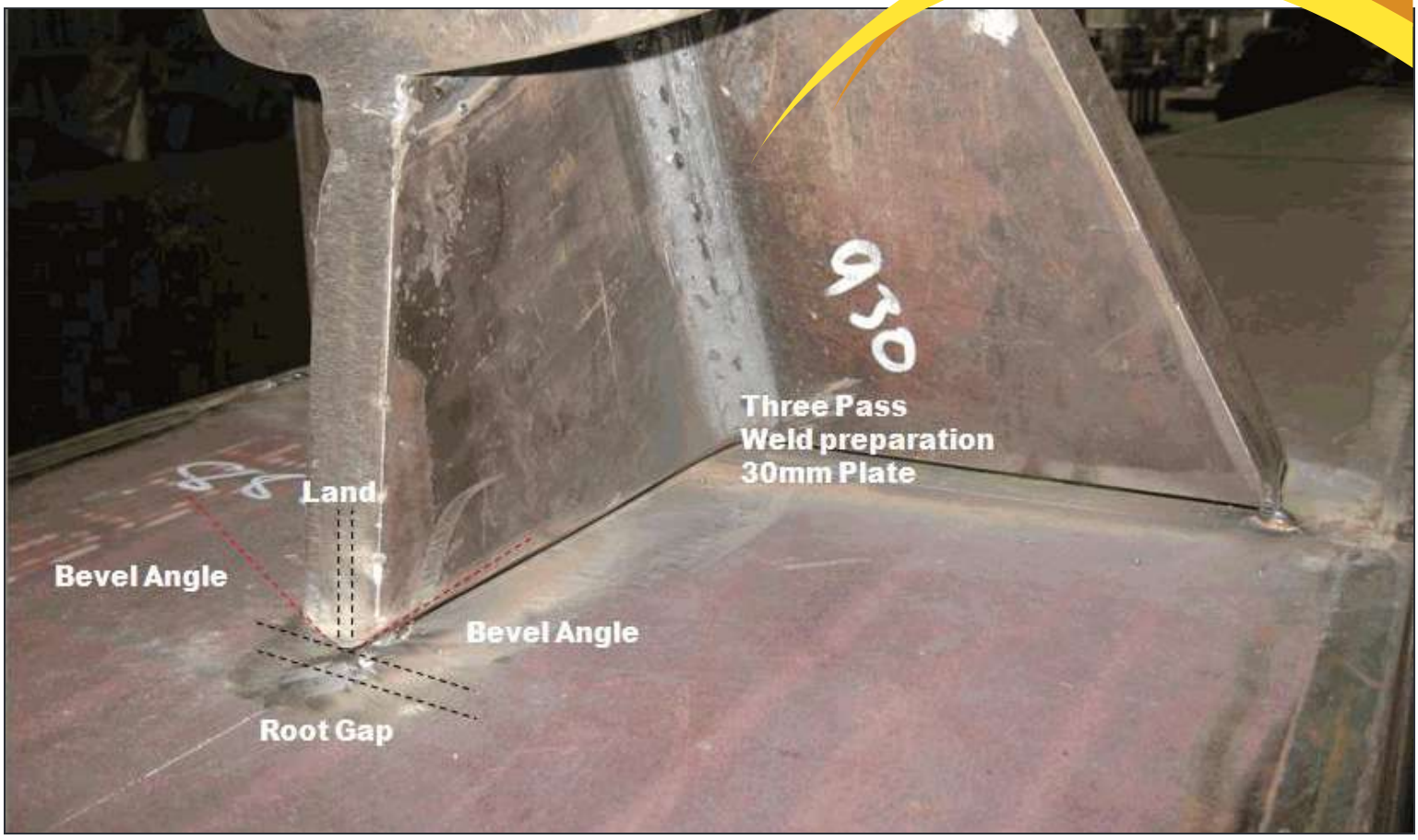
3D – plasma BEVEL SYSTEM



FastCAM – Linatrol – m3Plasma

Finally – An Easy and Affordable way to upgrade your 2D cutting machine to 3D!

3D BEVEL SYSTEM REQUIRES THESE COMPATIBLE COMPONENTS:

- FASTCAM™ **3D** BEVEL HEAD – DIGITAL CAT5 CABLE AND POWER, HIGHLY MODULAR, MULTI AXIS.
- INTEGRATED EASY FASTCAM® PROGRAMMING SOFTWARE FOR BOTH **2D & 3D NESTING** (PATENT PENDING), PREDICTIVE **LASER HEIGHT CONTROL** (PATENT PENDING) AND EDGESMART™ PIERCING (PATENTED) TECHNOLOGIES.
- LINATROL™ WINDOWS BASED TOUCH SCREEN INFINITY **3D** CONTROLLER

3D BEVEL SYSTEM AUTOMATES WELD PREPARATION

Oscar Kjellberg was a Swedish inventor and industrialist. Founder of ESAB, in 1904, he invented the coated electrode used in manual metal arc welding. In the last 100 years, people have dreamed of a way to cut steel and perform the weld preparation at the same time. Plasma is the preferred tool and will cut many materials including the latest Q&T steels.

