Info - WELD No. 15

WELDAMAX WELDING INFORMATION BULLETIN

ACCOUNTABILITY - COMMITMENT - CONTINUOUS IMPROVEMENT - TEAMWORK

DIRECT CURRENT (D.C.) STICK INVERTERS

The WELDAMAX D.C. STICK INVERTER range consists of 140 amp, 160 amp and 200amp output capacity welding machines, all suitable for use on 220 volt input supply and generally used for maintenance applications. For production use we have a 250 amp and 400 amp, both suitable for use on 380 volt input supply. All units are rated at 60% duty cycle, are lightweight and have low amperage capabilities (i.e. 20 to 30 amps depending on the unit).
INVERTER welding machines are state of the art technology and makes use of solid state switching and rectification and filtration of the input voltage to produce very stable D.C. voltage and current. The input line voltage can either be single phase (220 volt or three phase 380/525 volt). Solid state control circuits are incorporated to provide excellent arc characteristics and line voltage compensation.

IMPORTANT FEARURES

1. Lightweight portability is one of the main features to be considered when purchasing an Inverter welding machine for use on a specific range of maintenance or production applications.
2. Input voltages covers all power inputs supplied in South Africa.
3. The components can absorb up to 15% under or over line voltage variations.
4. Inverters produce a stronger, more concentrated, smooth and state arc with excellent striking and re-striking capabilities.
5. Inverters are ideally suited and versatile for use on all commercially available ferrous and non-ferrous metals. It will weld electrodes of different specifications, including basic (low hydrogen) and cellulosic types. Fine adjustment through the current range allows for precision welding on complex alloys.
6. The stick Inverters (no high frequency facility) can be used for scratch start D.C. T.I.G. welding using straight (Negative -) electrode polarity when T.I.G. welding ferrous (steel) metals. (See INFOWELD No. 12)
7. On thin metals using E6013 mild steel electrodes, the polarity can be reversed i.e. electrode negative (-) and ground (earth) (+). This allows for less burn through possibilities by using lower amperages.
8. The Inverter is fitted with a V.R.D. (voltage reduction device) switch located at the back of the Inverter. This is a safety feature and when switched to the "ON" position, it reduces the initial open circuit voltage and safeguards the operator from electrical shock when welding in wet of damp areas. It effectively means that the voltage needed to start the arc is reduced and no arcing is established until (within a couple of seconds) the voltage increases to the level needed to establish the arc. This can also be used as a feature for use by an operator who wears a standard helmet (not required when using a automatic Solar Helmet) as the arc delay gives the operator time to down his helmet.
9. The Inverters are fitted with an overload protection switch that is activated once the components reach overheating levels or the duty cycle is exceeded. (See INFOWELD No. 6.)

PREVENTATIVE MEASURES AND MAINTENANCE

1. Inverters should be used in dry environments, with humidity levels of 90% max.
2. The ambient room temperature should be between 10 to 40 °C.
3. The Inverter should not be used in rain or drizzle or for long period in the sun.
4. Do not use the Inverter in corrosive areas.
5. The cooling fan fitted to the Inverter needs to keep the unit cooled to required limits, therefore, the intake / outlet air vents must be kept clean and the machine must not be placed within 0.3 meter to the nearest object.)
6. The WARRANTY on the Inverter allows for the operator to remove the cover to blow out excessive dust and metal dust particles using dry compressed air with reasonable pressure level (to prevent damage the electrical components).

7. The WARRANTY will be nul and void if any component is changed or altered. Care should be taken that the cover is fitted back correctly as this can influence the correctly required air flow.
8. The duty cycle of the Inverter should not be exceeded. (See INFOWELD No. 6)
9. The input voltage should always be within the + - 15% under of over allowable voltage supply. Using input power cable exceeding 15 meters may cause the voltage to drop below this level and may damage the electronic components. (See INFOWELD No. 3. for cable information.)
10. When the overload protection device is activated (front indicator light will come on) the Inverter will switch off and the power will only be re-activated (front indicator light off) for further welding once the component temperature reaches safe levels. The cool down time may vary according to the conditions under which the Inverter is used. (See INFOWELD No. 6)
11. Prevent water or steam from entering the Inverter. Should this happen, remove the power supply from the mains and dry properly.
12. Inverters should not be used using power generators unless expensive voltage equalizers are fitted. The electronic components fitted to Inverters cannot absorb the excessive voltage variations found with this type of power supply.

TSA 'DC' INVERTERS – 220 volt 1 phase

140 amp (stock code 900127)

160 amp (stock code 900128)

200 amp (stock code 900129)

all @ 60% duty cycle

ALSO AVAILABLE

TSA 'DC' INVERTERS – 380 volt 3 phase & 380 / 525 dual voltage units

TSA DC 250 I (stock code 900199) 250 amp @ 60% duty cycle – 380 volt

TSA DC 400 I (stock code 900130) 400 amp @ 60% duty cycle – 380 volt

TSA DC 400 I (stock code 900133) 400 amp @ 60% duty cycle – 380/525 volt

TSA DC 500 I (stock code 900132) 500 amp @ 60% duty cycle – 380/525 volt