# BACK-A-LINE DYNAMIC BACK SUPPORT

This report summarizes the experience of a large group of companies within a body of tests, where numerical data was provided to the Company. As a matter of confidentiality, individual Company names are not included in this report.

With various research studies offering mixed results, the safety industry has come to question whether back belts provide real reduction in back pain or injuries. The need and hope for a solution to the serious and expensive issue of back pain and injury in the workplace remains. The Back-A-Line belt design is quite different from the conventional elastic, girdle-type back belts used in previous studies. In this experience report, we document the results of *real-world* experience monitoring back pain relief and injury prevention using the Back-A-Line Dynamic Back Support belt.

More than 20 years ago, Back-A-Line developed a different kind of back support: rather than rely on elastic, which was known to lead to muscle weakness and atrophy, the Company developed and patented a "curved-and-firm" pad within a non-stretch belt, which became the Back-A-Line Dynamic Back Support. The design concept was to promote healthy spinal mechanics and strengthen the back. Unlike other back belts, the design works to:

- dynamically correct posture by facilitating spinal muscles to work optimally and
- in conjunction with the non-stretch belt, provide a point of resistance to utilize intra-abdominal pressure (IAP) to rigidify (not atrophy) the trunk.

# BACKGROUND

Over the past few years Back-A-Line has progressively built an independent, in-the-workplace experience base. By the close of 2012, this experience base had reached a level where the results were compelling. As of this report date, the Company has conducted 58 tests involving 55 corporations, 2 public entities, and the U.S. Army, collectively comprising more than 1,700 people.

### **EXPERIENCE**

Tests were conducted over several years in the following industries: air transport, food/grocery, health care, other transport, manufacturing, and services, as well as the public sector and the U.S. Army. Tests monitoring symptoms, and in some cases injury rates, were conducted over a wide variety of actions, situations, and settings. Tests typically included 20-30 people, who evaluated their back-pain and fatigue levels (on a five-level subjective scale ranging from "no pain" to "unable to concentrate") prior to using the Back-A-Line Dynamic Back Supports, and then evaluated their back pain and fatigue levels again (after using the Supports) in 30-60 days. Results were reported in all test cases, with specific deep-data provided to Back-A-Line in 35% of the cases.

Results across the tests were consistently positive, meaning all tests produced similar results with no significant negative variation.

Of particular note, the Company has never had a "failed" test, defined as a test in which there was not significant improvement in conditions.

The following report highlights the real-world experience regarding injuries and pain impact.

#### **INJURIES**

Reportable injury experiences were documented by the U.S. Army and a U.S.-based major international airline. In both cases, the improvements were significant as demonstrated in Figure 1 below.



The Army reported a drop of 66% in back injuries, and the airline experienced a 49% drop in OSHA reportable back injuries during its partial rollout of Back-A-Line Supports over the period. For the Army, lower back injuries had been their #1 injury profile, representing 23% of all injuries. Using the medical "Oswestry protocol", their test was conducted in Afghanistan over one year, with 200 pilots and materiel off-loaders.

The U.S.-based major international airline experienced a 49% drop in reportable injuries. With this experience, the airline decided to equip its ramp loaders around the globe with Dynamic Back Supports, numbering in the thousands of units and at this date, in more than 48 locations.

#### **PAIN IMPACT**

The comparable improvements from the Back-A-Line Support across all industries are shown in Figure 2 below.

- There is a 77.5% drop in workers in the "High Risk" Zone, i.e. reporting "chronic pain" or routinely "very tired" prior to the test.
- 71% of workers with any problem report improvement across the symptom levels (on a five-level scale).



# **BAGGAGE HANDLERS ILLUSTRATION**

The baggage handling industry is illustrative because, not only did it fare better in pain/fatigue reduction when lined up against the typical industrial applications shown on the previous page – even with heavier weights and excessive torqueing, but also because there were four separate baggage handling evaluations all with nearly identical metrics, showing consistent results. The experience report is even more dramatic in this industry.

The number of workers in the "High Risk" Zone was reduced 95%: 56% of the loaders were in the "High Risk" Zone before using Back Supports, 3% were in the "High Risk" Zone after use.



### **SUMMARY**

Given the level, breadth, and consistency of these preliminary findings, the real-world experience of using the Back-A-Line Dynamic Back Support confirms that a different approach to belts as aids/ solutions to injury levels and back pain is *safe*, *beneficial and superior* to the performance of elastic girdle back belts.



### **TEST PERFORMANCE GRIDS**



# **INDUSTRIES TESTED**

Airline Auto Parts Food Processing Furniture Manufacturing Hospitality Hospitals Nursing Homes Public Transportation Warehousing



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# CONTACT INFORMATION

Back-A-Line, Inc. 644 11th Avenue San Francisco, CA 94118 (415) 387-4082 www.backaline.com