Applies To

This advisory covers all Wills Wing Paraswivels manufactured prior to March 10, 2000

Introduction

At a recent parachute seminar in Vancouver, a Wills Wing Paraswivel was found that was not properly manufactured. Early model Wills Wing Paraswivels are blue anozided, and all such swivels should be inspected to determine whether or not they have the following manufacturing defect.

The paraswivel consists of two machined-aluminum barrels held together by a large diameter hex head steel bolt. This bolt passed through a hole in one barrel of the swivel and is threaded into machined threads cut into the other half. In the side of the second half, there is a small threaded hole to accept a small hex head screw. After the swivel is assembled and properly adjusted to allow for free rotational movement, this small screw is threaded into the small hole in the side of the barrel until it bears against the side of the large screw that holds the two barrels together. The small screw is then tightened down securely and thus prevents the large screw from rotating in, and backing out of the barrel.

On the defective swivel, the threads for the small locking screw were not machined all the way through to the inside of the barrel. As a result the locking screw bottoms out in the hole in the barrel, and cannot be tightened against the main bolt, and the main bolt is thus not secured. This ultimately could cause the two halves of the swivel to separate, and as a result the parachute would become separated from the pilot.

The paraswivel is designed to be a permanent assembly, and cannot be disassembled for inspection. The small locking screw is secured with permanent Loc-Tite, and any attempt to remove it in order to disassemble the unit will damage it and render it unsafe to use. The only proper way to inspect a swivel for the defect is to secure the large hex head screw against rotation, and apply a torque of approximately 40 inch lbs (ten lbs of force on a four inch lever) to the swivel barrel in which the small locking screw is installed. There should be no more than ½ turn of relative rotation of the large hex screw and the barrel under this load before the barrel “locks up” and will not turn further under this amount of torque. (The ability of the small locking screw to restrain the large bolt is dependent on its position relative to the threads of the large bolt. Some initial slippage under load is acceptable, as long as the bolt is eventually locked against at least 40 in lbs of torque. There is no way for the parachute during operation to exert more than a fraction of that much torque on the swivel, and even with the main bolt not locked at all, the main bolt will normally not unscrew if the swivel is rotated under load.) If the main bolt will continue to rotate beyond one half turn under 40 inch lbs of torque, it means that the small locking screw is not adequately securing the large screw, and the swivel is defective and must be replaced.

A specially modified 5/16” hex wrench (cut down so that it fits into the slot in the swivel) is required to secure the large hex screw against rotation. We will be providing these along with a tool for securing the barrel of the swivel to you so that you can inspect your customers’ swivels. Defective swivels will be replaced at no charge.

Swivels which been inspected should be check marked with an indelible marker next to the setscrew. Cover the mark with a piece of clear tape to protect it.

Swivels produced after August 17, 2000 have a small (1/8th inch diameter) star character stamped into the aluminum body of the swivel opposite the set screw. Later model swivels are red anodized.