

## Weld Procedures in the ORBIMAT C Power Supplies.

The ORBIMAT C Orbital Welding Power Supplies store not just welding parameters but a complete Welding procedure with details of the Application Specification. Detailing Gas Type & Flow, Tungsten Type, Diameter & Grind Angle and any additional information required.

The ORBIMAT C Orbital Welding Power Supplies will store around 300 4 level procedures in its internal memory. These numbers can be extended using standard 'Smart Media' Card. These are the cards used in a lot of the modern day digital cameras. This makes the cards readily available and inexpensive.

The use of these Smart Media cards also makes data transfer very easy between machines, sites and even countries.

It is common for users of our equipment to email procedures from one site to another with ease. This means a good procedure from Germany can be working in Australia within a matter of minutes.

The procedures stored also allow several options to be used these include:-

- |                       |  |
|-----------------------|--|
| Tacking Mode          | – To carry out a set number of tacks prior to welding  |
| Data Logging          | – The machine will store a data log file for each weld   |
| Weld Print            | – The machine can print a verification ticket for each weld  |
| Backing Gas Detection | – Our ORB1000 Oxygen Analyser will interface to the Power Supply to ensure the backing gas level is acceptable prior to welding. |
| Parameter Limits      | - Pre-Set deviation level at which the machine will either alarm the operator or abort the weld.                                 |

### Data Logging

Each Procedure can be set to send Data Log Files to the Smart Media card. The files stored are unique .log files which are not editable.

The card can be removed from the machine and downloaded to any PC with either a Flash Path (Floppy Disk Adaptor) or suitable Smart Media Card Reader. Both of these items are also readily available and inexpensive.

From a PC the data log files (or any procedures) can be stored for complete traceability. Each Data Log File will store Date, Time, Procedure Name & comment and the weld number.

ORBIMATIC GmbH, Floesser Weg 17 – D 35418 Buseck, Germany  
Tel.: +49 (0) 6408-9026-0 - Fax: +49 (0) 6408-9026-50  
E-Mail : orbimatic@t-online.de



UK Office – PO Box 416 Welbeck Way, Peterborough, PE7 3FT, UK  
Tel +44 (0) 1733 244063 – Fax +44 (0) 1733 244463  
Email : sales@orbimatic.fsbusiness.co.uk

Website : [www.orbimatic.de](http://www.orbimatic.de) + [www.orbimatic.com](http://www.orbimatic.com)

# Sample Weld Procedure Printed from the Orbimat 160C

```

Weld procedure: 50-16
Comment : 2" OD Tube x 1.65mm WT - Wel
der ID W094 James Adams

Tack-parameters:

Number of tacks      : 3
Tack current         : 10 A
Tack time            : 1 sec
Pilot current        : 5 A

Pre- and post- purge values:

Tube/pipe O.D.      : 50 mm
Start position       : 0 deg
Gas prepurge         : 30 sec
Gas postpurge        : 30 sec
Strike current       : 25.0 A
Final current         : 2.0 A
Start delay           : 4.3 sec
Final slope time     : 10.0 sec

Level : 1

Start angle          : 0 Degree
Final angle           : 45 Degree
Time                 : 13.86 sec
Slope time           : 2.77 sec
High pulse curr.     : 59.5 A
Low pulse current:    26.8 A
High pulse time      : 0.17 sec
Low pulse time        : 0.17 sec
High pulse speed     : 85.00 mm/min
Low pulse speed      : 85.00 mm/min

Level : 2

Start angle          : 45 Degree
Final angle           : 135 Degree
Time                 : 27.72 sec
Slope time           : 5.54 sec
High pulse curr.     : 57.1 A
Low pulse current:    25.7 A
High pulse time      : 0.17 sec
Low pulse time        : 0.17 sec
High pulse speed     : 85.00 mm/min
Low pulse speed      : 85.00 mm/min

Level : 3

Start angle          : 135 Degree
Final angle           : 240 Degree
Time                 : 32.34 sec
Slope time           : 6.47 sec
High pulse curr.     : 60.7 A
Low pulse current:    27.3 A
High pulse time      : 0.17 sec
Low pulse time        : 0.17 sec
High pulse speed     : 85.00 mm/min
Low pulse speed      : 85.00 mm/min

```

```

Level : 4

Start angle          : 240 Degree
Final angle           : 370 Degree
Time                 : 40.04 sec
Slope time           : 8.01 sec
High pulse curr.     : 58.3 A
Low pulse current:    26.2 A
High pulse time      : 0.17 sec
Low pulse time        : 0.17 sec
High pulse speed     : 85.00 mm/min
Low pulse speed      : 85.00 mm/min

Parameter limits :
                Low limit high limit
Parameter  Abc. Al. Al. Abc.

HP current:  -10  -5  5  10 A
LP current:  -10  -5  5  10 A
Voltage      : 0  0  15  20 V
HP travel    : -10  -5  5  10 mm/min
LP travel    : -10  -5  5  10 mm/min

Application. Spec. :
Weldhead type : OW 76 5
Tube/pipe O.D. : 50 mm
Start position : 0 deg
Wall thickness  : 1.70 mm
Tube/pipe material : 316
Plate thickness : 0.00 mm
Plate material  : -
Arc gas type   : Argon5.0
Gas flow rate  : 7 l
Backup gas type : Argon5.0
Flow rate backup gas : 3 l
Electrode type : Thor 4pc
Electrode diameter : 1.60 mm
Electr. grinding angle : 20 deg
Arc gap        : 1.5 mm
Number of loops : 1
Filler wire diameter : 0.0 mm
Filler-wire-material : -
Comment : Ensure tube id Square, burr
free and cleaned with IPA before
welding starts. No scratches to be on ID
of tube.

```

Procedure Name & Description

Tacking Sequence Parameters (Optional)

Pre and Post Weld Parameters

Individual Level Parameters

Parameter Limits

Application Specification Details

ORBIMATIC GmbH, Floesser Weg 17 – D 35418 Buseck, Germany  
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# Sample of a Data Log File

Data log file: 06181424  
machine no. : OM 160 C: 2001-748  
Proc.: 38X16 Weld.Nr. 1  
Date : 18.06.2002  
Time : 14:24  
Comment : Derek and Micks Program

Level	1	2	3	4	
-----					
High pulse current					
- set value	56.00	53.80	57.10	54.90	A
- deviation	-0.00	-0.01	0.01	-0.01	A
Low pulse current					
- set value	25.20	24.20	25.70	24.70	A
- deviation	-0.01	0.01	0.00	0.01	A
High pulse speed					
- set value	95.00	95.00	95.00	95.00	mm/min
- deviation	0.01	0.01	-0.00	-0.02	mm/min
Low pulse speed					
- set value	95.00	95.00	95.00	95.00	mm/min
- deviation	-0.01	0.01	0.00	0.02	mm/min
arc voltage					
- mean	10.19	9.72	9.97	9.81	V

Alarm:

Abort:

Each weld performed by the system can have a Data Log File stored automatically by the Orbimat C Power Supply.

Each Data Log File stores the information shown above, detailing exact deviation from the programmed parameters.

These Data Log Files are stored on a standard 'Smart Media' Card. These are the cards used in a lot of the modern day digital cameras. This makes the cards readily available and inexpensive.

By use of our ORBIPOINT software these data log files can be converted into Microsoft Word or Text Delimited files for presentation purposes. This conversion is complete with the click of an icon.

## DATA LOGGING HAS NEVER BEEN EASIER.

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