

Universitatea Tehnică a Moldovei



# Analizoare Hematologice automate



Lector universitar: Petru BOLEA

## Definitie :

- Echivalent ce incadreaza diferite metode de masurare a parametrilor sanguini care poate fi de tip semi sau complet automat
- In dependenta de metodele utilizate pot determina un numar cuprins intre 5 si 30 parametri diferiti ai sistemului sangvin.

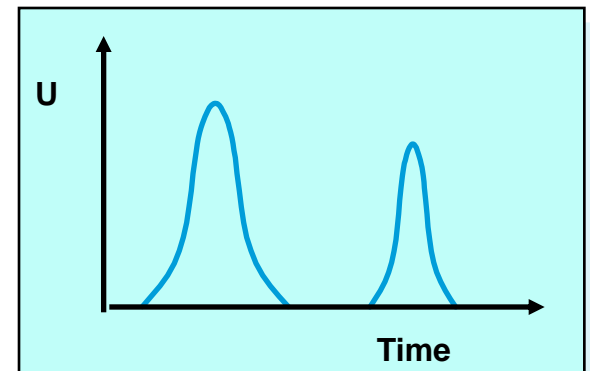
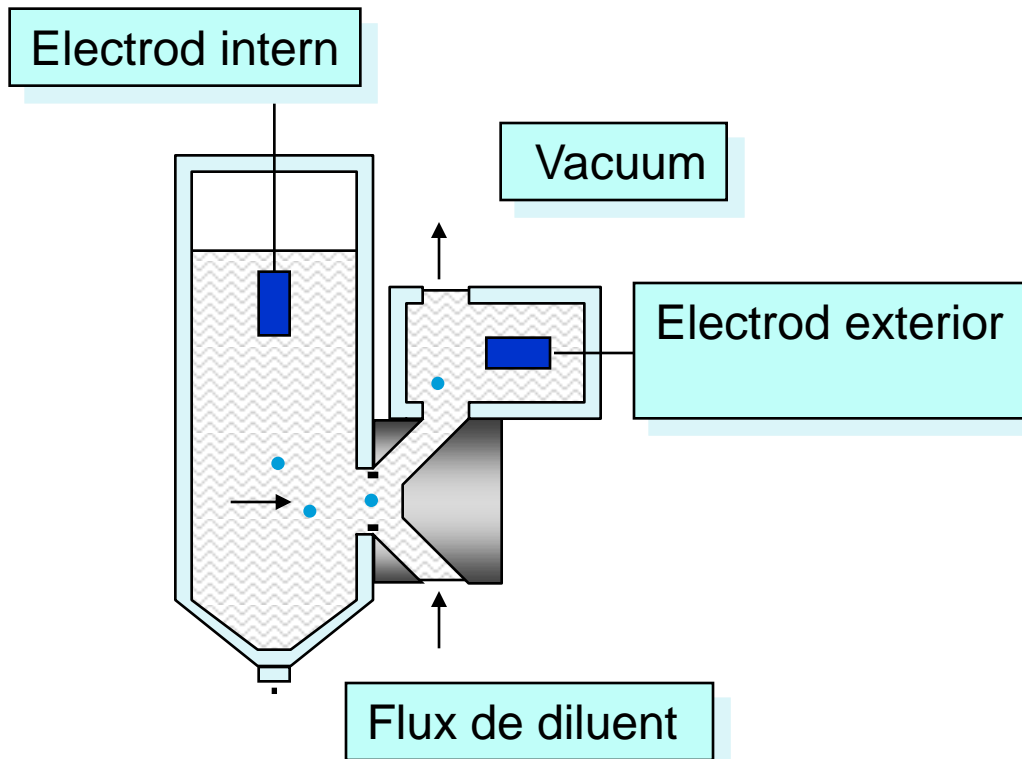
Pot fi clasificate dupa constructie si nr. de parametri masurati:

- cu o singura camera de masurare pina la 5-8 parametri
  - impedata volumetrica
  - Fotometrie
- 3 DIF,cu doua camere de masurare , repartizarea leucocitelor in 3 grupe
  - impedata volumetrica
  - Fotometrie
- 5 DIF cu doua camere de masurare , repartizarea leucocitelor in 5 grupe
  - impedata volumetrica
  - fotometrie
  - flowcitometrie

