



## AT LAST! PRODUCTION LINE COMES TO STRUCTURAL STEEL BEAM ASSEMBLY



Introducing to Australia a **fully automatic beam assembly production** line! This will revolutionize fabrication speed / costs and accuracy. For example this full robotic system can process and weld 15,000 – 45,000 ton of material per year with brilliant accuracy and even cleat attachment and alignment with one man per shift. This will bring the structural steel production back home to Australia by reducing the bottle neck in fabrication of structural steel workshops!

**Brochures and video are available on request**

### Fast

Time saving up to approximately 85% *Saves laborious handling and manipulation of the steel members*

### Cost effective

Reduced man hours, lower energy and warehousing costs. *Saves skilled shop personnel that are expensive and hard to recruit.*

### Error Free

The production data are imported directly from any standard CAD system, transferred by the proprietary software solutions 'pro fit', and then executed by the SBA. *Saves engineering and detail drawings that are often misinterpreted, necessitating subsequent corrective work.*

### Flexible

Huge production diversity, for all common applications, all the way down to lot for lot production of single item lots. *Saves where ever humans work, mistakes are bound to occur.*

### The principle

Computer controlled robot arms execute the CAD engineering drawings 1:1. Without errors, and at record speed. The components are delivered on a conveyor system. A laser scanner accurately recognizes which are the right components. Robots pick, fit and weld the components accurately to the member, rapidly and with error.

### **Laser scanner**

Detects the components in any position and compares them with the CAD data. Data transfer to the robots is effected in real-time (ie with no testing time)

### **Positioning Robot**

This picks up the required components with precises fitting accuracy and positions them at their exact fitting location. Time consuming weld handling and calibration work is a thing of the past.

### **Welding robot**

Operates with constantly high welding quality and at constantly high speed. This is ensured by the automatic welding robot service station

### **Modular design compact**

Either one or two lines can be served by one position robot, as require by the client and its production needs.

### **Conveyor system**

Consisting of member feed in system, feed tables for the add on parts and unloading device.

The intelligent design layout of the conveyor system brings benefits such as

- High plant productivity, as the tables can be loaded at one end at the same time as the robot unloads them at the other end
- Accurate positioning of the add on parts at the measured position the line, enabling them to be passed on to the positioning robot
- Collision free unloading of the finished members despite the fact that add on parts have been positioned and welded on all sides

Potential throughput savings of up to 85%. Produce in less time and at lower cost. Faster than any human worker every could: the SBA from Zeman fabricates steel elements in record time. And in outstanding quality. The robot system will execute your projects much faster and at far lower cost.

### **Covers an amazingly wide product range**

All common beam formats can be handled

200 – 1560mm height

3000 – 16,000mm lengths

- Rolled section
- Welded plate girders
- Tapered beams
- Special beams

### **ZERO down time**

- The robots work on one member at the same time.
- No need for manual measuring and marking out. The machines knows every position

### **No crane handling**

- The member is automatically fed into the machine, clamped in place, and moved out again once it is finished.
- One robot accurately positions the add on parts at the planned fitting location, and the other robot tack weld and weld on the parts in the top quality

### **Low labour costs**

- Thanks to its high degree of automation, the machine needs very little manpower. Zeman's many year's experience in structural steel fabrication is at users fingertips in the form of a databank.
- Personal do not need any special structural steel fabrication know how.

### **Rapid completion**

- The SBA from ZEMAN works in record time
- Savings of up to approximately 85% of previous production times are typical. Considerable overall cost reductions are the result. (for every 20 welders this machine replaces perhaps this is a saving of \$3m / year?)

### **Geared for flexibility**

- ZEMAN's "pro FIT" software solution broadens the usual scope of a robotic line for standardized mass production to include one-off L4L fabrication, even of single – item lots
- The SBA from ZEMAN gives you constant operation readiness, allowing you to respond quickly and flexibly to the needs of your market

### **Error free production**

- The production data are imported directly from the CAD program. This means that there is no risk of production being disrupted by misinterpretation, by components being accidentally confused, or by any other careless mistake. Whatever the CAD drawings specify, the ZEMAN control software, "pro FIT" will always implement it 100%

### **Continuous checking**

- The engineering and detailing data and production phases are continually checked. All the time, in fact, from when the components are fed in until they emerge as the finished product.

### **Reproducible perfection**

- Thanks to the field parameters, the fabrication process can be replicated again and again at the highest level. This means, efficient, cost effective and time saving fabrication of both small and large series, with widely differing components.

### **Precision in every phase**

- Now, dimensionally accurate, positioning and correctly oriented fit up of the add on parts is something you can take for granted. Even when components are arranged at angles, and with no need for pre assembly. The SBA completely eliminates the need for remedial work due to manual assembly errors and for corrective welding.

### **Flawless welding quality**

- Not even the best trained specialist can ever weld as precisely as a machine. What is more, the automatic preheating facility improves the welding quality and guards against component distortion. ON high grade structural steels, the uniform thermal input ensures that the seam is flawlessly welded.

### **Fully automated, down to the last detail**

- The plasma cutting option allows fully automated weld preparation of the ends of the components. Any openings needed in the web, or cut outs on the members, are also fabricated automatically.
- Automatic tool change
- Torch cleaning
- Measuring(calibration) station
- Automatic turn over until for add on parts
- Facility for adding angle brackets, tappets and frame corners
- "pro FIT" teachable, remote maintainable control software

- Complex databank for process parameters
- Work can resume unhindered after any power outage

I look forward to your comments on the above.

Kind Regards,

A handwritten signature in blue ink that reads "Dolling". The signature is written in a cursive style with a large initial 'D' and a long, sweeping tail.

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