

Modified Flex M Couplings

DIAMOND TOOLMAKING MACHINES

PROBLEM

A diamond toolmaking machine manufacturer in the UK needed a precision coupling solution for use on their line of new extreme material finishing machines. The OEM supplies the specialized, individually-built, high precision equipment to the polycrystalline diamond industry and single crystal diamond and gem stone industry.

The machines are designed for processing diamonds and cubic boron nitride, the world's two hardest materials. The coupling is installed on the servo motor that controls the machine's slow, smooth planetary XY axis movement during polishing.

SOLUTION

Based on Huco's reputation for highly reliable couplings and previous successful collaborations, the OEM contacted Huco to meet the new machine's precision coupling requirements.

Huco engineers and technical team worked closely with the OEM's engineers to select and design a modified Flex M bolted series coupling with specific bore sizes and keyways. The custom 1.89 in. (47.9mm) long Flex M membrane-type couplings provided have a peak torque rating of 100 in.lb. (11.3 Nm) and can accommodate 2 degrees of angular misalignment.

Huco's lean, rapid-changeover production capability made it possible to manufacture the small batch of custom couplings while many other coupling manufacturers would not be interested in such a small, custom order.

Huco's Flex M precision couplings feature thin pressed steel membranes – torque is resolved to simple tensile stresses in opposing segments of the membranes. The couplings have near-infinite life and a dynamically balanced construction which makes them suitable for applications requiring high rotational speed and motion integrity.



HIGHLIGHTS

- Modified membrane-type coupling with special bore sizes and keyways
- Ideal for highly dynamic position and velocity control systems
- Torque capacity: 100 in.lb. (11.3 Nm)
- Heat treated, spring-quality stainless steel membranes
- Double-stage version features two membranes for greater misalignment capacity

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