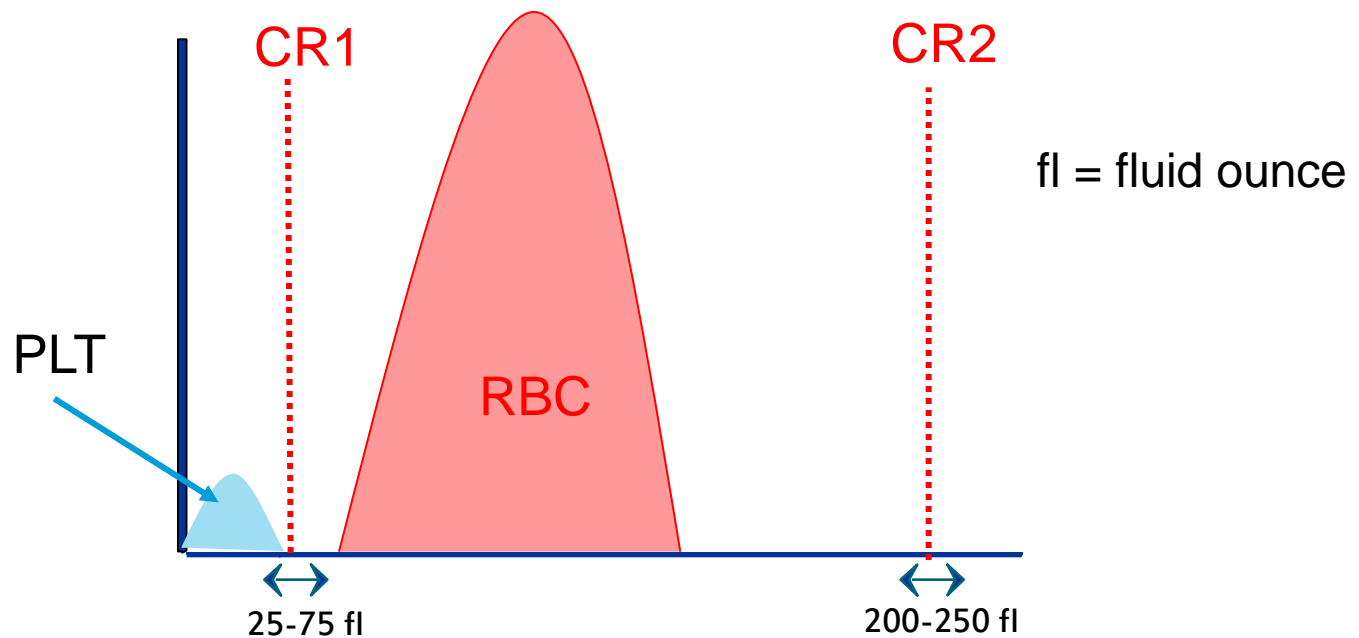


# Construcție , principii de lucru

Camera de numarat celule , **Counting Chamber**



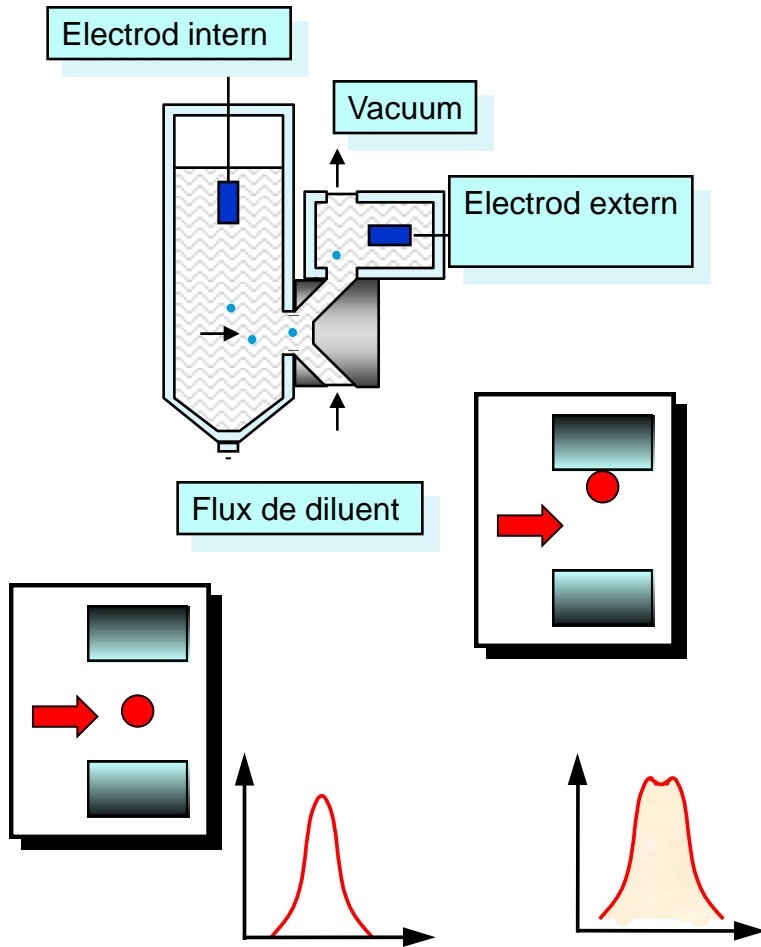
# Repartizarea elementelor pe Histograme



- ▶ Distribuția curbelor elementelor după volum
- ▶ Histograma trebuie să înceapă și să se termine de la linia 0.

# Numararea Eritrocitelor

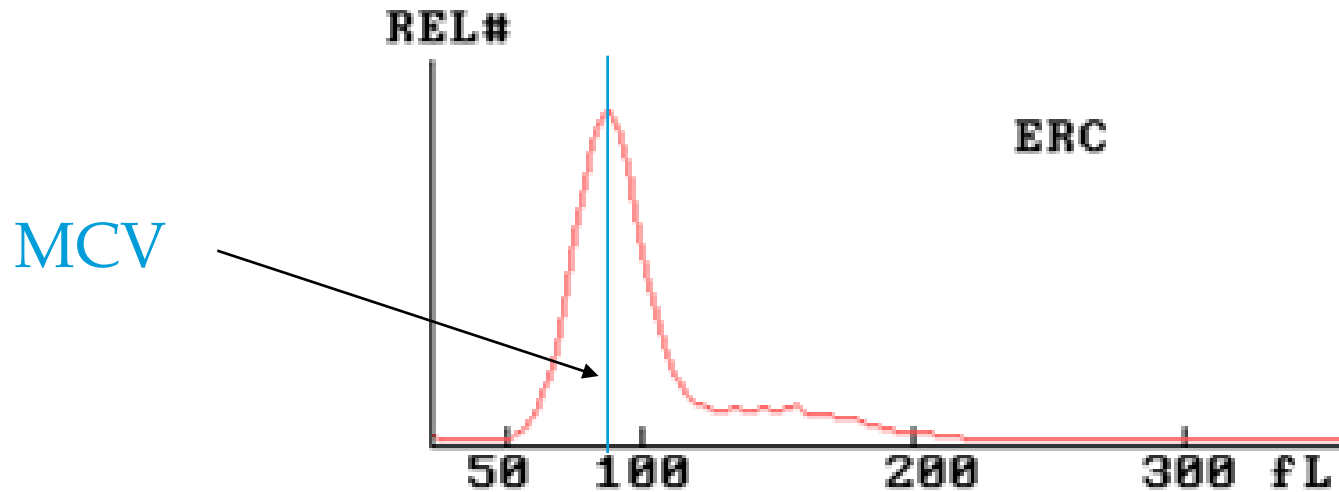
## RBC/PLT chamber



- Trecera fluxului de celule prin apertura de  $70 \mu\text{m}$
- Numararea evenimentelor aparute
- Fiecare particula care are un volum mai mare de 26 fl. este numarata ca celula rosie .
- Impulsurile se standardizeaza si se aduna .

# Numararea Eritrocitelor

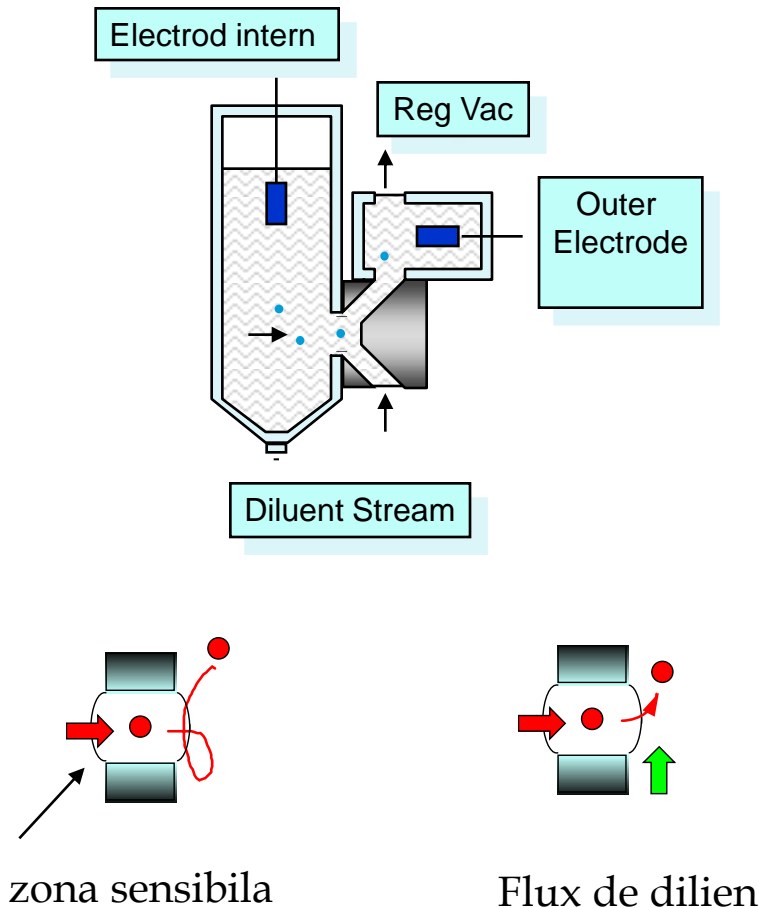
## Histograma RBC



Determinarea Volumului mediu al eritrocitului - MCV

# Numararea Trombocitelor

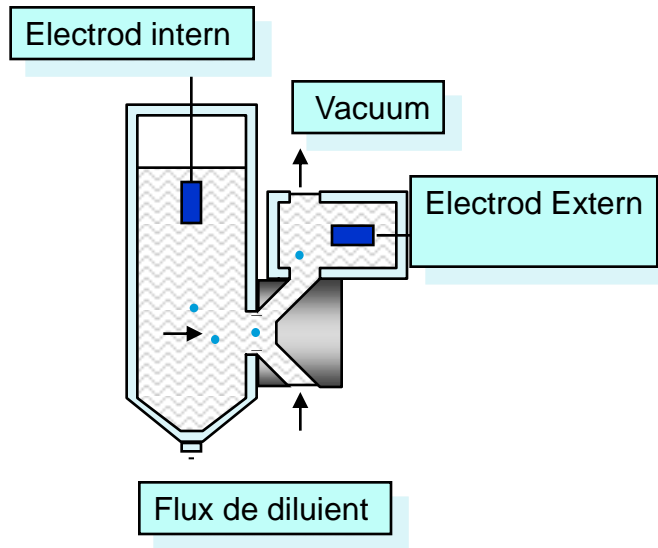
## RBC/PLT chamber



- Numararea si masurarea volumelor a fluxului de celule.
- Particulile cu volumul cuprins intre 2 si 20 fl. Se vor considera trmbocite.
- Fluxul de diluient inlatura artefactele provocate de eritrocite si inlatura interferenta impulsurilor in zona sensibila.

