



## PRODUCT DEVELOPMENT TEST 2 FOR TARGET

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### StrongArm is Revolutionary Industrial Gear

We are inventors and product designers who come from families of manual laborers. In the past fifteen years, we saw our fathers' quality of life decreased, due to the demand of their jobs. This inspired our vision for replacing industrial age safety solutions with breakthrough technologies that help laborers be stronger and more durable. Society, industries and businesses will benefit by having a stronger and happier workforce.

Lifting safety is our focus today. In this area, our breakthrough technologies are proven to prevent the four factors associated with back disorders when lifting as published by OSHA. In the past year, employees, safety personnel, and management of several Fortune 500 companies have been testing our innovation to ensure that our solution meets both company and individual needs. Based on the data we have received from leading companies and ergonomic research labs, the **StrongArm** Vest is poised to dramatically improve the health, productivity and longevity for workers and companies that make it a standard operating procedure.

### Lifting Injuries are an Epidemic in the US

Incorrect lifting is the number one cause of workplace injury in the United States. These injuries reduce the quality of life for workers and they lead to billions of dollars in workman's compensation claims and lost productivity.

Current lifting solutions (products and training) are ineffective. Studies have shown that teaching employees proper lifting techniques through "back schools" alone is not enough. Even ergonomically astute material-handlers tend to reconstitute improper lifting posture when work pace quickens or changes.

A human's physical body is not developed for lifting materials repetitively. For this reason, it comes as no surprise that humans fail to constitute NIOSH lifting techniques even after proper training. Lifting materials or people is simply not a natural human behavior.





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### Proper Lifting Requires Innovation

For decades, material handlers have been under increasing pressure to physically move materials from one place to another. This has placed a growing burden on a workers productivity and health. Often these factors are made worse when the environment leads to lifting discomfort. Benchmark research conducted by Ulrich & Zimring (2004, 2006) found scientific evidence linking the physical environment to several performance outcomes:

- Increase worker effectiveness and satisfaction, and reduce errors by designing better workplaces
- Improve employee health and safety through environmental measures
- Improve worker safety and reduced worker fatigue
- Reduce stress and improve outcomes
- Improve overall health and work conditions

Today, it is generally accepted that workplaces should be adapted to fit workers and the work they do to optimize their performance to produce superior output. Despite widespread agreement, the materials handling industry continues to make investments in cost controls rather than even small investments in worker safety and productivity solutions that will yield substantial financial returns.

The reason is simple—no standard has been developed and proven to help workers lift safely and improve productivity.





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### StrongArm Vests Make Lifting Safe

We exist to help workers lift strong and live long. After developing our core technology, hundreds of Fortune 500 workers and three ergonomic design firms with clients such as Reebok, Adidas and 3M, were instrumental in making 22 improvements to our original design in the past year.

As a result, we believe **StrongArm** has created a Vest that is the first in history that has the potential to meet and exceed NIOSH lifting standards. Our Vest accomplishes this by working in harmony with the worker's body and tasks to improve lifting technique and reduce the load simultaneously.

#### The StrongArm Mantra: Lift Strong & Live Long

To make lifting safe, we started with the root of the problem, "the human body." We created a technology that bolsters a worker's musculoskeletal system making lifting more natural, safe and powerful.

Our technology allows a worker equipped with a **StrongArm** Vest to dramatically reduce the loads that are typically absorbed by their weaker hands, arms, neck and lower-back by naturally redistributing them to the stronger and more capable areas of the torso. Throughout the lift, **StrongArm** naturally shifts the load from these injury prone areas to three strategic leverage points on the back and torso. This reduces fatigue, but most importantly, it guides the lifter into the proper posture throughout the lift, thereby reducing the potential of back injury.

### Compliance

Since **StrongArm** reinforces and fosters proper lifting techniques, it works hand-in-hand with ergonomic employee training. When training is over, **StrongArm** continues to remind and reinforce one's proper lifting technique each and every time it is used.

