



**GFD™**



**POWDER SYSTEMS LIMITED**

Patent pending



**POWDER SYSTEMS LIMITED**  
PSL BELIEVES IN WORLD CLASS PEOPLE WORKING  
TOGETHER TO PROVIDE **WORLD CLASS SOLUTIONS.**

Our experienced engineering teams work closely with our skilled chemists to accelerate process development and create the most suitable and ergonomic solutions. PSL's established supply chain management ensures all components, sourced from across the globe, are of the highest quality and value. This enables market savings to be passed directly onto our customers.

PSL is an international manufacturer of filtration, drying and high containment solutions. We have been supporting pharmaceutical, biopharmaceutical, chemical and laboratory industries since 1989.

PSL's experienced technical experts have refined our filtration and drying designs over many years using the latest global technology.



**OUR GLOBAL OFFICE BASE**

PSL continues to increase its number of global offices, agents and distributors to aid the smooth distribution of its equipment to any part of the world.



# THE GFD™ FROM PSL



## The Glass Filter Dryer

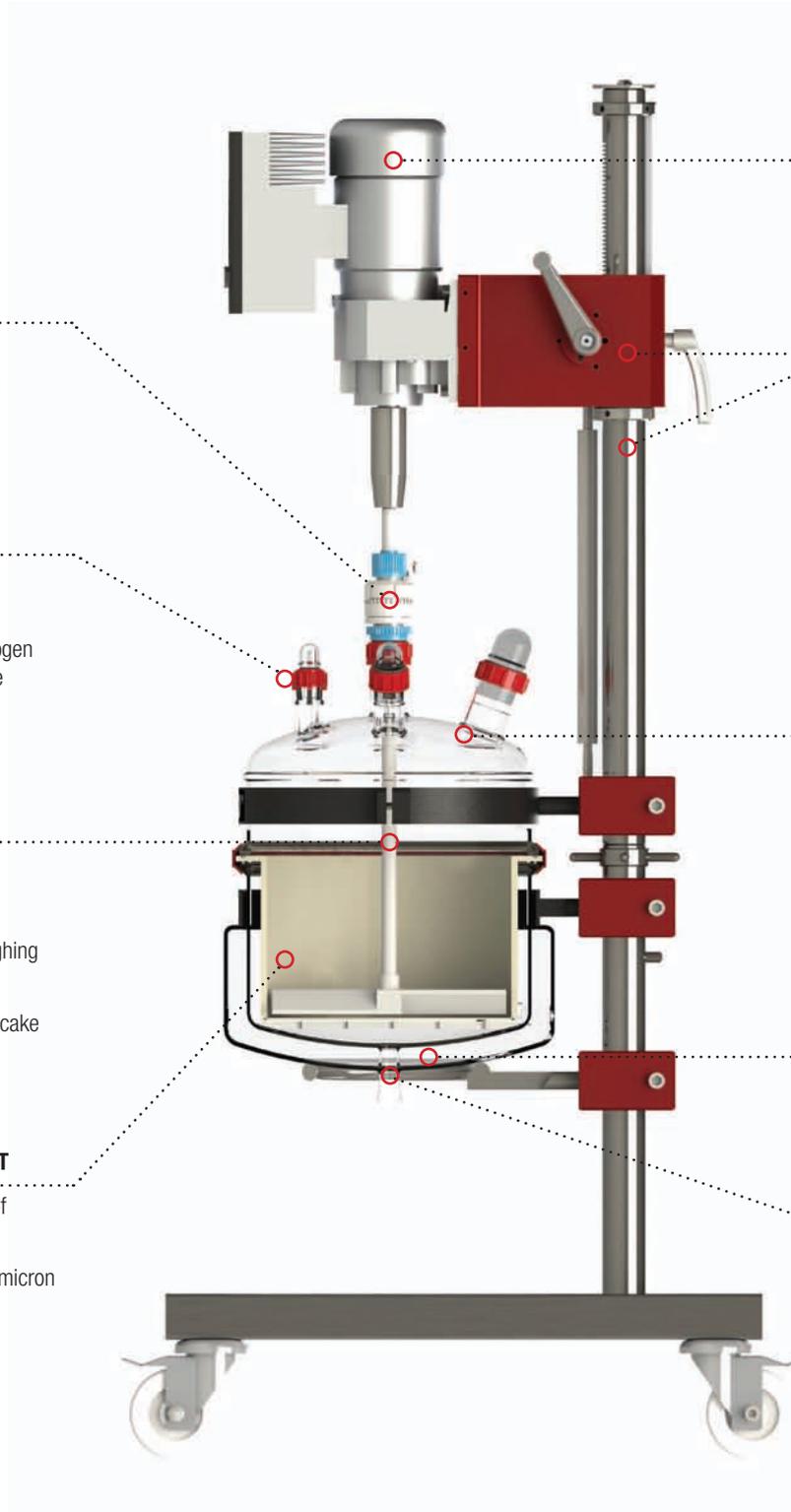
(GFD™) is an innovative piece of laboratory/pilot plant equipment. It is a miniature version of a production filter dryer, allowing easy lab scale filtration and drying with the same reliability and benefits as full size PSL filter dryer products. The different sizes available means that there will be a GFD to meet any laboratories' needs.

