

Case Study – Automotive Manufacturer



Project ROI Summary

Injury Cost Savings	\$39,376
Other Cost Savings (i.e. tool repair costs)	<u>\$ 3,000</u>
Total Cost Savings	\$42,376
Less Depreciation	- \$2,500
Less Annual Maintenance	<u>- \$250</u>
Total Net Savings	\$ 39,256

Total zeroG Acquisition Cost - (1) zeroG System \$ 10,000

ROI 393%
Payback Period 3.1 months

A major manufacturer of automobiles had an overhead fastening task tagged as a high ergonomic risk process after multiple injuries in the area. Previous attempts to solve the problem using traditional automation solutions were unsuccessful due to freedom of motion performance constraints that negatively affected production speed.

zeroG® reduced the injury rate to zero while allowing the operator the full freedom of motion required to perform their job efficiently. The system's light weight and flexibility in mounting also allowed for a smaller footprint installation that freed up production space. Trip hazards and tool damage were reduced by running air hoses through the zeroG® arm cavity.

"This is one of the best <dynamic assist devices> I have ever used. It makes my job easier without getting in the way." – End User

Overhead use of heavy right angle tools or even light tools in a repetitive manner is typical in a number of industries including automotive and heavy equipment manufacturing. Due to the nature of the task, traditional lift assists which require an overhead mounting location are not effective. As a result, areas where this task is performed often have high injury rates, lower than desired productivity and higher error rates.

The zeroG® from Equipois is a patented, proven solution for fastening that eliminates the weight of the tool while still allowing users to perform the task effectively. zeroG® systems have provided significant costs savings to many of the largest manufacturing companies in the world. Satisfied users include companies such as Ford, Toyota, Honda, Bendix and Johnson Controls. As a result of their success, many zeroG® customers have gone on to implement the technology as a best practice.

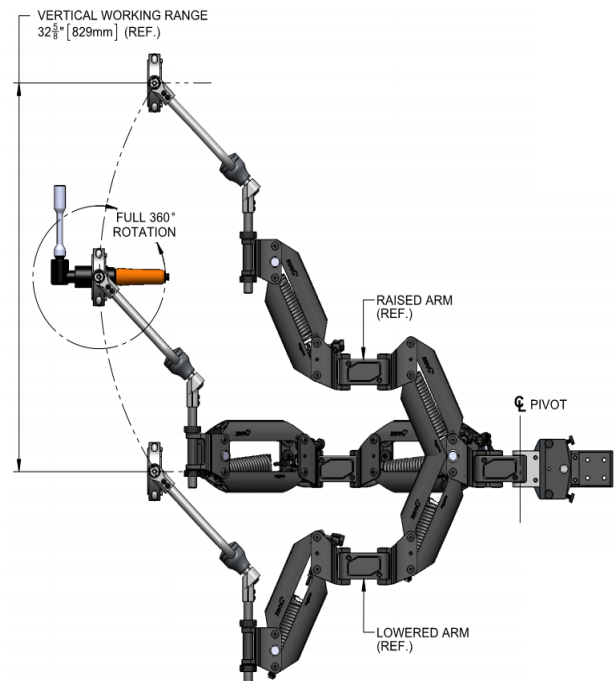
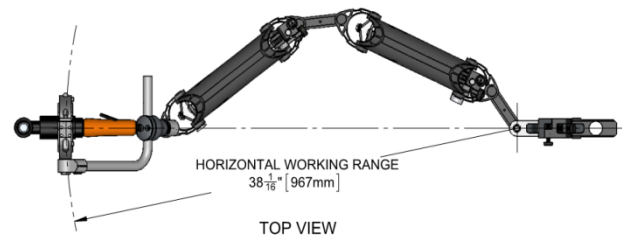
Return-on-Investment

- **Injury Costs.** Primary benefits include the reduction of operator fatigue and strain injuries. For a typical shoulder injury, the direct medical costs alone can exceed US\$20,000. After adding the indirect costs associated with lost time, retraining, etc., costs can easily exceed US\$40,000 for a single injury.
- **Productivity.** The reduction in exertion from eliminating the weight of the tool provides much more than an ergonomic benefit. Many users report labor reductions of up to 50% through the use of zeroG®. It also enables users to consider the use of heavier and more powerful tools providing the potential for even greater productivity gain.
- **Quality.** The need to support a heavy tool compromises precision. zeroG® allows workers to utilize their fine motor skills to be more accurate. Accordingly, zeroG® can help improve the quality where it is utilized. A reduction in the number of rejected parts is a common occurrence with zeroG® systems.
- **Employee Satisfaction.** Customers using zeroG® systems have seen immediate improvements in employee satisfaction. In some cases, users have been able to return restricted duty employees to work by using zeroG®.
- **Tool Damage.** It is common to damage tools during usage by dropping them or running over cabling. With zeroG® cables and hoses are festooned along the length of the arm to prevent damage. Also since tools are no longer dropped when not in use, tool repair costs are reduced. Typical cost savings can be US\$500 to US\$1,000 per year or more.

zeroG® Standard Solution

- **zeroG Arm:** zeroG4 Double Link Arm suitable for payloads 8 lbs to 36 lbs (2.72 kg to 16.33 kg) - Part Number 101-5000-21 (RH Centering), -22 (LH Centering) or -20 (No Centering)
 - Standard Disposable Polyco Double Link Arm Cover – Part Number 300-2100
 - Secure docking kit for securing the tool and arm when not in use – Part Number 400-6200-02
- **Gimbal and Post System:** S1 Ring Gimbal with 45 Degree Wrist Bearing and Post Kit for approved riveters – S1 Ring Gimbals – Part Number 400-0190-01 (Large); -02 (Medium); & -03 (Small) & Post Kit – Part Number 400-1021-02. Both Top Mount and Underslung orientations available (Top Mount shown)
- **Mounting Solutions:** Both fixed and portable mounting solution options are available (see Mounting Solutions data sheets):
 - Fixed Mount 2-Axis Pre-Set Interface Mounting Block – Part Number 500-4200 (shown in this document)
 - Fixed mount Linear Rail System with 80/20 post to mount zeroG system to wall or fixture –Part Numbers 500-5710-72, -96 or -144 (72, 96 or 144 inch rail)
 - Portable Gantry System with top mounted linear rail –Part Numbers 500-5420-72, -96 or -144 (72, 96 or 144 inch rail)
 - Portable zeroG4 Quad Stand – Part Number 500-5520

Standard Reach Drawings



Approved Tools List

Right angle torque tools from the following manufacturers:

- Atlas Copco
- AcraDyne
- Bosch and Bosch Rexroth
- Cooper Tools
- DeWalt
- Milwaukee Tools
- Stanley Tools