While the **StrongArm** Vest is advanced technology, it addresses the **four factors** that OSHA associates with back disorders. These factors include **reaching, twisting, bad body mechanics and posture**. Industry studies have also shown that **arm fatigue** leads to an increase of back injury so we include it as a fifth factor. The following information illustrates how StrongArm performs across all of these industry benchmarks.







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Common Lifting Problems	Industry Recommendation	StrongArm Solution The StrongArm Advantage	Rating (1-6) 1 = strongly disagree 6 = strongly agree
<b>Reaching</b>  Holding load too far from body	Remain <b>close</b> to the object	Cords  Reduces moment arm length  Intuitive tension keeps lifter close to load	
<b>Twisting</b>  Contorting body while lifting	<b>Pivot</b> , don't twist. Move your feet in the direction of the lift	FLX-Form™ + Cords  Prevent twisting and awkward body positioning	
<b>Bad Body Mechanics</b>  Fatigue	The use of one's body to produce motion that is: <ul style="list-style-type: none"><li>• Safe</li><li>• Energy Conserving</li><li>• Efficient</li></ul>	Strong Muscle Group™  Targets to strengthen and stabilize these muscles. These muscles are the ones that last longer, recover quicker, and can endure greater stress.	
<b>Posture</b>  Bending while lifting	Raise and lower to the ground by bending your knees.  Look straight ahead, and keep your back straight, your chest out, and your shoulders back	Clinically proven to reduce flexion of the back  Load is transferred to more capable and faster recovering areas of the body	



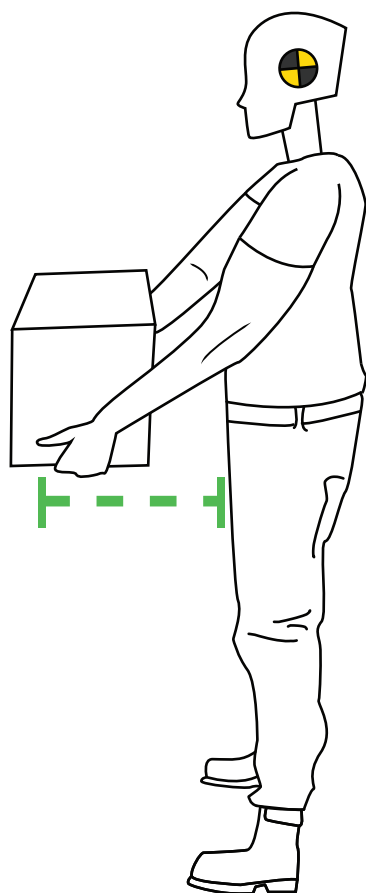


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### REACHING

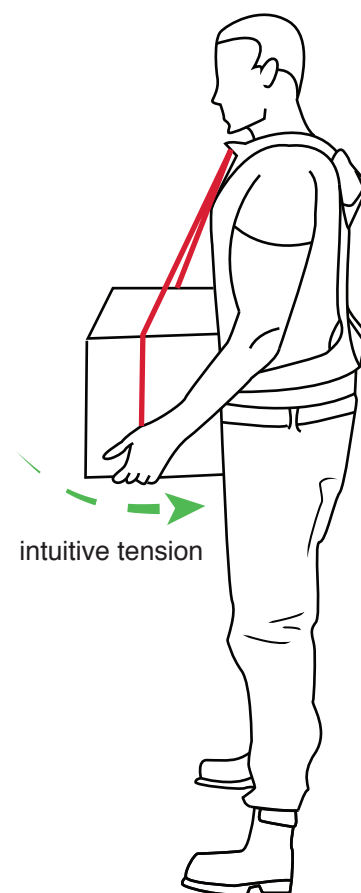
- Remain **close** to the object
- Use short lever arms for better control & efficiency (*with less strain*)
- You will be a stronger and more stable lifter if the object is held close to your body, rather than at the end of your reach



### The StrongArm Advantage

#### Preloaded Resistors

- Initiates movement of object closer to the user
- Teaches the user to move closer to the object, reducing moment arm
- Provides unlimited reach for non-lifting and carrying tasks



#### A Note From StrongArm:

**Keep the load close:** Holding an object with your hands further from the body creates more compressive force on your lower back. This is because the muscles in your back have to work harder to counterbalance the weight when it is further from the body. As the compressive force on your lower back increases, so does the risk of muscle strains, ligament sprains and damage to disks in the spine.