Steel has to be cut and then weld prepared, generally by hand. Grinding is a costly, dirty, difficult and time consuming operation, especially difficult for Q&T and Stainless steels.

After 100 years, one step cutting and weld preparation has arrived and it is very affordable and fully digital!

The 3D Plasma Bevel System is perfect for new machines or to cheaply and quickly upgrade existing machines with entirely new digital electronics.

FASTCAM™ 3D DIGITAL BEVEL HEAD

A revolutionary digital bevel head, designed specifically for 3D plasma shape cutting, which combines simplicity, price and performance.

- Pantograph style for zero rotation and zero cable twist
- Maximum tilt 58 degrees from vertical for true corners without loops
- All Digital electronics
- 3 Axes. A,C, Z simultaneous for true 5 axis
- Full integrated Z height axis (no need for THC)
- Predictive laser height control with digital laser (Class II)
- Second laser pointer to display focal point (Class II)
- Spring loaded multi direction breakaway torch holder for m3Plasma PT36 torch
- Spring loaded collision ring around pantograph and torch
- Integrated digital laser device with accuracy to 0.03mm
- 3 digital motors
- Absolute encoders for power off recovery without homing
- 180:1 gearing on all axes prevent collapse on power off without motor brakes
- Removable triple SDI digital amplifier module
- Removable digital converter module
- Removable digital laser module
- Simple removable rear mounting plate
- Single locking CAT5 digital cable
- RS232c cable for limit switches digital I/O
- RS232c cable for digital laser
- Standard industrial locking 240/110v power cable
- 6 Limit switches on 3 axes
- Closed strong metal box for minimal RF penetration with passive cooling
- Simple removable front cover for easy access
- Belt driven drives with external cam tension adjustment
- 280mm clearance integrated retraction
- Material 6061 T6 aluminum
- Finish clear hard anodized
- Weight <110lbs. (50kg) total

THE LINATROL™ 3D INFINITY∞ NC DIGITAL CONTROLLER :

- DIGITAL GAS CONTROL
- ABILITY TO HANDLE ADDITIONAL PLASMA AND OXY HEADS
- I/O FOR LIMIT SWITCHES ETC
- 19" COLOR TOUCH SCREEN
- OPERATOR CONSOLE WITH CONVENIENTMACHINE CONTROLS INCLUDING JOYSTICK AND SPEED ADJUSTMENT DIAL
- INTEGRATED & OFFLINE SOFTWARE

LINATROL™ INFINITY∞ 3D NC CONTROL

The Infinity∞ 3D digital system has 6 axes standard including dual Y gantry support. Triple Warp Drives reduce the cost and complexity of installation.

CAT5 cabling is also used for low cost and fast installation. The Infinity∞ 3D has discrete I/O of 48 inputs and 32 outputs. The system can also be delivered with the WESBUS I/O scheme – where 8 inputs and 16 Outputs reside on a bloack that is user defined and switches user applied Line Voltage,DC Voltage or Contact Closure to industrial relays in one module via a single cable. These can be easily expanded so the system can be customized to meet the requirements of any cutting machine. All I/O is user assignable for maximum flexibility.

The Digital system used is also compatible with Analog systems for retrofitting to existing analog machines. It is not compatible with other digital systems.

Based on an industrial PC, the Infinity∞ 3D has all the smart features expected of a traditional CNC including extensive FastCAM® software for

- Tool path graphics
- Easy touch screen operation
- Start point selection
- Cut & Power loss recovery
- DXF conversion using EdgeSmart™(Patented)
- Rectangular nesting
- Parametric programming
- Laser plate scanning
- Predictive laser height control (Pat.Pend)

PLUS ALL THE OFFLINE SOFTWARE

A complete FastCAM® Professional 3D programming system for offline use (Pat Pending)

- FastNEST® 3D True shape multi plate nesting for straight and weld prepared parts with precise bevel clearances on true boundaries, not fixed gap nesting.
- FastCAM® 3D Drawing system for plate bevelling including bevel editor system
- FastPLOT™ 3D True code verification

TOUGH & RELIABLE – WITH ONLINE INTERNET SUPPORT DIRECT TO THE CONTROL

The Infinity∞ 3D display and console are all made to stand up to the harshest industrial cutting environments with strong stainless enclosures that are built to last. The I/O modules are sealed to maximize reliability.

