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Shield-Cor 11	2203.1: ETP-GNn-W500A. CM2	A5.20: E71T-11	149
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Shield-Cor 4XP	2203.1: ETD-GNp-W500A. CM2 H15	A5.20: E70T-4	147
Shieldcrome 308LT	---	A5.22: E308LT1-1	153
	---	A5.22: E308LT1-4	153
Shieldcrome 309LT	---	A5.22: E309LT1-1	155
	---	A5.22: E309LT1-4	155
Shieldcrome 309LTD	---	A5.22: E309LTD-1	155
	---	A5.22: E309LTD-4	155
Shieldcrome 316LT	---	A5.22: E316LT1-1	157
	---	A5.22: E316LT1-4	157
Stoody SOS 308L	2576: 1315-B7	A5.22: E308LTD-3	159
Stoody SOS 309L	2576: 1315-B7	A5.22: E309LTD-3	160
Murex Speedex 12	1553.1: E4112-0	A5.1: E6013	30
Murex Speedex 13	1553.1: E4113-0	A5.1: E6013	33
Murex Speedex 16	1553.1: E4116-0	A5.1: E6013	43
Murex Speedex 308L-16	1553.3: E308L-16	A5.4: E308L-16	61
Murex Speedex 309L-16	1553.3: E309L-16	A5.4: E309L-16	62
Murex Speedex 312-16	1553.3: E312-16	A5.4: E312-16	63
Murex Speedex 316L-16	1553.3: E316L-16	A5.4: E316L-16	64
Supre-Cor 5	2203.1: ETP-GCn/p-W505A. CM1 H5	A5.20: E71T-5 H4	139
	2203.1: ETP-GMn/p-W505A. CM1 H5	A5.20: E71T-5MJ H4	139
Supre-Cor XP	2203.1: ETP-GCn/p-W503A. CM1 H5	A5.20: E70T-5 H4	141
	2203.1: ETP-GMn/p-W503A. CM1 H5	A5.20: E70T-5M H4	141
Tensi-Cor 110T XP	2203.1: ETD-GCp-W769A. K4 H5	A5.29: E110T5-K4	144
Verti-Cor 3XP	2203.1: ETP-GCp-W503A. CM1 H10	A5.20: E71T-1 H8	131
	2203.1: ETP-GMp-W503A. CM1 H10	A5.20: E71T-12M H8	131
Verti-Cor 3XP H4	2205.1: ETP-GMp-W503A. CM1 H4	A5.20: E71T-1 H4	133
Verti-Cor Ultra H4	2203.1: ETP-GCp-W502A. CM1 H4	A5.20: E71T-1 H4	130
Verti-Cor 80Ni 1	2203.1: ETP-GMp-W554A. Ni1 H10	A5.29: E81T1-Ni1	136
Verti-Cor 91 K2	2203.1: ETP-GMp-W629A. K2 H10	A5.29: E91T1-K2	137
Verti-Cor 111 K3	2203.1: ETP-GMp-W768A. K3 H10	A5.29: E111T1-K3M H8	138
Verti-Cor Ultra	2203.1: ETP-GCp-W502A. CM1 H10	A5.20: E71T-1 H8	128
Verti-Cor Ultra 3	2203.1: ETP-GCp-W503A. CM1 H10	A5.20: E71T-1 H8	134
	---	A5.20: E71T-12 H8	134
Verti-Cor XP	2203.1: ETP-GCp-W502A. CM1 H10	A5.20: E71T-1 H8	126
	2203.1: ETP-GMp-W502A. CM1 H10	A5.20: E71T-1M H8	126
Weldall	1553.3: E312-17	A5.4: E312-17	65
Weldcraft	1553.1: E4113-2	A5.1: E6013	32

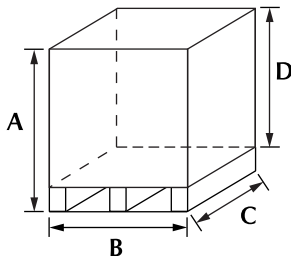
## PACKAGING INFORMATION

### Pallet Weights of Electrodes:

12kg Cartons =	90 Ctn per pallet =	1,080kg	
15kg Standard Cartons =	72 Ctn per pallet =	1,080kg	
25kg Cartons =	40 Ctn per pallet =	1,000kg	

### Average Pallet (Skid) Dimensions:

A =	650mm
B =	1,140mm
C =	1,155mm
D =	480mm



### MIG (GMAW) & Flux Cored (FCAW) Wires:

15kg Spools of MIG Wire =	54 Spools per pallet =	810kg
250kg AutoPaks of MIG Wire =	4 Packs per pallet =	1,000kg
300kg AutoPaks of MIG Wire =	4 Packs per pallet =	1,200kg
13kg Spools of FCAW Wire =	54 Spools per pallet =	702kg
25kg Coils of FCAW Wire =	24 Coils per pallet =	600kg