# Numararea leucocitelor

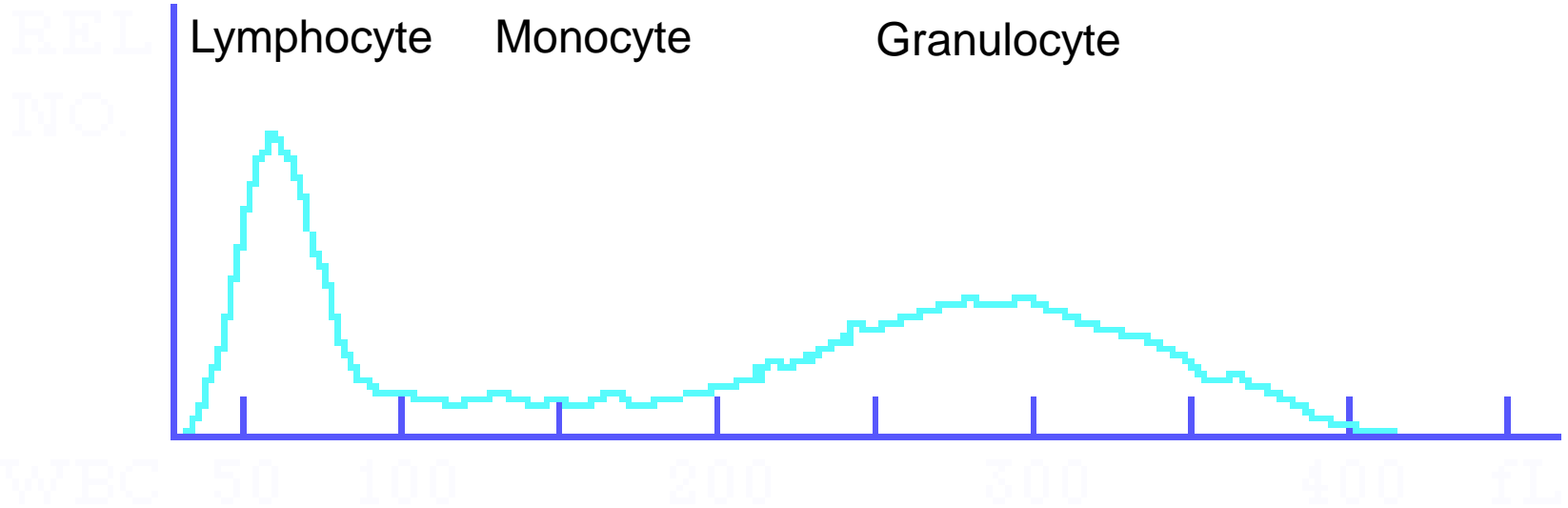
## WBC Chamber



- Lezarea chimica a eritrocitelor
- Numararea evenimentelor prin apertura de  $100\ \mu\text{m}$
- Fiecare particula cu un volum mai mare de 35 fl. Este considerata leucocit.

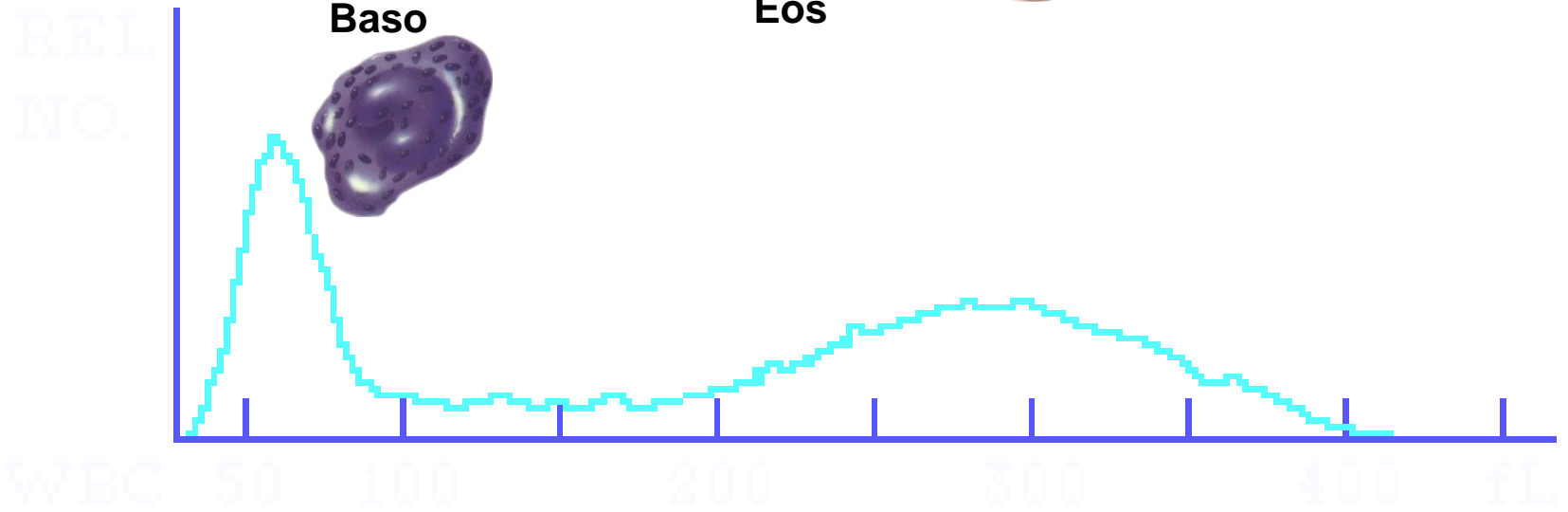
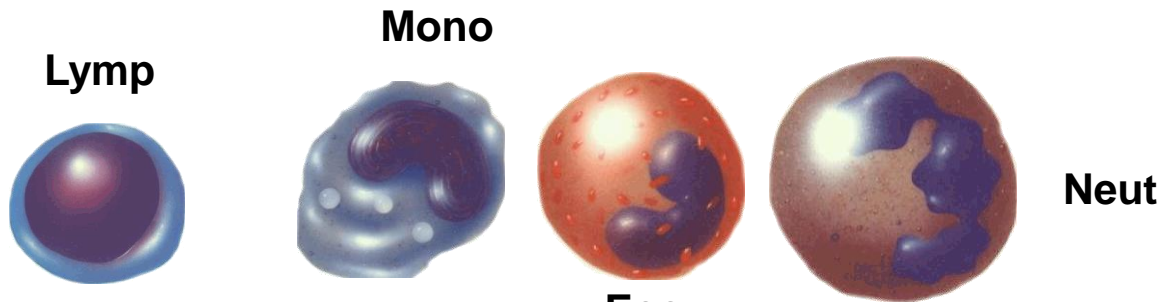


