

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.

This equipment should only be used by an operator who has been deemed competent to do so by his/her 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 under the influence of alcohol or drugs.

This equipment generates potentially harmful

Warning

If you are wearing an electronic life support device (a heart Pacemaker) you must consult your doctor before going near or working with this equipment. Magnetic fields associated with high currents may affect these devices.

noise levels. To comply with health and safety at work regulations, **ear defenders must be worn** by everyone in the vicinity.

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

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

A head shield with a 10 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 for example. **Keep combustible materials at a safe distance** - at least 5m.

Check the condition of the equipment before

Vehicle Safety

Before carrying out welding work on cars/lorries and similar vehicles...

Remove the vehicle's battery and disconnect the alternator.

Remove all combustible material and other fire/explosion hazards.

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.

The TSW Studwelder plugs into a standard 240V 13amp power socket.

ELECTRICAL SAFETY

If the equipment fails, or if its power supply cable or plug becomes damaged, return it.

Never try to repair it yourself.

Keep cables out of harm's way, and clear of the work area.

Extension leads should be fully unwound and loosely coiled, away from the equipment.

Never run them through water, over sharp edges or where they could trip someone.

Keep the equipment dry, using electrical equipment in very damp or wet conditions can be dangerous.

To reduce the risk of electric shock, always use a suitable RCD (Residual Current-Operated Device) available from your local TSW dealer.

Ensure the welder and the power socket are both switched OFF before plugging into the power supply.

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

GETTING STARTED

techniques as it is assumed that the user already has the necessary training/knowledge and experience.

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

Clamp the workpieces securely in their final positions to stop them moving during welding.

Set up the control unit near the work, make sure that the machine is switched OFF and isolated from the power supply.

Plug the welding earth cables into the earth connection sockets on the controller.

The cable end sockets have a key slot to match with the peg on the earth lead plug.

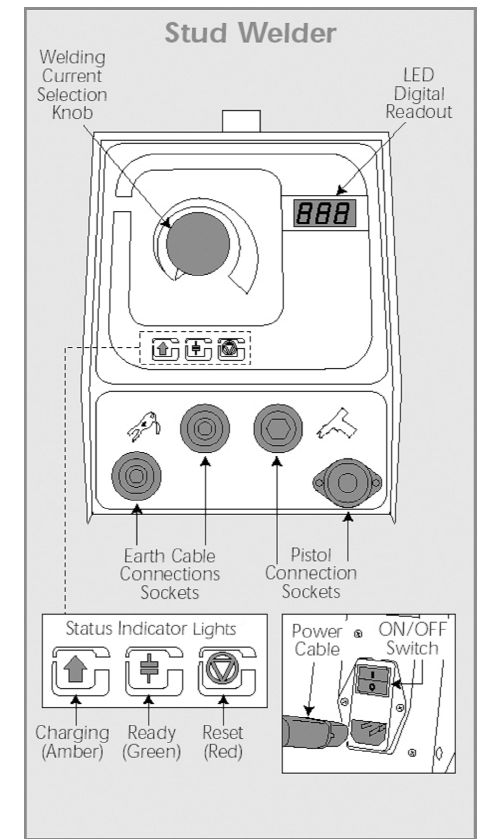
Turn the connectors clockwise, until the lock – damage will be caused to the connectors during welding if this is not done.

To avoid 'Arc Blow', attach the welding earth clamps to the workpiece at 180° to each

other. Make sure that the contact area of the work is free from paint, rust and grease.

Plug the welding pistol cables into the pistol connection sockets

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.

