Direct Color Systems®

ADA Application Guide

I. Introduction

This document is intended to guide any user through the ADA printing process from beginning to end. ADA printing with a UV-LED printer is very unique; therefore it is important for the user to understand all components that make it possible. This guide will cover all of those areas, providing you with all the tools necessary to produce remarkable ADA signs.

This document will be divided into three main sections; hardware, substrate selection and software. After reading this guide, you will understand how simple it is to produce ADA signs with a DCS Direct Jet UV printer.

Before we begin it is important to note that while the components of the ADA signage, produced on applicable DCS Direct Jet UV printers, have tested to be in compliance with federal USA ADA signage guidelines outlined in the 2010 ADA Standards for Accessible Design (Department of Justice – September 15, 2010 – www.ADA.gov), it is the responsibility of the signage manufacturer to ensure compliance with the governing local, state and federal authorities.

II. Hardware

A. Having the Right Machine

You can only produce ADA signs with a Direct Jet 1024UVHS, 1024UVMVP, 1018UVMVP2, 1024UVMVP4, 1024UVMVP6 and 1024UVMVP15 printer. These printers have been designed for absolute positioning accuracy from pass to pass and provide the speed and cure rates necessary for this type of printing.

B. Setting Head Height

The factory setting for head height is a nominal 0.40". The United States specifications state that tactile letters must be 0.32" which means we are closing this gap between the head height and printed surface.

To avoid head rubs due to this closing of the gap, we recommend placing a 0.040" shim on top of your material and setting the head height to the top of that shim. Use the 0.40" head height gauge shim in the accessory kit that ships with the printer. *Be cautious when setting head height on clear substrates.*

C. UV Lamp Intensity

A more in depth discussion of why we will use the UV Lamp intensity Control will be discussed in the substrate section, but it is important to familiarize yourself with this feature on your printer.

Located on the control panel side of the printer, lift the cover to see the dial, picture below. This dial controls the intensity or wattage of the UV Lamp. 11 is the highest intensity and 1 is the lowest.

D. Auto-Return

ADA print modes are designed to output two passes; therefore the auto-return should be enabled before the first job is sent to the printer. Pressing the button causes the printer to toggle between Manual and Auto Return. When the amber light is lit on the button, the Auto Return function is enabled. After a job is finished the table will move back to the print home position automatically.

III. Substrates

A. Choosing the Right Substrate

There are many different substrates that ADA signs are produced on. DCS offers ADA compliant materials that were manufactured with this process in mind. Those materials include a Matte/Gloss Inkmark™ UV Acrylic and Matte Inkmark™ Metal. The acrylic comes in thicknesses of 0.25" and 0.125" and the metal comes in a thickness of 0.20". These materials have a special print receptive coating and therefore, will produce the best adhesion and will not require any promoter or adjusting of lamp intensity.

With that being said, many users wish to print on their own material or material specifically requested by a customer. ADA can be printed to these substrates but may require some additional steps. If you wish to print on acrylic, DCS *only* recommends printing to Cast Acrylic.

Please note that other substrates can be used but will require testing for compliance and/or receptivity and adhesion by the END USER.

B. Adhesion

Durability is one of the most important aspects of an ADA sign. The printed objects need to be durable enough to withstand everyday wear and tear. This is why the bond between the ink and substrate needs to be as strong as possible.

If you are not using DCS Inkmark™ substrates, you may need to use DCS' low odor adhesion promoter. This promoter is wiped onto the substrate and helps the ink bond. This chemical does have the potential to mare the surface of some acrylics and plastics, leaving streaks and discoloration which is unacceptable to some users.

To help protect the substrate but also achieve good adhesion, DCS recommends diluting the Low Odor Adhesion Promoter with 100% isopropyl alcohol. A ratio of 70 parts 100% IPA to 30 parts Low Odor Adhesion Promoter has proved to be the most successful combination. This promoter should be mixed in an empty opaque ink bottle.

C. Applying the Adhesion Promoter

Place a small amount of the adhesion promoter on a lint free cloth and wipe it on the substrate. To conserve the promoter, only wipe it on the areas that will host ink. For best results, use a heat gun on the areas with promoter. Be careful not to warp the material when doing this.

D. UV Lamp Intensity and Material Warping

Some materials, usually thinner plastics, have a tendency to warp and bow when a receiving a large volume of ink and are exposed to a heat/energy source, in this case the UV lamp. If you refer to section II subsection B, you will see that we build up our ink height very close to the print head and therefore recommend a shim to set a slightly higher head height. If the material warps it will close the gap even more. To avoid this, try a lower UV intensity (refer to Section II subsection D). It will be important to find the balance between lamp intensity and adhesion. You want to find an intensity that reduces warping but still cures the ink. For thin plastics less than 1/8" thick try starting with a setting of six.

IV. Software Setup

Refer to the DCS FTP Site for the Instructional Video on setting up and printing ADA signs.

Please click here for instructions on accessing the DCS ftp site using an SSL-Certified FTP Client.