### Spool Dimensions:

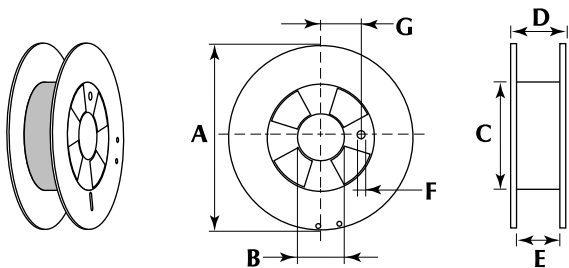
SEE NEXT PAGE FOR SPOOL DIAGRAMS

CIGWELD Name		MiniSpool	HandiSpool	Spool	Coil
Spool Dimensions		ø200mm 4 Inch	ø300mm 8 Inch	ø400mm 12 Inch	16 Inch
A	Flange O.D.	100mm	200mm	300mm	400mm
B	Hub I.D.	16mm	52mm	52mm	300mm
C	Barrel Diameter	57mm	104mm	207mm	---
D	Width Outside	45mm	55mm	100mm	100mm
E	Width Inside	40mm	45mm	95mm	---
F	Engaging Hole	---	11mm	11mm	---
G	Hole offset	---	44mm	44mm	---
Weight Range		0.45-1kg	5kg	12.5-15kg	25-30kg

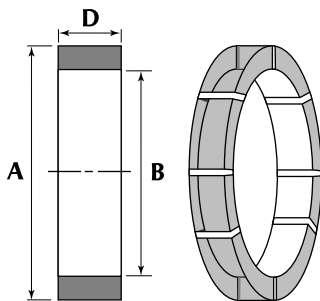
PACKAGING INFORMATION

SPOOL DIAGRAMS (not to scale):

MINISPOOLS, HANDISPOOLS & STANDARD SPOOLS:



COIL:



## COMPARABLE\* CONSUMABLES BY WELDING PROCESS

MMAW	GMAW	FCAW	GTAW
Speedex 12 (E6013)	Autocraft LW1/LW1-6 (ER70S-4/6)	Shield-Cor 15 (E71T-GS)	Comweld High Test (R60)
Speedex 13 (E6013)	Autocraft LW1/LW1-6 (ER70S-4/6)	Shield-Cor 11 (E71T-11)	Comweld High Test (R60)
Ferrocraft 12XP (E6013)	Autocraft LW1/LW1-6 (ER70S-4/6)	Shield-Cor 15 (E71T-GS)	Comweld High Test (R60)
Satincraft 13 (E6013)	Autocraft LW1/LW1-6 (ER70S-4/6)	Shield-Cor 11 (E71T-11)	Comweld High Test (R60)
Ferrocraft 21 (E7014)	Autocraft LW1/LW1-6 (ER70S-4/6)	Verti-Cor 3XP (E71T-1 H8)	Comweld LW1 (ER70S-4)
Ferrocraft 22 (E7024)	Autocraft LW1/LW1-6 (ER70S-4/6)	Metal-Cor XP (E70C-6M)	Comweld LW1 (ER70S-4)
Ferrocraft 7016 (E7016-1)	Autocraft Super Steel (ER70S-2)	Super-Cor 5 (E71T-5 H4)	Comweld Super Steel (ER70S-2)
Ferrocraft 61 (E7018)	Autocraft Super Steel (ER70S-2)	Super-Cor 5 (E71T-5 H4)	Comweld Super Steel (ER70S-2)
Alloycraft 80-B2 (E8018-B2)	Autocraft CrMo1 (ER80S-B2)	Verti-Cor 80Ni1 (E81T1-Ni1)	Comweld CrMo1 (ER80S-B2)
Alloycraft 90-B3 (E9018-B3)	Autocraft CrMo2 (ER90S-B3)	—	Comweld CrMo2 (ER90S-B3)
Alloycraft 90 (E9018-M)	—	Verti-Cor 91K2 (E91T1-K2)	—
Alloycraft 110 (E11018-M)	Autocraft NiCrMo (ER110S-G)	Tensi-Cor 110TXP (110T5-K4) Verti-Cor 111K3 (111T1-K3)	
Castcraft 55 (EniFe-CI)	—	Nicore 55 (ENiFe-CI)	Comweld G.P. Cast Iron (RC11)
Satinchrome 308L-17 (E308L-17)	Autocraft 308LSi (ER308LSi)	Shieldchrome 308LT (E308LT1-1/4)	Comweld 308L (ER308L)
Satinchrome 309Mo-17 (E309Mo-17)	Autocraft 309LSi (ER309LSi)	Shieldchrome 309LT (E309LT1-1)	Comweld 309L (ER309L)
Satinchrome 316L-17 (E316L-17)	Autocraft 316LSi (ER316LSi)	Shieldchrome 316LT (E316LT1-1)	Comweld 316L (ER316L)
Speedex 308L-16 (E308L-16)	Autocraft 308LSi (ER308LSi)	Shieldchrome 308LT (E308LT1-1/4)	Comweld 308L (ER308L)
Speedex 309L-16 (E309L-16)	Autocraft 309LSi (ER309LSi)	Shieldchrome 309LT (E309LT1-1)	Comweld 309L (ER309L)
Speedex 316L-16 (E316L-16)	Autocraft 316LSi (ER316LSi)	Shieldchrome 316LT (E316LT1-1)	Comweld 316L (ER316L)
—	Autocraft AL1100 (ER1188)	—	Comweld AL1100 (ER1188)
—	Autocraft AL4043 (ER4043)	—	Comweld AL4043 (ER4043)

