



## Technical Note 190

### Introduction

CellDrop™ Automated Cell Counters utilize patented DirectPipette™ Technology to eliminate disposable slides from the cell counting process. Two optical grade sapphire surfaces are positioned parallel to one another to form a variable height sample chamber. A simple Load, Count and Wipe Clean process (Figure 1) enables rapid, accurate cell counting and viability analysis.

This technical note explains the basic cleaning steps and routines for maintaining CellDrop instruments.

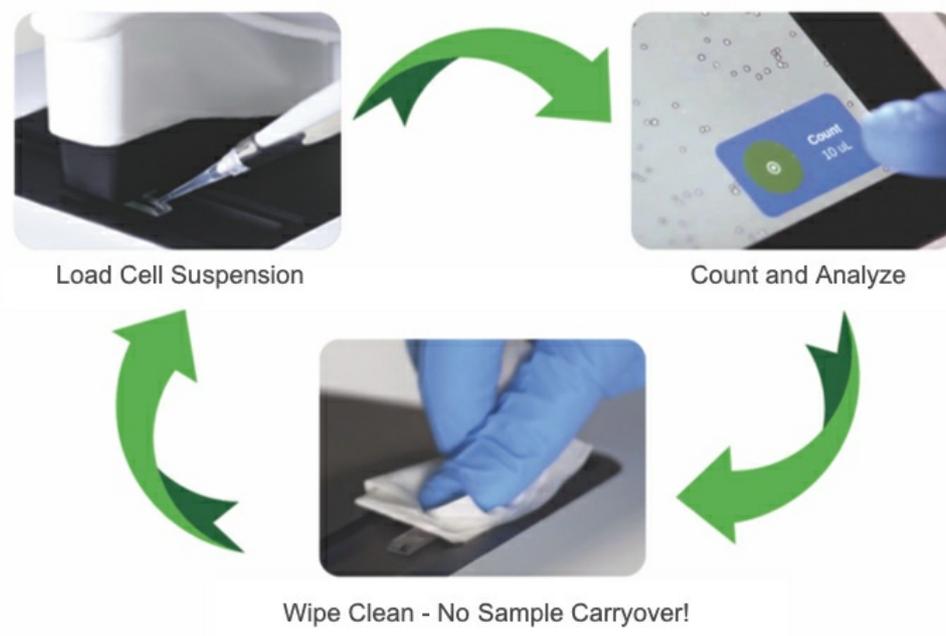


Figure 1: DirectPipette™ Technology. This innovation replaces disposable plastic slides with a wipe clean sample chamber.

### Routine Cleaning Between Samples

1. When counting is complete, lift the arm and wipe both the upper and lower surfaces with a clean, dry laboratory wipe. Firmly wipe in a single direction.
2. Return the arm to the down position and verify on screen that sample surfaces are clean.

#### Recommended usage:

- Best practice is to clean the surfaces before use and following the completion of a measurement session.
- Clean if debris remains after routine cleaning.
- Clean if experiencing issues with sample loading.
- Cleaning may be necessary after loading samples in media.

### Additional Surface Cleaning Protocol

1. Open any Count app with the arm in the down position. The app will open, and the Brightfield channel will begin showing the Live Preview.

2. With the arm down and the chamber height set to 100  $\mu\text{m}$  (default setting), load 15  $\mu\text{L}$  of 70% ethanol or 10% bleach with the pipette tip placed into the alignment groove (Figure 2).
3. Allow the cleaning solution to sit on the chamber surfaces for  $\sim 10$  seconds before cleaning the surfaces with a dry laboratory wipe (figure 3). A single wipe in one direction with firm pressure is generally sufficient to clean the chamber surfaces.
4. Repeat if necessary to ensure that cells/particles are cleaned from the alignment groove and the sample surfaces.



Figure 2: Pipette position for cleaning. Load 70% ethanol into the alignment groove.