# Histograma WBC



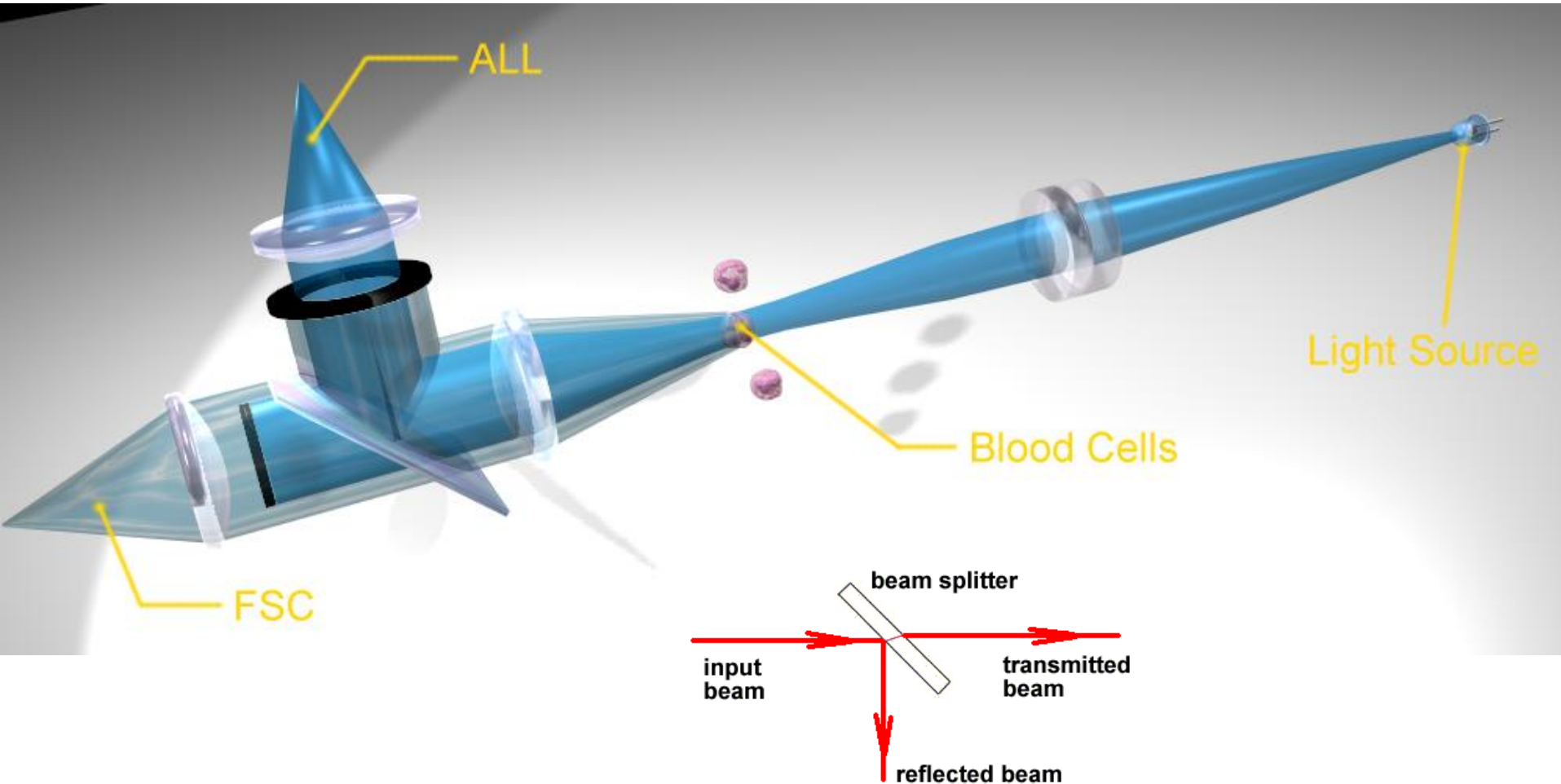
Ilustrarea histogramei WBC, populatii de celule cu volumul intre 35 si 450 fl repartizate in 3 grupe – **3 DIF**

