

## GENERAL SAFETY

For advice on the safety and suitability of this equipment contact your local TSW Dealer.

There is a serious risk of personal injury if you do not follow all instructions laid down in this guide.

The hirer has a responsibility to ensure that all necessary risk assessments have been completed prior to the use of this equipment.

Most welding tasks may be considered as hot work in site situations and may be subject to specific permits to work.

### Warning!

During electric/electronic welding/cutting operations, intense magnetic and electrical fields are produced and these may interfere with other electronically sensitive equipment.

All personnel wearing Heart Pacemakers or other electronically controlled medical devices must be kept away from any electric/electronic welding/cutting operations.

The welding/cutting equipment should be installed at least 5 metres away from any computer equipment to minimise any possible interaction.

Cables carrying signals between electronic devices are capable of picking up interference from electric/electronic welding/cutting operations. This Interference may prejudice the way in which these devices function and, therefore, all signal carrying cables should also be sited outside the 5 metre zone.

Do not place objects that are sensitive to magnetism (wristwatches, credit cards, computer discs etc.) near the welding or cutting zone. They may be rendered useless.

The welding/cutting equipment is itself electronically sensitive and its position relative to other radiation emitting equipment (mobile phones, remote controls, motor speed controllers etc.) must be considered.

This equipment should only be used by an operator who has been deemed competent to do so by their employer.

This equipment should be used by an able bodied, competent adult who has read and understood these instructions. Anyone with either a temporary or permanent disability should seek expert advice before using it.

Keep children, animals and bystanders away from the work area.

Welding screens should be used where necessary.

Never use this equipment if you are ill, feeling tired, or whilst under the influence of alcohol or drugs.

Fumes produced by the welding process, if inhaled, can be harmful to health. A suitable mask must be worn when using this equipment.

Exposed skin must be covered - wear practical, protective clothing, gloves and footwear.

This equipment is heavy, never attempt to lift it on your own, always get help.

A head shield with an 11 EW shade MUST be worn by anyone in the work area. Avoid loose garments and jewellery that could interfere with the work.

### Let It Cool

Handle welding equipment and work with care - it will be hot. Leave equipment to cool before changing work piece, moving earth clamps, and so on.

Always transport, store and operate the machine in an upright position.

Keep the power unit's air vents clear of all obstructions.

Always switch equipment OFF before making any adjustments to it. Never leave it switched ON and unattended.

Ensure the work area is well lit and ventilated, a fume extractor or smoke eliminator may be used. If in doubt, ask about lighting and ventilation at your local TSW Dealer.

Do not work near flammable gasses or liquids, petrol or paint thinner fumes. Keep combustible materials at a safe distance - at least 5m.

### Vehicle Safety

Before carrying out welding work on any type of vehicle...

Remove the vehicle's battery and disconnect the alternator.

Remove all combustible material and other fire/explosion hazards.

Make sure you know how to switch this machine OFF before you switch it ON in case you get into difficulty.

Check the condition of the equipment before use. If it shows signs of damage or excessive wear, return it to your local TSW Dealer.

COSHH information sheets are available from your local TSW Dealer.

## ELECTRICAL SAFETY

This equipment must be powered from a 415VAC - 3 Phase mains supply, and all mains connections may only be made by a qualified electrician.

Extension leads MUST ALWAYS be protected by ARMOURED CABLE.

Keep flexes and leads out of harm's way. Never run them through water, over sharp edges, or where they could trip someone.

If the equipment becomes faulty, or if the flex or plug (if fitted) gets damaged, return it. Never try to repair it yourself.

Do not use electrical equipment in very damp or wet conditions, it can be dangerous.

