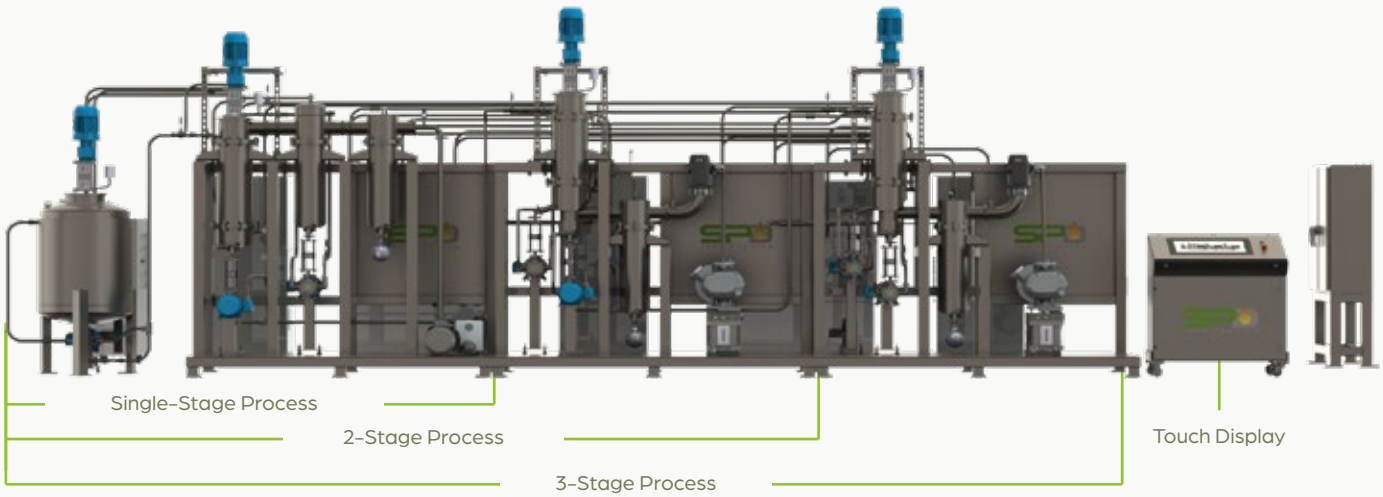
SPD-16

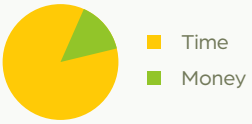
KEEP GROWING

The SPD-16 was named for its throughput rate of 16L per hour. This unit is available in one, two or three stages with manual or automated operation capabilities. This unit is ideal for high throughput distillation for commercial production or for pilot testing of processes before scaling to larger capacity.



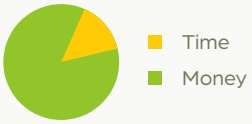
Batching vs. Continuous Processing

Molecular separation can be achieved by many different distillation methods, each with varying operating costs. An optimized multi-stage distillation system utilizes the most efficient distillation configuration/ method at each point in the refinement process.



Single Stage (Batching)

- ✓ Lower initial cost
- × Lower consistency
- × Increased run-time (multiple-passes required)
- × Increased labor and operating costs
  - Batch collection / handling / transfer
  - Breaking vacuum and cleaning



Multi Stage (Continuous)

- ✓ Higher initial cost
- ✓ Quicker ROI
- ✓ Consistent results
- ✓ Faster run-time (single pass)
- ✓ Less operating cost / operator error
  - Hands free "recipe" programming
  - Easy operation / intuitive SOP
  - Remote support available