# Histograma WBC



# Metoda Flowcitometrica

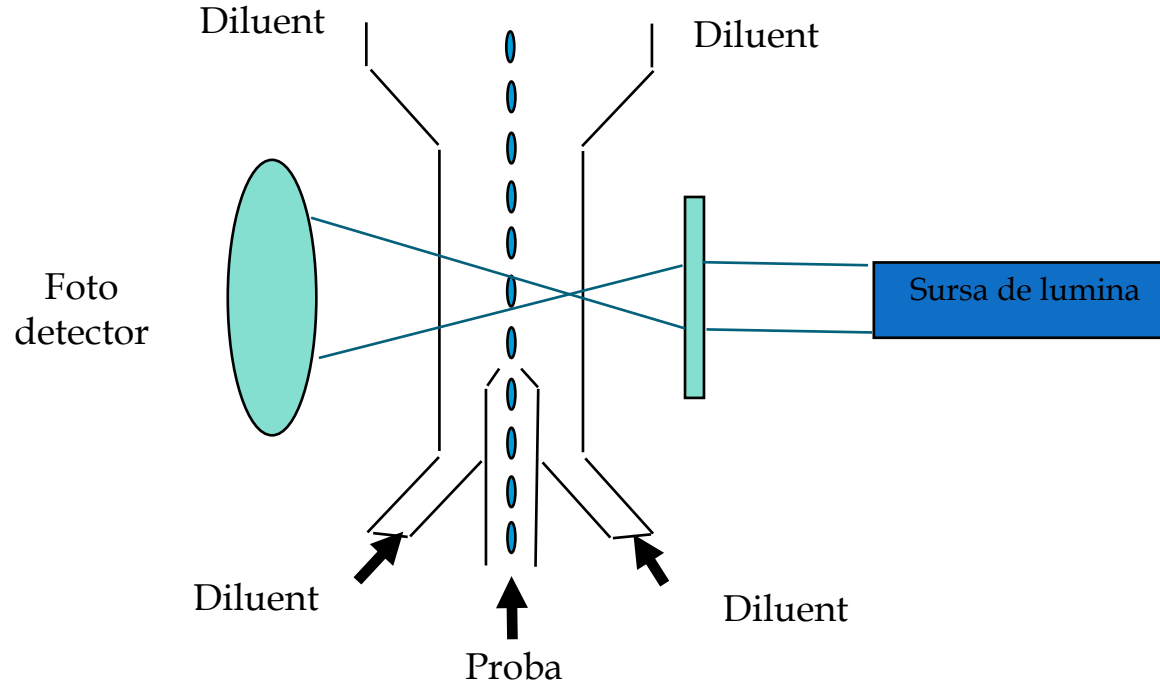
## Diferentierea 5 DIF



# Metoda Flowcitometrica

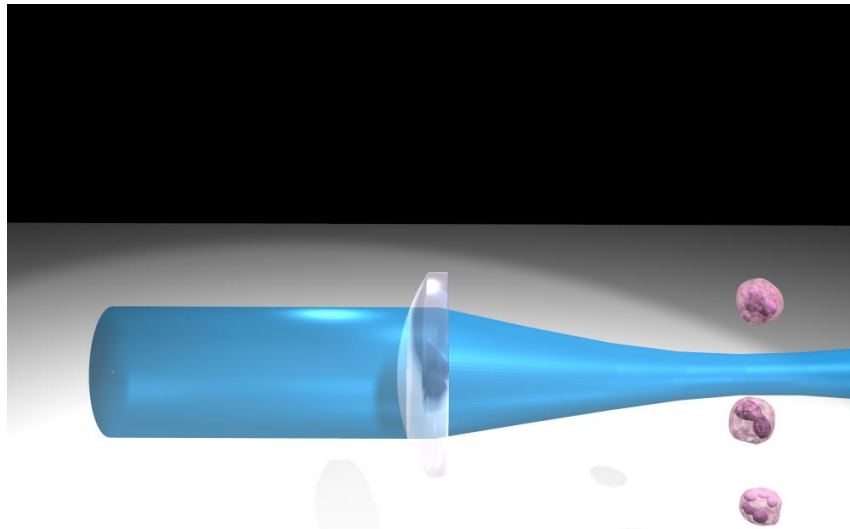
## Diferentierea 5 DIF

- Flowcitometrie

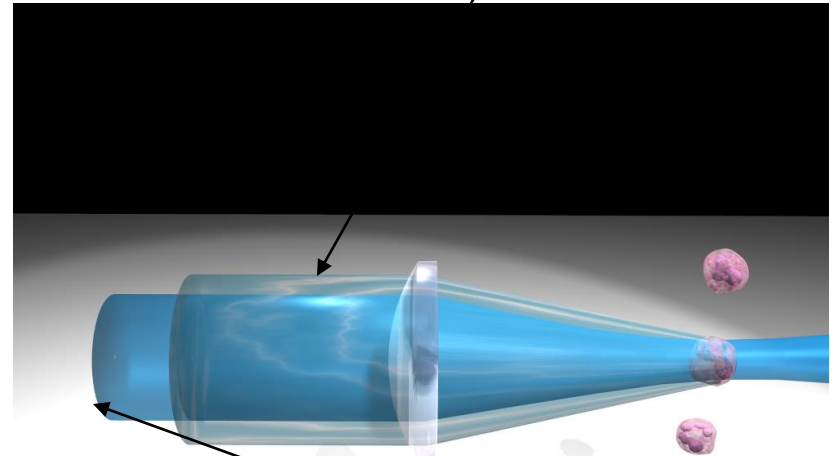


Metoda Flowcitometrica  
Diferentierea 5 DIF

**Lumina difractata**



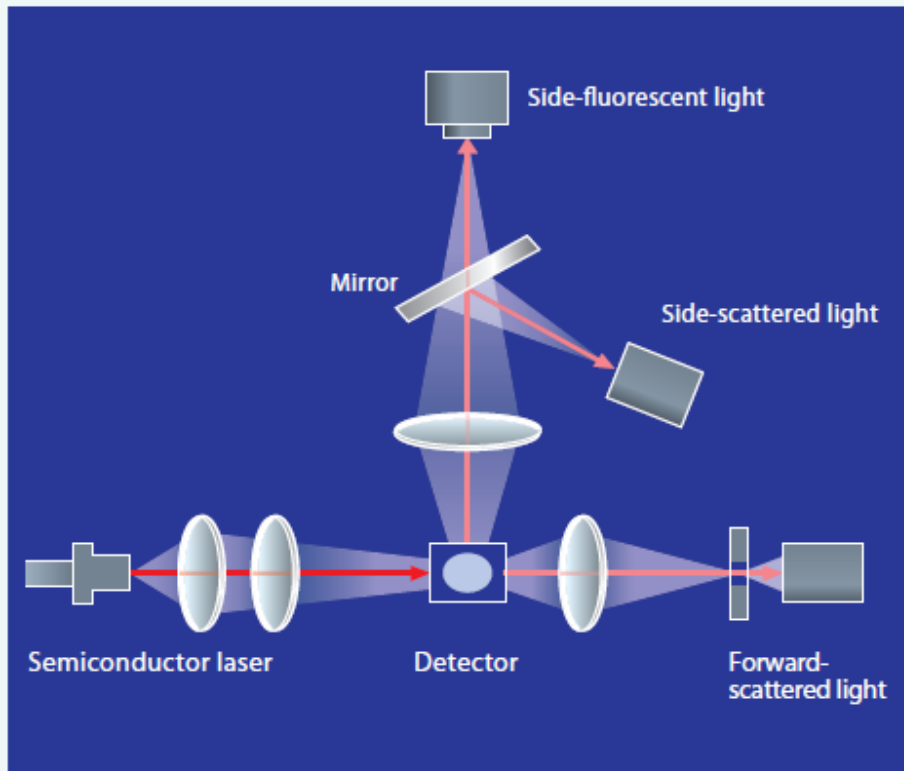
Celula in apropiere de trecere  
prin fascicolul luminos



