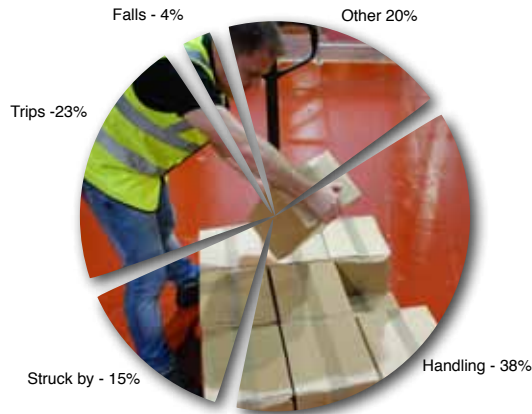


Guide to Manual Handling Best Practice



Manual handling
causes over a third of all
workplace injuries

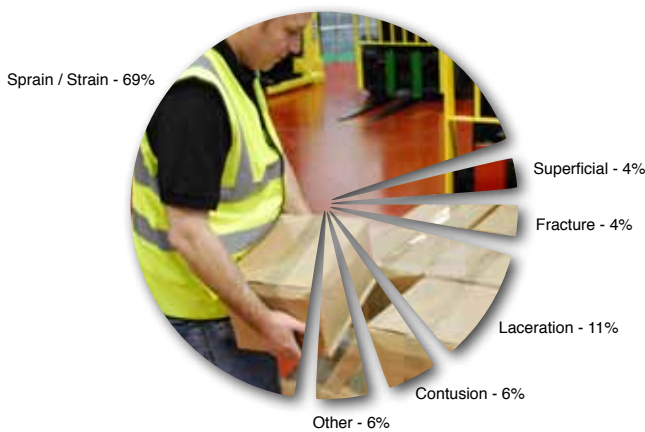
Kinds of accidents causing injury*



**Manual Handling:
Not Just Hands**

When you're lifting, or stacking, or moving things about, you're not just using your hands. You're using all the tools at your disposal, all the muscles, joints and ligaments in your body. People with manual handling tasks use these tools every day. But like anything used frequently, these tools – these muscles, joints and ligaments – get taken for granted. That's when accidents happen.

Types of injury caused by handling accidents*



In fact, more than a third of all industrial accidents, every year, are caused by handling loads. Just by pushing, pulling, or lifting. Most of these injuries are strains – to back, arms, hands, fingers – and sprains: to the wrist, the thumb, the ankle. These accidents are often caused by lifting heavy things too often, or twisting round to stack things at the side, or pulling loads by the simple measure of bracing the back and giving a good heave.

Sites of injury caused by handling accidents*



Many of these accidents can be prevented. They should be prevented, in fact, because employers have the legal duty to 'So far as is reasonably practical, avoid the need for their employees to undertake any manual handling operations at work which involve a risk to their being injured'*. It is in employers' legal interests to make sure their employees are handling goods and loads safely.

It's also in their economic interests. Millions of working hours are lost every year through injury, and personal injury cases and compensation packages can prove costly. Employers could even boost productivity by training their employees to handle loads properly, or by providing materials handling equipment to aid them with the job. Lifting something by hand is hard work; fortunately today's employer has solutions to lighten the load.

Manual Handling: lift that load

There are a few simple rules to remember when handling loads.

Keep it close to the body

The further away the load, the more stress on your lower back. Holding a load at arms length puts five times more weight on your back than holding it close to you. Keeping it close to your chest makes you more stable – and the friction of your clothes helps keep the weight where you want it.

Check your feet

Get close to the job. Stand square on to the load, with your leading leg as far forward as comfortable, preferably facing the direction you're going to move in next.

Use your legs

If you have to bend down to pick something up, don't stoop – bend the legs, and use your strong leg muscles to take the weight. It's not a good idea to handle loads when sitting down – you can't use your leg muscles, you can't use your body weight as a counter balance, and you're asking too much of your arms and upper body.

Pulling and pushing power

You have more power when pulling or pushing if your footing is secure – make sure the floor is dry and solid. Grip the load between waist and shoulder to ease strain on the back and the arms. Even better, turn your back to it and push with your legs: you have strong leg muscles for a reason.

