

Case	Application: Delta Industrial Automation Products for Metal Printing Machines				
Issued by	Solution Center	Date	May, 2014	Pages	3
Applicable to	PLC DVP-EH3 series, HMI DOP-B series, AC servo drive ASDA-A2 series				
Key words	Metal printing, DVP-EH3, DOP-B, ASDA-A2				

【Introduction】

Delta's metal printing solution integrates the PLC DVP-EH3 series, HMI DOP-B series and AC servo drive ASDA-A2 series to deliver high speed and high precision printing control, and increase customer competitiveness at a reasonable cost.

【Application】

A metal printing machine is used to print color photos, patterns, logos, letters, and various other demands onto a metal surface. The printed patterns are easily designed by a computer to save repetitious design work. The metal printing machine process is a lot easier than a traditional screen printing process that requires using mesh-based stencils to press ink onto the material and only allows one color per press. Single color and multi-color printing can be done in one print cycle using a metal printing machine. This saves on repeating the work of pressing different colors of mesh onto the material and it provides good print quality with high pattern accuracy and vivid design with waterproofing, no color fading and less friction. Metal printing machines are widely adopted by the various printing industries to perform label printing, decoration printing, fabric printing and more. Benefits include:

1. Simple printing procedures

- No need for making a mesh mold, or coloring and drying the mesh, and it saves on purchasing traditional print equipment and materials.

2. Applicable to various industries with no restriction on printing material and won't cause damage to the materials

- Capable of performing printing on complex compound materials

3. Precise printing at the desired position

- Avoids the printing position deviation error of using hand printing.

4. Suitable for color transition printing

- Industry today requires precise printing of labels, logos and all types of highly complex patterns. However, the traditional silk printing is unable to deliver proper color transition printing, and the colors at the edge and joint will be distinct.

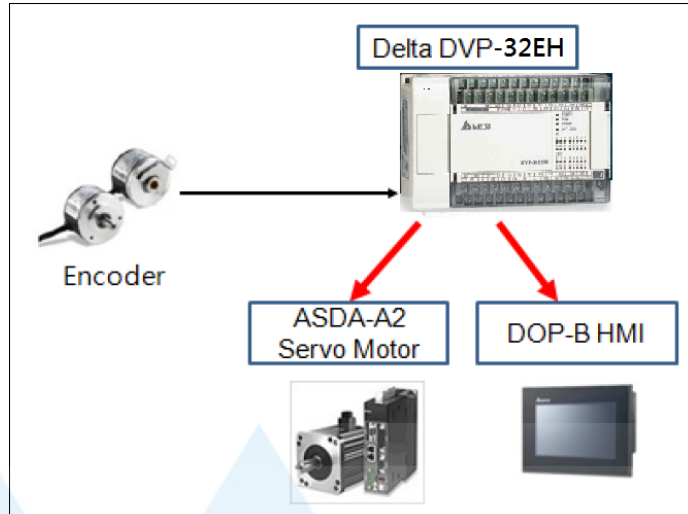
5. Suitable for printing with high frequency of changing patterns

- The print content is easily changed to provide different printing effects. Metal printing also supports digital printing that is fast and simple.

With solid experience and advanced technology, Delta Industrial Automation offers efficient and reliable solutions and service – we are your most trustworthy partner.

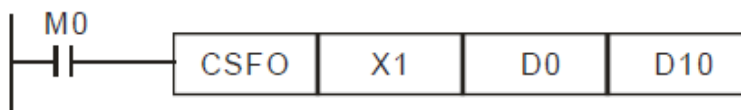
【Delta Solution】

Delta's metal printing solution uses the high standard PLC DVP-EH3 series as a host controller to control the motion of the whole system. AC servo drives ASDA-A2 series control the servo motors to trigger the roller using pulse commands and the HMI DOP-B series lets the operator set up parameters and control the printing process.



【System Structure】

Delta's solution is used to control the mid-stage of the printing process that requires following the front stage printing speed and adjusting the mid-stage speed for stable printing purposes. The front stage roller is installed with an external encoder to output a precise speed in pulse signals to the mid-stage (see the picture above). Delta's PLC DVP-EH3 is equipped with a CFSO command function that is designed for collecting the external pulse input of the front stage roller and configure the exact speed command for the mid-stage servo drive to follow the front stage speed for speed synchronization.



【Conclusion】

Delta's metal printing solution adopts the high performance PLC DVP-EH3 series, HMI DOP-B series and AC servo drive ASDA-A2 series to provide high speed and high precision printing control. The DVP-EH3 series features high-speed pulse output of 4-axis and 4 high speed configurations with various motion control commands to attain high precision positioning. This solution is especially suitable for paper printing, label printing, packaging machines and many more. The HMI DOP-B series provides parameter setting function which allows operators to set up the parameters for the AC servo drive and it is equipped with 3 communication ports to support RS232/RS422/RS485 that facilitates the integration process. Delta's metal printing solution raises the competitiveness of customers at a

reasonable cost.

For more information on Delta industrial automation products, please visit our website at:

<http://www.deltaww.com/Products/CategoryListT1.aspx?CID=06&hl=zh-TW>



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