## COMPARABLE\* HARDFACING CONSUMABLES BY PROCESS

MMAW	FCAW	SAW	GTAW
—	Autocraft AL5356 (ER5356)	—	Comweld AL5356 (ER5356)
Bronzecraft AC-DC (ECuSn-C)	Autocraft Si Bronze (ERCuSi-A)	—	Comweld Si Bronze (RCuSi-A)
Cobalarc Mangcraft (1215-A4)	Stoody Dynamang (1215-B5 / B7)	—	—
Cobalarc Austex (1315-A4)	—	—	Comweld 309L (ER309L)
Cobalarc 350 (1435-A4)	Stoody Super Buildup (1435-B5 / B7)	—	—
Cobalarc 650 (1855-A4)	Stoody 965 G/O (1855-B5 / B7)	—	—
Cobalarc 750 (1860-A4)	Stoody 965 G/O (1855-B5 / B7)	—	—
Cobalarc CR70 (2355-A4)	Stoody 101 HC-G/O (2360-B5 / B7)	—	—
Cobalarc Borochrome (2560-A4)	Stoody Fineclad (2565-B7)	—	—

\* Comparable consumables may not be interchangeable for all welding applications. Please contact your local CIGWELD representative for advice regarding the suitability of specific process / consumable combinations for the particular application in question.

## PRODUCT CERTIFICATION

Most CIGWELD welding consumables are approved by Lloyd's Register of Shipping (LRS), American Bureau of Shipping (ABS), and Det Norske Veritas (DNV) for use in ship building and general fabrication. These third party approvals are renewed annually at CIGWELD by completing a series of tests on various sizes of consumables under the supervision of a surveyor from each shipping and testing society. CIGWELD lists the relevant approvals to the above mentioned societies, as well as Australian and New Zealand (AS/NZS) and American (AWS/ASME-SFA) standards/classifications on the individual product data pages throughout this pocket guide.

The following lists Product Certification available from CIGWELD. There are four main certificates available, the most popular being the CONFORMANCE CERTIFICATE (BATCH) and the MATERIAL SAFETY DATA SHEET (MSDS). To obtain further information on CIGWELD Product Certificates please call or fax the following numbers: PH: 1300 654 674 FAX: +61 3 9474 7391



### Conformance Certificate:

Demonstrates that the product complies to relevant Standards, Regulations and Specifications. The certificate certifies that the product supplied is equivalent to that used in annual Shipping Society approval tests (ABS/DNV/LRS) and/or Standards Conformance tests (AS/NZS & AWS). Includes conformance test results. Available for all manufactured main line products. "Issued Free Of Charge".



### Quality Assurance Certificate:

Is only issued where Conformance Certificates are not available. Results are derived from CIGWELD's internal batch testing procedures. The results quoted are normally chemical analysis and limited mechanical properties.



### Special Test Report:

Includes results of tests carried out to relevant Standards and specific customer requirements. Tests can be quite extensive (eg. product for certain applications may require tests for weld metal composition, mechanical properties, diffusible hydrogen, x-ray soundness etc.) The "Fee charged" for a Special Test Report will depend on the specific tests carried out.



### Material Safety Data Sheets (MSDS):

Provides information on the products and the hazards associated with them to allow the safe handling and use of the products at work. The MSDS describes the identity, physical and chemical properties and uses of the product, health hazard information, precautions for use and safe handling information. "Issued Free Of Charge".

## STORAGE, CARE & CONDITIONING OF ELECTRODES

### 1. Introduction

- ▲ During manufacture, CIGWELD electrodes are baked at specific temperatures to either virtually eliminate any moisture, eg. hydrogen controlled types, or reduce moisture to a predetermined low level eg. general rutile type electrodes.
- ▲ Electrode coatings exposed to the atmosphere however, will gradually absorb moisture. Moisture resistant (MR) type flux coatings will be more resistant to moisture re-absorption and flux coating rehydration.

