

Further reading

Manual handling. Manual Handling Operations Regulations 1992. Guidance on Regulations L23 (Second edition) HSE Books 1998
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Getting to grips with manual handling: A short guide for employers Leaflet INDG143(rev1) HSE Books 2000
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This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

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Choosing a welding set?



Make sure you can handle it



The risks

Manual welding can be a demanding and difficult job. It can involve precision work with the welder's body being in a fixed or awkward posture, often in a confined environment. This imposes high muscle loads. Welders also have to handle heavy materials and equipment. All these factors may increase the risk of workers developing musculoskeletal disorders, such as back problems.

A study found that 51% of welders suffered at least one period of sickness over the two-year study, taking time off work due to disorders of the muscles, joints and tendons. Welding sets are becoming smaller and lighter in weight so there is more individual manual handling, which can lead to injury if the risks are not properly assessed and managed. This leaflet can help you identify the risks and manage them effectively. It contains an illustrated ergonomic checklist to help you make the right choice when selecting welding equipment.

Selecting equipment

When employers select work equipment, the Provision and Use of Work Equipment Regulations 1998 require them to consider the risks posed to the health and safety of people using that equipment. This includes ergonomic risks.

Consider the effect poor equipment handling might have when selecting a welding set. It can result in personal suffering caused by injuries, the financial burden of sickness absence, reduced productivity and increased insurance premiums. The welder may be unable to return to work in this field, which impacts on their potential future earnings.

Reducing injuries caused by handling welding equipment will benefit everybody. Here are some ergonomic design features to look for when deciding between welding sets with the same power output:

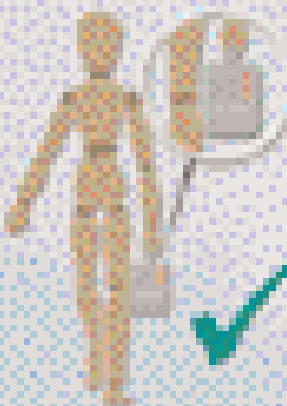
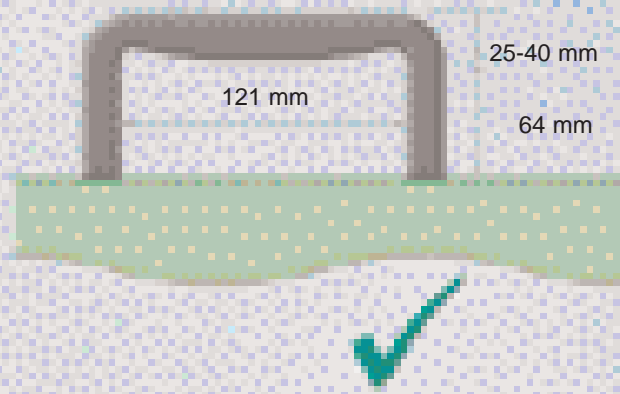
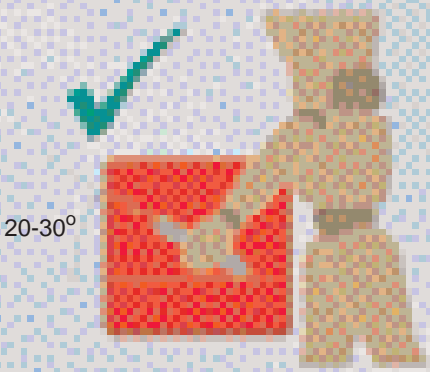
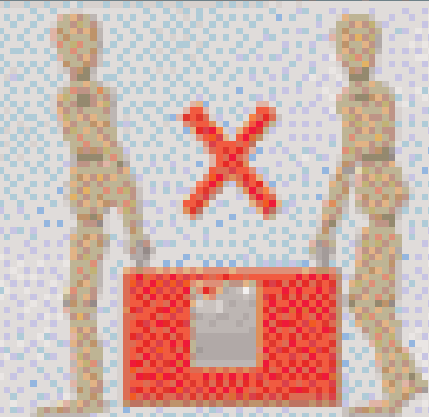
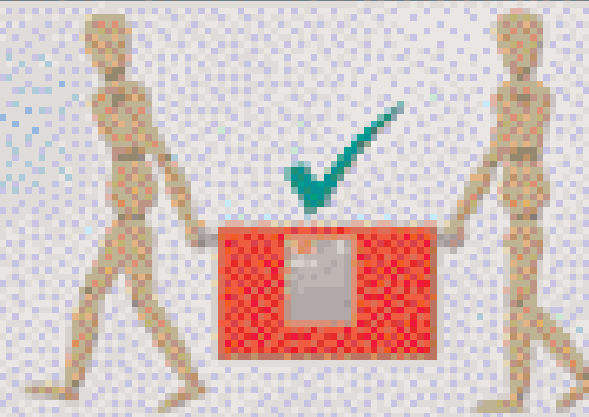
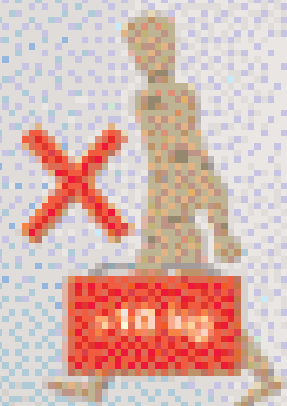
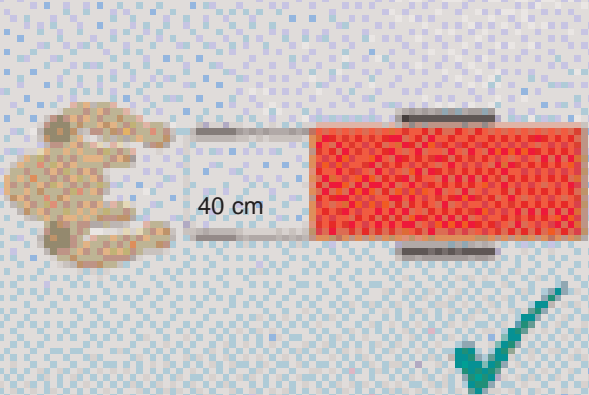
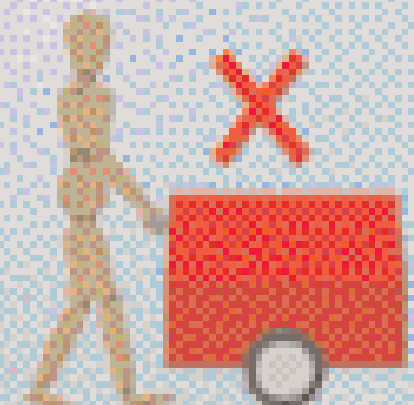
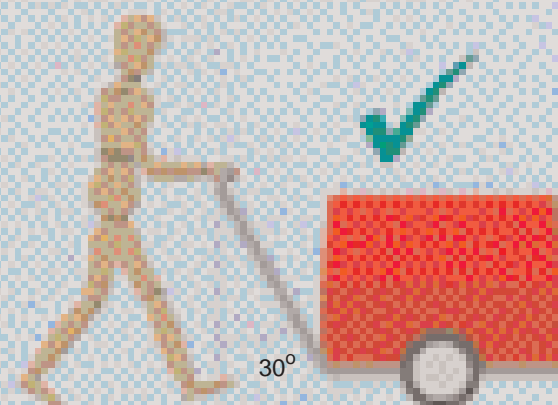


