

# **Reducing Musculoskeletal Injuries in the Workplace: Personal Positioning**

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## ABSTRACT

Proper positioning of employees can be more effective and cost efficient than attempts to orient the workstation or work piece to the employee.

Modern ergonomics dictate that the employee be able to perform their assigned tasks while operating within prescribed ranges of motion to prevent injury. Traditional ergonomic methodologies typically focus on manipulation of the workstation or work piece to allow the employee proper access.

In some cases, reorientation of the work is not cost effective, or simply not possible. In lieu of proper work positioning, makeshift devices are constructed to allow the employee to prop, roll, or otherwise rig themselves into a position so that they can complete a task. Often this stop-gap measure allows limited access with poor positioning that requires overextension or other trauma to joints just so the employee can complete the task. When done in this manner, the task is often completed quickly to minimize discomfort, resulting in work that may not be in compliance with production standards. Eventually the employee could suffer an acute injury, and over time could suffer cumulative trauma requiring time off, therapy, surgery, and even disability.

Personal Positioning Devices can reduce or eliminate these poor work practices, increasing efficiency, improving quality, reducing injury, and resulting in greater employee satisfaction.



# TABLE OF CONTENTS

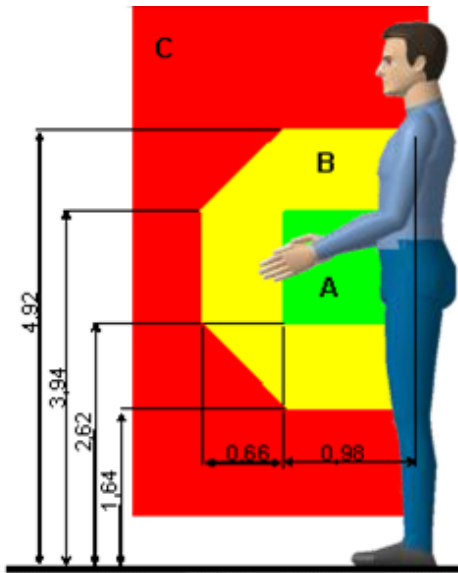
<b>INTRODUCTION .....</b>	<b>4</b>
<b>PROBLEM .....</b>	<b>6</b>
<b>SOLUTION .....</b>	<b>8</b>
<b>CALCULATE YOUR EXPOSURE.....</b>	<b>9</b>
<b>CONCLUSION.....</b>	<b>10</b>
<b>RESOURCES .....</b>	<b>11</b>



## INTRODUCTION

Musculoskeletal injuries in the workplace cost industry Billions of dollars each year. Workers reaching, stretching, or crawling to access work are at risk to be injured in the course of their employment. Musculoskeletal disorders effecting specific body parts occur in the following percentages:

- Back 42%
- Shoulders 13%
- Legs 10%

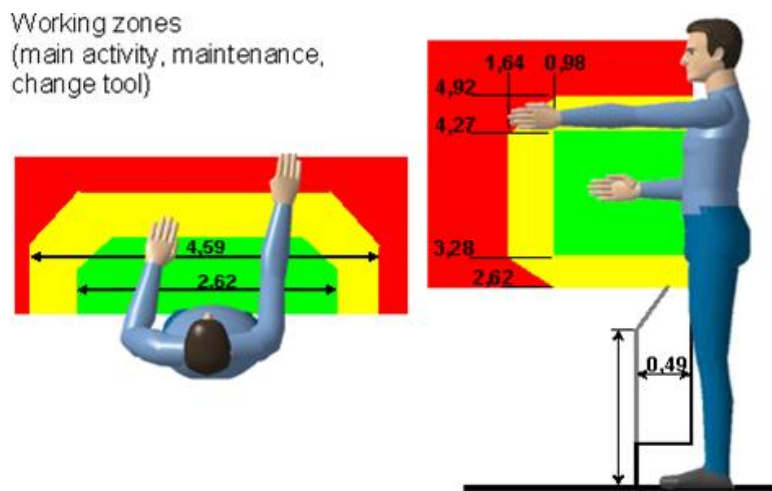


Upper Body handling zones. Even when working at mid-thigh level, the opportunity for musculoskeletal damage is increased.

Dimensions in feet.



The most common types of injuries to these body parts are: 1) Sprains, strains, and tears (35%), and, 2) Soreness, pain (22%)<sup>1</sup>. On average 27% of reported injuries escalate to Workman's Compensation claims.<sup>2</sup> And these numbers are likely to increase every day as the workforce ages.



Upper Body working zones. Dimensions in feet.

Proper ergonomic positioning and support of employees while performing each work task can improve work quality and productivity, reduce the stretching, straining, and reaching that lead to acute injuries, and reduce the likelihood of cumulative trauma that results in disability claims.



## PROBLEM

Traditional ergonomic solutions typically involve positioning work to allow easy access to workers within accepted ranges of body motion. Some work, however, is too large to reposition or must be accessed from multiple positions while certain operations are performed. In many of those cases, makeshift stools or creepers are modified for specific tasks, often requiring multiple devices, or a compromise solution that still involves any combination of twisting, turning, or reaching to complete tasks. While these devices might seem creative their presence indicates a task that needs attention.