This modern laboratory apparatus works under vacuum and pressure, has a heated jacket for drying and a removable filtration basket for collection of the product. The GFD technology supersedes old style laboratory filtration and drying methods such as Buchner filtration and tray drying.

BATCH HOMOGENEITY  
EASY CLEANING  
IMPROVED YIELD  
REDUCED PRODUCT EXPOSURE

PROCESS VISIBILITY

REMOVABLE FILTER BASKET  
MINIMUM PROCESS DISRUPTION



**AGITATOR SEAL**

- PTFE
- Vacuum and pressure rated
- Allows bidirectional rotation

**NOZZLES**

- Slurry in
- Can easily connect other equipment/controls i.e. nitrogen purge, IR temperature probe
- Cake washing

**AGITATOR**

- PTFE coated stainless steel
- Adjustable agitator height
- Allows smoothing and ploughing of filter cake
- Aids uniform drying of filter cake to avoid the biscuit effect

**REMOVABLE FILTER BASKET**

- Totally removable for ease of product collection
- Metallic and different sized micron baskets available
- 20µm nominal pore size, polypropylene as standard

**MOTOR**

- High torque bidirectional motor
- RPM display

**AGITATOR HEIGHT ADJUSTMENT**

- Standard on all sizes of GFD
- Enables effortless raising/ lowering of the agitator
- Scale for accurate and repeatable agitator height setting

**GLASS VESSEL**

- Manufactured from borosilicate 3.3 glass
- Easy to clean
- Extremely chemical and heat resistant
- Vessel lid swings out for easy removal of inner filter basket

**HEATED JACKET**

- Aids quick and effective drying of product

**VACUUM/DRAINAGE NOZZLE**

## STANDARD GFD SPECIFICATIONS

	MINI LAB	LAB	MAXI LAB
Filtration Area	0.002m <sup>2</sup>	0.01m <sup>2</sup>	0.05m <sup>2</sup>
Filter Cake Volume (Max)	0.1 Litre	0.5 Litre	5 Litres
Filter Cake Depth (Max)	50mm	50mm	100mm
Volume	0.3 Litres	2 Litres	10 Litres
Vessel Design Temperature (Min)	-25°C (-13°F)	-25°C (-13°F)	-25°C (-13°F)
Vessel Design Temperature (Max)	150°C (302°F)	150°C (302°F)	150°C (302°F)
Vessel Design Pressure (Min)	FV	FV	FV
Vessel Design Pressure (Max)	0.5 barg (7.25 psig)	0.5 barg (7.25 psig)	0.5 barg (7.25 psig)
Product Dimensions (mm)	1080 (H) x 330 (W) x 400 (D)	1230 (H) x 330 (W) x 400 (D)	1680 (H) x 780 (W) x 650 (D)
Product Contact Materials	Borosilicate 3.3 Glass, PTFE Coated Stainless Steel, Viton Polypropylene, Silicone	Borosilicate 3.3 Glass, PTFE Coated Stainless Steel, Viton Polypropylene, Silicone	Borosilicate 3.3 Glass, PTFE Coated Stainless Steel, Viton Polypropylene, Silicone
Filtration Media	Polypropylene Cloth 20µm Nominal Pore Size	Polypropylene Cloth 20µm Nominal Pore Size	Polypropylene Cloth 20µm Nominal Pore Size
Agitator Seal	PTFE Vacuum and Pressure Rated Seal	PTFE Vacuum and Pressure Rated Seal	PTFE Vacuum and Pressure Rated Seal
Motor	44W Motor 115V/240V (50Hz/60Hz) Output Torque 406Ncm	44W Motor 115V/240V (50Hz/60Hz) Output Torque 406Ncm	0.18kW 100-120V/200-240V (47-63Hz) Output Torque 60Nm IP55 Rated
Speed of Agitator Rotation	5 to 100 RPM	5 to 100 RPM	5 to 26 RPM
Hazardous Area Classification	Safe Area	Safe Area	Safe Area

## GFD OPTIONS

-  Metallic filtration basket
-  Different micron sized filtration baskets
-  Metallic agitator
-  GFDs inserted into containment systems
-  IR temperature probe
-  Different o-ring materials
-  cGMP certification package



## AFTERCARE SERVICE FROM PSL

**PSL Serve** is our dedicated after sales customer care, on-site service and spares team. They are technical specialists, here to aid the smooth installation of new equipment, along with the servicing and repairs of existing PSL equipment and any spare parts required.

