

# Dilution Protocol for the Catalyst Dx Chemistry Analyzer

## When to dilute

Dilutions should only be performed when a test value is outside the reportable range or when the sample contains interfering substances (e.g., medications) that cause a nonlinear or invalid result. The Catalyst Dx\* Chemistry Analyzer supports automated dilutions (the analyzer mixes the sample and diluent for you) and manual dilutions (you prepare the dilution outside of the analyzer). Select the appropriate option on the Identify Sample screen.

**IMPORTANT: You cannot perform a manual or automated dilution on electrolytes, NH3, PHBR, TT4, SDMA, PL, PROG, BA, or FRU tests, or on whole blood samples. You cannot perform an automated dilution on CRP, but it can be manually diluted.**

## Running an automated dilution

1. Enter the patient information on the IDEXX VetLab Station (for more information, see the "Analyzing Samples" chapter of the *IDEXX VetLab\* Station Operator's Guide*).
2. Once the patient's name appears in the Pending list on the Catalyst Dx Home screen, tap the patient's name and then tap **Select**.
3. Select the Sample Type (**whole blood, plasma, serum, or other**).
4. Select the desired dilution option:
  - a. Select **Automated** and use the up/down arrows to specify the desired dilution factor (total parts).
  - b. Tap **Next**.
  - c. Open the tip and diluent drawer(s). **Do not** open the drawer(s) if there is an automated dilution run in process.
  - d. Fill the tip drawer completely.
  - e. Load an empty sample cup in the left circular cup holder.
  - f. Load a sample cup containing 300 µL of diluent (0.9% saline/NaCl) in the right circular cup holder (the sample cup should fit inside the holder easily).
  - g. Close the tip and diluent drawer(s).
  - h. Tap **Load**.
  - i. Load the slides in the sample drawer.

### Notes:

- Only load the slide(s) that require a dilution. Do not load an entire CLIP.
- If an exact value is not reported on the initial dilution, rerun the sample with an increase of one dilution factor.

## Running a manual dilution

1. Enter the patient information on the IDEXX VetLab Station (for more information, see the "Analyzing Samples" chapter of the *IDEXX VetLab\* Station Operator's Guide*).
2. Once the patient's name appears in the Pending list on the Catalyst Dx Home screen, tap the patient's name and then tap **Select**.
3. Select the Sample Type (**whole blood, plasma, serum, or other**).
4. Select the desired dilution option:
  - a. Select **Manual** and use the up/down arrows to specify the desired dilution factor (total parts). It is recommended to start with a 1:1 dilution, unless directed otherwise.
  - b. Tap **Next**.
  - c. Accurately measure the desired amount of sample to be diluted and gently transfer it to a sample cup. Then, accurately measure an equal amount of diluent (0.9% saline/NaCl) and transfer it to the sample.
  - d. Thoroughly mix the sample and diluent, ensuring there are no bubbles in the mixed sample.
  - e. Load the sample and slides in the sample drawer.  
**Note:** Only load the slide(s) that require a dilution. Do not load an entire CLIP.
5. Tap **Run**. The Catalyst Dx analyzer begins to process the patient sample automatically and calculates the results by multiplying by the dilution factor.
6. Remove (and dispose of) the sample cups from the diluent drawer when prompted.  
**Note:** If an exact value is not reported on the initial dilution, rerun the sample with an increase of one dilution factor.

### Manual dilutions

Volumes are for example only. Fill the sample cup with up to 300 µL of the mixed sample.

Parts sample + Parts diluent = Total parts (dilution factor)

Parts sample	Parts diluent	Total parts (dilution factor)
1 (100 µL)	0	1 (no dilution)
1 (100 µL)	1 (100 µL)	2
1 (100 µL)	2 (200 µL)	3
1 (100 µL)	3 (300 µL)	4
1 (100 µL)	4 (400 µL)	5
1 (100 µL)	5 (500 µL)	6
1 (100 µL)	6 (600 µL)	7
1 (100 µL)	7 (700 µL)	8
1 (100 µL)	8 (800 µL)	9
1 (100 µL)	9 (900 µL)	10