



**DURA**FLEX™

# *Technical Bulletin*

## Inline Degasser Installation

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## Introduction

DuraFlex systems are designed to operate with ink bags that have been prefilled with degassed ink. These ink bags are constructed with foil-lined material which does not allow air to pass through into the ink. In this way it can maintain the ink in a degassed state for long periods.

Degassed ink bags come at an additional handling and raw material cost. High usage DuraFlex applications may find it more economical to buy larger volumes of ink in a non-degassed state and install degassers directly in the DuraFlex system.

This document contains information on how to prepare, install and use degassers in a DuraFlex system.

Using a degasser has the following requirements:

- The ink to be used for this application is DuraLink ink.
- One degasser is required for each ink channel.
- Degassers can contain contamination and even if they are installed before the ink filter, they risk producing sufficient contamination to overload the ink filter. Therefore, the degassers must be flushed before use to clean them. Memjet recommended part washing fluid and instructions for flushing the degasser are provided in this document.
- The degasser should be installed in the return ink path from the printhead,
  - To allow the degassers output to be filtered before reaching the printhead,
  - So that the pressure drop from the degasser is not seen by the printhead, and
  - So that the ink is degassed when circulated reducing the overall gas concentration

If you require extra support with the degasser implementation, contact your TAMs.

## Choice of Degasser

A detailed comparison of available degasser modules has not been performed. Memjet has tested the [Separe! EF-G3](#) module and test/contamination data for this unit can be provided upon request.

The degasser module should be chosen based on the flow rate to be degassed at the negative pressure that it will be operated at. The DuraFlex ink flow rates are given in as follows:

Operation	Flow Rate (mL/min)
Maintenance Flush	50
Refill	150 (peak rate) 80 (average at 100% single color ink coverage)
Printing circulation	17
Vacuum	As per the degasser specifications

A larger capacity degasser will remove more dissolved gas and do it faster than smaller units.

The degasser should be sized to carry the peak ink flow which is the refill plus the printing circulation which is 97 mL/min when printing a CMYK primary color at 100% although this will be subject to flow rate peaks of up to 167 mL/min.

A degasser with capacity exceeding this peak flow rate would be preferable but a reduced capacity unit may be suitable depending on the printing application.



A Separel EF-G3 module with a supported flow rate up to 300 mL/min has been found suitable.

The chosen degasser module should provide a dissolved oxygen (DO) content of less than 3mg/L. This is best measured at the output of the circulation pump as it will reflect the DO content at the printhead and will not impact the ink supply pressure to the printhead. Memjet uses an [Oxyscan 300](#) from Unique Measuring Systems to measure the DO content in the ink.

## Degasser Preparation

The degasser uses a hollow fiber membrane which sheds particles over time. Although the degassers will be installed prior to the ink filter, they can have a very high initial contaminate load and should be flushed clean before usage.

### Flushing the Degasser

The following process is used to prepare degassers for use with DuraFlex systems. Memjet uses a system setup similar to [Figure 1](#), however OEMs are free to implement any setup they see fit.

Details of the flushing process is provided below:

1. Flush the degasser using Memjet part washing fluid at 45°C at a flow rate of 2L per minute for 5 minutes. The part washing fluid can be reused provided it is filtered as shown. The part washing fluid should be discarded after a week of use.
2. When complete, drain the part washing fluid by blowing filtered air through the degasser.
3. Flush the degasser with 20-30°C deionized (DI) water at a flow rate of 2L/min for 10 seconds.
4. When complete, drain the part washing fluid by blowing filtered air through the degasser.
5. Flush the degasser with 20-30°C deionized (DI) water at a flow rate of 2L/min for 10 seconds.
6. When complete, drain the part washing fluid by blowing filtered air through the degasser.

