

### ADOR WELDING LIMITED

58<sup>th</sup> Annual Report **2010-11** 



# INDIA'S WELDING Power House



## ADOR WELDING LIMITED

#### **REGD. & HEAD OFFICE**

809, Raheja Centre, Free press Journal Marg, GPO Box No. 1546, Nariman Point, Mumbai - 400 021. Maharashtra, INDIA. Tel. : (022) 2284 2525, (3 Lines) Fax: (022) 2287 3083 E-mail: investorservices@adorians.com prajakta@adorians.com

#### CORPORATE MARKETING OFFICE

5/A, CORPORA L.B.S. Marg, Bhandup (West), Mumbai - 400 078. Maharashtra, INDIA. Tel.: (022) 2596 2564, 6623 9300 Fax: (022) 2596 6562/ 6062 E-mail: cmo@adorians.com

#### INTERNATIONAL BUSINESS DIVISION

5/A, CORPORA L.B.S. Marg, Bhandup (West), Mumbai - 400 078. Maharashtra, INDIA. Tel.: (022) 2596 2564, 6623 9300 Fax: (022) 2596 6562 / 6062 E-mail: cmo@adorians.com





## Contents

Board of Directors, Executive Management Team, Bankers, Solicitors and RTA	
Distribution of Revenue	
Innovations / New Developments	
Directors' Report and its Annexures	
Auditor's Report and its Annexures	
Balance Sheet, Profit and Loss Account	
Cash Flow Statement	
Schedules, Notes to Accounts and Annexure I	
Balance Sheet Abstract and Company's General Business Profile	

1





## BOARD OF DIRECTORS, EXECUTIVE MANAGEMENT TEAM, BANKERS, SOLICITORS AND RTA

#### **Board of Directors**

Ms. A. B. Advani Executive Chairman

Mr. Raman Kumar Managing Director

Mrs. N. Malkani Nagpal **Director** 

Mr. R. A. Mirchandani Director

Mr. A. T. Malkani Director

Mr. D. A. Lalvani Director

Mr. Anil Harish Director

Mr. M. K. Maheshwari Director

Mr. P. K. Gupta Director

Mr. R. N. Sapru Director

Mr. K. Digvijay Singh **Director** 

Mr. Vippen Sareen\* **Director** (\* w.e.f. 23<sup>rd</sup> October, 2010)

#### Executive Management Team

Mr. S. M. Bhat Mr. K. N. Subramanian Mr. R. Ravi Mr. V. M. Bhide Mr. H. K. Bhatia Mr. J. Rajagopalan Mr. S. S. Bhoi Mr. A. R. Vilekar Mr. M.G. Gadre Mr. S. Ajay Kumar Mr. H. Venkataraman Mr. H. A. Mazumdar

Company Secretary Mr. V. M. Bhide

#### **Registered & Head Office**

809, Raheja Centre, Free Press Journal Marg, Nariman Point, Mumbai 400 021, Maharashtra, India Tel: 2284 2525, 2287 2548 Fax: 2287 3083 Web: www.adorwelding.com

#### Bankers

HDFC Bank Limited Bank of Baroda

#### **Auditors**

Dalal & Shah, Chartered Accountants Mumbai

#### **Solicitors**

Nanu Hormasjee & Co., Mumbai

#### Registrar & Share Transfer Agent (RTA)

M/s. Sharex Dynamic (I) Pvt. Ltd. Unit No. 1, Luthra Industrial Premises, Andheri Kurla Road, Safed Pool, Andheri (East), Mumbai – 400 072 Tel: 2851 5606, 44, 28516338, 28528087 Fax: 2851 2885 Web: www.sharexindia.com





## DISTRIBUTION OF REVENUE



(Figures in bracket indicate Previous Year)





## WELDING CONSUMABLES (NEW DEVELOPMENTS)

#### A. SMAW Electrodes:

1. Product Name: Tenalloy-Ni (SPL Batch)

AWS Classification: AWS A/SFA 5.5 E7018-G

An electrode for depositing Ni containing low alloy steel weld metal for excellent impact strengths at minus 46C as demanded by offshore fabrication industries. Weld metal meets special toughness tests like CTOD at minus 10C which ensures good performance of the weld metal under actual service conditions. Developed as a substitute for imported products.

#### 2. Product Name: Tenalloy-60NX (SPL Batch)

AWS Classification: AWS A/SFA 5.5 E8018-G

An electrode for depositing Mn-Ni containing weld metal for meeting sub-zero temperature toughness down to minus 60C. Ideally finds applications in off shore structures. Weld metal meets stringent requirements of toughness like CTOD tests. Developed as a substitute for imported products.

#### 3. Product Name: Nicalloy-Mo4 (NS)

AWS Classification: AWS A/SFA 5.11 ENiCrMo4

Non-synthetic electrode producing Ni alloy weld metal, having, excellent resistance to chloride containing media and wet chlorine gas. Ideal not only for welding but also for surfacing on carbon and low alloy steels used in oil & gas, chemical industries.

