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GEW RHINO UV SYSTEM
INSTALLATION MANUAL

MODULE 2:
Typical UV Lamphead Installation
Original Instructions

gewuv.com

...engineering UV

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1 About This Manual

1.1 Introduction

This Installation Manual provides Original Instructions, as defined in Machinery Directive 2006-42-EC, for the installation and commissioning of your GEW UV system. Read it carefully before attempting to install or commission the equipment it describes.

Always use trained and competent people for installation, operations, maintenance, repairs or modifications. Each GEW UV system is engineered to meet the requirements of a given installation. Any change in requirements may require re-commissioning or modification of the system.

Do not modify any GEW UV system without the prior written approval of GEW.

1.2 Symbols, Warnings, Cautions and Information

This document, and GEW equipment, use the symbols set out below. They highlight possible dangers where you need to take safety precautions and follow good practice. Failure to follow the Warnings and Cautions may invalidate your warranty.

WARNING: Risk of electric shock.

Caution: a reminder of safety practices, or directs attention to unsafe practices that could result in personal injury or damage to the equipment, or its components, or to the environment.

Caution: Hot surface.

WARNING: Risk of exposure to ultra violet light.

Additional information and/or essential documentation: Read before attempting to install or operate equipment.

Check list: Follow a structured set of checks to install or operate equipment.

Electronic copies of this document contain underlined links to essential documentation.

1.3 Installation Manual Structure

This installation manual is divided into modules. Each module describes the installation procedures for different types of GEW equipment, as follows:

Module 1 Provides general and statutory information about installing GEW products, explains how to activate the GEW warranty and includes a glossary of terms.

Module 2 Applies to the installation of GEW UV lampheads.

Module 3 Applies to the installation of GEW and RHINO supplied cooling systems, including chillers, fans and ducting.

Module 4 Applies to the installation of GEW RHINO power supply systems.

Module 5 Applies to the installation of GEW HMI control panels.

Module 6 Contains the commissioning checklist.

NOTE: The installation of GEW custom components including inert nitrogen systems may be detailed separately if appropriate.

2 About UV Lampheads

2.1 Description

GEW UV lampheads are designed for the instantaneous drying of inks, varnishes and adhesives that are sensitive to ultra violet (UV) light.

A typical web colour printing press comprises several printing stations in line, each station applying ink of a different colour. The ink printed on the first station must be dry before entering the second station to avoid contaminating the press. A GEW lamphead containing a high power, low energy UV lamp or UV LED array is located between print stations. The web passes through a ‘web slot' in the lamphead and travels past the lamp. UV drying is effectively instantaneous, allowing the press to be run at high speed. An extra GEW lamphead may be located at the end of the web for drying varnish applied after the final printing.

As a by-product of UV generation, heat is produced within the lamphead. The heat is removed from the lamphead by an air cooling system, a water cooling system or a combination of both. The installation of cooling systems are detailed in Module 3 of this manual. All non-LED lampheads feature a pneumatically operated shutter.

Spares manuals and service procedures are available for standard lampheads. All user serviceable parts and relevant service procedures for are detailed within.

2.2 Certifications and Product Warranty

Refer to Module 1 of this manual.

3 Installing UV Lampheads

3.1 Preliminary Steps

WARNING: Risk of electrocution if the press is not isolated from the mains supply.

Ensure that electrical power to the host press is off and that the power supply is isolated. If possible, lock the supply off. Place a warning notice beside the isolator advising that power is not to be restored until the installation is complete.

1. Ensure the host press is cleaned thoroughly before commencing installation.
2. Remove the web from the press to facilitate installation.
3. Remove the guards from the press as required.
4. Inspect your UV lampheads after removing the packaging. Contact GEW immediately if there are any signs of damage.
5. Remove the cassette from each GEW lamphead. See Section 3.2 below.

3.2 Removing and Refitting Cassettes

A typical lamphead will feature a removable cassette secured with a single point locking screw located on the cassette door. In some cases the door may be secured with a number of standard metric screws, removal of which will be obvious. To remove a cassette:

1. For a single point fixing, insert key into on front of cassette and turn anticlockwise. For a multipoint fixing, remove all door fixings.
2. Slide cassette out of outer casing.
3. Store the cassettes in a clean, dust and moisture free environment.
4. To refit, follow steps 1 to 3 in reverse order.

Figure 1: Removal of a typical cassette. E2C lamphead shown

3.3 UV Shielding

GEW UV lampheads use high-powered UV light to cure inks on the web of the host press. Shielding is custom designed for each installation to prevent excess UV emissions from the lamphead, and is factory fitted by GEW.

Warning: personnel must be shielded from direct exposure to the UV sources in GEW lampheads at all times. Do not tamper with shielding.

3.4 Mounting the Lamphead

Mount your GEW lamphead(s) on the host press in accordance with the instructions set out in the Installation Drawings provided with your system.