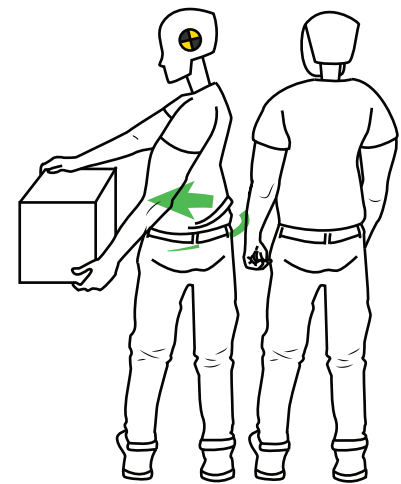
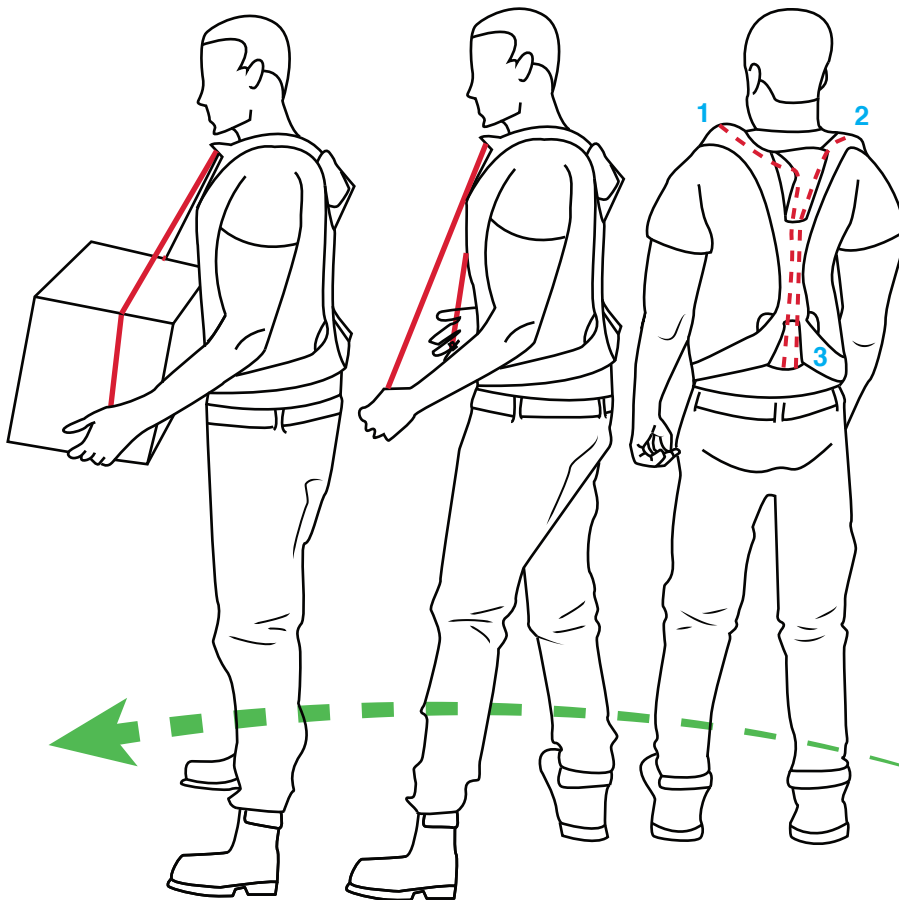


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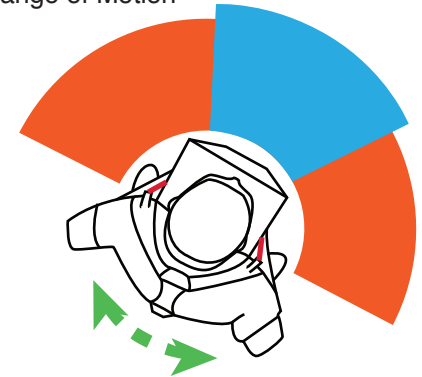
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### TWISTING