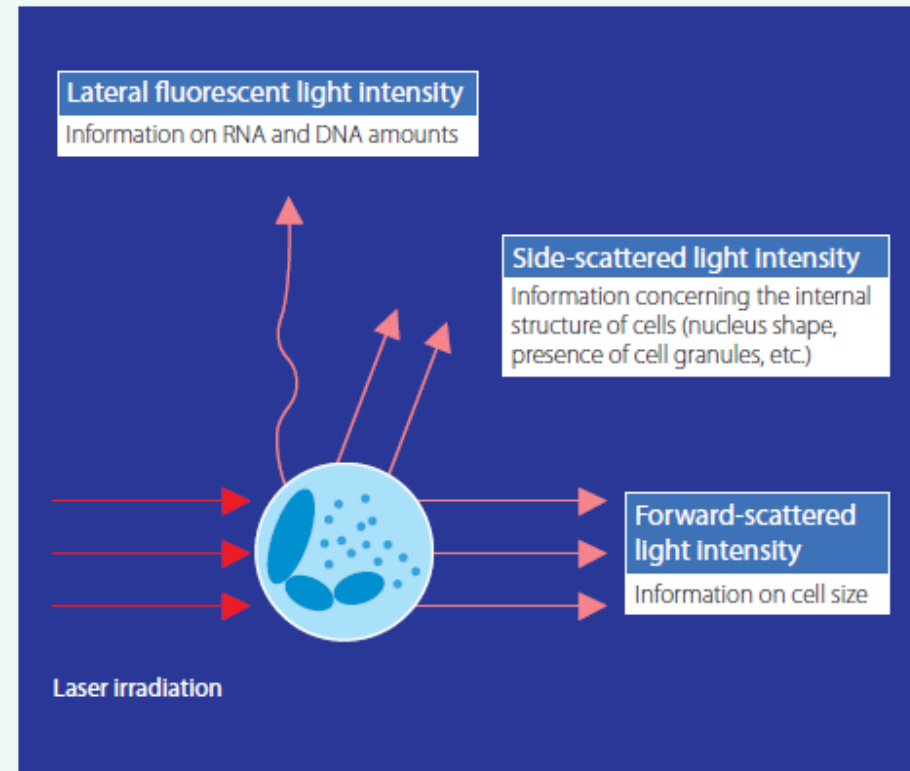
**Lumina transmisa**

# Metoda Flowcitolometrica diferentierea 5 DIF

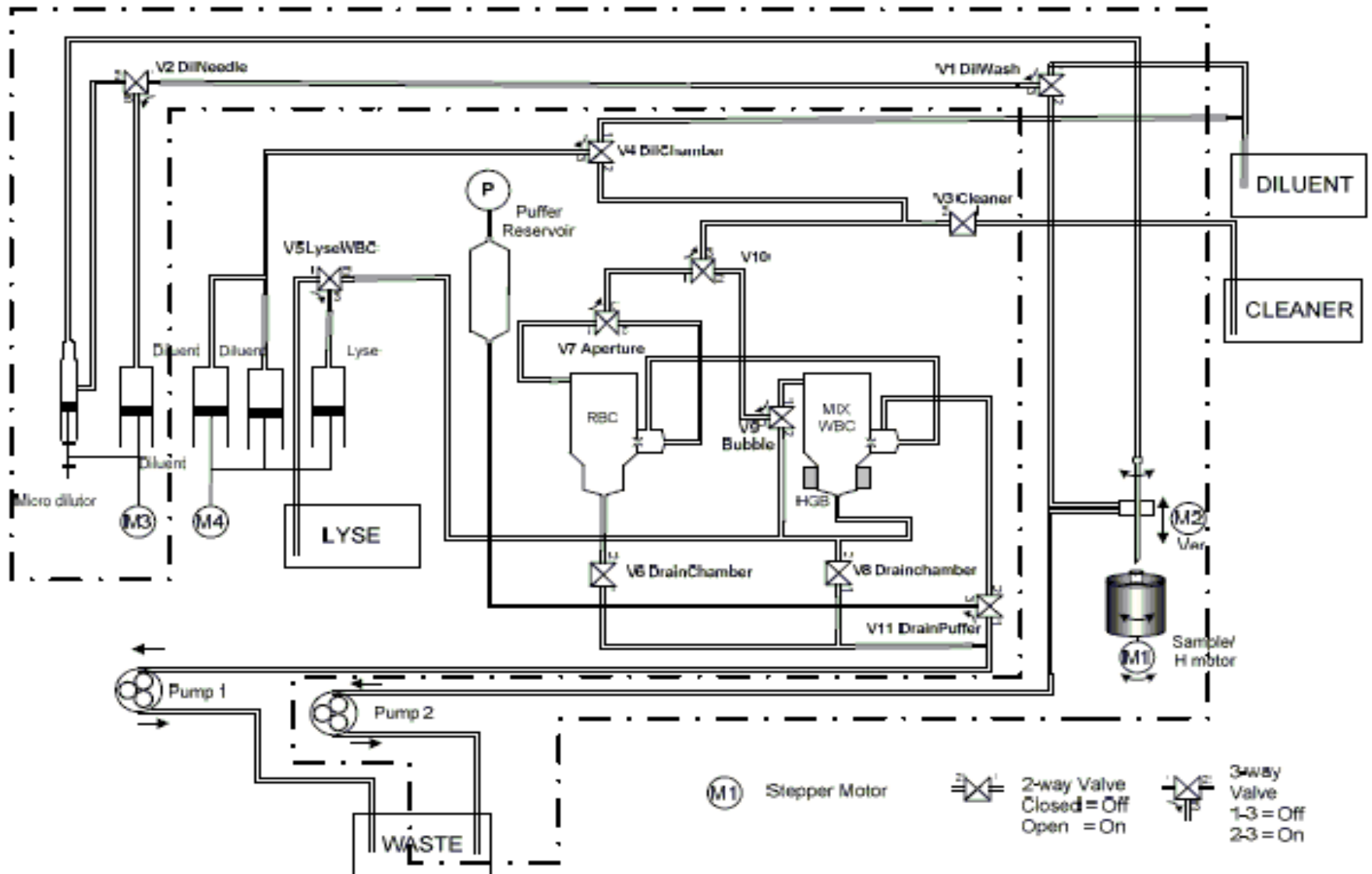
Conceptual Diagram



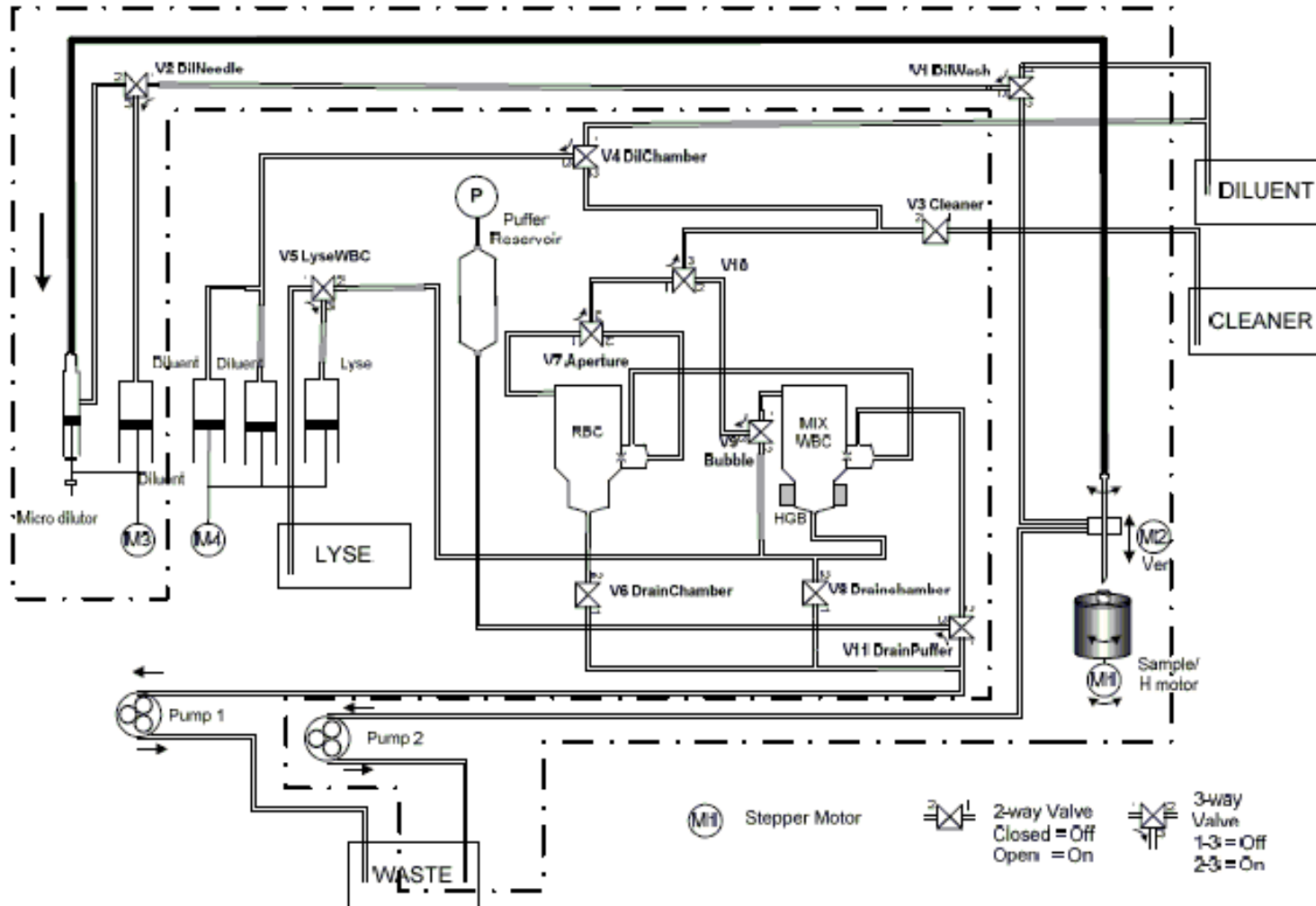
Captured Information



