

Squeeze Analyser SQA2

Resistance welding force monitor

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Applications

- Correct setting the squeeze time and squeeze force for resistance welding.
- Users of Squeeze Analyser include: BMW, Mercedes, GM, Ford, Jaguar, Land Rover, Nissan & Volvo.



Features

- Measures the squeeze force - the force when the electrode current commences.
- Measures the peak force - the maximum force in the welding cycle
- Display shows if the timing of the resistance welding cycle is correct.
- Enables resistance welding equipment to be correctly adjusted within minutes.
- Ensures high quality resistance welds.
- Meets BS 5750/ ISO 9000 quality assurance requirements.
- Fully calibrated and delivered with certification.
- Supplied with a protective carrying case and full user instructions.

Overview

The problem for resistance weld guns is that the timing of the forging force to the application of the weld current is critical in obtaining a high quality weld. The sparks shown in film of manufacturing plants is an indication that the forge force applied is too small when the weld current flows resulting in higher resistance and a poor weld.

The Squeeze Analyser addresses this problem by measuring the electrode force at key points during a resistance welding cycle and by giving a measure of the squeeze force when the welding current is applied and also the peak force in the welding cycle. Thus both the timing of the electrode current and the squeeze time can be correctly adjusted.

Correct setting of the squeeze time will result in greater productivity, improved weld quality and reduced electrode wear. Squeeze Analyser is recommended for routine quality checks and following servicing of resistance welding equipment. It allows both the timing of the weld and the forces to be adjusted to the optimum settings.

Its operation is simple and smart: just place the measurement head in the welding jaws, power on and start a weld cycle. The data is captured automatically and displayed on a simple to interpret bar graph display.

The Squeeze Analyser is built to a high robust standard and will give years of excellent use in an environment when squeeze forces of up to 10 tonnes can be applied.

Unit is supplied in a protective carrying case and has a 12 month warranty

- Optimises & Calibrates Resistance Welding Guns
- Greater Productivity
- Improved Weld Quality



Squeeze Analyser

A robust magnetic field meter for industry

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About the Squeeze Analyser

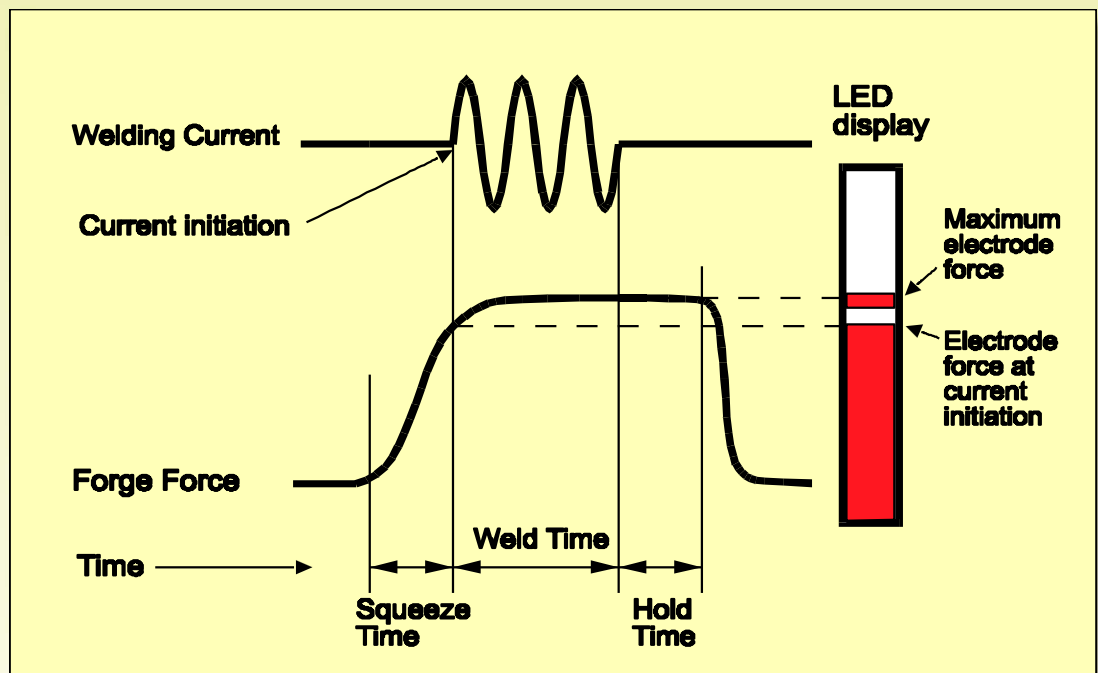
Squeeze Analyser enables the correct squeeze time and electrode force to be established not only when setting up resistance welding equipment for the first time, but also when doing regular maintenance or corrections after repairs. By setting the optimum weld cycle with the Squeeze Analyser, resistance welding equipment will be adjusted to the highest possible speed with consistent weld quality.

The basic resistance welding cycle involves squeeze, weld, and hold times as shown in the figure below. The squeeze time in a resistance weld is the time which elapses after the electrode force is activated and before the welding current commences. The weld time is the period when the current passes between the electrodes. And the hold time is where the force remains on the electrode whilst the spot weld cools.

The Squeeze Analyser displays both the force at the beginning of the weld and the peak force during the welding cycle. This is easily seen on the optical display on the Squeeze Analyser enabling the welding parameters to be established quickly and simply. By setting the squeeze force to be slightly lower than the peak force, it is possible to ensure that the welding sequence is adjusted to produce consistently good welds.

One or more of the following spot welding conditions may be related to incorrectly set squeeze times:

- Severe surface splashing
- External cracking
- Burnt surface condition
- Electrode pick up
- Expulsion between faying surfaces
- Voids and Porosities
- Copper deposits in the contact area
- Excessive electrode wear



Squeeze Analyser SQA2 Specification

Measurement Ranges: European (Full scale)	0.5 to 1.25 kN 1.0 to 2.5 kN 2.0 to 5.0 kN 4.0 to 10 kN
Measurement Ranges: US (Full scale)	100 to 250 lbf 200 to 500 lbf 400 to 1000 lbf 800 to 2000 lbf
Range change:	User controlled cycling through ranges with a single push button
Measurements modes	Average, absolute peak, bipolar peak, true RMS
Display	Bar graph displays and holds force at the end of the squeeze time and the peak electrode force
Initiation	Forge force captured continuously. Squeeze time captured at start of the supply of weld current.
Electrode gap European	6mm minimum 20 mm maximum
Electrode gap European	0.25 in minimum 0.75 in maximum
Accuracy	2% full scale at 20C
Probe size	200mm x 50mm x 50mm
Monitor size	160 x 100 x 50 mm
Bar graph	Continuously shows relative reading. Mono or bipolar mode
Zeroing	Automatic to current field Calibration zero recall for high ambient fields
Probe cable length	1.5m typical
Calibration:	Calibrated by Diverse to NPL traceable standard. 12 month recalibration required for ISO9000 quality standard.
Power NmH rechargeable:	4 standard AA NmH cells. Charger supplied. Typical lifetime 5 hours of continuous use.
Low battery:	Automatically detects and warns user
Weight in case:	3kg
Environmental:	10 - 40C operating, 0 - 80C storage
Humidity	0-90% non condensing
Display update rate:	Continuous
Warranty	12 months

