

# Portable Liquid Pump and Filter Systems



**Filtration Systems™**

Division of Mechanical Mfg. Corporation



**Our Portable Liquid Filter Systems are designed to pump, transfer and filter liquids from tanks, drums or other sumps, using air-powered double diaphragm pumps. It is an essential tool for any plant where liquids are present. Portable Systems are extremely effective for batch processing and/or clean up of accidental spills. Here are a few of the liquids that are compatible with these systems:**

- ACIDS ■ ADHESIVES ■ BEVERAGES
- BULK CHEMICALS ■ COOLING OILS ■ COSMETICS
- CUTTING FLUIDS ■ DETERGENTS ■ FOOD
- FUEL OIL ■ HYDRAULIC OIL ■ INKS
- PAINTS & VARNISHES ■ PETROCHEMICALS
- PHARMACEUTICALS ■ PROCESS WATER ■ RESINS
- SLUDGES ■ SLURRIES ■ SOLVENTS
- VEGETABLE OIL ■ WATER

## MODEL PNS-141-10



### MODEL PNS-141-10

#### Specifications

Operating Capacity 10 gpm (600 gallon/hr.)  
Pump Construction Polypropylene/PTFE Elastomer  
Pump Size 1/2"  
Pumps Solids up to 1/32" diameter  
Filtration from .5-800 microns  
Maximum Operating Pressure 125psi  
Maximum Operating Temperature 150°F  
Housing is Hydrostatically Tested to 250psi  
Dimensions HxWxD inches 18 x 9 x 20  
Shipping Weight Lbs 59

#### Filter Media

Uses a single #4 size disposable Filter Bag (4" dia. x 14" long), or Strainer Baskets, Mesh or Micron-Lined Baskets or (1) standard 10" Cartridge Filter

#### Features

Completely Packaged System  
Easily Operated by Single User  
Non-Electric  
Requires No Special Tools

#### Pump Features

Air-Powered Double Diaphragm Pump  
Self-Priming from a dry start  
Can run dry without damage  
Stops automatically if discharge is closed;  
resumes running when line is open  
Low internal velocity allows trouble-free  
pumping of abrasives or viscous materials

## MODEL PNS-122-35



### Features

Completely Packaged System  
Easily Operated by Single User  
Non-Electric  
Requires No Special Tools

### Pump Features

Air-Powered Double Diaphragm Pump  
Self-Priming from a dry start  
Can run dry without damage  
Stops automatically if discharge is closed;  
resumes running when line is open  
Low internal velocity allows trouble-free pumping  
of abrasives or viscous materials

## MODEL PNS-122-75



## MODEL PNS-122-35

### Specifications

Operating Capacity 35 gpm (2100 gallons/hr.)  
Pump Construction Stainless Steel/PTFE Elastomer  
Pump Size 1"  
Pumps Solids up to 1/8" diameter  
Filtration from .5-800 microns  
Maximum Operating Pressure 125psi  
Maximum Operating Temperature 150°F  
Housing is Hydrostatically Tested to 250psi  
Dimensions HxWxD inches 44 x 29 x 26  
Shipping Weight Lbs 260

## MODEL PNC-122-35

Operating Capacity 35 gpm (2100 gallons/hr.)  
Pump Construction Aluminum/Buna Elastomer  
Pump Size 1"  
Pumps Solids up to 1/8" diameter  
Filtration from .5-800 microns  
Maximum Operating Pressure 125psi  
Maximum Operating Temperature 150°F  
Housing is Hydrostatically Tested to 250psi  
Dimensions HxWxD inches 44 x 29 x 26  
Shipping Weight Lbs 225

## MODEL PNF-122-35

Operating Capacity 35 gpm (2100 gallons/hr.)  
Pump Construction Aluminum/Buna Elastomer  
Pump Size 1"  
Pumps Solids up to 1/8" diameter  
Filtration from .5-800 microns  
Maximum Operating Pressure 125psi  
Maximum Operating Temperature 150°F  
Housing is Hydrostatically Tested to 250psi  
Dimensions HxWxD inches 44 x 29 x 26  
Shipping Weight Lbs 225

