

TECNA[®]

ROCKER ARM SPOT WELDERS
20-25 kVA

Models
4642
4644
4647
4649



CE

WSI  **WELD
SYSTEMS
INTEGRATORS, INC.**

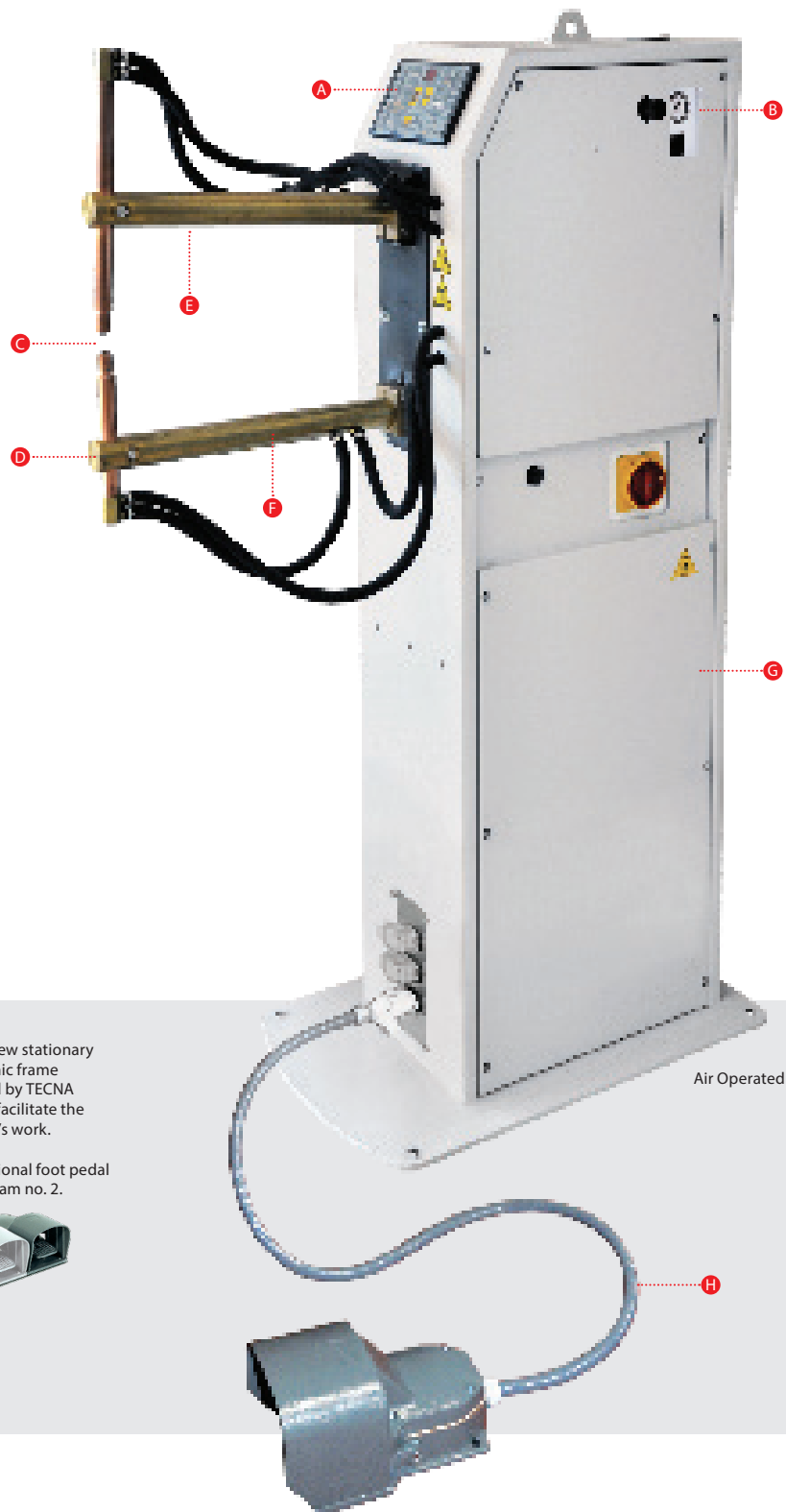
TECNA SPOT WELDERS ARE DESIGNED TO MEET EVERY NEED OF SPOT WELDING.

