

## TERMS &amp; DEFINITIONS IN WELDING

- A. ▲ Arc Blow** The deflection of an arc from its normal path because of magnetic forces. Normally occurs on DC current when welding carbon steel.
- ▲ Arc Voltage** The voltage across the welding arc.
- ▲ Arc Length** The distance from the tip of the welding electrode to the adjacent surface of the weld pool. Also known as "Arc Gap".
- ▲ Arc Time** The time during which an arc is maintained in making an arc weld.
- ▲ As-welded** Pertaining to the condition of weld metal, welded joints and weldments after welding, but prior to any subsequent thermal, mechanical or chemical treatments.
- ▲ Autogeneous Weld** A fusion weld made without filler metal.
- B. ▲ Back bead** A weld resulting from a back weld pass. Also known as "Back Filling" or "Backing Pass".
- ▲ Backgouging** The removal of weld metal and base metal from the weld root side of a welded joint to allow complete fusion and complete joint penetration upon subsequent welding from that side.
- ▲ Backing Strip** A material (metal, carbon, ceramic etc.) for backing up a joint during welding to help obtain a sound weld.
- ▲ Backing Ring** As above, but in the form of a ring, generally used in pipe welding.
- ▲ Backstep Sequence** Weld passes are made in the opposite direction to the progress of welding.
- ▲ Base Metal** The metal alloy that is being welded. Also known as "Base Material" or "Work Piece".
- ▲ Bevel Angle** The angle formed between the prepared edges of two plates.
- ▲ Build up** Layers of weld metal deposited when surfacing material to achieve a required dimension. Also known as "Buttering" and "Cladding".
- ▲ Buffer Layer** Layers of weld metal on components which prevent crack formation or dilution effects in subsequent weld layers. See also "build up".
- C. ▲ Consumable** Preplaced filler metal that is completely fused insert into the root of a joint and becomes part of the finished weld.
- ▲ Crater** A depression at the termination of the weld bead.
- D. ▲ Deposition Efficiency** The ratio of the weight of filler metal deposited in the weld metal to the weight of filler metal melted, expressed in percent.
- ▲ Deposition** The weight of material deposited in a unit of Ratetime.
- ▲ Depth of Fusion** Distance that fusion extends into the base metal from the surface being welded.
- ▲ Dilution** A chemical composition change of the deposited weld metal due to admixture of the filler metal and base metal.
- ▲ Direct Current Electrode Negative** The electrode lead and welding electrode are connected to the negative pole on the welding machine. Also known as DC - or DCEN and DC straight polarity (Negative = 1/3 Heat)
- ▲ Direct Current Electrode Positive** The electrode lead and welding electrode are connected to the positive pole on the welding machine. Also known as DC+ or DCEP and DC reverse polarity. (Positive = 2/3 Heat)
- E. ▲ Edge Preparation** The surface prepared on the edge of a joint for welding.
- ▲ Electrode Lead** Conductor between source of current and electrode holder.
- F. ▲ Flux** Fusible material coated onto electrodes for removal of oxides impurities and to create gas for shielding and slag for shape and contour.
- ▲ Fusion** The melting together of filler metal and base metal or a base metal only to produce a weld.
- G. ▲ Ground Lead** The electrical conductor between the arc welding current source and work piece connection. Also known as "Work Lead".
- H. ▲ Hardfacing** The process of covering a surface with wear-resistant metal by welding to reduce wear.
- ▲ Heat affected Zone** The region beneath or around the weld bead which has not melted, but whose mechanical properties or microstructure has been altered by the heat of welding.
- I. ▲ Infra-Red Radiation** Electromagnetic energy with wavelengths from 770 to 12,000 nanometers.
- ▲ Intermittent Welding** Is welding wherein continuity is broken by recurring unwelded spaces.
- ▲ Interpass Temperature** In a multiple run weld, the lowest temperature of deposited metal before the next pass is started. Normally measured 25mm from the weld metal centre line.
- L. ▲ Liquidus** The lowest temperature at which a metal or an alloy is completely liquid.
- ▲ Longitudinal Sequence** The order in which weld passes of a continuous weld are made along its length.
- M. ▲ Melt-Through** Is the visible root re-inforcement obtained in a one sided weld joint.
- O. ▲ Open Circuit Voltage** The voltage between terminals of a power source when no current is flowing.
- P. ▲ Parent Metal** Same as "Base Metal".
- ▲ Peening** The mechanical working of metals by light hammering.
- ▲ Penetration** The depth a weld extends into a joint from the metal surface.
- ▲ Post-heating** Application of heat to the weldment after welding is completed.
- ▲ Preheating** Application of heat to the base metal before welding commences.
- ▲ Procedure Qualification prescribed** To establish that welds made by a detailed method can meet standards.
- R. ▲ Residual Stress** Stress that is present in a joint member or material that is free of external forces.
- ▲ Root Bead** A weld which is part or all of the root joint.
- ▲ Root Bend Test** A test in which the root surface is bent around a specified radius.
- ▲ Runoff / Runon Weld Tab** Is additional plate that extends beyond the end of the weld joint on which the weld is finished or started. (Also known as an End Tab)
- S. ▲ Seal Weld** A weld made primarily to seal a joint for tightness against leakage.
- ▲ Short Arc (short circuiting) transfer** Is metal transfer where molten metal from an electrode is deposited during repeated short circuits.
- ▲ Sidewall** The surface of a joint wall included inside the preparation of a butt weld.
- ▲ Side Bend Test** A test in which the side of a transverse section of the weld is bent around a specified radius.
- ▲ Slag Inclusion** Non-metallic solid material trapped in weld metal or between weld and base metal.
- ▲ Spatter** Metal particles expelled during welding which do not form part of the weld.
- ▲ Spray Transfer** Metal transfer where molten metal from an electrode is propelled across the arc in small droplets.
- ▲ Stringer Bead** A weld bead made without weaving.
- ▲ Suck-Back** A concave root surface.
- T. ▲ Tack Weld** A small weld made to hold parts in proper alignment until final welds are made.
- U. ▲ Underbead Crack** A crack in the heat affected zone which may or may not extend to the surface of the base metal.
- ▲ Underfill** A depression on the weld face dropping below the surface of the base metal.
- V. ▲ Vertical-down** Downhill direction.
- ▲ Vertical-up** Uphill direction.
- W. ▲ Weave Bead** A weld bead made with slow oscillation motion of the electrode, best limited in width to 2-3 times the diameter of the electrode.
- ▲ Welder Certification** Written verification that a welder has produced welds meeting a prescribed standard of welder performance.
- ▲ Welding Arc** A controlled electrical discharge between the electrode and the work piece that is formed and sustained by the establishment of a gaseous conductive medium, called an arc plasma.
- ▲ Welding Procedure Qualification Record (WPQR)** A record of welding variables used to produce an acceptable test weld and the results of the tests conducted on that weld which qualify a welding procedure specification.
- ▲ Welding Procedure Specification (WPS)** A document providing the detailed variables for a specific welding application to ensure reproduction by trained welders.
- ▲ Work Lead** The conductor between source of current and the work piece or work table.
- ▲ Work Piece** The job, part or component being welded.

