

**Special Interest
Articles:**

- Ariane rocket nozzle
MetaTIG system
- DLS300 Scanner, new
and intelligent.

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Meta contributes to wind tower production



Due to the huge demand globally for alternative energy sources, the manufacturers of wind towers cannot produce enough to satisfy the need. Not only is the manufacturing process time consuming, the requirements for high quality welds are stringent to meet with the safety criteria.

Most of the structural welds are multipass, using high welding currents and relatively slow welding speeds.

Significant increase of orders from the pipe industry

2008 has been extremely busy for Meta, with the receipt of an extraordinary number of order intakes for the famous VistaWeld, the system of choice for pipe mill applications.

Meta's experienced staff and specially designed sensor systems allow a swift integration of the VistaWeld into a

The traditional method involves an operator positioning the welding torch via joystick monitoring the process via a remote camera. This is not only tiring, but the operators often need to perform other tasks leaving the welding unattended for short periods. This, of course, has a significant impact on the final weld integrity leading to extensive rework.

For more than 5 years Meta has successfully installed laser sensor guided automatic multipass welding applications at the Dutch company SIF. More recently, coinciding with the release of Meta's new scanner, the DLS300, a large number of Meta Systems were installed at the US company Tower Tech Inc.

Time and manpower savings allow the tower manufacturer to produce faster and more efficiently with fewer weld defects.

Quality issues are considerably reduced and the wind tower manufacturer is able to increase his cycle time significantly.

Dr. Kölbl, Meta's director of sales stated: "Meta is proud to contribute significantly to helping with the climate change issue"

given pipe mill.

The order volume resulted in Meta having yet again to expand its production facility and labour force.

The pipe industry is expected to expand for at least the next five years, whereby oil, gas and water pipes are affected in almost equal measure.

Ariane rocket nozzle welding system

“The sensor head survived nearly 20 years, well above its projected lifetime..”



At the EADS facility in München Ottobrunn rocket nozzles are being produced at a rate of about 10 per year. The heart of the welding cell is a MetaTIG sensor system installed by Dr. Kölbl Technologie Beratungs GmbH and Oerlikon GmbH between 1988 and 1989. The system was originally purchased to weld the last remaining nozzles for the Ariane 4 rocket,

which were about 15, which would have been the break even point. In the end, more than 150 nozzles have been produced by the system, with no repair needed except for replacing the Adept robot drive cards (after a lightning strike) and replacing the sensor head and power supply early this year. The sensor head survived nearly 20 years, well above its projected lifetime.

EADS are very happy with the Meta sensor system and with the years of excellent service it delivered

Meta-Scout Systems are going strong

When it comes to really difficult applications, where other systems find it difficult to see or track the seam, the Meta-Scout sensor comes into its own. The use of five laser lines allows the system to obtain measurements in 6 degrees of freedom (X, Y, Z, A, B, C) and with the patented grey scale illumination method it is able to detect zero gap, a problem for most structured light sensors.

Since taking over the product in 2005 Meta has received a steady stream of orders from customers specifying the Meta-Scout system.

Immediately after the Scout acquisition Meta embarked on a major redesign of the Scout sensor head allowing it to be used at Daimler for a very hostile laser hybrid welding application,

Recent Meta–Scout applications include installations at several Daimler plants, a

high precision application at Areva and welding an Airbus part using a Cloos robot.



DLS300 - Meta's new intelligent scanner

Although a structured light sensor can cover a large number of applications, for some tasks such as deep narrow groove welding a “flying spot laser sensor” has the advantage of being less susceptible to reflections and allows the lateral and vertical measurement being de-coupled: the lateral measurement depends solely on the scan angle, i.e. the distance the laser spot travels from one extreme position to the other.

Multipass welding and deep narrow groove applications are now possible since multiple reflections are now no longer seen as the camera only looks at the position of the laser spot and rarely catches a stray reflection.

The DLS300 sensor will soon be available as part of the standard LaserProbe and LaserPilot systems, but is already available in a VistaWeld configuration.

A very popular and reasonably priced

configuration is the DLS300 MDK where the customer can fully integrate the system into the existing system using just an Ethernet connection and some basic software supplied by Meta. The DLS300 MDK comprises of a DLS300 Scanner, a break out board a set of cables and a power supply.

