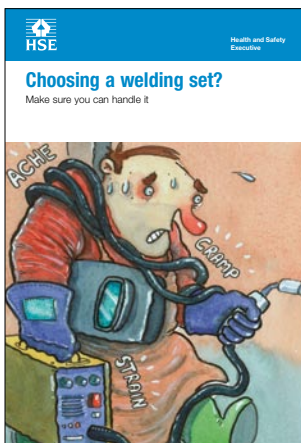


# Choosing a welding set?

Make sure you can handle it



This is a web-friendly version of leaflet INDG390(rev1), revised 12/09

## 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 a two-year period, 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.

When selecting a welding set, consider the effect poor equipment handling might have:

- personal suffering caused by injuries;
- the financial burden of sickness absence;
- reduced productivity;
- increased insurance premiums; and
- the welder being unable to return to this type of work, which would affect 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 it well balanced?

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 checklist in this leaflet will help you select the right welding set.

## Want to know more?

*Getting to grips with manual handling: A short guide* Leaflet INDG143(rev2) HSE Books 2004 (single copy free or priced packs of 10 ISBN 978 0 7176 2828 5)

*Manual handling assessment charts* Leaflet INDG383 HSE Books 2003 (single copy free or priced packs of 10 ISBN 978 0 7176 2741 7)  
[www.hse.gov.uk/pubns/indg383.pdf](http://www.hse.gov.uk/pubns/indg383.pdf)

*Manual handling. Manual Handling Operations Regulations 1992. Guidance on Regulations L23* (Third edition) HSE Books 2004 ISBN 978 0 7176 2823 0

See also advice on the HSE website at: [www.hse.gov.uk/msd/](http://www.hse.gov.uk/msd/)

## Further information

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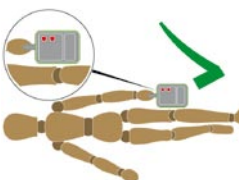
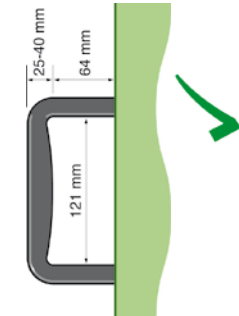

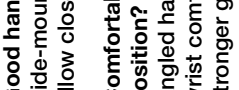
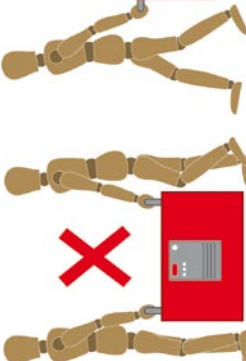
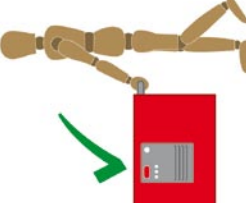

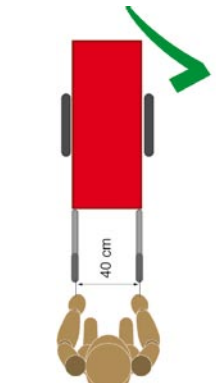
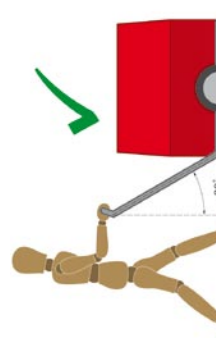
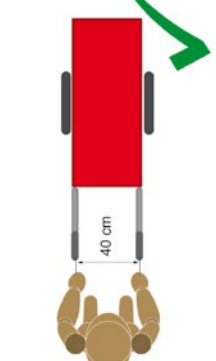
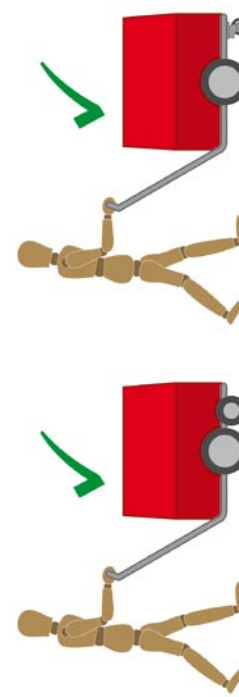
For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Fax: 0845 408 9566 Textphone: 0845 408 9577 e-mail: [hse.infoline@natbrit.com](mailto:hse.infoline@natbrit.com) or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

**This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

This leaflet is available in priced packs of 10 from HSE Books, ISBN 978 0 7176 6384 2. Single copies are free and a web version can be found at [www.hse.gov.uk/pubns/indg390.pdf](http://www.hse.gov.uk/pubns/indg390.pdf).

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# Welding set buyer's guide: Considering manual handling

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