## WARRANTY

**TERMS OF WARRANTY****January 2004**

1. The Trade Practices Act 1974 (Commonwealth) and similar State Territory legislation relating to the supply of goods and services, protects consumers' interests by ensuring that consumers are entitled in certain situations to the benefit of various conditions, warranties, guarantees, rights and remedies (including warranties as to merchantability and fitness for purpose) associated with the supply of goods and services.  
A consumer should seek legal advice as to the nature and extent of these protected interests. In some circumstances, the supplier of goods and services may legally stipulate that the said conditions, warranties, guarantees, rights and remedies are limited or entirely excluded. The warranties set out in Clause 2 shall be additional to any non-excludable warranties to which the Customer may be entitled pursuant to any statute.
2. Subject to Clause 3. CIGWELD gives the following warranties to the Customer:  
Insofar as they are manufactured or imported by CIGWELD, goods will upon delivery be of merchantable quality and reasonably fit for the purpose for which they are supplied by CIGWELD.  
CIGWELD will repair or, at its option, replace those of the goods which, upon examination, are found by CIGWELD to be defective in workmanship and/or materials.  
CIGWELD reserves the right to request documented evidence of date of purchase.
3. The Warranty in Clause 2;  
Is conditional upon:  
The Customer notifying CIGWELD or our Accredited Distributor in writing of its claim within seven (7) days of becoming aware of the basis thereof, and at its own expense returning the goods which are the subject of the claim to CIGWELD or nominated Accredited Distributor/Accredited Service Agent.  
The goods being used in accordance with the Manufacturer's Operating Manuals, and under competent supervision.  
Does not apply to:  
Obsolete goods sold at auction, second-hand goods and prototype goods.  
Breakdown or malfunction caused by accident, misuse or normal wear and tear.  
Repairs or replacement made other than by CIGWELD or Accredited Service Agents, unless by prior arrangement with CIGWELD.  
Replacement parts or accessories which may affect product safety or performance and which are not manufactured, distributed or approved by CIGWELD.
4. CIGWELD declares that, to the extent permitted by law, it hereby limits its liability in respect of the supply of goods which are not of a kind ordinarily acquired for personal, domestic or household use or consumption to any one or more of the following (the choice of which shall be at the option of CIGWELD).  
The replacement of the goods or the supply of equivalent goods.  
The repair of goods.  
The payment of cost of replacing the goods or acquiring equivalent goods.  
The payment of the cost of having goods repaired.
5. Except as provided in Clauses 2 to 4 above, to the extent permitted by statute, CIGWELD hereby excludes all liability for any loss, damage, death or injury of any kind whatsoever occasioned to the Customer in respect of the supply of goods including direct, indirect, consequential or incidental loss, damage or injury of any kind.