AIR OPERATED WELDERS

- The air operated lubrication free cylinder eliminates oil mist.
- Electrode force adjustment with air filter reduce with gauge.
- Semi-automatic drainage system.
- Electrode speed control valves, shock absorber for cylinder's end of stroke and air discharge silencers.
- Two-stage electric foot pedal, that besides its normal use in automatic and single spot mode, allows the operator to bring the pieces together and to weld them only when correctly positioned.
- Pre-arrangement for the connection of a second electric two-stage foot pedal item 70284.
- The addition of the second foot pedal allows to recall two different adjustments of time-current. This function is helpful when different kinds of welding are to be performed on the same piece.

FOOT OPERATED WELDERS

Adjustable electrode force; a microswitch starts the welding cycle when the desired pre-set value is reached. The foot pedal is adjustable in length.



Air Operated

A The TE90 control unit has been positioned frontally to allow the operator to view welding data even during the working cycle.

B The pneumatic commands and the compressed air pressure gauge have been placed at the top for easier adjustment and reading.

C Adjustable electrode stroke.

D Chrome-copper electrode-holders for long life and heavy duty service, designed for straight and angled fitting.

E Water-cooled transformer, arms and electrodes. Epoxy resin coated transformer.

F Arms adjustable in length allowing a better working flexibility.

G The new stationary ergonomic frame designed by TECNA helps to facilitate the operator's work.

H Additional foot pedal for program no. 2.



CONTROLS

CONTROL UNIT TE 90 MARK II

TE 90 is a microprocessor welding control unit for single-phase resistance welders. The welding control unit is used to control the welder parts and, in particular, the thyristor regulating the welding current. The working cycle carried out by the TE 90 is described through the programming parameters. The TE 90 can be used for both manual and pneumatic-operated welders.

- Synchronous thyristor drive.
- Phase shift control for welding current adjustment.
- Simplified programming by means of four push-buttons.
- Twin presetting for time and current, recallable by two independent controls.
- Slope and pulse functions.
- Single and repeat operating mode.
- Secondary current compensation function for welding of oxidized sheets and rods.
- Auto-retain disabling for manually operated welders.
- First phase shift delay adjustment. It enables the machine line current best balance.
- Control of solenoid valve 24 Vdc 7,2 W Max with protected output against short circuits.



CONFIGURATIONS & PERFORMANCE

| Thickness in (mm) | Arms Length in (mm) | Electrode in (mm) | Welding Time (cycles) | Spots/h |
|-------------------------|---------------------|-------------------|-----------------------|---------|
| kVA 20 | | | | |
| 0.03 + 0.03 (0.8 + 0.8) | 9.0 (230) | 0.2 (4.5) | 0.2 (5) | 4000 |
| 0.06 + 0.06 (1.5 + 1.5) | 9.0 (230) | 0.2 (5.5) | 0.5 (12) | 3400 |
| 0.1 + 0.1 (3 + 3) | 9.0 (230) | 0.3 (8) | 2.2 (55) | 400 |
| 0.04 + 0.04 (1 + 1) | 21.7 (550) | 0.2 (5) | 0.2 (5) | 4000 |
| 0.08 + 0.08 (2 + 2) | 21.7 (550) | 0.3 (7) | 1.6 (40) | 1200 |
| 0.08 + 0.08 (2 + 2) | 27.6 (700) | 0.3 (7) | 2.0 (50) | 1100 |
| kVA 25 | | | | |
| 0.03 + 0.03 (0.8 + 0.8) | 9.0 (230) | 0.2 (4.5) | 0.2 (5) | 4000 |
| 0.06 + 0.06 (1.5 + 1.5) | 9.0 (230) | 0.2 (5.5) | 0.5 (12) | 3400 |
| 0.1 + 0.1 (3 + 3) | 9.0 (230) | 0.3 (8) | 2.2 (55) | 400 |
| 0.04 + 0.04 (1 + 1) | 21.7 (550) | 0.2 (5) | 0.2 (5) | 4000 |
| 0.08 + 0.08 (2 + 2) | 21.7 (550) | 0.3 (7) | 1.6 (40) | 1200 |
| 0.08 + 0.08 (2 + 2) | 27.6 (700) | 0.3 (7) | 2.0 (50) | 1100 |
| 0.2 + 0.2 (4 + 4) | 9.0 (230) | 0.4 (11) | 3.1 (80) | 220 |
| Ø 0.2 + 0.2 (6 + 6) | 21.7 (550) | 0.6 (16) | 0.6 (15) | 4000 |
| Ø 0.3 + 0.3 (8 + 8) | 9.0 (230) | 0.6 (16) | 0.8 (20) | 1600 |
| Ø 0.5 + 0.5 (12 + 12) | 9.0 (230) | 0.6 (16) | 1.6 (40) | 500 |