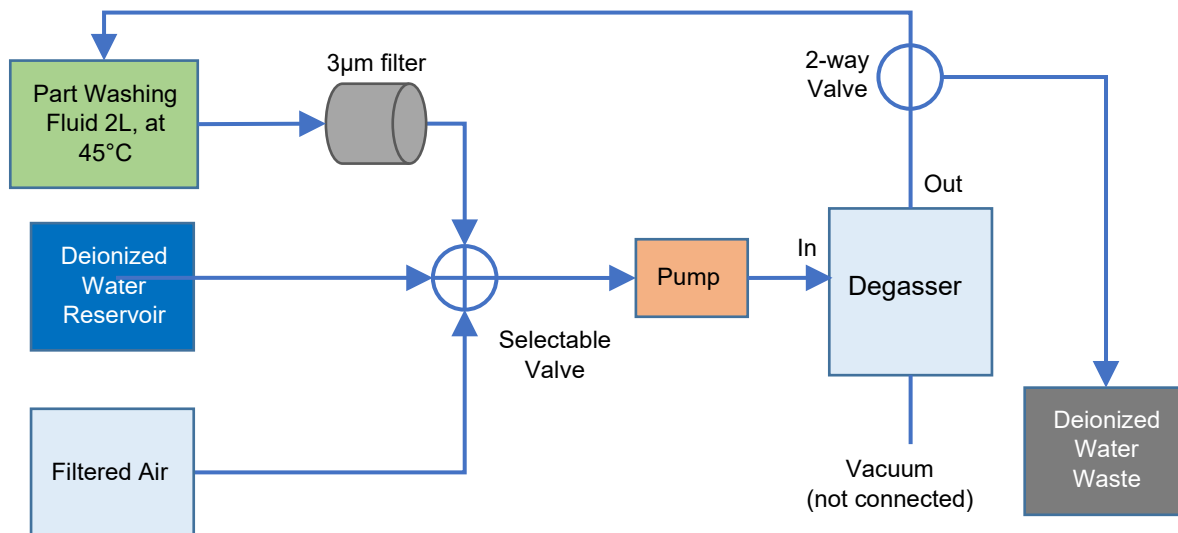
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Note:	Memjet has found that this part washing procedure is sufficient to flush the degasser. However you may choose to confirm the cleaning process was successful and ensure that the particle load has reached acceptable limits before use.
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**Figure 1 – Degasser Flushing Setup**

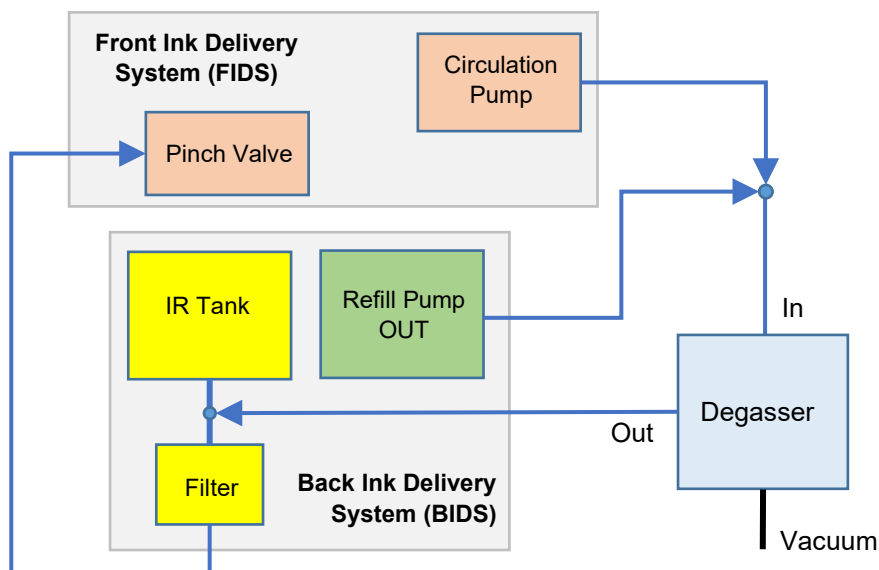


## Degasser Installation

The degasser should be installed in the return ink path between the output of the circulation pump and the BIDS as shown below. The ink from the refill pump and the ink from the circulation pump should be coupled together and then passed through the degasser. In this way any fresh ink is degassed prior to reaching the IR tank. The output of the degasser then connects to the IR tank where the circulation pump output was previously connected. This ensures that the degassed ink flows through the filter prior to reaching the printhead.