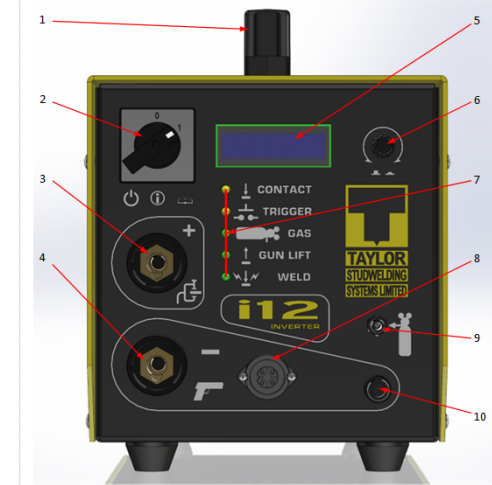
The ON/OFF switch is the main circuit breaker. The unit will run a self-check at startup.

If any faults, errors or warnings occur. The controller will display a red light and an audible tone will sound. The multi-function display will display more information about the issue. Which may be as mundane as the pistol is not plugged into the controller. Check the display before proceeding.

## GETTING STARTED

This guide is designed to help the user to safely set up and dismantle the welder. It is not intended as a guide to welding techniques as it is assumed that the user already has the necessary training/knowledge and experience.

If more detailed information on setting up and welding is required. It can be found in the equipment operating guide. Which is available as free download from the TSW website and can be accessed directly by scanning this QR code.




- |                           |                          |
|---------------------------|--------------------------|
| 1. CARRYING HANDLE        | 6. CONTROL KNOB          |
| 2. ON/OFF SWITCH          | 7. INDICATOR LEDS        |
| 3. WELDING EARTH SOCKET   | 8. PISTOL CONTROL SOCKET |
| 4. WELDING PISTOL SOCKET  | 9. SHIELDING GAS INLET   |
| 5. MULTI-FUNCTION DISPLAY | 10. SHIELDING GAS OUTLET |

Place the unit in an appropriate work area. With adequate support (if raised off the floor).

Make sure the unit is unplugged and turned OFF.

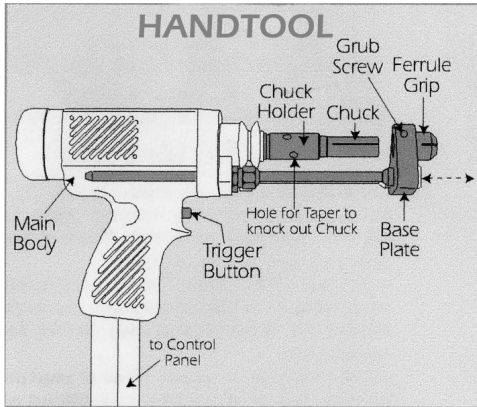
Plug the welding earth cables into the earth connection socket (marked +) on the control panel.

The cable end sockets have a key slot to match with the peg on the earth lead plug. Turn the connectors clockwise, until they lock - damage will be caused to the connectors during welding if this is not done.

Plug the pistol cables into the pistol connection sockets (marked with a  symbol) turning them clockwise, until they lock into position. The cable end and socket are keyed to prevent incorrect fitting. Push in and twist the locking ring to secure. If inert gas shielding is being used. Connect the bottle to the shielding gas inlet and the pistol supply pipe to the shielding gas outlet. Note! TSW do not supply shielding gas. This is the responsibility of the hirer.

Before preparing the pistol. Select the type and size of stud you are going to work with and match them with the appropriate chuck and ferrule grip. Studs/ferrules are available from your local TSW Dealer. Note! Studs must be ordered in advance. Set a stud in the chuck in accordance with the operating guide.

See overleaf for the next step.



Insert the chuck into the chuck holder and the ferrule grip into the base plate. Then adjust the overall length of the unit for the stud to be used. Ensure that the stud is centred properly in the ferrule and protrudes from the ferrule according to the dimensions in the stud chart. Tighten the base plate adjusters to fix the length.

Ensure that the work piece is clean, dry and free from rust, paint and grease. Aim to attach the stud to bright bare metal.

Clamp the work piece securely to stop it moving during the welding process.

To avoid 'Arc Blow' attach the welding earth clamps to the work piece keeping them approximately 180° to each other. Make sure that the contact area of the work is free from paint, rust and grease.