Linatrol provides fast and easy access to highly trained staff dedicated to cutting machine control systems. For convenience and speed, support can be managed remotely via the web.

PLUS DIGITAL SERVO DRIVES

The Infinity∞ 3D supports the Digital AC ***Warp Drive®*** for minimum wiring and rapid configuration with any gearing and kinematics.

FOR FURTHER SPECIFICATIONS CONTACT:

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THE m3Plasma™ Torch :

- FOR MARKING & CUTTING
- USED FOR ALL APPLICATIONS & MATERIALS
- IDEAL FOR HIGH PRECISION 3D CUTTING
- SIMPLE, HIGH POWER & MODULAR
- CLEAN CUTTING - VIRTUALLY NO DROSS

m3 Plasma™ Dry/Water Injection Torch

Add the **m3 Plasma™** with **PT-36** torch for a complete 2D/3D solution.

One platform, one torch, and one set of components to do marking and cutting in both dry plasma and water injection plasma cutting modes!

You can select any power source you need based on your cutting thickness requirements, with the same torch and set of components, as follows :

201 up to 30mm

360 up to 40mm

450 up to 50mm

601 up to 120mm SS and AL

720 Thick SS with Water Injection Plasma cutting completely under water

With the following advantages over older technologies :

1. Same torch and same wear parts for marking
2. A much simpler design, significantly increasing the system reliability
3. Production and service training is significantly simplified
4. The same PT-36 torch is used for all applications!
5. Wear and spare parts stock is significantly reduced
6. Documentation and paper work is significantly cut
7. Straight cutting for simple air plasma cutting is possible
8. Multi gas beveling and weld edge preparation with same torch and wear parts
9. m3 Plasma™ power supplies deliver exceptionally high cutting voltages demanded by the beveling.
10. m3 Plasma™ PT-36 torch with its pointed front end makes it ideal for beveling
11. The same system for every project!
12. Ideal for Robotic Cutting Applications with a simple interface
13. Ideal for upgrading older machines with latest plasma cutting technology

Note: The m3plasma torch is an additional cost to the 3D Bevel System Price.

FOR FURTHER SPECIFICATIONS CONTACT:

www.m3plasma.com

oemplasma@esab.com or Phone:+843 664 5550

or your local Esab Cutting agent.

ALLIANCE DELIVERS LOW COST 3D DIGITAL UPGRADE

m3Plasma, Linatrol and FastCAM form an alliance to upgrade 2D plasma cutting machines to 3D Digital from around $80K installed (excluding the torch).

The combination of the fully digital FastCAM™ (3D) Bevel Head with laser height control,FastCAM® 3D software and Powerful Windows-XP based Easy to use Touch screen Linatrol™ Infinity∞CNC will cost around $80,000 installed. Customers will also be able to add the new versatile and compatible m3 plasma™ bevel dry/Water injection Cutting and Marking torch to give a quick conversion of any machine to precision weld preparation of V, X, Y and K bevels and even rotating weld faces. The torch itself is not included in the system price.

Weld preparation is on the critical path so customers have always wanted the enormous time and cost saving in fabrication with fully prepared accurate plate parts. It is Y and K bevels that offer the potential to halve welding costs and assembly labour by removing an entire step in the fabrication process. However bevelling as a process is not simple. Machines, torches and programming systems are still tested by this type of application which is machining, not rough flame cutting. For many reasons, it just has not worked or has been too expensive or too complex. Where accuracy is required, there are varied inherent problems such as torch height control, special logic for loops, corners, adjustment to kerf, feedrate and more. A small error in the head position, horizontally or vertically means a big shift in the position of the small land formed in a K bevels. Many weld preparations are critically dependent on the angle of the 'land', which is often not 90 degrees.

To complicate matters further, there are multiple ways in which a drawing can be defined. Thus a simple rectangle is not enough. When bevelled you have to know if you are looking at the top, the bottom, half way through or even the top on one edge and the bottom on another, with the biggest or smallest rectangle approach. In many cases, the NC programmer has had to tackle problems best left to a welding engineer. If not calculated correctly, you may have a beautiful bevel but on a part which is too big or too small and does not fit.

Such an expert, complex problem required changes in all the cutting technologies to achieve a breakthrough in all the areas: accuracy, simplicity and cost. Combining the latest torches and high power PC based 5-axis controls with new 3-axis, 240v digital bevel heads and next generation offline software (with Patented EdgeSmart™ piercing and Patent Pending laser height control) has been the key. Respectively, all work as a set to solve the 3D problems of torch, control and head.

3D plasma BEVEL SYSTEM ENQUIRIES TO:

VIDEO DEMONSTRATION ON WEB - Link at www.fastcam.com

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