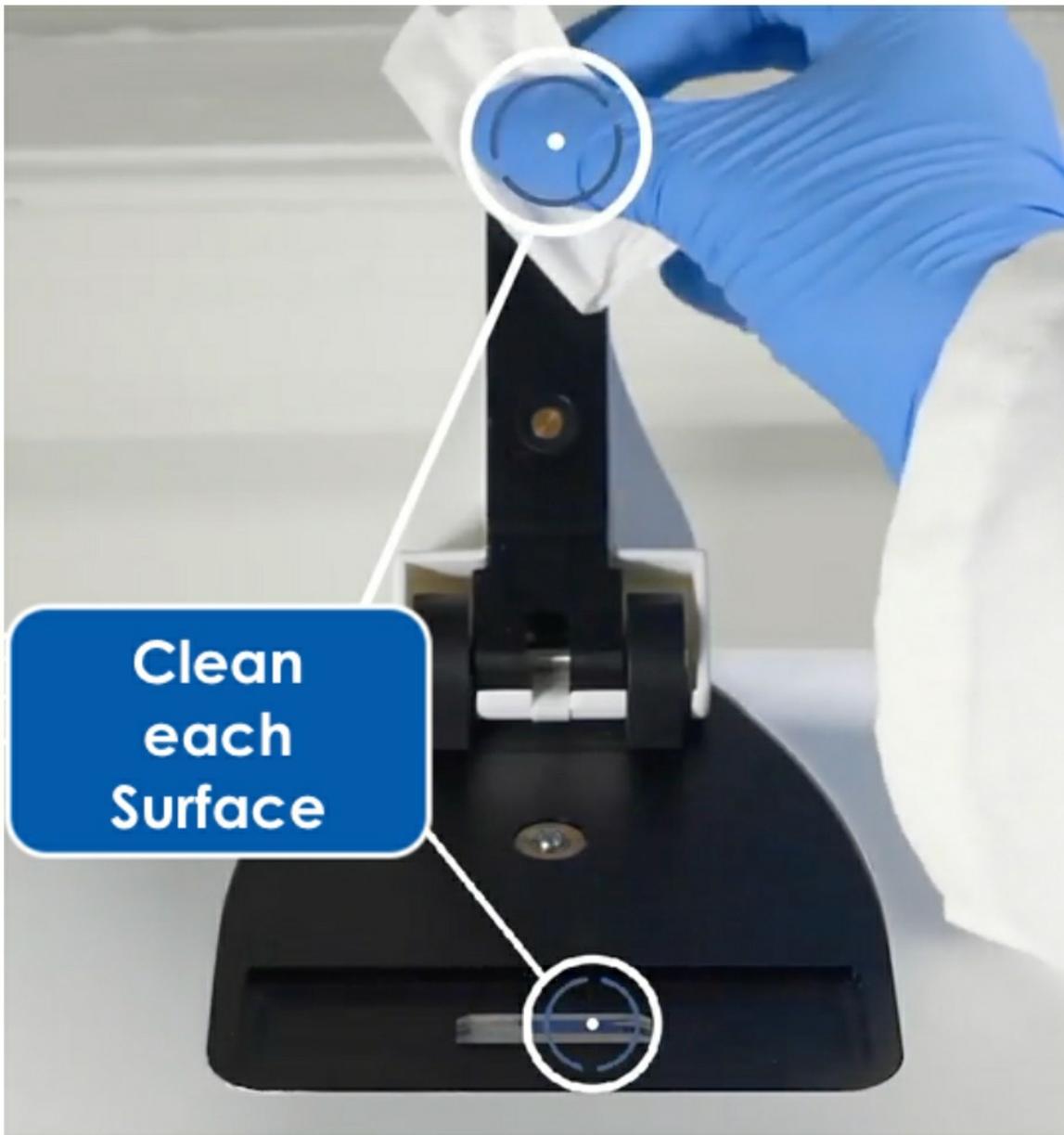


Figure 3: Clean top and bottom chamber surfaces. Use a folded lab wipe to firmly wipe each surface once in a single direction.

### Removing Static Charge

Quickly rubbing a lab wipe back and forth over the sapphire surfaces may cause a static charge to form. This charge can result in sample loading issues such as the sample not entering the chamber (Figure 4) or the sample not loading evenly in the field of view (Figure 5). It is recommended to wipe firmly in one direction with a neatly folded wipe to prevent static charge.

If sample is not able to load, first try the cleaning procedure. If sample still does not load, the static charge may be removed by spraying ethanol on a laboratory wipe and wiping down the entire black anodized surfaces on the arm and keyplate. The sapphire surfaces should also be wiped clean during this process.



