

# NELSON Stud Welding Units

Technical Information

**NELSON**<sup>®</sup>  
STUD WELDING

## ALPHA 850

**Light, strong,  
secure, robust**

### Universal Usage

- Drawn Arc up to a full 12 mm Dia.
- Short Cycle up to 8 (10) mm Dia.
- Inert Gas (Option)
- Base material thickness  $\geq 0.6$  mm
- Mobile and portable

### High Welding Reliability

- 25% "Power-Reserve"
- Weld Current and Weld Time infinitely adjustable
- Constant-Current stabilization up to maximum output!

### User-friendly and Service-friendly

- Control of functions and self-diagnosis through LED's
- Unique self-shut-off at overload, phase loss and short circuit in gun circuitry
- NELSON-Quick-Service Guarantee
- Electrically and mechanically robust



Available with wheels and Lifting Rings



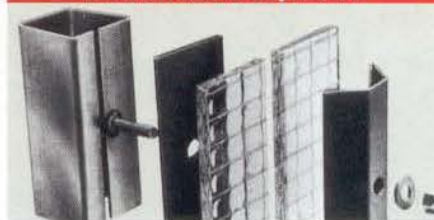
**The world's strongest unit  
in this size category**

- with:
- Time and Current infinitely adjustable
  - Constant-Current Stabilizer
  - Plus 25% "Power Reserve"

*The NELSON Stud Welding Process provides secure connections – fast and economically – in a single, split-second operation without the need for holes.*



Efficient and totally secure



No hole – no leaking



Keeps surfaces intact – no distortion



Homogeneous full fusion weld



Stud Welding – invented by Ted Nelson 60 years ago – today is used to weld billions of studs annually. From small workshops to fully automated large scale production. Stud welding is technically and economically superior

over traditional fastening methods:

- Eliminates costly and time consuming drilling, threading or electrode welding
- Absolutely secure weld: stronger than stud and base metal

- No drill hole – therefore:
  - Less susceptible to rust
  - No sealing required
  - No material weakening
- Highly accurate positioning

**NELSON**<sup>®</sup>  
STUD WELDING

**The Name for Stud Welding**



# Stud Welding Units

## Alpha 850

### High Welding Performance

● The high output power was intentionally set high at 850 Amps (or 500 Amps) in order to weld 12 mm diameter studs (or 8 mm) without any risk – even with long cables, high duty cycle and under adverse conditions such as an unstable mains supply.

- The combination of
  - Infinitely adjustable Weld Current
  - Constant-Current stabilization
  - Infinitely adjustable Weld Time

ensures the most secure weld under any condition.

● The **NELSON Power Reserve** automatically ensures secure welds even under continuous high duty cycle.

### Ease of Operation, Service-friendly

- The infinitely adjustable Current x Time Optimization is not only an indispensable safety feature – it also ensures ease of operation.
- The functions of the unit are constantly monitored and indicated through LED's.
- Built-in Double-Triggering Prevention avoids accidental retriggering after weld.
- The unit shuts off automatically in the event of overheating, phase loss and/or short-circuit in the gun circuitry.
- LED's allow instant „Trouble-shooting“.

## Technical Data ALPHA 850

Duty Cycle under continuous operation – Drawn Arc –	Stud	Weld Dia.	Duty Cycle
(Standard 5 m Gun Cable)	S 12	12.00 mm	3 per min.
	MP 12	10.80 mm	5 per min.
	MR 12	9.50 mm	7 per min.
	S 8	8.00 mm	10 per min.
Weld Current	200 – 850 Amps., stepless with constant-current stabilization		
Power incl. Reserve	1050 Amps.		
Weld Time	0,01 – 1 s., stepless		
Size (H x W x D)	325 x 370 x 550 mm (excl. handles)		
Weight Unit	64 kg (with cable)		
Weight Gun (NS 40)	2,4 kg (with cable)		
Fusing	35 Amps./per phase, HRC		
Supply	415 Volts AC		
Enclosure	IP 23		
Input Voltage	220/380, 415, 500, 200/400, 220/440 V + Options, 50/60 Hz.		

### Options:

- **Inert Gas\***
- **Automatic Stud Feeder**
- **Wheels**

\*In accordance with DVS 0902, § 2.2 welding standard, studs 10 mm dia. and larger require a ceramic ferrule. Stud welding with inert gas, without ferrule only below 10 mm dia., only in gravity positions and only under special conditions. Please contact our technical advisors!

## The Superior NS 40 Welding Gun

**makes your work even more precise, secure and easy**

A reliable welding gun is the prerequisite of a secure, reliable weld. The ALPHA-System includes the NS 40 Gun – an improvement of the legendary NS 30 Gun. It has – under toughest working conditions – acquired the reputation as the **world's most-used, most reliable, everlasting stud welding gun.**



**NS 40 B-1**  
Drawn Arc

Thanks to its ergonomically formed handle, the stable gun body lies firmly in the hand.

**NS 40 SL**  
Short Cycle



**NELSON**  
STUD WELDING

Germany



**NELSON**  
Bolzenschweiß-Technik GmbH & Co. KG  
Postfach 4020, D-58272 Gevelsberg  
Flurstraße 7–19, D-58285 Gevelsberg  
Telefon: 02332.661-0  
Telefax: 02332.661-165  
eMail: info@nelson-europe.de  
www.nelson-europe.de

North America: Nelson Stud Welding Division  
7900 West Ridge Road, P.O. Box 1019, Elyria, OH 44036,2019, USA  
Phone: 440.329-0400 · Telefax: 440.329-0597 · www.nelsonstud.com

Great Britain

**NELSON**  
Stud Welding UK Ltd.  
47-49, Edison Road  
Rabans Lane Industrial Estate  
Aylesbury, Bucks, HP19 8TE  
United Kingdom  
Telephone: 01296.433500  
Telefax: 01296.487930

France

**NELSON**  
Soudage de Goujons France S.A.S  
Z.I. du chemin Vert  
8, rue de l'Angoumois  
F-95100 Argenteuil  
France  
Téléphone: 01.34 11-94 00  
Téléfax: 01.34 11-20 33

Italia

**NELSON**  
Saldatura Perni Italia Srl  
Via Miraflores 20  
I-10042 Nichelino/Torino  
Italia  
Telefono: 011.605-93 28  
Telefax: 011.605-00 15

Also represented in: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey, Israel, Australia, Brazil, Hong Kong, Indonesia, Japan, Korea, Philippines, Singapore, Thailand, Taiwan