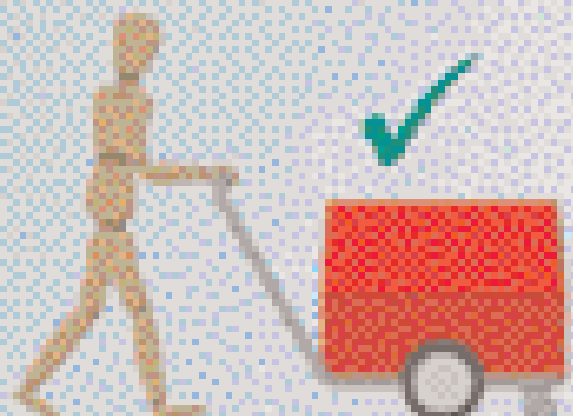
- Does the set have to be carried? Consider controlled pushing or pulling of the load instead of lifting and carrying.
- How easily can the load be grasped?
- Are the handles suitable?
- Can the load be held close to the body (avoid sharp corners, jagged edges, rough surfaces etc)?
- Is the load stable?

Other considerations include:

- handle orientation;
- ease of pushing/pulling;
- axle types;
- size of wheels;
- wear and maintenance of wheels/tyres;
- effect of torch, wire feed, hoses, gas bottles etc on the handling characteristics of the welding set.

The poster overleaf provides an ergonomic checklist for the selection of welding sets.

Welding set buyer's guide: Considering manual handling

Welding set size	Handling type	Ergonomic checklist
Small	Single person One- or two-handed	 <p>Can be carried close to the body? Smooth edges and rounded corners allow closer physical handling without injury or clothing damage</p>  <p>Allows powerful grip while carrying? Good handle size and clearance allows a better grip even while wearing gloves</p>  <p>Good handle position? Side-mounted handles allow closer handling</p> <p>Comfortable wrist position? Angled handles improve wrist comfort and enable stronger grip</p>
Medium	Two person	  <p>Comfortable posture for both people? Side-mounted, protruding handles will assist by giving extra leg space for walking more freely with a good posture, reducing lower back forces significantly.</p> <p>Even though the second handle arrangement is better, it could be improved with the addition of wheels.</p>  <p>Too heavy for one person? Lifting and carrying over 10 kg with one hand or 25 kg with two hands can increase risk of lower back injury and should be avoided.</p>
Large	Two to four wheels	 <p>Good handle width? Allow for a person to stand inside the handles while gripping them</p>   <p>Good handle clearance? Below the legs to allow a full swing of the leg while walking forwards, pushing the trolley</p>  <p>Good handle height? Allow for the lifting and transportation of the welder without any stooping</p>   <p>Axle configurations? Consider the ease of moving the welder over rough surfaces when evaluating different axle designs</p>

Remember that torches, wire feeders, hoses, gas bottles etc change the handling characteristics of equipment and should be considered in any risk assessments