| Model | Arms Length in (mm) | Thickness in (mm) | Thickness Ø in (mm) |
|-------|---------------------|-------------------|---------------------|
| 4642 | 15.0-27.6 (380-700) | 0.1 + 0.1 (3 + 3) | 0.4 + 0.4 (10 + 10) |
| 4644 | 15.0-27.6 (380-700) | 0.2 + 0.2 (4 + 4) | 0.5 + 0.5 (12 + 12) |
| 4647 | 15.0-27.6 (380-700) | 0.1 + 0.1 (3 + 3) | 0.4 + 0.4 (10 + 10) |
| 4649 | 15.0-27.6 (380-700) | 0.2 + 0.2 (4 + 4) | 0.5 + 0.5 (12 + 12) |

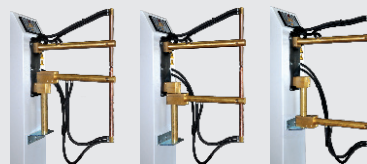
Adjustable arms depth 12.6 in (320 mm) according to the working requirements.



Foot Operated

Adjustable arms large gap assembly. Available on all models.

The more the arms gap, the less the welding current.



Min gap

Intermediate gap

Max gap



Adjustable Arms Large Gap Assembly

| SPECIFICATIONS | | 4642 | 4644 | 4647 | 4649 |
|---|------------------|------------------|------------------|------------------|------------------|
| Level or Pneumatic Operation | | Lever | Lever | Pneumatic | Pneumatic |
| Adjustable arms depth | | ● | ● | ● | ● |
| Nominal power 50% | kVA | 20 | 25 | 20 | 25 |
| Max welding power | kVA | 39 | 55 | 39 | 55 |
| No load secondary voltage | V | 4 | 4.6 | 4 | 4.6 |
| Able to weld aluminum | kA | - | - | - | - |
| Max welding current on steel, shortest throat | kA | 9.6 | 11.6 | 9.6 | 11.6 |
| Thermal current 100% | kA | 3,5 | 3,8 | 3,5 | 3,8 |
| Supply | *V | 400 | 400 | 400 | 400 |
| | *Hz | 50 | 50 | 50 | 50 |
| Delay fuses | 220-230-240 V | A | 63 | 80 | 63 |
| | 440-460-480 V | A | 126 | 160 | 126 |
| Mains cables section for | L=10 m | mm ² | 10 | 16 | 10 |
| | L=30 m | mm ² | 10 | 16 | 10 |
| Insulation class | F | F | F | F | F |
| Compressed air | **bar | - | - | 6.5-10 | 6.5-10 |
| Consumption for 100 spots | N/m ² | - | - | 4.3 | 4.3 |
| Min throat depth | in (mm) | 15.0 (380) | 15.0 (380) | 15.0 (380) | 15.0 (380) |
| Max electrode force | daN | 150 | 150 | 165 | 165 |
| Electrode stroke | in (mm) | 0.4-2.4 (10-60) | 0.4-2.4 (10-60) | 0.4-2.4 (10-60) | 0.4-2.4 (10-60) |
| Max throat depth | in (mm) | 27.6 (700) | 27.6 (700) | 27.6 (700) | 27.6 (700) |
| Max electrode force | daN | 80 | 80 | 90 | 90 |
| Electrode stroke | in (mm) | 0.6-3.9 (15-105) | 0.6-3.9 (15-105) | 0.6-3.9 (15-105) | 0.6-3.9 (15-105) |
| Short circuit current with L max | kA | 8.8 | 10.5 | 8.8 | 10.5 |
| Water cooling | l/min | 3 | 3.7 | 3 | 3.7 |
| Min. water pressure | **bar | 2.5 | 2.5 | 2.5 | 2.5 |
| Aerial noise produced | dB(A) | <70 | <70 | <70 | <70 |
| Measure condition | | | | | |
| working stroke | in (mm) | 0.8 (20) | 0.8 (20) | 0.8 (20) | 0.8 (20) |
| welding time | cycles | 26 | 20 | 26 | 20 |
| welding current | kA | 9 | 11 | 9 | 11 |
| Working rating | weld/min | 10 | 10 | 10 | 10 |
| Net weight (approximately) | kg | 146 | 148 | 144 | 146 |
| Arms diameter | in (mm) | 1.6 (40) | 1.6 (40) | 1.6 (40) | 1.6 (40) |
| Electrode-holders diameter | in (mm) | 0.9 (22) | 0.9 (22) | 0.9 (22) | 0.9 (22) |
| Electrode-cone diameter | in (mm) | 0.6 (14.8) | 0.6 (14.8) | 0.6 (14.8) | 0.6 (14.8) |