Apart from the wind tower welding, recent projects include flame cutting/bevelling using an industrial robot.

The DLS300 comes equipped with microprocessors, which pre-analyse the signals and issues a series of position data.

A specially designed quick release mount allows rapid sensor change. Air and optional water-cooling are also available to ensure optimal operating conditions.



The DLS300 scanner in action

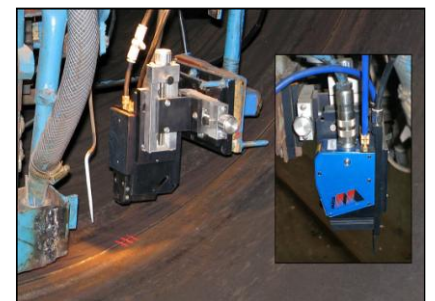
Meta releases New Miniature Triple Stripe Laser Sensor

Meta Vision Systems Ltd is pleased to announce that it has released its latest miniaturised vision sensor for automatic laser seam tracking. The new sensor, model MTH20D, is aimed particularly at internal welding applications in the pipe mill sector.

The MTH20D continues the series of high-resolution triple stripe laser sensors that Meta has used with notable success in various pipe mill applications. The new sensor measures only 38 x 73 x 69 mm and is well suited to applications such as ID welding on one and two step spiral pipe mills, ID welding on two step spiral offline welders and ID welding on longitudinal pipe mills.

Jonathan Moore, Meta's Technical Director, commented, “The basis for the MTH20D was a redesign of the sensor electronics using the latest surface mount technology to get everything into a much smaller volume than before while at the same time reducing power consumption. We also improved various aspects of the sensor's mechanical and optical design which are critical to successful long term operation in the tough environment of a typical pipe mill ID welder”.

According to Dr. Bob Beattie, Meta's MD, “The MTH20D is the latest result from our ongoing program of R&D focussed on improving quality and efficiency in



Meta's new MTH20D triple stripe sensor

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pipe mills worldwide. We work both on specific products, such as the MTH20D, and on understanding pipe mill applications in real depth so that we can

Exhibitions galore

2008 was the year of exhibitions for Meta starting with the Tube India show and finishing with the Sojom, India, exhibition.

From India the journey went to Germany for the all important Tube Düsseldorf, to was followed by Tube China in Shanghai, the AWS/Fabtech in Las Vegas, The Canadian Wind Energy Exhibition in Vancouver.

Although it is said that the internet and web sites will be replacing conventional trade shows, the need to physically examine the products and the one-to-one contact with qualified engineers will continue to be an essential part of the selling process. Dr. Wolfgang Kölbl, Meta's Sales Director: "It is important that our sales team is technically highly

Comments on 2008

Although there is just over a month to go to the year end and a great deal can still happen before the 31st December I feel that a few words commenting on this rather turbulent year will not come amiss.

What a year 2008 has been so far. Meta has achieved record sales and made a record profit after nearly 24 years operation. This was due to the incredible support we have received from our customers and due to the immense hard work and dedication of our Meta staff.

In a twist of irony, fate presented all of us with the present financial crises, which plunged almost every nation on this earth into turmoil and uncertainty. Many are reluctant to invest, be it in new equipment or be it financially in stocks and shares. Spending is much reduced and many economies are grinding to a halt. Every company is re-appraising its position looking into possible savings in

continue to offer new innovative solutions that address real factory issues."

qualified and that our advisors fully understand the difficulties our customers encounter. I am more of a problem solver, working with my customer to help to improve his manufacturing process than a sales person"



Meta's stand at Tube Düsseldorf 2008

order to survive this Armageddon.

Facing this global crisis we still look ahead with cautious confidence. We are proud of our adaptability, which enables us to move with the changing demands of our customers, most recently through our focus on applications within the sustainable energy sector. Not only do we feel that we are contributing to the reduction in CO2 output but we are able to support our partners and customers by contributing to a substantial reduction in operation costs.

A typical Meta system can save costs and provide a R.O.I. after approximately 6 months, I had one case in Germany recently where the equipment paid for itself in two weeks!

We wish you all a successful 2009!

W.R.Kölbl

Sales Director