## Warranty Schedule

These warranty periods relate to the warranty conditions in clause 2. All warranty periods are from date of sale from the Accredited Distributor of the equipment. Notwithstanding the foregoing, in no event shall the warranty period extend more than the time stated plus one year from the date CIGWELD delivered the product to the Accredited Distributor. Unless otherwise stated the warranty period includes parts and labour.

CIGWELD reserves the right to request documented evidence of date of purchase.

MANUAL ARC EQUIPMENT	WARRANTY PERIOD
Transarc 131i, 161i; 145i; 165i; 141VRD; 161VRD	18 months
Compact, Compact Turbo, Easywelder Turbo, Transarc 280AC/DC, Transarc 400AC/DC	1 year
Transarc 250Si; Transarc 300Si	1 year
Main Power Magnetics	2 years (Labour 1 year)
Original Main Power Rectifiers, Control P.C. Boards	2 years (Labour 1 year)
All other circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, power switch semi-conductors	1 year
Electrode holders, Work clamps and accessories	1 year
Electrode Drying Ovens	6 months
<b>ENGINE DRIVEN WELDERS</b>	
Main Power Magnetics	2 years
Original Main Power Rectifiers, Control P.C. Boards	2 years
All other circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, power switch semi-conductors	1 year
Diesel/Petrol Engines and Associated Components Refer to Engine Manufacturer's Warranty	
<b>MIG, &amp; TIG WELDING EQUIPMENT</b>	
Portaweld 100, Transmig 135, 165, 190, 200, 220, 250, 275 (Compact or Remote where applicable)	
Main Power Magnetics	3 years
Original Main Power Rectifiers, Control P.C. Boards	18 months
All other circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, power switch semi-conductors	1 year
Transmig 330; 400; 400HD; 450EC; 500i (Compact or Remote where applicable)	
Main Power Magnetics	3 years
Original Main Power Rectifiers, Control P.C. Boards	3 years
All other circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, power switch semi-conductors	1 year
Transtig 160AC/DC/HF	18 months
Transtig 200Pi; 200AC/DC; 250Pi; 300Pi; 300AC/DC; Transmig 400i	
Main Power Magnetics	2 years (Labour 1 year)
Original Main Power Rectifiers, Control P.C. Boards	2 years (Labour 1 year)
All other circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, power switch semi-conductors	1 year
<b>GENERAL ARC EQUIPMENT</b>	
MIG and TIG	3 months
Arc Air Gouging torches	6 months
MIG, TIG and Plasma welding torch consumable items	Nil
Water Recirculator	1 year
Replacement repair parts	3 months (Labour Nil)
<b>GAS WELDING AND CUTTING EQUIPMENT</b>	
Hand held welding, cutting and heating blowpipes, blowpipe mixers, cutting and powder spray attachments	5 years**
Accessories, defined as items used to carry, support, ignite, maintain or repair, including hoses and fittings, cutting nozzles, welding and heating tips	1 month
Gas Regulators (excluding regulator seat assemblies and pressure gauges)	5 years**
Regulator seat assemblies and pressure gauges used in Gas Regulators	1 year
Manifolds - Manual and Portable	5 years**
Medalist Regulators	6 months
Turbo Torch®	2 years (refer separate schedule)
** Elastomer seals and "O" rings used in the equipment	6 months
<b>PLASMA CUTTING MACHINES</b>	
Pak Master 50XL Plus; 75XL Plus; 100XL Plus ; CutMaster 38; 81;101	
Main Power Magnetics	3 years (Labour 1 year)
Original Main Power Rectifiers, Control P.C. Boards	3 years (Labour 1 year)
All other circuits and components including, but not limited to, starting circuits, contactors, relays, solenoids, pumps, power switch semi-conductors	1 year
Pak Master 7e; 9e; AP70; AP90	1 year
Drag-Gun	1 year
AP 40i Compact	18 months
Consoles, Control Equipment, Heat Exchangers and Accessory Equipment	1 year
Plasma cutting torches and leads	6 months
SL60 & SL100 1Torch Plasma Torches	1 year
Plasma cutting torch consumable items	Nil
Repair / Replacement Parts	3 months (Labour Nil)
<b>SAFETY PRODUCTS</b>	
All products are strictly subject to clauses 2 and 3 of the warranty conditions	
All claims will be strictly subject to inspection by CIGWELD	
<b>EASY SPRAYER SPRAY OUTFIT</b>	
All components	2 years †
† Warranty period is reduced to 6 months if the product is used in a commercial or industrial application	
<b>WELDING CONSUMABLES</b>	12 months *
* Goods returned as faulty will either be credited or replaced subject to inspection by CIGWELD	

## WARNING

For the purpose of safety and performance and to protect your CIGWELD Equipment Warranty always use genuine CIGWELD replacement parts and accessories.

Please note that the information detailed in this statement supersedes any prior published data produced by CIGWELD.

In the interest of continuous improvement CIGWELD Pty. Ltd reserves the right to change the specifications or design of any of its products without prior notice.

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