Ink is continually degassed as it is circulated, reducing the gas content of the ink stored in the IR tank.

**Figure 2 – Degasser Schematic**

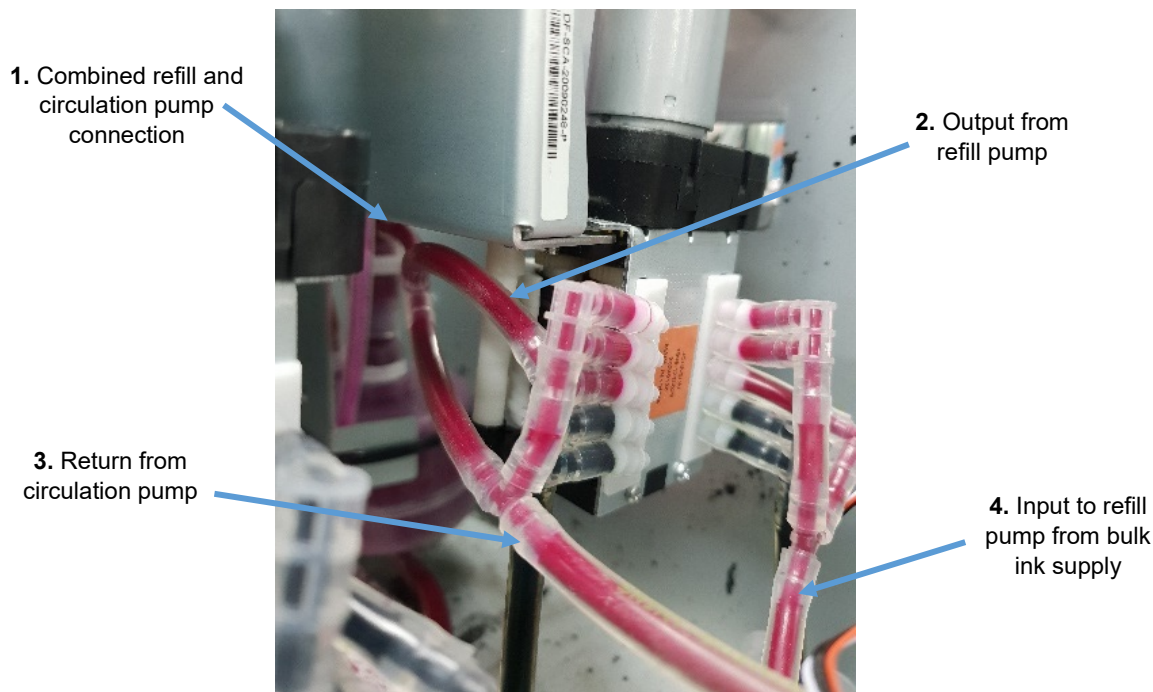


## Connecting the Degasser

The existing DuraFlex connections to the refill pump are shown in [Figure 3](#).

Before making any changes, you will need to find mounting locations for the 4 degassers (one per ink channel). Memjet recommends the degassers be located as close to the IR tank as is feasible to reduce ink tubing run lengths.