#### 1.1 Excessive moisture in electrodes may produce one or more of the following effects:

- |  |                                 |
|--|---------------------------------|
| ▲ Introduction of hydrogen into weld metal with increased danger of heat affected zone cracking. | ▲ Spalling of flux coating.     |
| ▲ Porosity in weld metal.  | ▲ Fiery unstable arc.           |
| ▲ Blistering of electrode tip.   | ▲ High arc voltage.             |
| ▲ Formation of "white fur" on the flux coating.  | ▲ Excessive spatter.            |
|  | ▲ Difficulty with slag removal. |
|  | ▲ Undercut.                     |

Electrodes indicating any of the above should be reconditioned following the procedures set out in this recommendation, which will usually return the electrodes to their original as manufactured condition.

### 2. Before Work Commences

- 2.1 Before using CIGWELD electrodes, the welder should be aware of the following points regarding handling:
- 2.1.1 CIGWELD electrodes should be kept dry and clean at all times, free of moisture, grease, oil, paint, grinding dust and condensation.
  - 2.1.2 Electrodes which show visible signs of mechanical damage, appear wet or moist and show signs of rust (especially on hydrogen controlled electrodes) should not be used for welding.
  - 2.1.3 Product which shows visible signs of damage (ie water or otherwise) should be returned to the supervisor or person responsible for inspection and possible reconditioning before approval for use.

### 3. Storage of CIGWELD Electrodes Before Use

- 3.1 When held under the recommended storage conditions\*, original unopened packs of CIGWELD electrodes are expected to remain in "factory fresh" condition for at least 12 months and hermetically sealed containers indefinitely.

**\* Recommended Storage Conditions:**

In weather proof, unheated storage rooms/cupboards/containers/warehouses. Stacked on racks or pallets clear of the floor and walls.

## STORAGE, CARE & CONDITIONING OF ELECTRODES

### 3. Storage of CIGWELD Electrodes Before Use cont.

- 3.2 For storage over twelve (12) months or under adverse (damp or high humidity) climatic conditions, the use of heated, store rooms/cupboards/containers/ warehouses maintained at the following parameters are recommended:

#### 3.3 Storage Table

**Section A:** Electrodes should be kept at 10-15°C (50-60°F) above ambient temperature with a maximum of 60°C (140°F) and at a maximum humidity of 60% R.H.

Speedex 12	Arcair DC Carbons
GP 6012	Cobalarc, Extruded electrode Range
Ferrocrafft 12XP	Castcraft, Cast Iron Range
Speedex 13	Bronzecraft AC-DC
Satincrafft 13	Ferrocrafft 21
Weldcraft	Ferrocrafft 22

**Section B:** Electrodes should be kept at 10-15°C (50-60°F) above ambient temperature with a maximum of 40°C (105°F) and at a maximum humidity of 60% R.H.

Ferrocrafft 11	PipeArc 6010P
PipeArc 8010P	

**Section C:** Electrodes should be kept at 10-15°C (50-60°F) above ambient temperature with a maximum of 40°C (105°F) and at a maximum humidity of 50% R.H.

Ferrocrafft 16TXP	Ferrocrafft 7016
Alloycraft 80-B2	Ferrocrafft 55U
Alloycraft 80-C1	Alloycraft 90
Alloycraft 90-B3	Alloycraft 110
Ferrocrafft 61	Ferrocrafft 18-Ni
Satincrome, Stainless Steel Range	Weldall
Speedex Stainless Steel Range	Speedex 16

### 4. Conditioning of CIGWELD Electrodes

- 4.1 The term conditioning refers to special treatments sometimes given to electrodes prior to use in critical applications. In practice, conditioning treatments are rarely applied to any but basic coated (low hydrogen) electrodes when they are to be used for applications requiring specific hydrogen controlled levels eg.  $\leq 5$  mls  $H_2$  /100g of Deposited Weld Metal.

In high temperature baking basic coated electrodes, it is important not to exceed the recommended maximum of temperature and time as this can result in chemical changes in the coatings which will permanently impair electrode performance. For the same reason, it is not advisable to repeatedly high temperature bake hydrogen controlled electrodes.

CIGWELD hydrogen controlled electrodes have a very robust flux construction and as a result they can be redried generally between 2 to 3 times.

## STORAGE, CARE &amp; CONDITIONING OF ELECTRODES

## 4. Conditioning of CIGWELD Electrodes cont.

Conditioning should be carried out in ventilated air ovens or hot boxes (see paragraph 6.1.2) set at a starting temperature of 100°C (210°F) and then raised to the correct temperatures for the various types of electrodes (as in Table 4.2). Electrodes should be unpacked and spaced evenly onto trays or racks, avoiding deep layering of electrodes so as to enable even drying.