Is it too big?

Make sure the load is small enough to enable you to get a good grip, and see where you're going. If any side of what you're carrying – length, width or height – is more than 75cm then you run a greater chance of injuring yourself. Make sure you know where the centre of gravity is; keep the heaviest side nearest to your body.

Not too far

If you can lift a load and carry it easily against your body, you'll also be able to carry it safely. Don't carry it too far, however: more than 10m and you'll probably be using all your energy in carrying the load, and have none left to put it down safely.

How much weight?

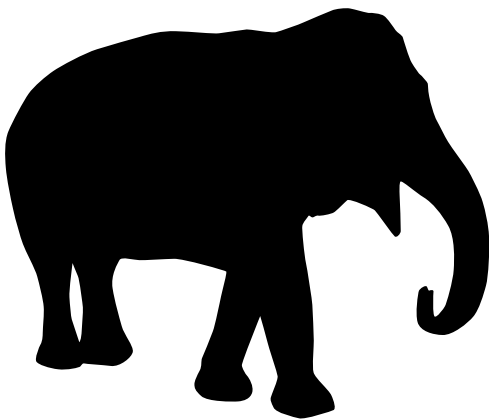
It is difficult to give precise guidelines about how much weight people should be carrying, because people vary so much. Weight is only one of the risk factors to manual handlers. A diagram on page 6 shows the guideline weights that men and women should be carrying safely.

Don't twist

You could hurt your back. Lift, carry and place in one direction where possible. If you have to put a load in an exact position, put it down first, and then adjust it, when the weight is off you.

Risk of repetition?

Don't make the same movement too often – it can lead to repetitive strain injury. HSE guidelines allow for lifting or lowering a load once every two minutes. Any more than this, and the employer should be carrying out a detailed survey of the risks involved. Take a break now and then, or alternate one handling job with another, to give different muscle groups a rest.



Is it too BIG?



Is it too far away?



Is it too heavy?

The Health & Safety Executive recommends that employees use machines and tools to take the strain....

Manual Handling: Get a little help

There are a few simple rules to remember when handling loads.

Lifting and lowering

Employers can reduce the risk of injury to their employees by providing materials handling equipment for moving loads. In fact, the Health and Safety Executive recommends that employees use machines and tools to take the strain. Investing in equipment, such as scissor lifts or moveable, powered workstations, will actually help employers meet their legal obligation to protect their workforce from injury, and to keep them safe and fit.

Rather than asking employees to lift and lower items, bending down and reaching up to do it, get a machine to bring the items to the right height.

For example, a scissor lift truck can be loaded with the goods, and then raised or lowered to the height needed to transfer the loads safely to the next stage. If the goods are extremely heavy, or have to be transported, a powered workstation can do the job efficiently.

Recommended manual lifting guidelines*

These are guideline weights, and their position in relation to the body, that employees should be able to move, lift and lower easily and safely. If the handler's hands enter more than one of the box zones during the operation, then take the figure as the smallest weight shown. If employees are handling greater weights than these, then employers should carry out a detailed assessment of the risk of injury

	Women		Men	
Shoulder Height	3kg	7kg	10kg	5kg
Elbow Height	7kg	13kg	20kg	10kg
Knuckle Height	10kg	16kg	25kg	15kg
Mid Lower Leg Height	7kg	13kg	20kg	10kg
	3kg	7kg	10kg	5kg



Problem: Moving loads from the floor to a waist height bench.

Risk: Back strain as employees bend down repeatedly to lift.

Solution: An electric workstation/transport truck, which raises the object to waist height, enabling the employee to transfer them easily to the bench.

Employers can reduce the risk of injury to their employees

Manual Handling: Get a little help

There are a few simple rules to remember when handling loads.

Pulling and pushing

The risk of injury may also be reduced if lifting can be replaced by controlled pushing or pulling. However, uncontrolled sliding or rolling, particularly of large or heavy loads, may introduce fresh risks of injury. Generally, people can exert more force towards and away from their bodies than sideways.

For both pulling and pushing, a secure footing should be ensured, and the hands applied to the load at a height between waist and shoulder wherever possible. For pushing and pulling operations the guideline figures assume the force is applied with the hands between knuckle and shoulder height.

