

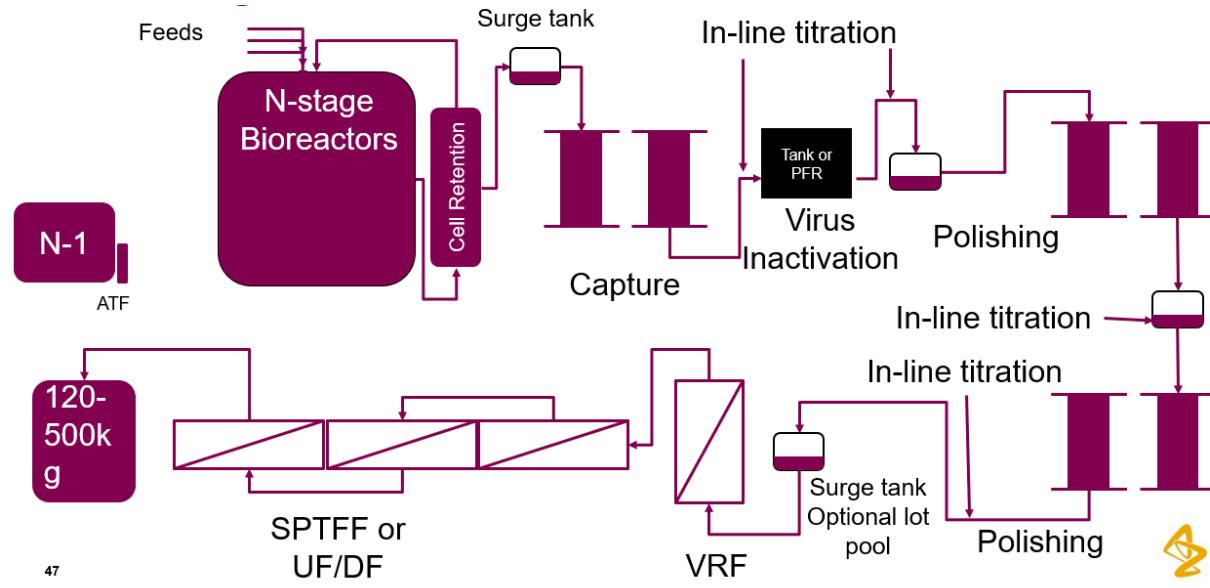


The National Institute for Innovation in Manufacturing Biopharmaceuticals





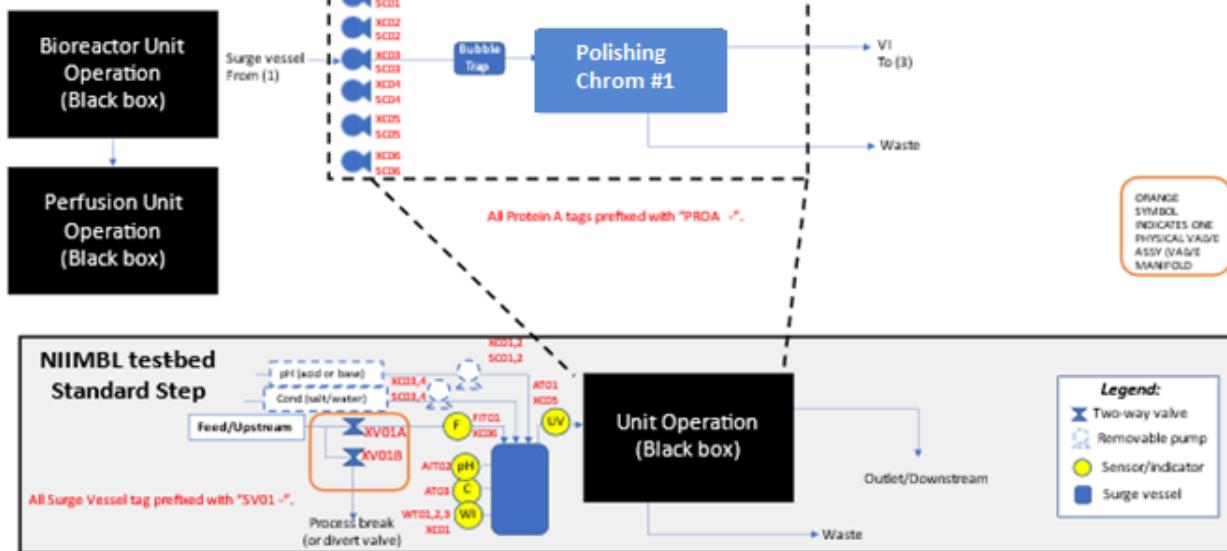








**Polishing  
(2) Chrom #1**

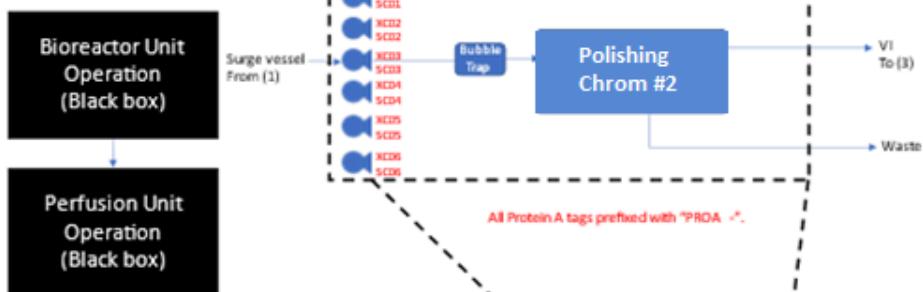








**(2) Polishing Chrom #2**



ORANGE SYMBOL INDICATES ONE PHYSICAL VALVE ASSY (VALVE MANIFOLD)

**NIIMBL testbed Standard Step**

All Surge Vessel tag prefixed with "SV01 -".

Process break (or divert valve)

XV01A XV01B pH (acid or base) Cond (salt/water)

WT01,2,3 WT01,2,3 pH AT01 C

WT01,2,3 WT01,2,3 pH AT01 C

Unit Operation (Black box)

Outlet/Downstream

Waste

**Legend:**

- Two-way valve
- Removable pump
- Sensor/Indicator
- Surge vessel

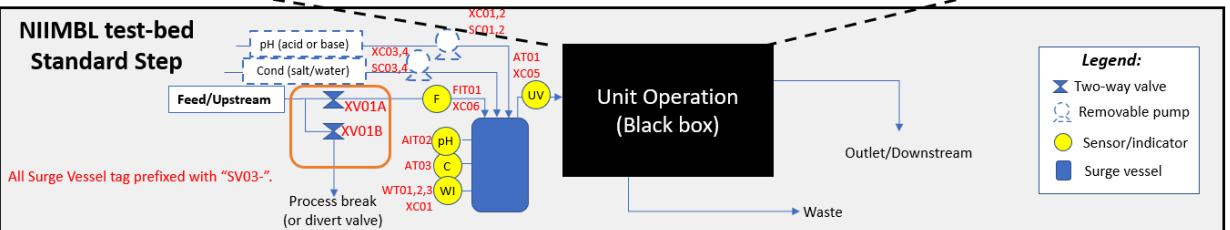








**(4) Post-VI Depth Filtration**

















(3)

### Viral inactivation black box:

















**(8) Ultrafiltration**