## 4.2 CIGWELD Electrode Reconditioning Table

**Section A: General Purpose Electrodes**

The electrodes in this group normally do not require reconditioning before use if stored correctly, however if electrodes absorb moisture and require reconditioning, heat to 135°C ± 20°C (275°F ± 70°F) and hold for 1-1½ hours. \*General purpose electrodes can be overdried so restrict the maximum temperature to 155°C.

Speedex 12 GP 6012 Ferrocraft 12XP Speedex 13 Satincraft 13	Weldcraft Cobalarc, Extruded electrode Range Ferrocraft 21 Ferrocraft 22 Arcair DC Carbons
---	--

**Section B: Cast Iron and Bronze Electrodes**

The electrodes in this group do not require reconditioning before use if stored correctly, however if electrodes absorb moisture and require reconditioning heat to 95°C ± 10°C (200°F ± 50°F) and hold for 1-1½ hours.

Castcraft, Cast Iron Range	Bronzecraft AC-DC
----------------------------	-------------------

**Section C: Cellulose Electrodes**

CIGWELD Cellulose Coated electrodes again do not normally require reconditioning before use if stored correctly, and actually rely upon a small percentage of moisture in the flux coating to obtain precise operating parameters. Reconditioning is not recommended, but if required please consult the CIGWELD Welding Consumables factory for more information.

Ferrocraft 11 PipeArc 6010P	PipeArc 8010P
--------------------------------	---------------

**Section D: Stainless Steel Electrodes**

The electrodes in this group if required may be reconditioned by heating to 250°C ± 20°C (480°F ± 70°F) and hold for 1-2 hours.

Satinrome range Speedex range	Weldall
----------------------------------	---------

**Section E: Hydrogen Controlled Electrodes - Low Hydrogen Status**

Electrodes that are capable of meeting AS/NZS 1553.1 low "H<sub>10</sub>" hydrogen classification and AWS A5.1 "H<sub>8</sub>" status, should be reconditioned by heating to 300°C ± 15°C (570°F ± 60°F) and holding for 2 hours and thereafter use from a hot box set at 100-120°C (210-250°F).

Ferrocraft 16TXP Ferrocraft 7016 Ferrocraft 55U	Ferrocraft 61 Ferrocraft 18-Ni
---	-----------------------------------

## STORAGE, CARE & CONDITIONING OF ELECTRODES

### 4. Conditioning of CIGWELD Electrodes cont.

#### Section F: Hydrogen Controlled Electrodes - Very Low Hydrogen Status

Electrodes that are capable of meeting AS/NZS 1553.1 low "H<sub>2</sub>" hydrogen classification and AWS A5.1 "H<sub>4</sub>" status, should be reconditioned by heating to 350°C ± 15°C (660°F ± 60°F) and holding for 2 hours and thereafter use from a hot box set at 100-120°C (210-250°F).

Alloycraft 80-C1	Alloycraft 90-B3
Alloycraft 90	Alloycraft 80-B2
Alloycraft 110	Ferrocrafft 61 H4

**Section G:** CIGWELD hermetically sealed containers, which are known to be airtight on initial opening may, where good workshop practice is adopted, be used for critical welding without reconditioning, provided the containers are first opened immediately prior to use, ensuring that the electrodes are not used in adverse (high temperature or high humidity) climatic conditions less than at 30-35°C (85-95°F) and a maximum humidity of 80% RH. Once opened, electrodes should be used within a maximum of 4 hours. Thereafter, if "H<sub>4</sub>" or "H<sub>5</sub>" levels of diffusible hydrogen are a critical requirement, electrodes should be reconditioned as described in paragraph 4.2, Section F.

### 5. After Reconditioning

CIGWELD electrodes which have been reconditioned and are not required for immediate use, must be either placed in heated storage or stored in airtight containers at ambient temperatures, following the recommendations in paragraph 2.

### 6. Work In Progress

- 6.1 Once work has commenced, it is recommended good workshop practice where possible to draw only those electrodes which are estimated "sufficient" for the immediate job at hand, whether those electrodes be from a holding oven or packets and cartons.
  - 6.1.1 CIGWELD products for heating and storage:
    - a. VB1689 portable drying oven, maximum temperature 120°C (250°F).
    - b. VB1690 bench drying oven, maximum temperature 260°C (500°F).
- 6.2 Electrodes which show signs of moisture absorption as in paragraph 1 (1.1) should be quarantined and reconditioned as in paragraph 4.

For further information regarding CIGWELD electrodes, please contact the CIGWELD Customer Service Centre on 1300 654 674.

