

UF System for E-coating

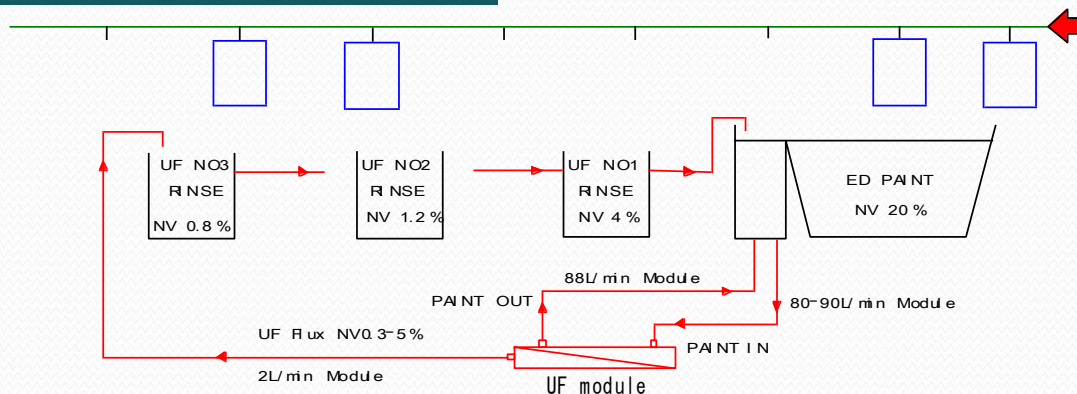
POLYSEP



UF system is a critical component of the E-coating process. Any issues/errors will result in stoppage of the E-coating line.

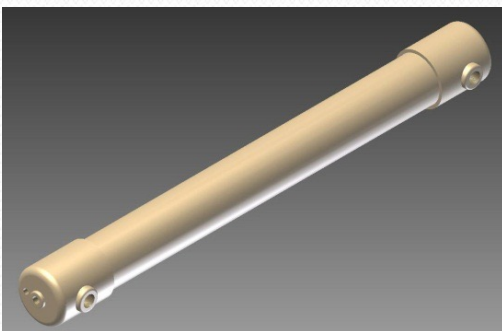
POLYSEP UF system is built upon rich experience and improvements over the years, supported by continuous research. As a result, our UF system is most economical and stable.

UF Paint Recycling Mechanism



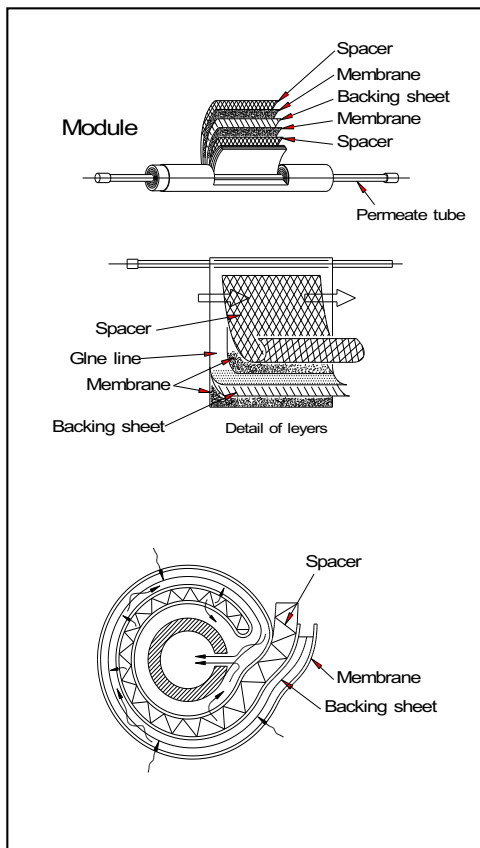
Electrodeposited articles carry out excess ED paint that did not form film. This excess paint is retrieved by rinsing with the UF permeate and returning the rinse solution back to the ED system. This allows the ED system to keep the paint loss at a minimum.

Features of PolyTechs UF Module



- No permeate loss like systems requiring back-flushing.
- Easy membrane cleaning and good performance recovery.
- Able to isolate modules for cleansing even during normal operation. (*this is a custom configuration)
- Low cost permeate production as a result of using large capacity module.
- Since we have an accurate UF membrane compatibility testing, we are able to analyze quickly when issues arise.

UF Module Structure and Permeate Production Mechanism



The UF module produces permeate as ED paint flows into the spacer portion of the module and filtered out at the membrane surface.

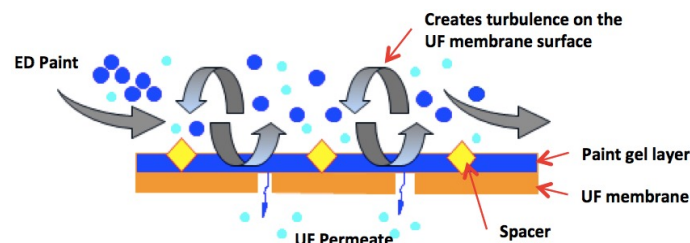
① UF Membrane

UF membrane is the most important component that comes in contact with the ED paint. Various design considerations are made from both chemical and mechanical aspects of the product to keep the surface from getting clogged.

- Various materials are available
- Pore sizes are $0.01\mu\text{m}$
- Special surface treatment

② Spacer

Spacer determines the flow channel gap and increase turbulence to break up the gel layer on the membrane surface.