Figure 4: Sample not loading. Static charge prevents capillary action of the liquid sample

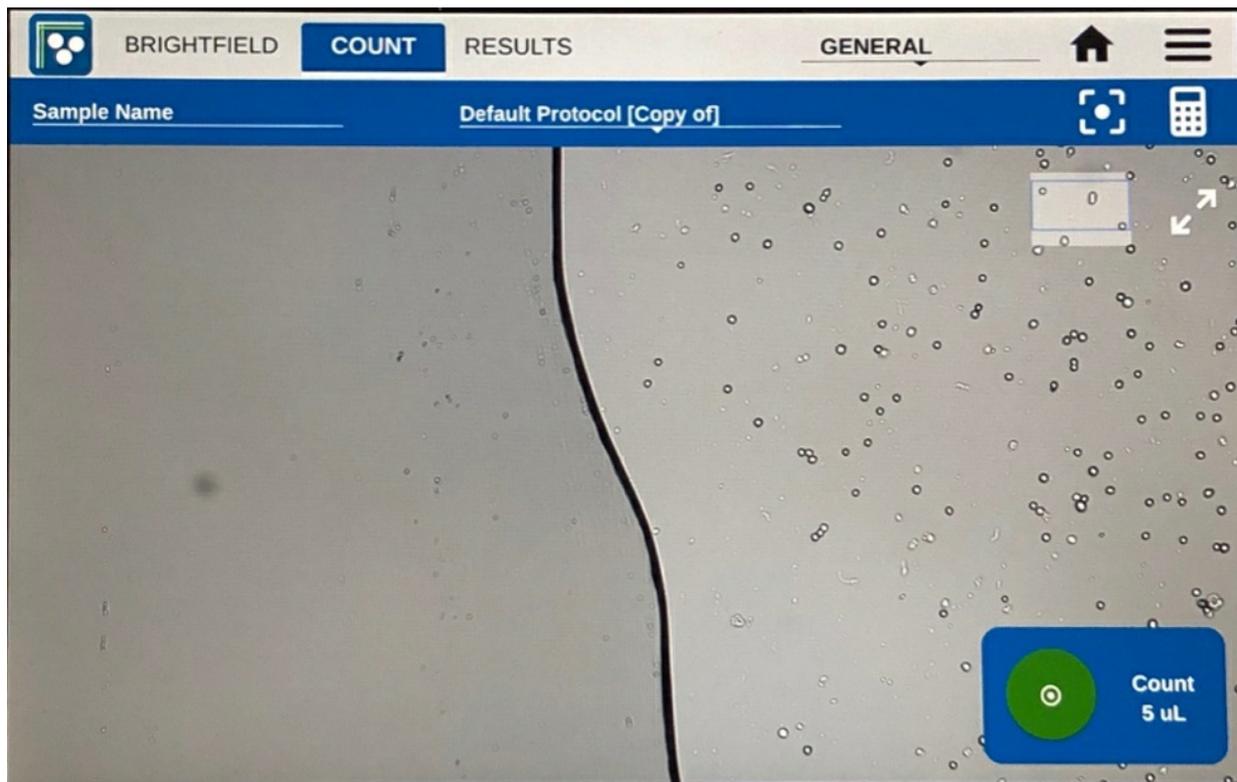


Figure 4: Sample not loading. Buildup in the sample groove or static charge prevents capillary action of the sample.

### Cleaning The Contact Switch

CellDrop instruments use a patented conductivity based system to make sure the chamber heights are set accurately. This system requires an electrical connection between the arm and the head of the screw on the keyplate when the arm is down. Typically this connection is robust however if there is contamination interfering with the two contact points, a "Lower Arm To Load Sample" alert will be present even if the arm is in the down position. Remove contamination by following these steps:

1. Spray a laboratory wipe with ethanol
2. Wipe brass surface on the arm and head of the screw on the keyplate
3. Restart CellDrop

### General Decontamination of CellDrop

CellDrop instruments can be decontaminated using routine cell culture laboratory methods (e.g., 70% EtOH or 10% bleach).

**Note: Do not spray or pour solutions directly on to the instrument.** Instead, spray disinfectant solution on a laboratory wipe or paper towel and wipe the instrument.

Do not use acetone or hydrofluoric acid on or around the instrument as they will damage internal components.

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