Remember that pushing or pulling a truck or trolley is still a manual handling operation. Trucks and trolleys are often pushed by manual effort, but battery powered equipment is also available.



Powered pallet and stacker trucks

Hand pallet trucks are moved by pedestrians. Manual effort is required to transfer the load but hydraulic power is normally used to raise and lower the load. A better solution is a powered pallet truck, an electric battery operated truck that moves the load without the need for manual effort. They are also available in pedestrian controlled and ride-on options.

Stackers are a high lift type of pallet truck – they are typically used for placing and removing loads on storage racking and vehicles. Stackers can also be manually operated or powered, and pedestrian-controlled and ride-on versions are available.

Recommended manual pulling and pushing guidelines*

The guideline figure for starting or stopping the load is a force of about 20 kg (ie about 200 Newtons) for men and about 15 kg (ie about 150 Newtons) for women. The guideline figure keeping the load in motion is a force of about 10 kg (ie about 100 Newtons) for men and about 7 kg (ie about 70 Newtons) for women.



Problem: Bringing load up slope on manual truck. The handler leans back to generate the necessary additional force to overcome the gradient of the slope.

Risk: Back, arm and hand strain from pulling back on the load; possible broken bones if the handler slips.

Solution: A powered pallet truck. The motor takes the strain, allowing the operator to effortlessly overcome the gradient. Additionally the electronic braking system allows the handler to stop and restart on the slope if necessary.

Battery powered equipment can reduce the risk of injury

The most effective means of measuring potential handling risks is by completing an assessment check



Are employees at risk?

Alongside the duty of reducing the risk of injury to their employees, HSE recommends that employers 'make a suitable and sufficient assessment of all such manual handling operations to be undertaken by them*'.

In other words, employers should be checking what risks their handling staff face in their jobs. The Health and Safety Executive has drawn up two forms to help employers assess risk, and we give examples of how these can be used below

How to complete the assessment checklist

The checklist is designed to be as straight forward as possible, and can be used as a means of identifying the potential risk of injury from the handling of loads within your workplace, as well as showing how the job may be modified to reduce the risk of injury. It should also help by ensuring a systematic examination of all the risk elements, and by aiding the prioritisation of remedial action.

On the page below are examples of how to complete the checklist.

The actual checklist may be copied freely, or used as the basis of your own checklist tailored for your company. Further checks should be carried out at a later date to ensure that the remedial action to remove or reduce the risk of injury has been effective.

Manual Handling of loads

Assessment checklist

SECTION A	
Job description	
Pallet loading: boxes containing coiled wire	
Is an assessment needed? (ie is there a potential risk for injury, and are the factors beyond the limits of the guidelines?)	
YES	<input checked="" type="checkbox"/>
NO	<input type="checkbox"/>

If 'YES' continue. If 'NO' the assessment need go no further.

Operations covered by this assessment (detailed description):	Diagrams (other information)
Operator lifts box, with hook grip, from conveyor, which is 20 inches above the ground, turns, walks 3 meters and lowers box onto a pallet on the ground. Boxes are piled six high on pallet.	A) Worker, B) Conveyor, C) 48kg boxes of wire, D) Pallet.
Locations:	<p>Arrows show direction of conveyor belt and worker movements between conveyor and pallet.</p>
Personnel involved:	
Date of assessment:	

SECTION B – See over for detailed analysis

SECTION C	
Overall assessment of the risk of injury?	Low <input type="checkbox"/> Med <input type="checkbox"/> High <input checked="" type="checkbox"/>

SECTION D	
Remedial steps that should be taken, in order of priority:	
<ol style="list-style-type: none"> 1. Review product design to reduce weight of load and improve grip. 2. Review process in light of changes agreed in (1), particularly on customer requirements and transportation. 3. Seek funding for magnetic lifting aid to help with transfer from conveyor to pallet. 4. Seek funding for pallet rotating/height adjustment equipment. 5. Operator to attend manual handling training. 6. Raise conveyor height by 15 inches. 7. Ensure full pallets are removed by pallet truck promptly. 8. Operations manager to ensure no rushing on this job. 	

