Damage & Injury Risk “Virtually” Eliminated with Gorbel’s G-Force®

Industry Group: Ergonomic Assist Systems and Equipment (EASE)

Atlas Copco’s gas and process division engineers turbo compressors and expansion turbines that serve a number of industries, including natural gas processing and power generation. At an assembly facility where the components of the large compressors are assembled, multiple work processes were sharing a single overhead crane system for handling the components and sub assemblies. Workers would often be at a stand still while a co-worker used the crane, or would forgo the crane altogether and risk injury by lifting heavy parts by hand.

Issues: In this work cell, large stainless steel cylinders that range from 5-15” in diameter and weigh from 15 to 400 pounds milled down from a bell shaped impeller blanks into the finished impeller with razor sharp edges. Moving the parts by hand posed multiple injury risks, as well as high potential for damage.

“We’re lifting very heavy steel cylinders and trying to place them with precision into the milling machine without damaging the part or the machine,” said Diehl. “We needed something that gave us a lot of control.”

Gorbel’s Solution: After exploring multiple

servopowered lifting devices, the company selected a 660 pound capacity G-Force® Q.

While all the servo-powered devices delivered very good control, Atlas Copco felt they would have the most control with the G-Force® after seeing a demo of the unit's virtual limit package, float mode feature, and overall smooth movement thanks to the unit's wire rope.

An operator now secures the impeller blanks into the tooling grip that Atlas Copco designed, which locks onto the blanks' outer rim. Once secured, the operator engages Float Mode on the G-Force® handle, and then moves the load up and down by holding the gripping tool or the load itself.

Results: From the perspective of reducing risk of injuries and product damage, Atlas Copco's expectations were met. Perhaps more importantly, worker response to the G-Force® has been overwhelmingly positive. "I really like the float feature," said one operator. "It makes it really easy when you're lining up a hole for a part."

"If you try to introduce a solution to a problem, but it actually makes the process hard or slow, workers just won't use it," said Diehl. "We've had no problems with workers not using the G-Force®. They all think this is the greatest thing."

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