# Schema fluidica a unui Analizor 3 DIF

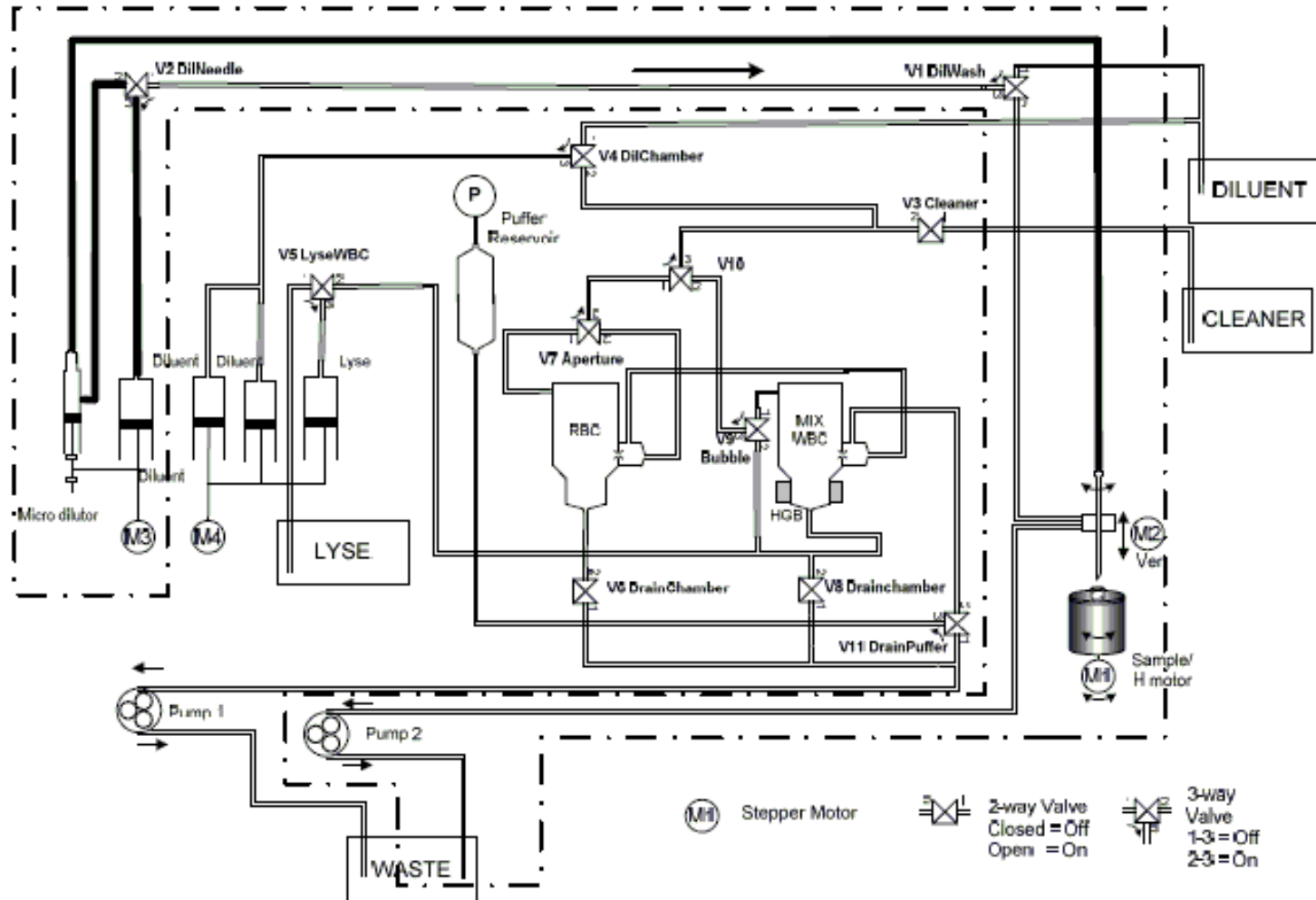


# Dozarea Probei

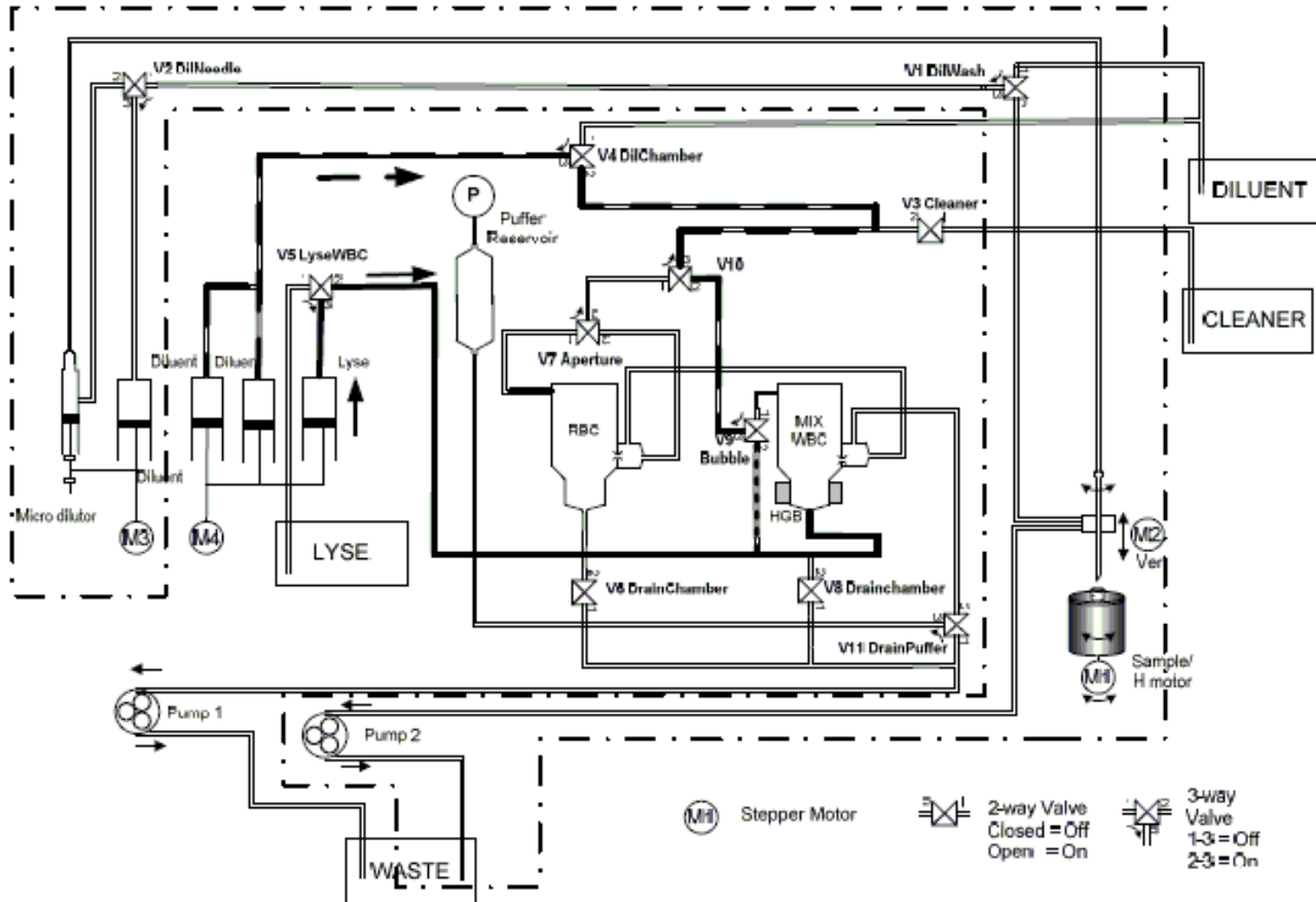




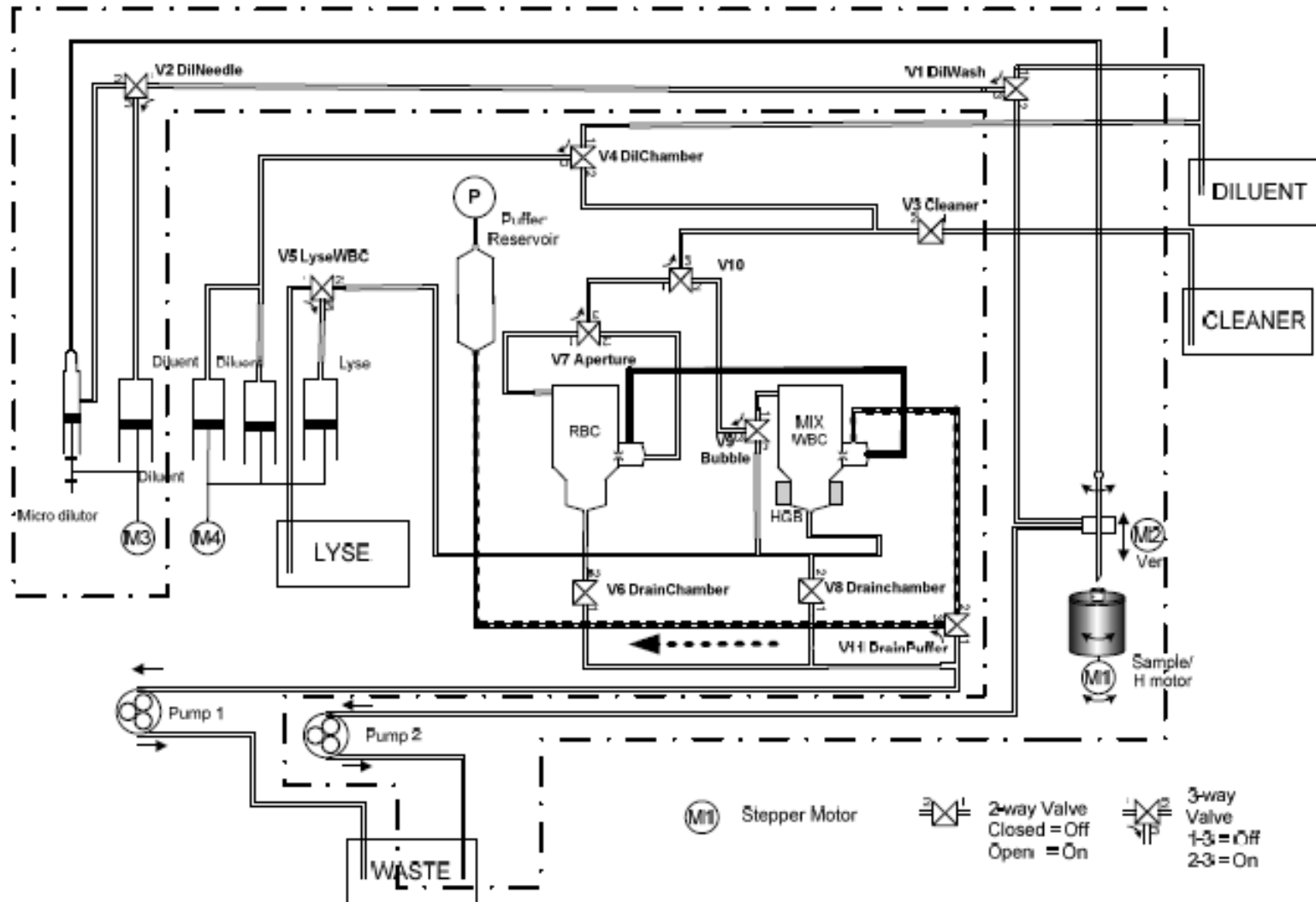
# Procesul de Dilutie



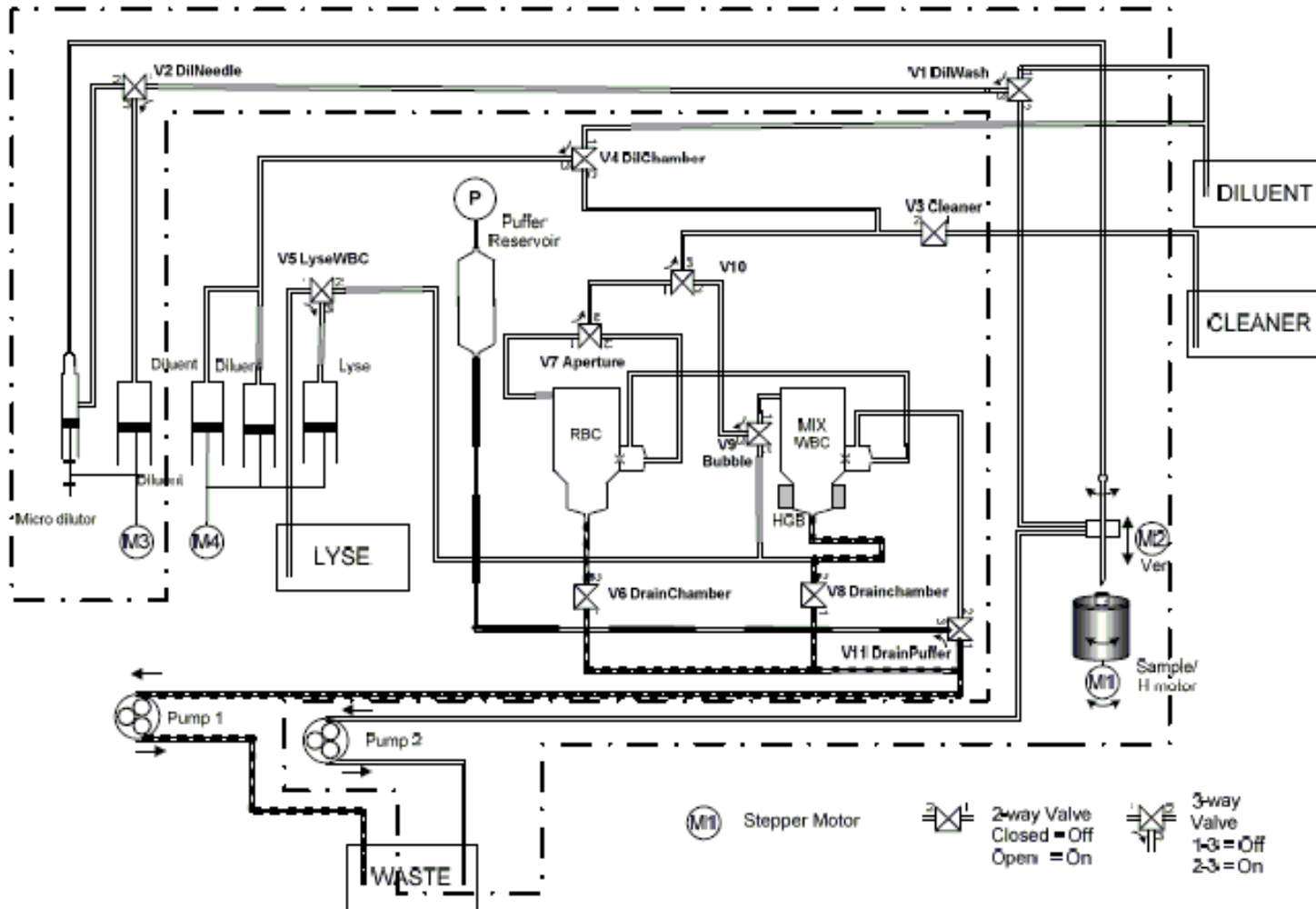