### Filter Media

Uses a single #2 size disposable Filter Bag  
(7" dia. x 32" long), or Strainer Baskets, Mesh  
or Micron-Lined Baskets or 4 standard 20"  
Cartridge Filters

## MODEL PNS-122-75

### Specifications

Operating Capacity 75 gpm (4500 gallons/hr.)  
Pump Construction Stainless Steel/PTFE Elastomer  
Pump Size 1 1/2"  
Pumps Solids up to 1/4" diameter  
Filtration from .5-800 microns  
Maximum Operating Pressure 125psi  
Maximum Operating Temperature 150°F  
Housing is Hydrostatically Tested to 250psi  
Dimensions HxWxD inches 44 x 29 x 44  
Shipping Weight Lbs 335

### Filter Media

Uses a single #2 size disposable Filter Bag  
(7" dia. x 32" long), or Strainer Baskets, Mesh  
or Micron-Lined Baskets or 4 standard 20"  
Cartridge Filters

## PORTABLE PUMP/FILTER SPECIFICATIONS

Note: All Portable Systems are tested and operated prior to shipment.	MODEL PNS - 141 - 10	MODEL PNS - 122 - 35	MODEL PNC - 122 - 35	MODEL PNF - 122 - 35 "Non Ferrous"	MODEL PNS - 122 - 75	MODEL PNS - 222 - V - 135
<b><u>BAG FILTER HOUSINGS</u></b>						
Material of Construction	T-316 SS	T-304 SS	Carbon Steel	T-304 SS	T-304 SS	T-304 SS
O-Ring Material	Buna	Viton/Atlas™	Buna	Buna	Viton/Atlas™	Viton/Atlas™
Filter Housing Model Number	NS-141	NS-122	NC-122	NS-122	NS-122	NS-222-V-PS
Standard Housing Finish	Glass Bead	Glass Bead	White Primer	Glass Bead	Glass Bead	Glass Bead
Optional Finish (Interior)	Halar	Halar	Halar	Halar	Halar	No
Micron Size to be Filtered	.5-800	.5-800	.5-800	.5-800	.5-800	.5-800
Bag Support Basket Included	Yes	Yes	Yes	Yes	Yes	Yes
Vent Port and Gauge Ports (NPT)	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Lid Safety Detents & Lid Stop	Yes	Yes	Yes	Yes	Yes	Yes
Hinged Closure w/ Lid Handle	Yes	Yes	Yes	Yes	Yes	Yes
Hardware-Bar Knobs (Plated)	Yes	Yes	Yes	Yes	Yes	Yes
<b><u>HAND TRUCK</u></b>						
Material of Construction	Stainless Steel	Coated Steel	Coated Steel	Coated Steel	Coated Steel	Stainless Steel
2 Wheel - 4 Wheel Type	Portable	2-Wheel	2-Wheel	2-Wheel	2-Wheel	4-Wheel
Wheel Diameter and Type	—	10" Pneum.	10" Pneum.	10" Pneum.	10" Pneum.	5" Swivel/Brake
Drip Containment	No	Yes	Yes	Yes	Yes	Yes
Wheels Off Ground at Rest	N/A	Yes	Yes	Yes	Yes	No
<b><u>COMPRESSED AIR COMPONENTS</u></b>						
Air Filter/Regulator Included	Yes	Yes	Yes	Yes	Yes	Yes
Air Pressure Gauge Included	Yes	Yes	Yes	Yes	Yes	Yes
Air Filter Micron Rating	50	50	50	50	50	50
Air Shutoff/Control Valves Included - Brass	Yes	Yes	Yes	Yes	Yes	Yes
Length of Airhose Included (ft)	5	25	25	25	25	25
Air Connection Size	1/4" Adapter	3/8" Adapter	3/8" Adapter	3/8" Adapter	1/2" Adapter	3/4" Adapter
Clean Out Air Purge	No	Yes	Yes	Yes	Yes	Yes
<b><u>VALVING SPECIFICATIONS</u></b>						
Pump Suction Valve Included	No	Yes	Yes	Yes	Yes	No
Vessel Effluent Valve Included	No	Yes	Yes	Yes	Yes	Yes
Valving for Series Operation Included	No	No	No	No	No	Yes
Valving for Parallel Operation Included	No	No	No	No	No	Yes
Valve Materials of Construction	T-316 SS/PTFE	T-316 SS/PTFE	Brass	Brass	T-316 SS/PTFE	T-316 SS/PTFE
Valve Type	Ball Valve	Ball Valve	Ball Valve	Ball Valve	Ball Valve	Ball Valve
<b><u>SUCTION &amp; DISCHARGE WANDS</u></b>						
Wands Included with System	No	Yes	Yes	Yes	Yes	Yes
Wand Diameter	None	3/4"-SS	3/4"-SS	3/4"-SS	1-1/2"-SS	1-1/2"-SS
Suction Screen Material & Size	T-316 SS 3/32"	T-316 SS 1/8"	T-316 SS 1/8"	T-316 SS 1/8"	T-316 SS 1/4"	T-316 SS 1/4"
Cam and Groove End for Quick Disconnect	None	Yes	Yes	Yes	Yes	Yes
Magnetic Wand Clamps for Unattended Use	No	Yes	Yes	Yes	Yes	No
<b><u>HOSES</u></b>						
Size	1/2"	1"	1"	1"	1 1/2"	2"
Material of Construction	Clear PVC	Teflon	Clear PVC	Clear PVC	Clear PVC	Clear PVC
Spiral Reinforced	Yes	Yes	Yes	Yes	Yes	Yes
Cam and Groove Ends for Quick Disconnect	Yes	Yes	Yes	Yes	Yes	Yes
<b><u>GAUGES</u></b>						
Stainless Steel Process Gauges Included	Yes	Yes	Yes	Yes	Yes	Yes
<b><u>OPTIONS AVAILABLE</u></b>						
Cartridge Contaminant Chambers	Yes	Yes	Yes	Yes	Yes	Yes
Canisters for Activated Carbon	Yes	Yes	Yes	Yes	Yes	Yes
Skimmer Attachments	Yes	Yes	Yes	Yes	Yes	Yes
Micron Rated Baskets	Yes	Yes	Yes	Yes	Yes	Yes
Perforated Strainer Baskets	Yes	Yes	Yes	Yes	Yes	Yes