**Figure 3 – Refill Pump Connections**

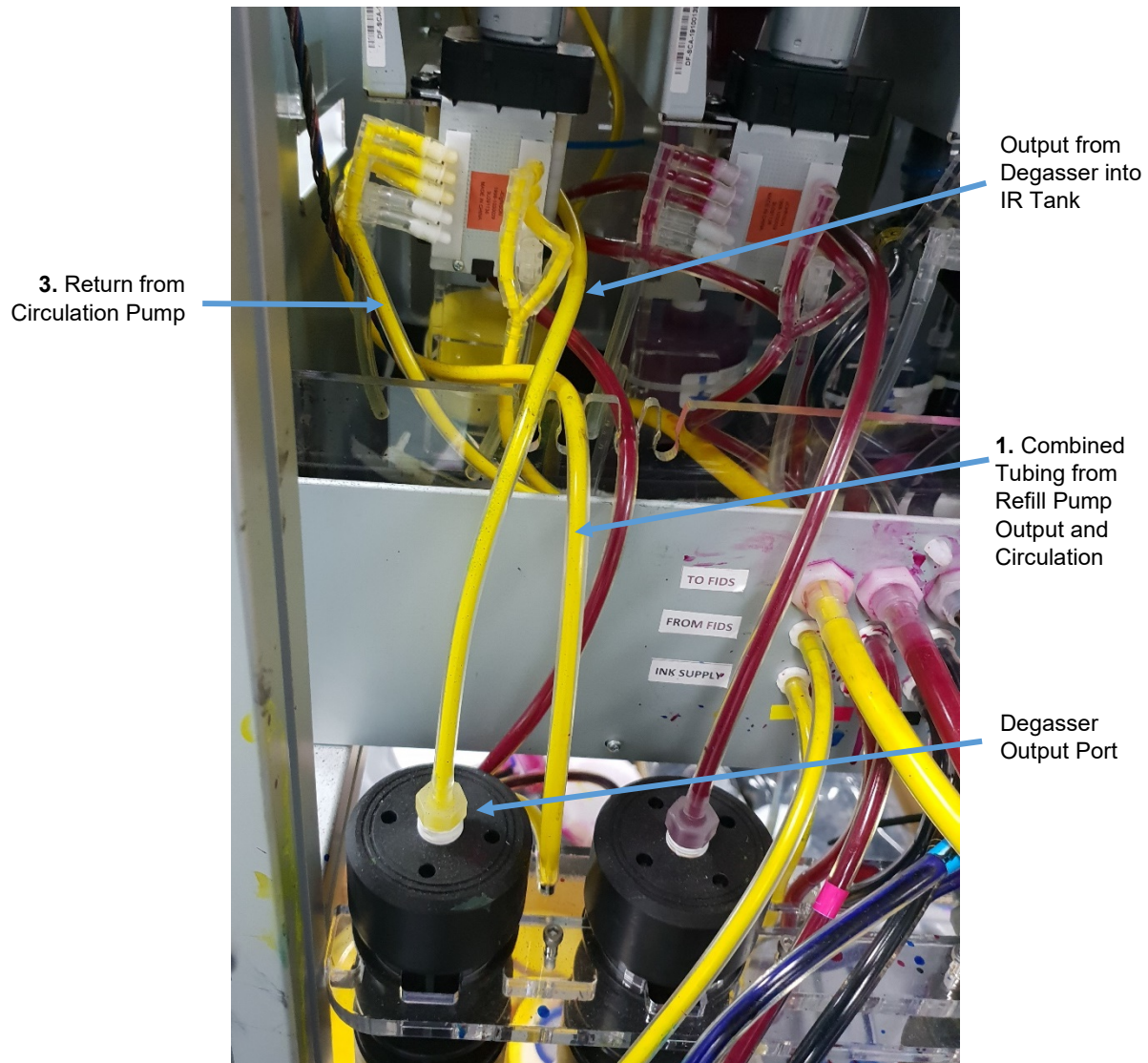


1. Disconnect the ink tube that goes into the IR tank, shown as point (1) in [Figure 3](#).
2. Extend the disconnected tube using appropriate tubing and connectors so that it can reach the degasser input.
3. Connect the extended tubing to the input port of the degasser using the required connectors.
4. Connect the degasser output port to the IR tank port that was disconnected in Step [1](#).
5. Connect the degasser vacuum port to the appropriate vacuum for the chosen degasser.

Once the connections have been made, the connections should appear as shown in [Figure 4](#). The numbered points in [Figure 4](#) are the equivalent features in [Figure 3](#).





**Figure 4 – Completed Degasser Connection**

## Questions

For additional information, contact your Technical Account Manager or Memjet Customer Support ([customer.support@memjet.com](mailto:customer.support@memjet.com)).