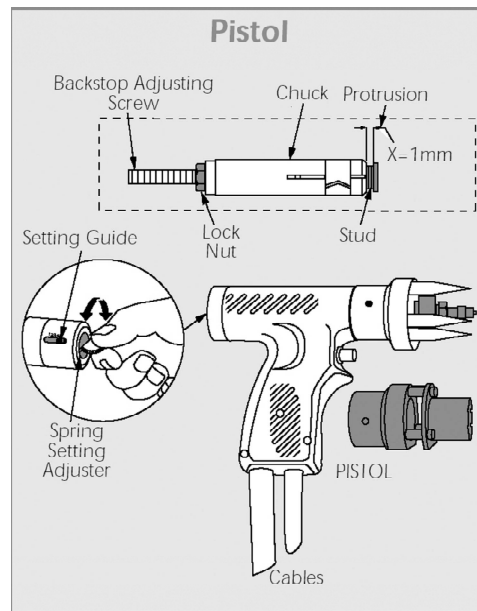


Now set the pistol spring pre-load to the desired setting for the welding application (see chart).

Controller and					
Stud Dia	Stud Mtl	Sheet Mtl	Volt	Spring Setting	
M2.5	ST37-3	CR4	40	2.5	
		S304	40	2.5	
		Zintoc	60	2.5	
M3	ST37-3	CR4	45	2.5	
		S304	45	2.5	
		Zintoc	75	2.5	
	1.4303	CR4	45	2.5	
		S304	45	2.5	
		Zintoc	90	2.5	
AlMg3	HE3	50	3.5		
	M4	ST37-3	CR4	60	2.5
			S304	60	2.5
Zintoc			100	2.5	
1.4303		CR4	60	2.5	
		S304	60	2.5	
		Zintoc	100	2.5	
AlMg3	HE3	65	3.5		
M5	ST37-3	CR4	85	2.5	
		S304	85	2.5	
		Zintoc	110	2.5	
	1.4303	CR4	85	2.5	
		S304	58	2.5	
		Zintoc	110	2.5	
AlMg3	HE3	90	3.5		
M6	ST37-3	CR4	110	2.5	
		S304	110	2.5	
		Zintoc	140	2.5	
	1.4303	CR4	110	2.5	
		S304	110	2.5	
		Zintoc	140	2.5	
AlMg3	HE3	150	4		
M8	ST37-3	CR4	160	2.5	
		S304	160	2.5	
		Zintoc	180	2.5	
	1.4303	CR4	160	2.5	
		S304	160	2.5	
		Zintoc	180	2.5	
AlMg3	HE3	190	4		
M10	ST37-3	CR4	185	2.5	
		S304	200	2.5	
		Zintoc	200	2.5	
Earth Tag	ST37-3	CR4	95	2.5	
		S304	110	2.5	
Large Bracket	AlMg3	HE3	70	3.5	
		ST37-3	CR4	120	2.5

Switch the unit ON and select the desired welding current – turn the selector knob clockwise, check the voltage on the LED digital readout.

Observe the three status lights on the front



BASIC TECHNIQUES

panel. The amber charging light confirms that the power unit is being charged. The green ready light indicates that the power unit is ready and you may proceed.

Never attempt to set a weld until the green light is ON.

If the red light illuminates, the systems safety circuit has tripped. To re-set, switch the unit OFF, wait 30 seconds then switch the unit ON again.

Position the pistol perpendicular to the work piece, the stud must be touching down at the desired location to be welded. Press down on the pistol until the 'legs' come firmly into contact with the workpiece and press the trigger.

You must lift the welding pistol vertically from the weld stud – failure to do this will damage the chuck.

Welding Process

The welding process is as follows: initial pressure, strike arc, fusion, immersion, completed weld.

Note that recommended settings are merely

guides. Changing them slightly may give better results so always make a test weld. 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 at 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.

Switch OFF and unplug the equipment.

FINISHING OFF

Leave everything to cool down before removing earth-clamps from the work and disconnecting all of the units' leads.

Finally, neatly coil all leads and cables, ready for return to your local TSW Dealer.

...Any problems?
Contact your local T.S.W. Weldhire
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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Operating & Safety Guide



TAYLOR
STUDWELDING
SYSTEMS LIMITED

Weld Hire

Capacitor
Discharge
Studwelding
Equipment

This lightweight, easily portable system will weld studs up to 10mm in diameter.

