

Hand Wrapping vs Machine Wrapping

Using automation to reduce
repetitive strain injury and increase
operational efficiency



What's the issue?

Repetitive Strain Injury

- Repetitive strain injury (RSI) which is caused by repeated movement of part of the body, affects any operations using hand-wrapping systems.
- According to the Occupational Safety and Health Administration (OSHA), RSI affects some 1.8 million workers per year. One government study puts the cost of RSI between \$17 billion and \$20 billion a year. *USA Aug 3rd, 2022, healthday.com*
- RSIs are the most frequent type of lost-time injury and the single largest source of lost-time costs in Canada. According to the Association of Workers' Compensation Boards of Canada (AWCBC), over 10,000 accepted lost-time injuries due to musculoskeletal and connective tissue injuries were reported in 2019.
- A repetitive strain injury is damage to your muscles, tendons or nerves caused by repetitive motions and constant use.



What is RSI?

Repetitive Strain Injury

- Repetitive strain injury (RSI) is a term sometimes used for pain caused by repeated movement of part of the body.
- Repetitive strain injury (RSI) is a condition where pain and other symptoms occur in an area of the body which has done repetitive tasks.
- Repetitive strain means strain related to actions which are frequently repeated. Such as using hand wrap stations
- A repetitive strain injury is damage to your muscles, tendons or nerves caused by repetitive motions and constant use.
- Most common areas of the body affected by RSI are
 - Shoulders
 - Arms
 - Forearms and Wrists
 - Hand and Fingers



What's the problem?

Repetitive Strain Injury

Hand Stretch Wrapping Systems and RSI:

- Continuous repetitive motion for many hours.
 - Arms are extending to pull the stretch wrap around the product at a rate of every 10 - 15 seconds
- Affects arms, shoulders and neck
 - Position of hand wrap unit will affect these three areas
- Can cause extended labour issues
 - RSI injuries require hours of physiotherapy and hours off work
- Production dependent on the physical condition of the employee
 - Rolls of stretch wrap are heavy and the force required to pull the material at the start of a roll is greater than the end of a roll
- Can also be a seasonal issue
 - During festive seasons where product sales are higher, more wrapping is required in a shorter period.



Hand Wrapping vs Machine Wrapping



Production

H - A trained operator – 4-5 packs per minute – often times lower

M - Any operator – 15 packs per minute – 300%+ increase in output

Quality of Wrap

H - Varies based on the skill of the operator – some better than others

M - Consistent tight seal doesn't vary by operator – greater consistency

Health & Safety

H - Repetitive Strain Injury and Hot Plate burn concerns – can be serious

M - Automated delivery and packaging reduce movement substantially

Cost Savings

H - Random amount of material used each time

M - Consistent and best selection by tray size reduces waste

Operational Efficiency

H – Packages require extra step of using a weigh scale to print a label

M – Greater flexibility - Wrap only, Wrap and Print or just Weigh options

What could go wrong with hand wrapping?

- According to the Bureau of Labor and Statistics, there were 170,450 work-related back or spinal injuries in 2013. And various sources suggest that the average back injury (sprain/strain) can cost anywhere from \$3,000 – \$10,000 in direct costs (National Safety Council Statistics). And anywhere from \$30,000 – \$100,000 in indirect costs.
- Today's automated stretch wrappers, such as the Ishida WM-MICRO, automate almost all the tasks that put your people at risk for shoulder and back injuries. They can attach the film, stretch it, and guide the film, wrap the product, heat seal it, finishing the process by cutting the film at the end of the wrap cycle – all automatically. No lifting, bending or pulling required, resulting in lower cases of Repetitive Strain Injury and time off work.
- Repeated trauma cases accounted for 73 percent of the total number of illness cases in the industry, considerably higher than the proportion for all retail trade industries (50 percent). Repeated trauma includes carpal tunnel syndrome and other motion-related disorders and usually involves the hand, wrist, elbow, or shoulder. For the past 5 years, the grocery store industry has ranked among the industries with the highest number of repeated trauma cases. *US Bureau of Labor*

Musculoskeletal Disorders

Painful disorders of muscles, tendons, and nerves that develop over time from tasks that repeatedly cause stress and injury to tissues

Common causes



Material handling

injuries due to repeated lifting, pushing and pulling



Workstation

furniture, layout, job design and keyboarding



Repetitive motion injuries

risk factors due to job design, awkward body motions, and tools



Inadequate job design

pace of work, production pressure, lack of sufficient time to recover from overwork



Musculoskeletal disorders (MSDs) are the most frequent type of lost-time injury and the single largest source of lost-time costs in Canada.

Symptoms

Musculoskeletal disorders (MSDs) do not happen overnight.



WATCH FOR SIGNS

Pain, joint stiffness, muscle tightness, redness, swelling of the affected area, numbness, "pins and needles" sensations, skin colour changes

What employers can do

Hazards are best eliminated at the source. Employers should focus on avoiding repetitive patterns of work through **job design** changes:



Mechanization

automate tasks



Team work

distributing work more evenly



Job rotation

moving between different tasks



Job enlargement

increasing the variety of tasks

If elimination of repetitive patterns of work is not possible, prevention strategies can focus on:



Workplace design

fitting the workstation to the worker



Assistive devices

using carts, hoists, or other mechanical handling devices



Work practices

training workers, allowing rest periods, and giving workers more job control



Tool and equipment design

providing proper tools that decrease the force and avoid awkward positions

Being aware of the causes and developing a prevention program is essential. Inform and train workers, encourage early reporting of symptoms, and identify and control job-related risk factors.

 **CCOHS.ca**
Canadian Centre for Occupational Health and Safety

Ishida WM-MICRO Automated Wrapping System



Ishida **WM-MICRO** Automated Wrapping System

The World's Best Tabletop Automated Wrapping System



<https://www.youtube.com/watch?v=n5zDuIJS2DA>



For more information.....

<https://ishidacanada.biz/wm-micro-tabletop-wrapper/>

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