- Twisting when lifting forces the spine into a position of weakness and removes the natural “S” curve of strength from the lifting process
- **Pivot**, don’t twist. Move your feet in the direction of the lift. This will eliminate the need to twist at the waist



Range of Motion



### Pivot Technique + StrongArm Torsional Reinforcement

- Hold the load very close to your body at waist level
- Turn the leading foot 90 degrees toward the direction you want to turn
- Bring the lagging foot next to the leading foot. Do not twist your body

A three-point V-shaped cord connection between the lower back and shoulders limits the users ability to twist, providing dynamic core stability





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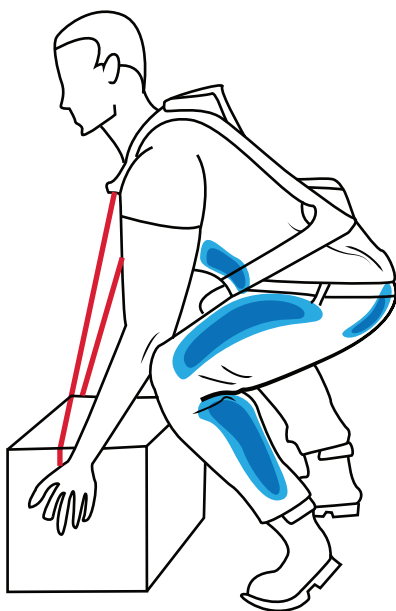
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### BAD BODY MECHANICS

Body mechanics can be described as the efficient use of one's body to produce motion that is safe, energy conserving, and anatomically and physiologically efficient and that leads to the maintenance of a person's body balance and control.

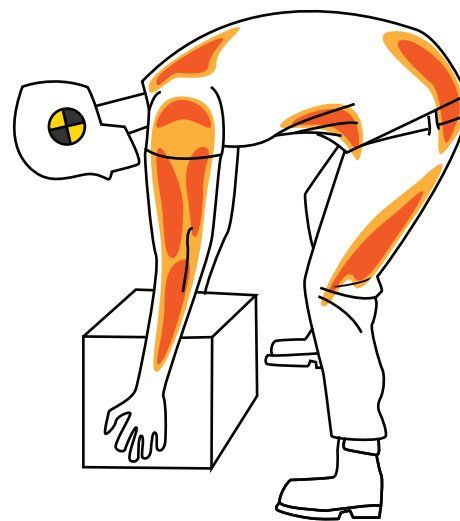
Proper lifting mechanics can prevent injury, however the muscles used in a traditional lift are not meant for repetitive lifting.

The use of a Strong Arm and the Strong Arm Muscle group will conserve energy, reduce stress and strain on body structures, reduce the possibility of personal injury, and produce movements that are safe.



#### StrongArm Muscle Group™

This is a group of muscles that **StrongArm** has strategically targeted. These are muscles that are last longer, recover quicker, and can endure greater stress. By using these muscles as a primary set of lifting muscles, users will be able to work longer at a more consistent rate.



#### Mismatch Muscle Group

This group of muscles, is the current group of lifting muscle. However, these muscles are not suited for the task of repetitive lifting.