Contact Steve Lach | S.L@spdsys.com | cell: 720-402-4451 | office: 323-262-0773

SPD-16

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Configurations

3 Stage

Rolled-Film + Short-Path + Short-Path

2 Stage

Rolled-Film + Short-Path

Single Stage

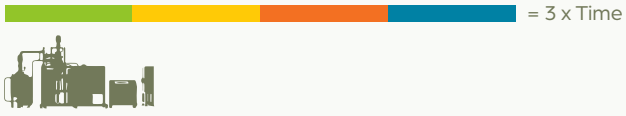
Short-Path

Run Time to High Potency

3 Stage

2 Stage

Single Stage



Time

Run Break Vacuum Collect Re-run

Operation Considerations

- "Hands-free" distillation from crude to highly concentrated product
- Integrate with upstream/feed stock process (ex: extraction, solvent recovery, holding vessel)
- Custom automation and in-line modifications
  - Feed cycle - Wash Cycle - In-line Analyzers - Flow Meters - In-line filtration

- May require additional refinement passes to achieve desired concentration
  - Optional semi-automated loop recycler
- Integrate with upstream/feed stock process (ex: extraction, solvent recovery, holding vessel)
- Custom automation and in-line modifications
  - Feed cycle - Wash Cycle - In-line Analyzers - Flow Meters - In-line filtration

- Requires multiple passes (~3-8x) to achieve high concentration
  - Optional semi-automated loop recycler
- Integrate with upstream/feed stock process (ex: extraction, solvent recovery, holding vessel)
- Custom automation and in-line modifications
  - Feed cycle - Wash Cycle - In-line Analyzers - Flow Meters - In-line filtration

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Throughput

Up to 16 L / h

Feedtank Capacity

200 Liters Jacketed

- Automatic In-Feed Available
- Custom feed tank configurations Available

Controller & HMI

- Allen - Bradley® Industrial PLC
- Windows® Based Operating System
- 21" Color Touchscreen
- 1 - Click Recipe Based Setup
- Data Collection Capability
- Remote Access, Monitoring, and Diagnostics

Cold Trap Cooling

- Liquid Nitrogen = 5L/hr/stage

Dimensions & Weights

Stage	Dimensions W x L x H	Weight
Single Stage	12′ x 14′ x 10′	2500 lbs
2 Stage	12′ x 22′ x 10′	5000 lbs
3 Stage	12′ x 30′ x 10′	7500 lbs

- Additional stages can be added after initial purchase for additional cost
- Standard straight line configuration. Other layouts available
- Does not include aisles for access around machine (recommend ~3′)
- Recommend additional 4′ above unit for installation and maintenance

Construction

Part of Process	Grade of Steel
Components That Contact Product	316 SS
Frame & Controller Body	304 SS

Power Requirements

Hz (Voltage) / Stage	3p/60hz (240/480vac)
480vac @ 1 / 2 / 3 Stage	100a / 200a / 300a

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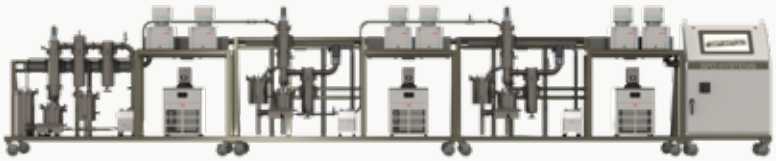
SPD-16

KEEP GROWING

Commercial Models

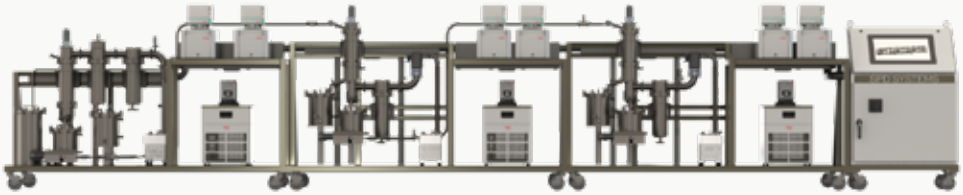
SPD-4.5

4.5 L/h
4′ x 22′ x 5.3′
240vac @ 3 Phase



SPD-8.0

8 L/h
4′ x 30′ x 5.3′
240vac @ 3 Phase



SPD-16

16 L/h
12′ x 30′ x 10′
480vac @ 3 Phase

SPD-25

25 L/h
12′ x 30′ x 10′
480vac @ 3 Phase

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