## STORAGE, CARE & CONDITIONING OF ELECTRODES

### Recommended Storage and Care of CIGWELD Welding Wires and Rods:

- ▲ Gas Metal Arc Welding (GMAW / MIG)
- ▲ Flux Cored Arc Welding (FCAW)
- ▲ Gas Tungsten Arc Welding (GTAW / TIG)

### 1. Introduction

#### CIGWELD Solid Welding Wires and Rods

Generally solid welding wires and rods as used for MIG and TIG welding will not pick up moisture or contaminants until the original packs are opened and this is normally limited to surface contamination mainly in the form of condensation, rust, oil and grease or other hydrocarbons. When solid welding wires and rods are kept clean, dry and free of airborne contaminants the welding consumable will provide\* consistent, reliable hydrogen levels and sound weld metal.

\*The proviso in MIG and TIG welding to achieving a quality weld are the other variables such as equipment set-up, parent metal, correct choice of welding consumable, operator technique and shielding gas quality.

#### CIGWELD Flux Cored Arc Welding Wires

CIGWELD Flux Cored welding wires are fabricated from selected high quality flux core ingredients and low residual steel strip. Raw material selection, storage and handling and manufacturing processes are closely controlled to ensure very low moisture levels in the final product.

CIGWELD Flux Cored welding wires are manufactured to tight size tolerances from steel strip and as such have a closed seam which runs along the length of the wire. Under conditions of prolonged exposure (several days) to a high humidity atmosphere (> 70% RH) it is possible for the flux core to absorb moisture through the closed seam.

#### 1.1 Excessive moisture in CIGWELD flux cored wires may produce one or more of the following effects:

- |  |                       |
|--|-----------------------|
| ▲ Introduction of hydrogen into weld metal with increased danger of heat affected zone cracking. | ▲ Fiery unstable arc. |
| ▲ Porosity in weld metal.  | ▲ High arc voltage.   |
|  | ▲ Excessive spatter.  |
|  | ▲ Undercut.           |

### 2. Before Work Commences

#### 2.1 Before using CIGWELD welding wires, the welder should be aware of the following points regarding handling:

- 2.1.1 CIGWELD welding wires should be kept dry and clean at all times, free of moisture, grease, oil, paint, grinding dust, condensation and other airborne particles.
- 2.1.2 Welding wires which show visible signs of mechanical damage or display excessive surface rust should not be used for welding.
- 2.1.3 In some cases where packaging has been damaged either in transit or during storage/handling the surface of the outer layers of the wire and rod may form an oxide film, which can cause poor feedability and current pick up. Increases in hydrogen levels in the weld deposit from this oxide film may occur.
- 2.1.4 Product which shows visible signs of damage (i.e. water or otherwise) should be returned to the supervisor or person responsible for inspection and approval for use.

## STORAGE, CARE & CONDITIONING OF ELECTRODES

### 3. Storage of CIGWELD Welding Wires Before Use

- 3.1 When held under the recommended storage conditions\*, original unopened packs of CIGWELD welding wires are expected to remain in "factory fresh" condition for at least 12 months.

**\* Recommended Storage Conditions:**

In weather proof, unheated storage rooms/cupboards/containers/warehouses. Stacked on racks or pallets clear of the floor and walls.

- 3.2 For storage over twelve (12) months or under adverse (damp or high humidity) climatic conditions, the use of heated, store rooms/cupboards/containers/warehouses maintained at 10-15°C (50-60°F) above ambient temperature (with a maximum of 40°C (105°F) and at a maximum humidity of 60% R.H is recommended:

### 4. Work In Progress

- 4.1 After opening, CIGWELD Welding Wires and Rods are normally consumed in two ways;

- (a) either the welding consumable is used the same day or;  
 (b) a portion of the welding consumable is left on or near the welding machine overnight or for an extended period of time.

- 4.1.1 The following points are recommended as good workshop practice when welding wires and rods are used on the job.

(a) In the case of FCAW and MIG welding the welding consumable should be protected at all times from contaminants, such as moisture and airborne particles, by either enclosing the wire in a sealed wirefeeder unit or by using PVC, leather or canvas spool covers which are standard on most MIG welding machines. Periodic cleaning of the underside of spool covers is recommended by appropriate means.

(b) For TIG welding it is recommended good workshop practice where possible to draw only those welding rods which are estimated "sufficient" for the immediate job at hand, those welding rods not required for immediate use, should be either kept in their original resealable packets or stored in airtight containers at ambient temperatures following the recommendations in paragraph 3.

- 4.1.2 For FCAW and MIG welding wires left on welding machines:

(a) Overnight: Wires should be covered with spool covers or if in areas of adverse weather or climatic conditions the wire should be stored as below.

(b) Extended periods: Wires which are not used for periods in excess of three days\* should be first removed from the welding machine ensuring that the wire is cut off at the wirefeeder unit\*\*. Wires should then be repacked in their original packaging as follows:

- Wrap the wire with any Vapour Phase Inhibitor (VPI) paper supplied.
- Replace the wire in the original thick plastic bag and seal with an elastic band.
- Pack into the original resealable cardboard packet and store as in paragraph 3.