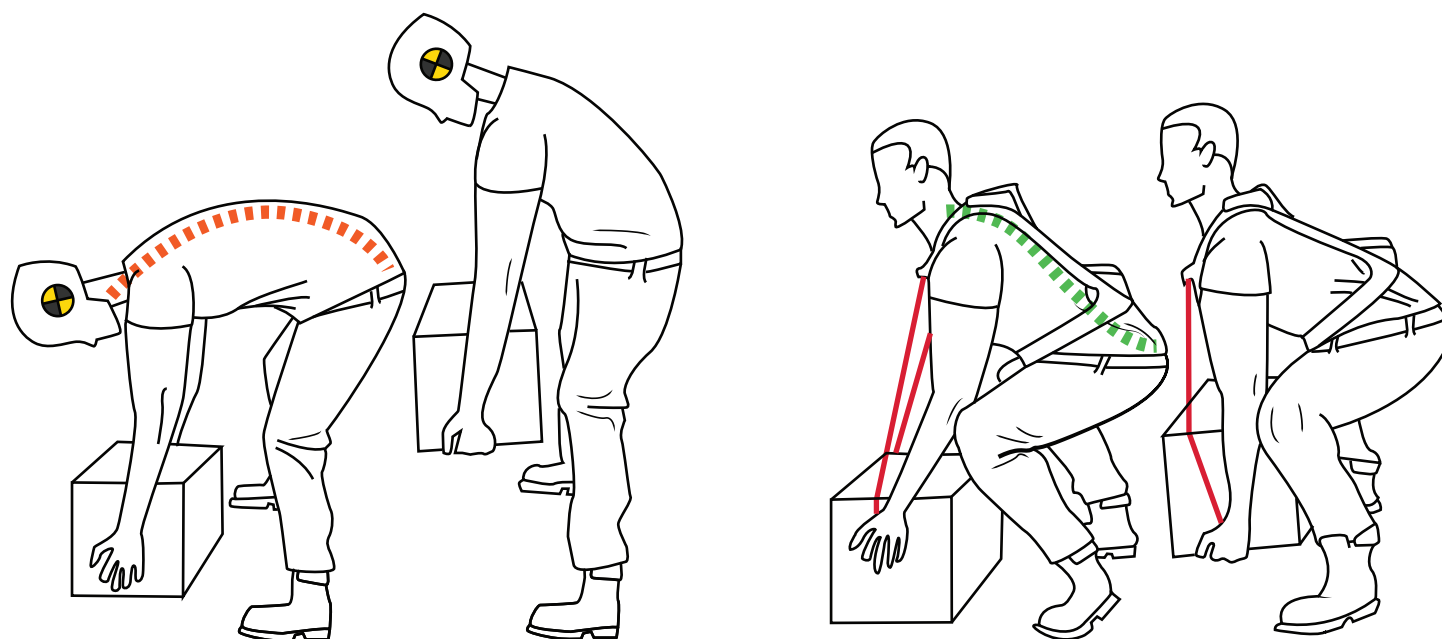
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### POSTURE

Look straight ahead, and keep your back straight, your chest out, and your shoulders back. This helps keep your lower back and upper back straight while maintaining a slight arc in you back Focus on keeping you spine straight—raise and lower to the ground by bending your knees.

**Prevents fatigue because muscles are being used more efficiently, allowing the body to use less energy.**



### FLX-Form™

- Forms a custom fit that keeps the body in an appropriate posture for lifting.
- Prevents a mismatch configuration of muscles by distributing forces from weaker muscles groups to those that are stronger