# Procesul de lezare a Eritrocitelor



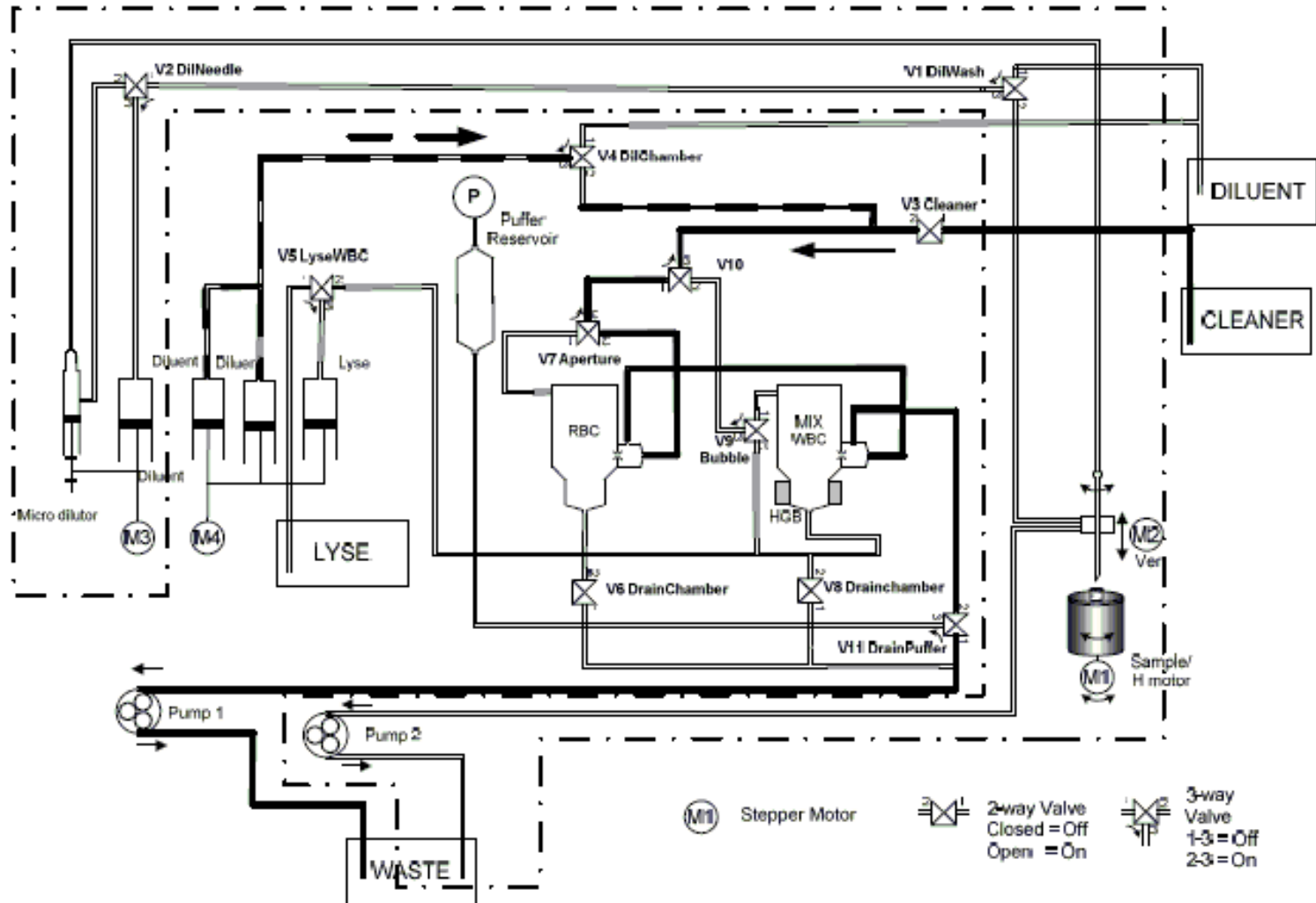
# Procesul de Numarare



# Curatirea camerelor de citire



# Procesul de Spalare



**Vă mulțumesc pentru  
atenție!**