#### 4. Product Name: Tenalloy-65 SPL

AWS Classification: AWS A/SFA 5.5 E9018G

An electrode producing high strength low alloy steel weld metal for welding nuclear power plant steam generators. Weld metal has good strength, toughness even after repeated heat treatment cycles. Will be offered as a substitute for imported products to nuclear power equipment manufacturers.

#### 5. Product Name: Cromoten-9M-15

AWS Classification: AWS A/SFA 5.5 E9015-B9

An electrode developed as a substitute for imported consumables used in welding materials like P91 used in super critical thermal power plants. This product will be used extensively in the future thermal power plants.

#### 6. Product Name: Betanox-2594

AWS Classification: AWS A/SFA 5.4 E2594-15

An electrode for welding super duplex stainless steels used in oil & gas, chemical industries for resisting chloride induced stress corrosion cracking and pitting attack in chloride environment, e.g. sea water. This product finds extensive usage in these industries.

#### 7. Product Name: Cromoten-CH

AWS Classification: AWS A/SFA 5.5 E9018-B3 (Nearest)

An electrode for welding castings used in high temperature applications in power plants. Casting manufacturers of power plant will be using this product.

#### 8. Product Name: Cromoten-T24

AWS Classification: AWS A/SFA 5.5 E9015G

An electrode developed as an import substitute for welding T24 steels which will be used in super and ultra super critical power plants.

#### 9. Product Name: Nicalloy-Mo5

AWS Classification: AWS A/SFA 5.11 ENiCrMo5

An electrode for depositing Ni alloy weld metal for chemical, oil & gas industries and also for hardfacing applications.

#### 10. Product Name: Superinox-1B (H Batch)

AWS Classification: AWS/SFA 5.4 E347-16

A higher carbon version of 347 type stainless steel, for chemical, fertilizer, power, refinery industries, to achieve high temperature properties.

#### B. SAW Fluxes:

#### 1. Product Name: Automelt A10 Plus

AWS Classification: AWS A/SFA 5.17 F6A2-EL8, F7AZ-EM12K

Automelt A10 Plus is a special agglomerated Aluminate-basic type flux, best suited for welding general structural steels. The flux can be used with single wire and multi-wire welding.

#### 2. Product Name: Automelt B41 Plus

AWS Classification: AWS A/SFA 5.17 F7A8/F6P8-EH10K

Automelt B41 Plus is a special agglomerated fluoride-basic type flux. It is suitable for welding of High Tensile Fine grained structural steels, General structural steels, Heat Resistant Steels.

#### C. FCAW Wires:

#### Product Name: Automig FC 180 R

AWS Classification: AWS A/SFA 5.29 E80T1-GC

It is a rutile flux cored wire for MAG welding, giving weld metal suitable for welding weathering steels. This product finds extensive use in railways.



#### ADOR WELDING LIMITED 58<sup>th</sup> Annual Report 2010-11



## WELDING EQUIPMENT GROUP (NEW DEVELOPMENTS)

#### 1) CHAMP T400:



It is a light weight and compact IGBT inverter based MMA Welding Rectifier, suitable for heavy duty shop floor and project site welding applications. Apart from the energy efficient feature, following are the salient features of this rectifier:

- Three phase inverter based, high efficiency and high power factor DC Welder
- Enhanced Reliability due to SMD technology
- Smooth and stable arc with minimum spatter.
- High frequency IGBT based Rectifier
- Built in HOT START and ANTISTICK functions.
- Arc force adjustment on panel.
- TIG Welding possible with External HF Unit
- Light weight, compact and portable for easy handling

It has following protections with auto reset capability:

- Over Temperature
- Protection against Single phasing
- Input Supply Voltage protections for over and under voltage

2) CHAMP 135 / CHAMP 165 / CHAMP 203:



These are world class, high efficiency and high power factor, inverter based MMA DC welders, which operate on wide single phase input supply voltage. These are light weight, compact and portable welders, suitable for light duty general purpose production and maintenance welding applications.

These power sources have following salient features:

- High operating frequency
- High efficiency (>85%) and higher power factor
- Smooth and stable arc with minimum spatter
- TIG welding operation possible with lift arc or scratch start technique without HF unit.

#### 3) MAESTRO 1000(I):



It is a world class high efficiency and high power factor IGBT inverter based Submerged Arc Welding (SAW) outfit suitable for heavy structural welding applications which require higher metal deposition rate. It is suitable for both SAW and Gouging application.





Apart from the energy efficient feature, it has following salient features:

- Multi turn potentiometer provides precise adjustment and ensures accurate parameter settings.
- User friendly interface including keys, LEDs and indicator lamps for easy operation of the equipment.
- Micro controller based Controllers ensure real time response for every parameter set.
- The wire diameter selection system is based on fuzzy control, which is suitable for the wire range of  $\Phi$ 2.0 mm  $\Phi$ 5.0 mm.
- Protection against supply voltage variation and over heating.

#### 4) MECHANISATION ATTACHMENT FOR GMAW/FCAW/ SAW:

#### MODEL - COMBO MS 600:



It is the unique Mechanization attachment mounted on travel carriage for GMAW / FCAW / SAW welding using standard CO2 Welding machine, which is very useful and handy to complete GMAW / FCAW / SAW jobs without really purchasing the complete SAW welding outfit consisting of power source and welding head.