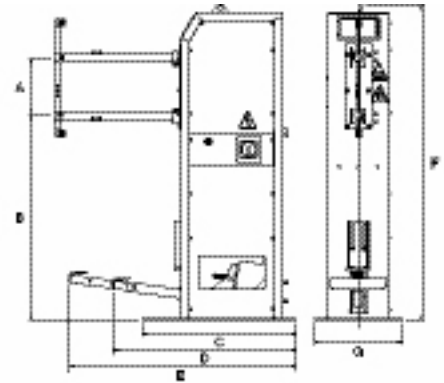
* Different voltages and frequencies on demand. ** kPa = bar x 100

TE 90 PROGRAMMABLE PARAMETERS

| | |
|-------------------|---------------|
| Squeeze time | 1 - 99 cycles |
| Slope time | 0 - 29 cycles |
| Welding time | 1 - 99 cycles |
| Welding current | 1 - 99% |
| Cold time | 1 - 50 cycles |
| Impulses number | 0-9 |
| Hold time | 1 - 99 cycles |
| Off time | 0 - 99 cycles |
| Welding time 2 | 0 - 99 cycles |
| Welding current 2 | 0 - 99% |

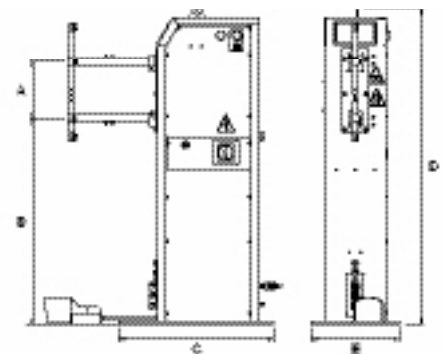
Specifications subject to change without notice.

FOOT OPERATED SPOT WELDERS



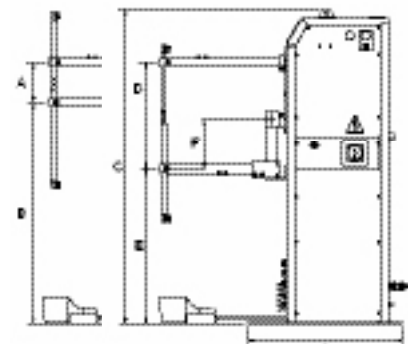
A 10.0 in (255 mm) D 32.3 in (820 mm) G 15.6 in (395 mm)
 B 36.2 in (919 mm) E 40.2 in (1020 mm)
 C 27.2 in (690 mm) F 55.7 in (1414 mm)

AIR OPERATED SPOT WELDERS



A 10.0 in (255 mm) C 27.2 in (690 mm) E 15.6 in (395 mm)
 B 36.2 in (919 mm) D 55.7 in (1414 mm)

ADJUSTABLE ARMS LARGE GAP ASSEMBLY



A 7.1 in (180 mm) D 18.9 in (480 mm) G 27.2 in (690 mm)
 B 39.1 in (994 mm) E 27.3 in (694 mm)
 C 55.7 in (1414 mm) F 8.9 in (225 mm)

DISTRIBUTED BY:



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