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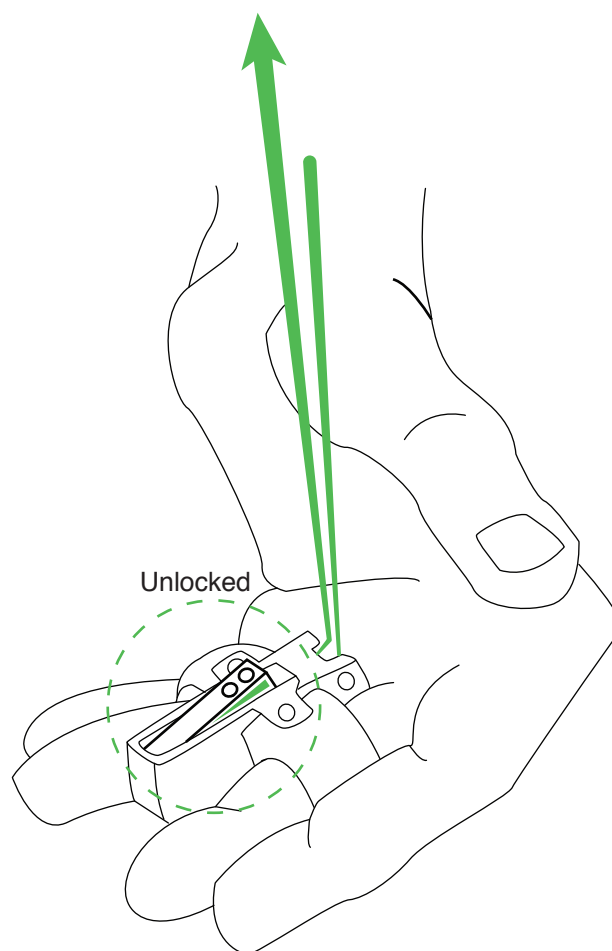
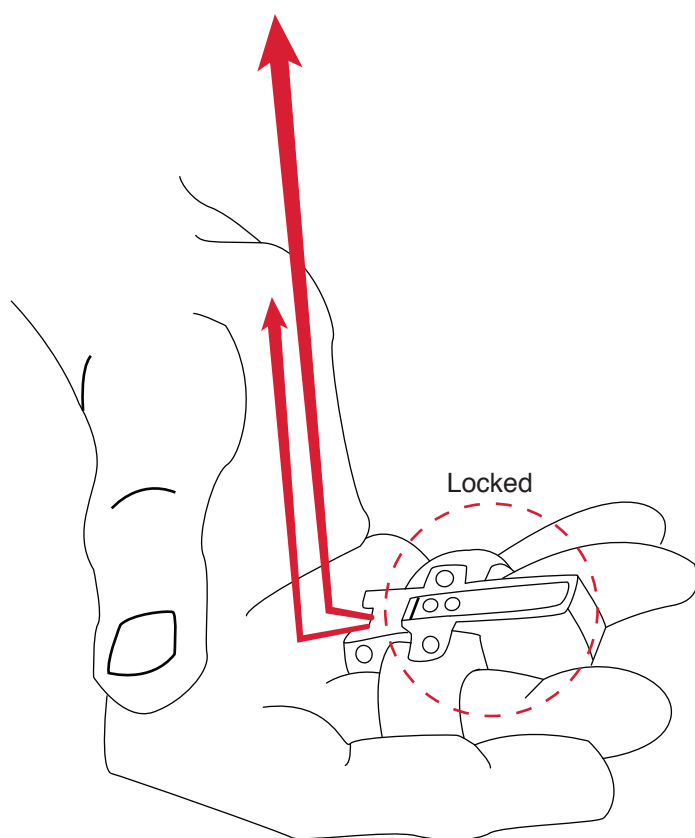
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### FLY TRIGGER™

FLX-Form™ is locked out until the user engages the Fly Trigger™

To Engage:

- Place the object onto the trigger
- During the lift keep the object on the trigger



### A Note From **StrongArm**:

*Before you lift, ensure that your body is positioned properly. Tuck the chin into the chest and keep the back straight. Keep your arms and elbows close to your body to prevent too much of the weight being placed on your shoulders. Grip the object you're going to lift with both your fingers and your palms to give yourself a stronger grip than you would achieve from the fingers alone.*





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### Creating a Stronger Workforce Through Innovation

At **StrongArm** Technologies we're dedicated to helping workers improve their individual performance, health and longevity through innovation. We are constantly in a process of inventing technologies and improving our products to make a positive difference in their lives.

We conduct pilot tests with select partners on a limited basis opportunity. The **StrongArm** Vests used for testing are conducted using advanced designs that inform our innovation process. These prototypes are engineered to perform optimally for testing over a 1-7 day timeframe.

Commercially available **StrongArm** Vests are engineered to perform for a minimum of 2-years.

StrongArm has a several patents pending that protect a range of core functionality all vital for achieving safer and more powerful lifts. Current patent titles that have been filed are:

- Supportive Lift Assisting Device
- Self-Activated Postural Compliance Lift-Assistance Device
- Self activated Postural Conformance Lift-Assistance Device
- Self-Activated Postural Compliance Lift-Assistance Device With Hand-Effector Means Thereof