In this arrangement, standard CO2 welding torch can be mounted on the travel carriage for carrying out mechanized welding either with GMAW or FCAW and SAW welding can be done by connecting flux hopper, flux hose & flux adaptor provided with the attachment.

User has the option to carry out normal semiautomatic CO2 / MIG welding torch or mechanized GMAW / FCAW / SAW welding.

This mechanization arrangement will enable the fabricator to carry out manual, semiautomatic as well as mechanized GMAW / FCAW / SAW welding of pipes / plates from 7 mm to 20 mm thickness.

#### 5) MIG / MAG WELDING TORCHES:

#### a) PUSH PULL TORCH (MODEL: ADOR-PP-350):

This welding torch is suitable for long reach application upto 10 meter distance. This torch is suitable for Aluminium, Stainless steel and M.S. wires having various diameter of 0.8, 1.0 and 1.2 mm.



It has swan neck which can be rotated in 360 degree for ease of welder to weld the job in any position.

#### b) ADOR TW 150 (E/S):

This is light duty, light weight MIG torch of current rating upto 150A suitable for maintenance, fabrication jobs. This Torch is suitable for 0.8 mm and 1.0 mm wire diameters. This torch is available in standard length of 3 meters.

#### c) ADOR TW 500 (E/S):

This is heavy duty gas cooled MIG torch of current rating upto 500A suitable for heavy structural fabrication and for semi automatic

welding applications. This Torch is suitable for 0.8 mm, 1.0 mm, 1.2 mm and 1.6 mm wire diameters. This torch is available in standard length of 3 meters.



d) ADOR TW 500 (WE / WS):

This is heavy duty water cooled MIG torch of current rating upto 500A suitable for heavy structural fabrication and



for continuous welding applications. This Torch is suitable for 0.8 mm, 1.0 mm, 1.2 mm and 1.6 mm wire diameters. This torch is available in standard length of 3 meters.



#### ADOR WELDING LIMITED 58<sup>th</sup> Annual Report 2010-11

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## PROJECT ENGINEERING BUSINESS (NEW DEVELOPMENTS)

#### 1. Flare Systems:

 a) Flare is an equipment used to safely burn industrial waste gases such as Hydrocarbons, BF gas etc., in an environment friendly manner. The following flare system is self supported, 45mtr height, 44" stainless steel Tip and FFG panel for auto start - up.



 b) The following flare system has Derrick support, 45mtr height, 80" and 48"stainless steel Tip and FFG panel for auto start - up and PLC Based Controller.



#### 2. Molecular Seal:

Molecular seal is safety seal mounted directly under flare tip and it acts like a flame non return valve, thus no gas – air mixture is formed in the flare stack, reducing the risk of explosion.



#### 3. <u>Waste Heat Recovery Unit (WHRU):</u>

Two large Waste Heat Recovery Units (Heat Exchangers) made out of critical material P22 were supplied from Chinchwad Plant ASME approved PEB Shop in September 2010.







## WELDING AUTOMATION PRODUCTS & SYSTEMS (WAPS) (NEW DEVELOPMENTS)

#### 1) CIR SEAM & L-SEAM WELDING MACHINE:-

a) Automatic welding of the long seam joint, on a mandrel with copper backing.



b) Automatic welding of both dished ends using two torches by the press of single button. Can also do 2 runs of welding Non-stop, with manual removal of the slag.



Job range is 50 liters to 500 liters tanks of following sizes:-

Length: min 625 mm to max 1860 mm

Diameter: min 288 mm to 630 mm

Thickness: min 4 mm to max 6 mm

Welding process: submerged arc welding with ADOR Consumables

Machine : MAESTRO 800-02 T (F)

These type of machines are suitable for mass production of compressed air vessels, gas cylinders, storage cylinders etc. The welding process can be MIG / SAW as desired by the customer. 2) SQUARE AXLE WELDING MACHINE:-



This is a 5 servo controller mechanism suitable for square & round axle of following specifications:

Length: min 2112 mm to max 2362 mm

Square axle: 150 mm across flats & round axle: diameter: 127 mm

Welding process: MIG / MAG welding

Servomotor with drives: 5 nos

This is a fully programmable automated system. The challenge was to do the welding of square axle by rotating on its center axis with variable speed at different sections. The vertical slide moves up & down to accommodate the shape of square with reference to the centre. The encoder on the head stock, measures one full revolution & the required overlap set in the program and stop welding & the rotation.

In this case for root run the torch is in inclined position around 10 to 15 deg with respect to vertical. After root run including the overlap, before starting second run, the torch automatically comes to vertical position with the help of pneumatic cylinder. At the same time the vertical slides go up by a preset distance for the second run of welding. The horizontal slide "X" direction starts weaving as per the set parameters. The linear welding speed is reduced as per the program for the second run. After second run & the required overlap of welding are completed, the welding & rotation is stopped. The welding torches retract to their home position & job gets de-clamped automatically.

In case of power failure or due to any other interruption, the machine is stopped, once power is resumed it is possible to start the welding from the same point onwards & complete the cycle by pressing cycle start push button.