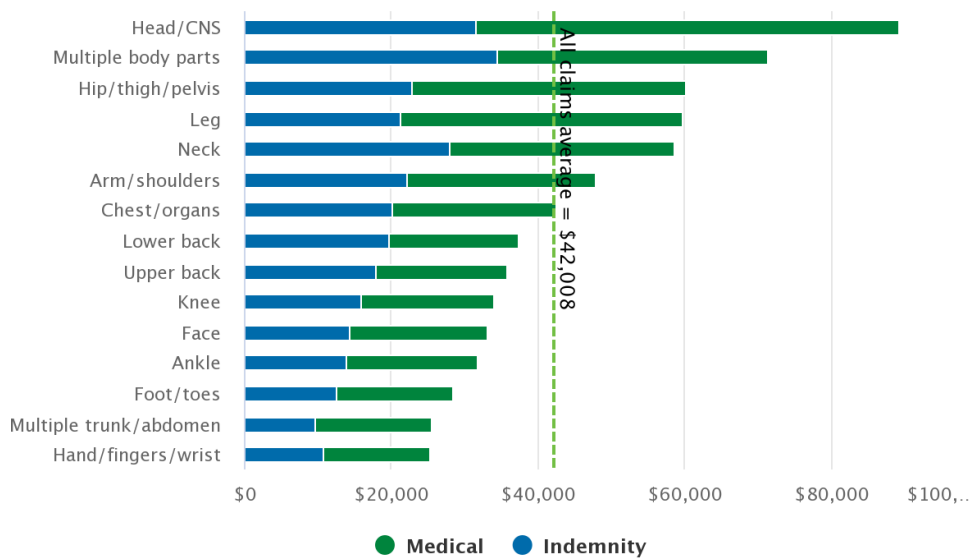
Unacceptable positions include crouching, squatting, kneeling, kneeling on one knee, standing on only one foot, or laying on the floor.

Work performed while out-of-position is often completed as quickly as possible, and often cannot be inspected properly from the awkward work position. The opportunity for acute injury increases with each task performed this way and lost work time injuries requiring therapy, surgery, or even long-term disability become more likely with each task. Employee satisfaction and morale plummets when employees leave work tired, sore, or injured and are unable to enjoy free time with their family because of poor ergonomics.



The cost of musculoskeletal injuries are staggering.

Workers' compensation costs by part of body, 2018–2019



This amount includes medical treatment, medical costs, medical bills, wage loss benefits, vocational rehabilitation services provided when the case remains open, and a negotiated settlement.

Not included in the chart above are costs related to training (both of the lost employee and of the replacement), absent worker replacement and hiring, the experience of the injured worker, and increases in insurance modifiers. Also to be considered are the burden of a recordable incident and the potential for regulatory body actions.

And probably the most of all, the unspoken message to the injured and other employees that a solution was available, but not implemented.



## SOLUTION

By adjusting the position of the worker to large or unwieldy work, proper ergonomics can be applied and work can be performed within the accepted ranges of movement. In addition, multiple tasks can be performed, each in a proper work position by quickly and safely repositioning the device for each task.

The Human Hoist Power Shop Chair is a personal positioning device uniquely designed for lifting and supporting the human body for work. Designed with stable 3 point casters, Human Hoist effortlessly glides from position to position, and can be anchored with the wheel locks as needed. Human Hoist can be stopped at any position in its travel to function equally well as a chair, an adjustable stool, or a creeper.

Human Hoist provides easy access to work in any number of industries:

- Aviation - Access to hatches, engines, fuselage, and landing gear for repair, inspection or paint.
- Maintenance - Clear access under and around production lines, process equipment and machinery. Bending, stooping and crawling are greatly reduced and diagnosis is easier being able to see the work without straining.
- Manufacturing - Work under and around assembly lines is performed quickly and with reduced risk of injury by proper positioning of employees. Process oriented jobs like welding and inspection are accomplished without stretching or reaching.
- Marine – Diagnose and repair drives; repair, clean and inspect hulls.





- Security – Border crossings, prisons, airfields, and other restricted areas can search under vehicles quickly, thoroughly, and easily without crawling on the ground.

## CALCULATE YOUR EXPOSURE

Use this simple chart to calculate your exposure to these risks.

Injury Type	Number	Avg. Comp Case Cost <sup>3</sup>	Total
-Back		X \$37,000	
-Neck		X \$58,000	
-Knee		X \$30,000	
- Other		X \$	
		Subtotal	
% of your reported injuries that become Workman's Compensation Cases (avg. 27%)			X
Potential Workers Compensation Exposure			=
Estimated reduction using Human Hoist Power Shop Chair (based on your injury history – generally 40-50%)			X
Total Potential Savings			=

And this only estimates the tangible savings – without regard to employee comfort, morale, and ease of work.



## CONCLUSION

The application of personal positioning devices such as Human Hoist can reduce or eliminate both acute and cumulative trauma caused by working in awkward positions.

Back, Neck, Leg and Shoulder injuries can reduce employee satisfaction with their job, reduce their productivity, and cost tens of thousands of dollars should recordable injuries progress to Workman's Compensation claims. Proper ergonomics provided by personal positioning can improve job satisfaction, work quality, productivity and drastically reduce costs related to lost work injuries.



## RESOURCES

1. US Bureau of Labor Statistics, Department of Labor News Release, Nov 19, 2015
2. National Institute for Occupational Safety and Health, State of Washington SHARP Program 2014 statistics
3. US Bureau of Labor Statistics, Department of Labor, National Compensation Survey (NCS)



**FOR MORE INFORMATION**

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**12**