1. Tighten all installation fixings evenly.
2. Once the lamphead(s) have been fixed to the host press, check that they are level, and aligned correctly with the press web.
3. Ensure that any air intake slots (typically on the top of the lamphead) are not obstructed in any way. Typical air intakes are highlighted in Figure 2.
4. Refit the cassettes to the lampheads. See section 3.2.
5. Refit press guards as appropriate and, if applicable, ensure correct/safe operation of the guards and that of any safety and alarm systems that may be fitted.

Figure 2: Typical lamphead (detail) showing air intake slots

3.4.1 Completion Checklist

When the mechanical installation is complete fill out the relevant section of the Commissioning Checklist in Module 6 of this manual.

3.5 Lamphead Cooling System(s)

3.5.1 Air Cooling System

GEW air-cooled lampheads are connected to the cooling system with flexible ducting.

Always use GEW specified flexible ducting for connection to the cooling system.

Caution: Ducting can get hot (up to 85° C) during operation. Ensure ducting runs are sited away from electrical cables and so as to avoid accidental contact with personnel.

1. Inspect ducting to ensure it is clean, free from holes, kinks, and deformations, and is not obstructed in any way.

3.5.2 Connecting the Air Cooling System

If your GEW lamphead(s) are to be equipped with a GEW supplied cooling system, refer to Module 3 of this manual for installation details.

1. Minimise kinks, bends and runs in flexible ducting during installation. Bends should be of large radius and of no more than 90°.
2. Fix ducting to lamphead using worm drive clip. See Figure 3.
3. Ensure all connections are tight and seals are airtight.

Figure 3: Typical connection to flexible ducting

3.5.3 Connecting the Water Cooling System

If your GEW lamphead(s) are to be equipped with a GEW supplied water-cooling system, refer to Module 3 of this manual for installation details.

3.5.4 Completion Checklist

When connection to the cooling system is complete fill out the relevant section of the Commissioning Checklist in Module 6 of this manual.

3.6 Lamphead Power Supply

3.6.1 Preliminary Steps

WARNING: Risk of electrocution if press is not isolated.

Ensure that electrical power to the power supply cabinet is isolated and locked off prior to connection. Place a warning notice beside the isolator advising that power is not to be restored until the installation is complete.

3.6.2 Connecting the Power Supply Cable

If your GEW lampheads are to be equipped with a GEW power supply system, refer to Module 4 of this manual for installation details.

GEW lampheads are connected to the power supply with GEW connector cables. The cables are keyed and tagged to ensure connection is correct. The cables plug directly into the lampheads. Figure 5 shows a typical lamp cable and the corresponding socket on a GEW lamphead.

After connection ensure:

1. That the lamphead connector latch is closed. See Figure 4.
2. Any slack in the cables is positioned so that it does not present a trip hazard to personnel. Do not bundle up slack behind power supply units where it might obstruct the airflow to cooling fans. Use cable trays wherever possible.

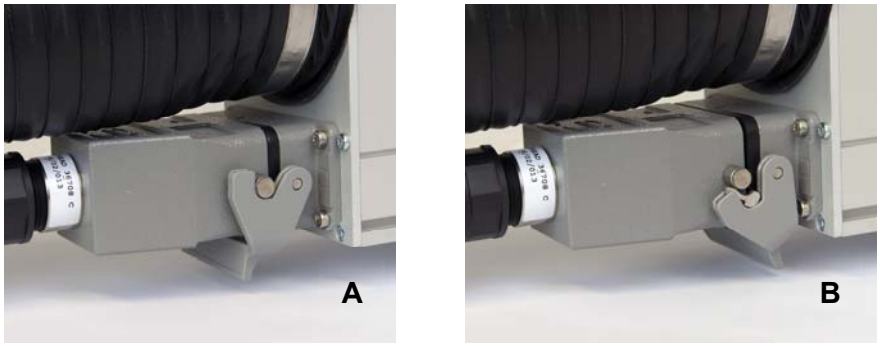

Figure 4: Connector latch A (closed) and B (open)

Caution: Do not force connectors into sockets.

3.6.3 Completion Checklist

When connection to the power supply is complete fill out the relevant section of the Commissioning Checklist in Module 6 of this manual.

3.7 Lamphead Pneumatic Air Supply

A pneumatic actuator controls the shutters on a GEW lamphead. The compressed air supply is bundled within the lamphead power supply cable. See Figure 5 (pneumatic connection is circled).

Figure 5: Typical power supply cable and lamphead socket

3.7.1 Connecting the Pneumatic Air Supply

Connection of the pneumatic air supply to the lamphead(s) is achieved automatically when connecting the power supply cable as described earlier. Should the connection be disturbed, reconnect the power supply cable and ensure the connector latches are closed as shown in Figure 4.

3.7.2 Completion Checklist

When connection to the pneumatic supply is complete fill out the relevant section of the Commissioning Checklist in Module 6 of this manual.

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