③ Support Material

Supports the membrane under high pressure, and provides a channel for the permeate flow.

UF Module Type

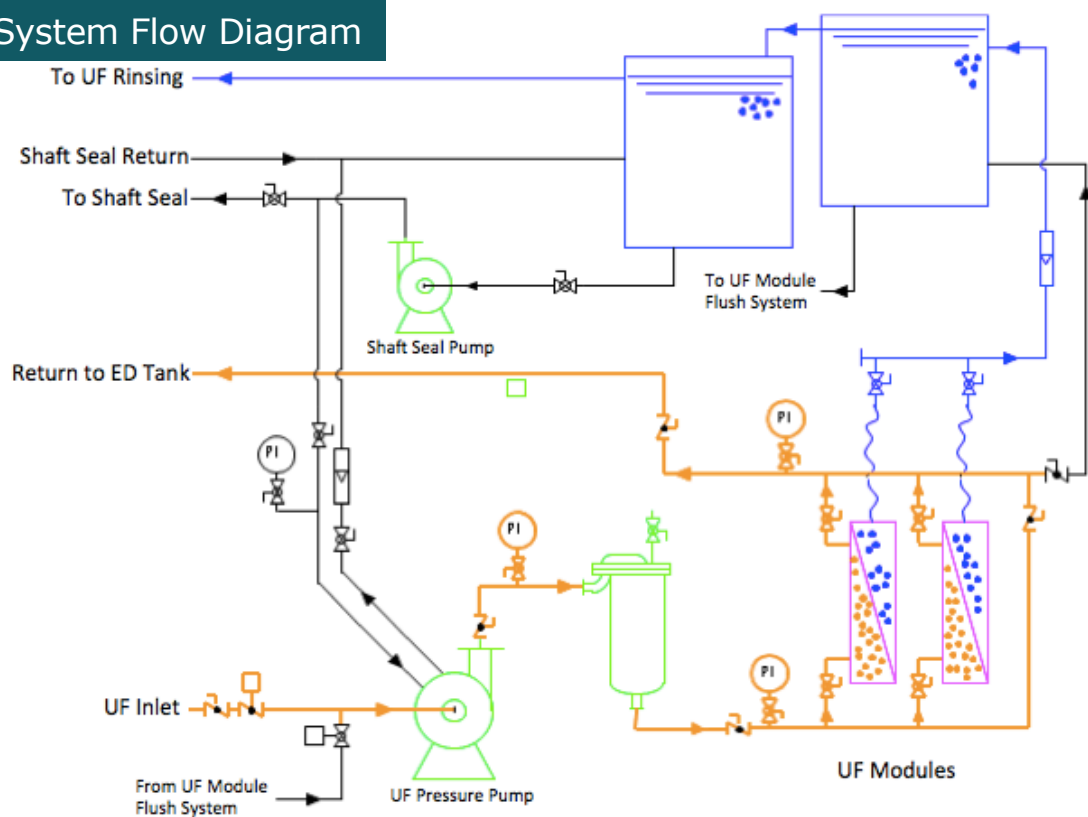
UF Module Type	ED-400	ED-500	ED-600	ED-800
Membrane surface area	4m ²	7m ²	13.7m ²	28.4m ²
*Initial UF permeate (typical)	1.2~1.5L/min	2~3L/min	4~6L/min	8~10L/min

*Assumes the ED paint having an A grade for PolyTechs' UFCC test.

Base Specification

Category	PS-2-500HK ED-500HK × 2MODULE	PS-3-600HK ED-600HK × 3MODULE	PS-4-800HK ED-800HK × 4MODULE
Permeate production rate	2.0L/min × 2MODULES= 4.0L/min	4.0L/min × 3MODULES= 12.0L/min	8.0L/min × 4MODULES= 32.0L/min
Operation Pressure	UF Inlet : 0.25-0.35MPa UF Outlet : 0.05-0.1 MPa		
UF Pressure pump power	3.7kW	5.5kW	11kW
Pre-filter Type	BAG filter Element 25~50μm	BAG filter Element 25~50μm	BAG filter Element 25~50μm
Material Of Construction	Frame : SS, Pump & Piping : SUS304 • SCS13		
System Dimensions	W1100 × L2350 × H200 0	W1300 × L2500 × H200 0	W1300 × L2800 × H200 0

UF System Flow Diagram



POLYTECHS, INC.
www.poly-techs.co.jp

Main Office
〒192-0045 2-5-1 Owada, Hachioji, Tokyo, Japan
TEL:0426-31-4801 FAX:0426-31-4802

Nagoya Office
〒467-0853 22-24 Uchiyama, Mizuho, Nagoya, Aichi, Japan
TEL:052-811-2373 FAX:052-811-2383

Osaka Office
〒553-0002 3-10-13-101 Sagisu, Fukushima, Osaka, Osaka, Japan
TEL:06-4799-8860 FAX:06-4799-8865

Factory
〒408-0002 1593 Murayamakitayari, Takane, Hokuto, Yamanashi, Japan
TEL:0551-47-4781 FAX:0551-47-4782

China Office
No.62 Xingnan Rd., Wuzhong, Suzhou, Jiangsu, 215168, P. R. China
TEL:0512-62927721 FAX:0512-62927720