

CRITICAL ROTOR ASSEMBLY NUT FOR HELICOPTER TIGHTENED WITH A ALKITRONIC MANUAL TORQUE MULTIPLIER

alkitronic[®] CASE STUDY

A helicopter manufacturer had a critical torque application during the routine maintenance process of their aircraft. The rotor of the helicopter requires servicing after every 20 hours of flight. Some of these aircraft are serviced in very remote locations, where air or power supply isn't available or reliable. Ensuring proper torque control for the rotor assembly nut is a critical element for maintaining the continuous safe operation of the helicopter.

INITIAL SITUATION

The director of maintenance contacted a retailer of alkitronic and explained the application requirements. He inquired about cost effective torque control options that were available to ensure the quality and safety needs of their critical fastening application. Impact wrenches and hydraulic torque multipliers could be excluded beforehand.

Impact wrenches lack torque control and are destructive by nature with their "hammering" design. These tools are not ergonomically friendly for a technician and require a high maintenance budget. Hydraulic wrenches are notorious for their heavy ratchets, bulky compressors and laborious operation. Hydraulic tools operate through a hydraulic ram that extends and retracts, ratcheting the head. Most importantly in both cases, with some locations being remote, power supply could not be guaranteed.



Figure 1: Helicopter; alkitronic[®] manual torque multipliers are used during maintenance.

THE SOLUTION

The director of maintenance selected the alkitronic hand torque multiplier as the only option to resolve their critical maintenance application issue.

The alkitronic hand torque multiplier provides precision tightening and loosening of all heavy duty fastening connections. It is the ideal tool for applications where air and electricity aren't easily accessible. The gearing design of the hand torque multiplier allows for a high torque output with minimal input. alkitronic torque multipliers provide precision torque control, making it easier and safer to assemble or service fasteners while reducing application problems and tool costs.



Figure 2: Manual torque multiplier M by alkitronic

TECHNICAL DATA OF THE M

- ✓ alkitronic M manual torque multiplier - for precise and energy independent tightening and loosening of heavy-duty bolting connections.
- ✓ Best working safety thanks to precision locking mechanism.
- ✓ The components of the alkitronic power gears are manufactured in a high-precision chipless process which ensures the highest possible operational demands upon lowest wear.
- ✓ The shearing pin built into the drive shaft protects against input overload.
- ✓ Torque multiplier input via 3/4" internal square socket torque wrench or conventional ratchets external hexagonal socket SW 36 mm.