personnel exercise care to avoid marking the ring. Personnel **MUST** ensure that they avoid having body parts in line with the centerline axis of the spring, or permitting other personnel near the spring until the spring energy is released. Once the three segments are separated, the restraints may be removed.

5. The Ringfeder spring should be carefully cleaned and inspected. Because spring seizure is caused by loss of lubrication in the conical contact interfaces, these surfaces will frequently be corroded. Rings may be cleaned by blasting with soft media, such as soda or plastic beads. Excessive pitting or surface roughness on the conical contact faces will require replacement of the spring assembly. Refer to service documentation or contact Tesco for details about cleaning and inspecting the Ringfeder ring springs.

6. Ringfeder spring assembly must always include generous application of approved lubricant to the conical contact surfaces of the spring. Assembly documents, service documents and parts lists identify approved lubricants.

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Please contact Tesco Corporation at the following email address on issues specific to this bulletin.

[Safety Technical Bulletins@TescoCorp.com](mailto:Safety_Technical_Bulletins@TescoCorp.com)

Contact your local Tesco Part Sales Center for supply of affected components as noted above.