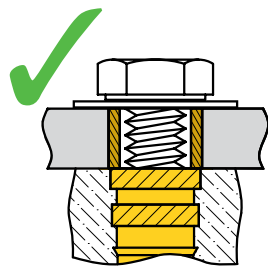


In applications where the mating component is also plastic, a Compression Limiter is necessary to avoid the creep or stress relaxation in the mating component from reducing the frictional load in the threaded joint.

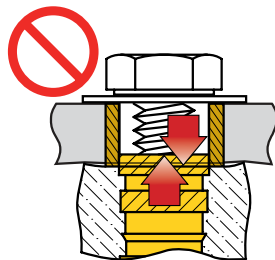


Similar to Inserts, Compression Limiters are used to ensure bolted joint integrity in plastic assemblies. As the bolt is tightened to achieve the required friction between threads, the plastic is compressed. The Compression Limiter absorbs the force generated during tightening of the bolt, and isolates the plastic from excessive compressive loads. Without the Compression Limiter, plastic will creep resulting in the loosening and eventual failure of the joint. The Compression Limiter ensures that the joint remains intact throughout the life of the product.

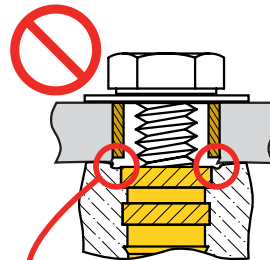
It is essential for the Compression Limiter to be in contact with the Insert and the condition described in the first paragraph on page 6 needs to be avoided. The Insert – and not the plastic – must carry the load. A jack-out condition is not acceptable.



Proper configuration



Jack-out



Plastic creep

**Headed Inserts** – **SPIROL** Series 20, 30 and 51 are designed to increase the contact surface for the Compression Limiters. In addition, **SPIROL** Series 14, 19, 63 and 65 generally have adequate surface area. In any event, at the design stage proper contact needs to be evaluated.

In applications using multiple Inserts where misalignment needs to be accommodated, the standard solution is to increase the clearance between the internal diameter of the Compression Limiter and the external diameter of the assembly screw. This obviously has the potential of the Compression Limiter not aligning satisfactorily with the Insert. In these situations a Headed Insert is always recommended. Consideration can also be given to increasing the wall thickness of the Compression Limiter.

If the bearing surface of the mating Insert is too small for the inside diameter of the Compression Limiter, then a special Compression Limiter with reduced clearance between the assembly screw may resolve the problem. This of course also reduces permissible misalignment.

If the surface area of the Insert is inadequate for proper contact with the Compression Limiter, then the only solution is using a plastic in the mating component which has good anti-creep characteristics and using a Compression Limiter with maximum wall thickness for better distribution of the load. Jack-out in these situations will be a concern and needs to be addressed by avoiding over-torquing the assembly screw.

**SPIROL** offers a variety of standard **Compression Limiters** enabling the most cost effective component to be chosen for each particular assembly depending on performance requirements and installation method.



Series CL200 and CL350



Series CL400 and CL460



Series CL500



Series CL600 and CL601



Series CL800 and CL801



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Lower assembly costs.**

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**SPIROL** Application Engineers will review your application needs and work with you to recommend the optimum solution. One way to start the process is to visit our **Optimal Application Engineering** portal at **SPIROL.com**.