Date by which action should be taken:	Xx December 20xx
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Date for reassessment:	Xx December 20xx
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Assessor's name:	A N Onymous	Signature:	
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Manual Handling of loads

Assessment checklist

SECTION B – More detailed assessment, where necessary:					
Questions to consider:	If yes, tick appropriate level of risk			Problems occurring from the task (make rough notes in this column in preparation for the possible remedial action to be taken)	Possible remedial action (possible changes to be made to system/task, workplace/ space, load, environment. Communication that is needed)
	Low	Med	High		
The tasks – do they involve:				1. Twisting when picking up the box 2. Stooping when placing box on pallet and stooping when picking up box from conveyor 3. Sometimes extended reaching when placing boxes on pallet	Remind operator of need to move feet (L) Adjust pallet height – Review availability of rotating height adjusting equipment (L) and raise height of conveyor (M). Provide better information and instruction (M). Review mechanical handling equipment to eliminate manual lifting (L).
Holding loads away from trunk?			✓		
Twisting?		✓			
Stooping?	✓		✓		
Reaching upwards?	✓				
Large vertical movement?	✓				
Long carrying distances?	✓				
Strenuous pushing or pulling?	✓				
Unpredictable movement of loads?	✓				
Repetitive handling?	✓				
Insufficient rest or recovery?	✓				
A workrate imposed by a process?	✓				
The loads – are they:				4. Load too heavy. Is the weight of the load a problem for customers too? 5. Smooth cardboard boxes are difficult to grasp.	Review product and customer needs with a view to improving product design. Provide boxes with hand grips.
Heavy?			✓		
Bulky/unwieldy?	✓				
Difficult to grasp?		✓			
Unstable/unpredictable?	✓				
Intrinsically harmful (eg, sharp/hot)?	✓				
The working environment – are there:				6. Bad postures encouraged by obstructions when full pallets are not removed	Introduce systems to ensure full pallets removed promptly – speak to Operations Manager (L).
Constraints on posture?		✓			
Poor floors?	✓				
Variations in levels?	✓				
Hot/cold/humid conditions?	✓				
Strong air movements?	✓				
Poor lighting conditions?	✓				
Individual capability – does the job:				7. Operator has no history of back pain problems but clear signs of sweating and straining	Consider job enlargement to introduce variety and allow for recovery time (M). Monitor to ensure no rushing (L). Speak to trainer about manual handling course (L).
Require unusual capability?			✓		
Hazard those with a health problem?			✓		
Hazard those who are pregnant?			✓		
Call for special information/ training?		✓			
Other factors:					
Is movement or posture hindered by clothing or personal protective equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	YES	NO			

SECTION A

Job description

Is an assessment needed?
(ie is there a potential risk for injury, and are the factors beyond the limits of the guidelines?)

YES NO

If 'YES' continue. If 'NO' the assessment need go no further.

Operations covered by this assessment
(detailed description):

Diagrams (other information)

Locations:

Personnel involved:

Date of assessment:

SECTION B – See over for detailed analysis

SECTION C

Overall assessment of the risk of injury?

Low Med High

SECTION D

Remedial steps that should be taken, in order of priority:

Date by which action should be taken:

Date for reassessment:

Assessor's name:

Signature:

SECTION B – More detailed assessment, where necessary:

Questions to consider:	If yes, tick appropriate level of risk			Problems occurring from the task (make rough notes in this column in preparation for the possible remedial action to be taken)	Possible remedial action (possible changes to be made to system/task, workplace/ space, load, environment. Communication that is needed)
	Low	Med	High		
The tasks – do they involve:					
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Twisting?					
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The working environment – are there:					
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Poor floors?					
Variations in levels?					
Hot/cold/humid conditions?					
Strong air movements?					
Poor lighting conditions?					
Individual capability – does the job:					
Require unusual capability?					
Hazard those with a health problem?					
Hazard those who are pregnant?					
Call for special information/ training?					
Other factors: Is movement or posture hindered by clothing or personal protective equipment	<input type="checkbox"/>	<input type="checkbox"/>			
	YES	NO			