

# THE FUNCTION OF A COMPRESSION LIMITER

Compression Limiters are designed to protect the plastic components of an assembly from the compressive loads generated by the tightening of bolts, thereby assuring continued integrity of the bolted connection.

In practice, as the bolt is tightened the plastic compresses and the stress in the plastic increases until the head of the bolt, or washer if one is used, comes into contact with the Compression Limiter. Thereafter, the Compression Limiter and plastic will compress at the same rate. The Compression Limiter will absorb additional clamping loads without further significant compression and increased stress in the plastic material.

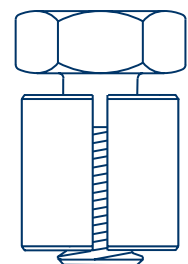
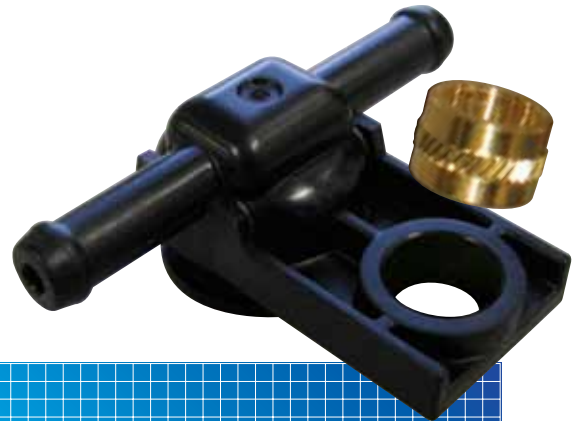
A properly designed bolted joint must meet the following criteria:

- The head of the bolt, or washer if one is used, should always seat against the Compression Limiter under load. This will prevent deterioration of the bolted joint resulting from diminished clamping load due to plastic creep.
- The proof load of the Compression Limiter should be equal to or greater than the proof load of the bolt to assure that the Compression Limiter will not yield prior to the bolt under excessive clamping loads.
- The mating component that the Compression Limiter seats against should be strong enough to withstand the localized compressive stresses generated by the clamping force.
- The clearance between the maximum bolt diameter and the minimum installed inside diameter of the Compression Limiter should be sufficient to compensate for normal misalignment.

Standard **SPIROL® COMPRESSION LIMITERS** meet these criteria.

The clearance between the bolt and the inside diameter of the installed Compression Limiters is adequate to meet normal misalignment. The length and length tolerance is application dependent. The standard tolerance is sufficient to meet most needs, but verification is recommended. **SPIROL** Engineering is available to assist in this process. If it is determined that a special Compression Limiter is required, a documented recommendation will be provided.

The **SPIROL** range of Compression Limiters includes the **molded-in, split seam and solid knurled designs**. The molded-in type is produced from low carbon steel and is equipped with radial grooves to provide maximum retention. The split seam type is produced from low carbon and high carbon steel. The solid knurled type is produced from brass and aluminum. Since these Compression Limiters are designed to meet specified proof loads, the dimensional specifications are different. The split seam design has a lead-in to facilitate insertion. The solid design has a pilot, allowing it to stand freely in the hole prior to complete installation.



# SPIROL®

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Lower assembly costs.



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