

Technical Newsletter from  
**ADOR WELDING LIMITED**  
Formerly Advani - Oerlikon Ltd.

## **SYNERGIC MIG-MAG WELDING - INCREASE PRODUCTIVITY & REDUCE LABOR COSTS**

### **Introduction:**

MIG/MAG welding outfits consist of three main units (i) Power source (ii) Wire feeder and (iii) Torch. A welder using conventional MIG/MAG welding system needs to be skilled in setting weld parameters for a particular job. In this welding system, he has to set many welding parameters like voltage, wire speed as per shielding gas, burn-back time and post-flow time before he starts welding.

A power source for GMAW process is constant voltage type; voltage is set and controlled by the power source, where as the welding current at any set voltage is dependant on the wire speed which in turn depends mainly on the following parameters

1. Wire diameter
2. The material of wire being used
3. The type of shielding gas used and
4. Welding position & joint

## **Product Update**

### **MIGINOX**



- MIGINOX 370S-6
- MIGINOX 90S-D2
- MIGINOX 308
- MIGINOX 308L
- MIGINOX 309
- MIGINOX 309L
- MIGINOX 310
- MIGINOX 316
- MIGINOX 316L
- MIGINOX 410
- MIGINOX 430

### **AUTOMIG FLUX-CORED WIRES**

From all these variables, one can understand that it requires a lot of skill to set the proper welding speed for any set voltage.

### **What is a synergic MIG-MAG system?**

A synergy exists when different parameters cooperate advantageously for achieving a desired final output; it is similar to teamwork that produces an overall better result than all people working independently.

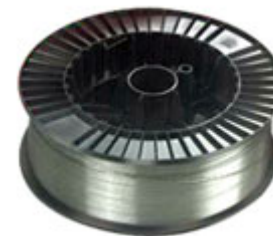
Use of advanced controllers which use micro-controllers has made it possible to set the wire speed and other parameters like burn back time, post flow time etc. with a single point control. The MIG/MAG welding system in which welding parameters are set using such a controller is called Synergic MIG-MAG system. All the welding data with respect to voltage and variables like wire speed, burn-back time, post-flow time etc. are stored in the controller's memory. Through the controllers one has to enter parameters for –

1. Wire diameters
2. Wire material
3. Shielding gas

Once completed set the voltage required (required for penetration & melting of weld metal) and start welding. During welding a welder needs to adjust only voltage; the wire speed and other parameters get adjusted automatically. If fine tuning of wire speed is required during welding, then it is also possible to adjust the wire speed independently.

In advanced synergic MIG/MAG systems, even voltage does not require to be set; in this case user has to enter few more known parameters like thickness of welding plates, type of joint and position of welding, etc.

### **Advantages of Synergic controlled MIG-MAG systems:**



- AUTOMIG FC 70-T2
- AUTOMIG FC 71T-1
- AUTOMIG FC 71T-1 (MOD)
- AUTOMIG FC 71T-5
- AUTOMIG FC 71T5-A1
- AUTOMIG FC 80T1-G
- AUTOMIG FC 80T5-G
- AUTOMIG FC 81T1-B2
- AUTOMIG FC 90T5-K2
- AUTOMIG FC 91T1-B3
- AUTOMIG FC 110T5-K4
- AUTOMIG FC 510
- AUTOMIG FC 520
- AUTOMIG FC 560
- AUTOMIG FC 580

**Visit AWL Stall No. E-02 at  
ESSEN WELDING INDIA 2010  
at Bombay Exhibition Centre,  
Goregaon (E), Mumbai  
during 10th to 12th February,  
2010.**

**ADOR Institute of  
Welding Technology**



**Course for Quality Assurance  
& Control of Welding (QA-1)  
19th-22nd April 2010**

**Refresher Course in  
Welding Technology (SC-1)**

1. Any welder can set and store the welding parameters, resulting in saving in labor costs. (Welding parameter through synergic control can be set by remote control also)
2. One touch control; set voltage and start welding
3. In these controllers, it is possible to store the weld parameters required for any particular job; settings can be re-called for repetitive operation
4. It is also possible to lock the set parameters, so that unauthorized person can not disturb these parameters (password protected)
5. Welding is spatter free; this is particularly useful while welding alloy steels and non ferrous steels
6. Arc length is steady and consistent because of the advanced controller
7. Down slope at end of welding avoids crater formation
8. Digital panel enables accurate setting and monitoring of parameters
9. Suitable for connection to robots and other automation systems

**Conclusion:**

With the advantages of this new advanced welding system, the productivity and quality is improved in following ways:

1. Labor time is reduced in setting the weld parameters
2. Consistency in operation for set parameters in repetitive work
3. Lesser dependency on welder skill to set the parameters

**Ador Welding Ltd. range of Synergic MIG/ MAG welding machines**

AWL has the following MIG/MAG machines with Synergic controllers with program storage and parameter locking facility.

(A) Diode based Synergic MIG/MAG machines

10th-15th May 2010

Course for  
Welding Procedures &  
Qualifications (QA-2)  
17th-19th May 2010

Certification Course for  
Welding Inspector (QC-1)  
8th-13th March 2010

Hands on training for  
Welders / Operators

1. AUTOMIG 250
2. AUTOMIG 250 CD
3. AUTOMIG 400

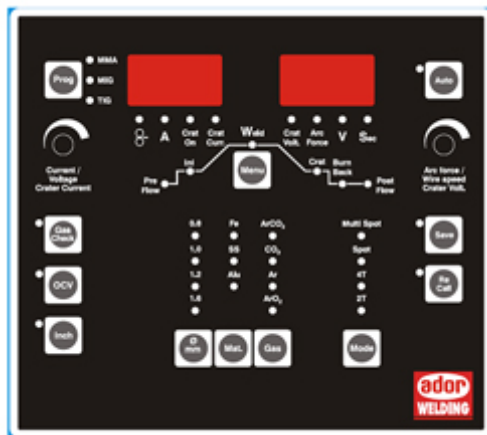


(B) Inverter based Synergic MIG/MAG Machines

1. CHAMP MULTI 400



## 2. Digital Panel for CHAMPMULTI 400



To learn more about Synergic MIG / MAG machines, kindly contact us at the earliest.



Project Engineering Solutions



ADOR Institute of Welding Technology



Welding & Cutting Solutions



Centre for Engineering Excellence



Energy Solutions



WELDERS TO THE NATION  
**ADOR WELDING LIMITED**  
(Formerly Known as Advani - Oerlikon Ltd.)



[www.adorwelding.com](http://www.adorwelding.com)

[cmo@adorians.com](mailto:cmo@adorians.com)

Contact us