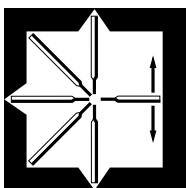
\* Maximum exposure time will be dependant on prevailing atmospheric conditions (i.e.. Temperature and humidity).

\*\*This is done so no contaminated wire comes into contact with the clean wire on the spool or coil. Feed rollers deform the surface of the wire, which normally runs through a spring steel conduit which are from time to time cleaned out with compressed air, which itself contains oil, or hydrocarbon containing mineral spirits.

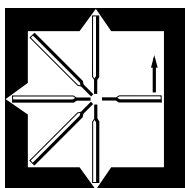
For further information regarding CIGWELD electrodes, please contact the CIGWELD Customer Service Centre on 1300 654 674.

## WELDING POSITION SYMBOLS

For fillet and butt welding applications - manual electrodes:



All Positional

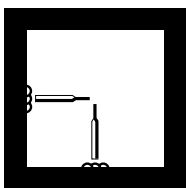


All Positional Except  
Vertical Down

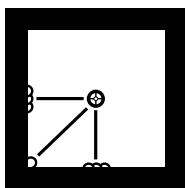


Downhand

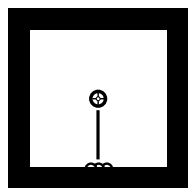
For hard surfacing applications - electrodes and tubular wires:



Downhand &  
Horizontal

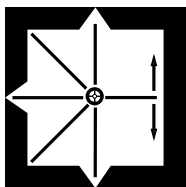


Downhand &  
Horizontal

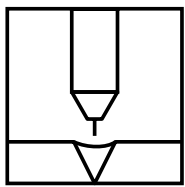


Downhand

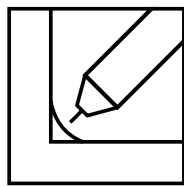
For fillet and butt welding applications - GMAW and FCAW wires:



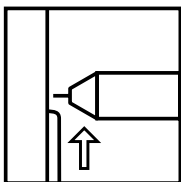
All Positional  
Welding Applications



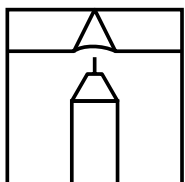
Flat



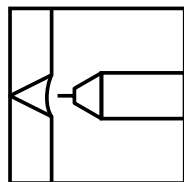
HV Fillet



Vertical Up



Overhead



Horizontal

## MUREX WELDING POSITION SYMBOLS



DOWNHAND



HORIZONTAL



VERTICAL



OVERHEAD



HORIZONTAL/  
VERTICAL



VERTICAL  
DOWN

## HEADING BAR ICONS



Alternating Current



Direct Current negative or positive



Direct Current electrode negative



Direct Current



Alternating or Direct Current electrode positive



Open Current Voltage



Alternating and Direct Current



Alternating or Direct Current electrode negative



Open Circuit Voltage rating



Alternating or Direct Current



Direct Current electrode positive



Weld Metal hardness



Requires no gas shielding



Requires gas shielding



Thermal conductivity



Melting point

## SHIPPING SOCIETY APPROVALS

CIGWELD product	AS/INZS Class	AWS Class	Shielding gas for Approvals	ABS Grade	LRS Grade	DNV Grade
<b>Manual Arc Electrodes</b>						
Ferrocraff 11	1553.1: E4111-2	A5.1: E6011	-	3 / A5.1 E6011	3, 3Y	3
GP6012	1553.1: E4112-0	A5.1: E6013	-	2	2	2
Ferrocraff 12XP	1553.1: E4112-0	A5.1: E6013	-	2, 2Y / A5.1 E6013	2, 2Y	2
Satincraff 13	1553.1: E4113-0	A5.1: E6013	-	2 / A5.1 E6013	2	2
Weldcraft	1553.1: E4113-2	A5.1: E6013	-	3	3	3
Ferrocraff 21	1553.1: E4814-2	A5.1: E7014	-	3 / A5.1 E7014	3	3
Ferrocraff 22	1553.1: E4824-2	A5.1: E7024	-	2, 2Y / E7024	3	3
PipeArc 6010P	1553.1: E4110-2	A5.1: E6010	-	3 / A5.1 E6010	3	3
PipeArc 8010P	1553.2: E5510-G	A5.1: E8010-P1	-	3, 3Y	3, 3Y	3
Ferrocraff 16TXP	1553.1: E4816-2	A5.1: E7016	-	3H10, 3Y	3, 3YH15	3YH10
Ferrocraff 55U	1553.1: E4816-2	A5.1: E7016	-	-	3, 3YH15	3YH10
Ferrocraff 7016	1553.1: E4816-3	A5.1: E7016	-	3H10, 3Y	3YH10	3YH10
Ferrocraff 61	1553.1: E4818-3	A5.1: E7018	-	3H15, 3Y / A5.1 E7018	3, 3YH15	3YH10
Ferrocraff 61 H4	1553.1: E4818-1	A5.1: E7018-1	-	3H5, 3Y,	3, 3YH5	3YH5
Ferrocraff 18-Ni	1553.2: E4818-G	A5.5: E7018-G	-	-	3, 3YH15	-
Alloycraft 80-C1	1553.2: E5518-C1	A5.5: E8018-C1	-	A5.5 E8018-C1	-	-
Satincrome 308L-17	1553.3: E308L-17	A5.4: E308L-17	-	A5.4: E308L-17	-	-
Satincrome 309Mo-17	1553.3: E309Mo-17	A5.4: E309Mo-17	-	A5.4: E309Mo-17	-	-
Satincrome 316L-17	1553.3: E316L-17	A5.4: E316L-17	-	A5.4: E316L-17	-	-
<b>Gas Metal Arc Welding (MIG) Wires</b>						
Autocraff LW1	2717.1: ES4-GC/M-W503AH	A5.18: ER70S-4	CO <sub>2</sub> , Argoshield Light, Argoshield Universal	3SA	3S	IIYMS
Autocraff LW1-6	2717.1: ES6-GC/M-W503AH	A5.18: ER70S-6	CO <sub>2</sub> , Argoshield Light, Argoshield Universal	3S, 3YSA	3S, 3YS	IIYMS
Autocraff 308LSi	2717.3: ES308LSi	A5.9: ER308LSi	-	A5.9: ER308LSi	-	-
Autocraff 309LSi	2717.3: ES309LSi	A5.9: ER309LSi	-	A5.9: ER309LSi	-	-
Autocraff 316LSi	2717.3: ES316LSi	A5.9: ER316LSi	-	A5.9: ER316LSi	-	-
Autocraff AL5356	2717.2: ES356	A5.10: ER5356	Argon	A5.10: ER5356	A5.10: ER5356	A5.10: ER5356

# SHIPPING SOCIETY APPROVALS

CIGWELD product	AS/NZS Class	AWS Class	Shielding gas for Approvals	ABS Grade	LRS Grade	DNV Grade
<b>Flux Cored Arc (FC) Welding Wires</b>						
Satincor XP	2203.1: ETD-GCp-W502A CM1 H10	A5.20: E70T-1H8	CO2	-	2YS H	-
Satincor HD70	2203.1: ETD-GC/MP-W502A CM1 H10	A5.20: E70T-1/1M H8,	CO2, Argoshield Universal	-	2YS H	-
Verticor XP	2203.1: ETP-GC/MP-W502A CM1 H10	A5.20: E71T-1/1M H8,	CO2, Argoshield 52, Argoshield Universal	-	2YS H	-
Verticor Ultra	2203.1: ETP-GCp-W502A CM1 H10	A5.20: E71T-1H8	CO2	2YSA H10	2YS H10	IIVMS H
Verticor Ultra H4	2203.1: ETP-GCp-W502A CM1 H4	A5.20: E71T-1 H4	CO2	2YSA H4	2YSM H4	-
Verticor 3XP	2203.1: ETP-GC/MP-W503A CM1 H10	A5.20: E71T-1/12M H8,	Argoshield 52, Argoshield Universal	3SA, 3YSA H	3S, 3YS H	IIVMS H
Verticor 3XP H4	2203.1: ETP-GMP-W503A CM1 H4	A5.20: E71T-1/12M H4	Argoshield 52	3YSA H4	3YS H4	-
Verticor Ultra 3	2203.1: ETP-GCp-W503A CM1 H10	A5.20: E71T-1/12M H8	CO2	3SA, 3YSA H	3S, 3YS H	IIVMS H
Suprecor 5	2203.1: ETP-GC/MP-W505A CM1 H5	A5.20: E71T-5/5MJ H4,	CO2, Argoshield 52, Argoshield Universal	3SA, 3YSA H	3S, 3YS H	IIVMS H
Suprecor XP 2.4mm only	2203.1: ETP-GC/MP-W504A CM1 H5	A5.20: E71T-5/5M H4	Argoshield 52	-	3S, 3YS H	-
<b>Gas Tungsten Arc (TIG) rods</b>						
Comwell AL5356	1167.2: R5356	A5.10: R5356	-	A5.10: R5356	-	-

# THE BIG PICTURE



CIGWELD has an extensive range of high quality welding consumables to suit every application, from the smallest household maintenance chore to heavy industrial applications.

As a major supplier to the manufacturing, mining, construction, engineering, rural and automotive sectors the CIGWELD product range is technologically advanced and constantly evolving.

Competitively priced and totally dependable, the CIGWELD welding consumable range is backed up with superior customer service, technical support and first class delivery.

You will already know and trust many of the CIGWELD product brand names, so if you're serious about quality and performance use CIGWELD every time and get the job done right.