## BASIC OPERATION

Turn on the power supply and turn on the controller using the ON/OFF switch.

The controller will carry out a start-up self-test routine.

Using the control knob and in reference to the table in the next column, set the desired welding parameters on the controller in-line with the operating guide (see QR code overleaf).

Note! The parameters in the table are intended as a general guide only as unquantifiable local factors can impact on weld quality and adjusting the parameters may give improved results. With this in mind. Always perform a series of test welds before committing to welding on the workpiece.

STUD TYPE	PROTRUSION (mm)	WELD CURRENT (A)	WELD TIME (ms)
5FB	3	400	100
6RB	3	376	94
6FB	3	480	120
8RB	3	496	124
8FB	3	640	160
10RB	4	632	158
10FB	4	800	200
12RB	4.5	760	190

RB = REDUCED BASE (reduced  $\varnothing$  at weld tip)

FB = FULL BASE (full  $\varnothing$  at weld tip)

Note! Discount the conical section of the stud tip when considering the protrusion value.

Once ready to weld. Place the stud in the pistol at the location to be welded and press the pistol into position. Taking care to keep the pistol perpendicular to the workpiece surface.

Pull the pistol trigger and hold until the weld completes.

Finally. Pull the pistol off the welded stud vertically and without excessive force. Failure to remove the pistol cleanly can damage the chuck and greatly shorten its working life.

### Caution

The ferrules are ceramic and shattering them will produce sharp splinters. When removing these make sure you are wearing protective gloves.

Shatter the ferrule around the base of the stud with a small hammer and brush away the debris. If you are doing a large number of studs this process can be completed after you've finished attaching all the studs.

When finished. Turn OFF the welder and remove the earth clamps.

ALWAYS inspect each weld and make sure the stud is secure and is fixed squarely to the surface.

## EQUIPMENT CARE

Never push the equipment beyond its design limits. If it will not do what you want with reasonable ease and speed, assume you have the wrong type or size of welder for the job. Ask your local TSW Dealer for advice.

When not in use, store the equipment somewhere clean, dry and safe from thieves.

Keep the equipment clean. You will find this less of a chore if you clean it up regularly rather than wait until the end of the hire period. Always switch OFF the unit before cleaning. Only clean the unit with a damp cloth, do not cause it to be exposed to excessive levels of water or any other cleaning solution.

## FINISHING OFF

Switch OFF and unplug the unit. Leave everything to cool then take the earth clamp off the work. Disassemble the pistol by reversing the procedure described earlier. The chuck may require a drift to be used in the taper holes in the chuck holder to free it. Only use a gentle tap to achieve this. Unplug the pistol connections and the earth connections.

Assemble all the components and neatly coil all leads, give the unit a final clean ready for return to your local TSW Dealer

...Any problems?

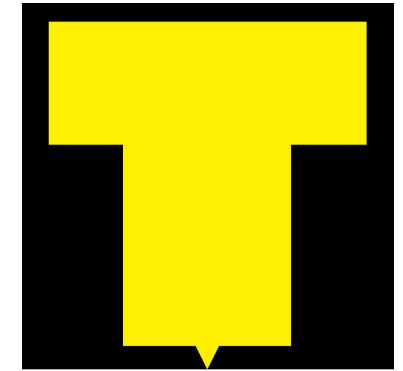
Contact TSW on  
01924 452123

We are here to help!

### Any comments?

If you have any suggestions to enable us to improve the information within this guide please fax your comments or write to the Product Manager at the address below:

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# TAYLOR

# STUDWELDING

# SYSTEMS LIMITED

**QUICK SET UP & SAFETY GUIDE**  
for  
**TAYLOR STUDWELDING SYSTEMS LTD**  
**i12 DRAWN ARC STUDWELDING EQUIPMENT**

**This powerful and easily transportable 415V stud welding system will weld studs up to  $\varnothing$ 12mm**