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## MODEL PNS-222-V-135



### Features

- Completely Packaged System
- Easily Operated by Single User
- Non-Electric
- Requires No Special Tools

### Pump Features

- Air-Powered Double Diaphragm Pump
- Self-Priming from a dry start
- Can run dry without damage
- Stops automatically if discharge is closed; resumes running when line is open
- Low internal velocity allows trouble-free pumping of abrasives or viscous materials



## MODEL PNS-222-V-135

### Specifications

- Operating Capacity 135 gpm (8100 gallons/hr.)
- Pump Construction Stainless Steel/PTFE Elastomer
- Pump Size 2"
- Pumps Solids up to 5/16" diameter
- Filtration from .5-800 microns
- Maximum Operating Pressure 125psi
- Maximum Operating Temperature 150°F
- Housing is Hydrostatically Tested to 250psi
- Dimensions HxWxD inches 44 x 30 x 72
- Shipping Weight Lbs 630

### Filter Media

- Uses two single #2 size disposable Filter Bags (7" dia. x 32" long), or Strainer Baskets, Mesh or Micron-Lined Baskets or 8 standard 20" Cartridge Filters (4 per module)

### Valved Duplex, Parallel and/or Series System

Individually valved modules may operate independently, providing continuous service during bag filter changes. Concurrent operation of both housings, doubles the flow rate capacity of a single vessel. Each vessel uses a #2 size filter bag (7" dia. x 32" long). This unit can also be used with any combination of Strainers, Micron-Rated Baskets or Cartridge Contaminant Chambers.

This system allows for Two-Stage (series) filtration; the first vessel feeds the second vessel. When used as a two-stage unit, the liquid is filtered in two separate passes which can, at a minimum, filter more effectively when there are any of the following conditions:

### CONDITION

- Unequal Particle Size Distribution

- Redundancy for Greater Quality Control and Performance

- Cost Reduction Requirements using Disposable Filters

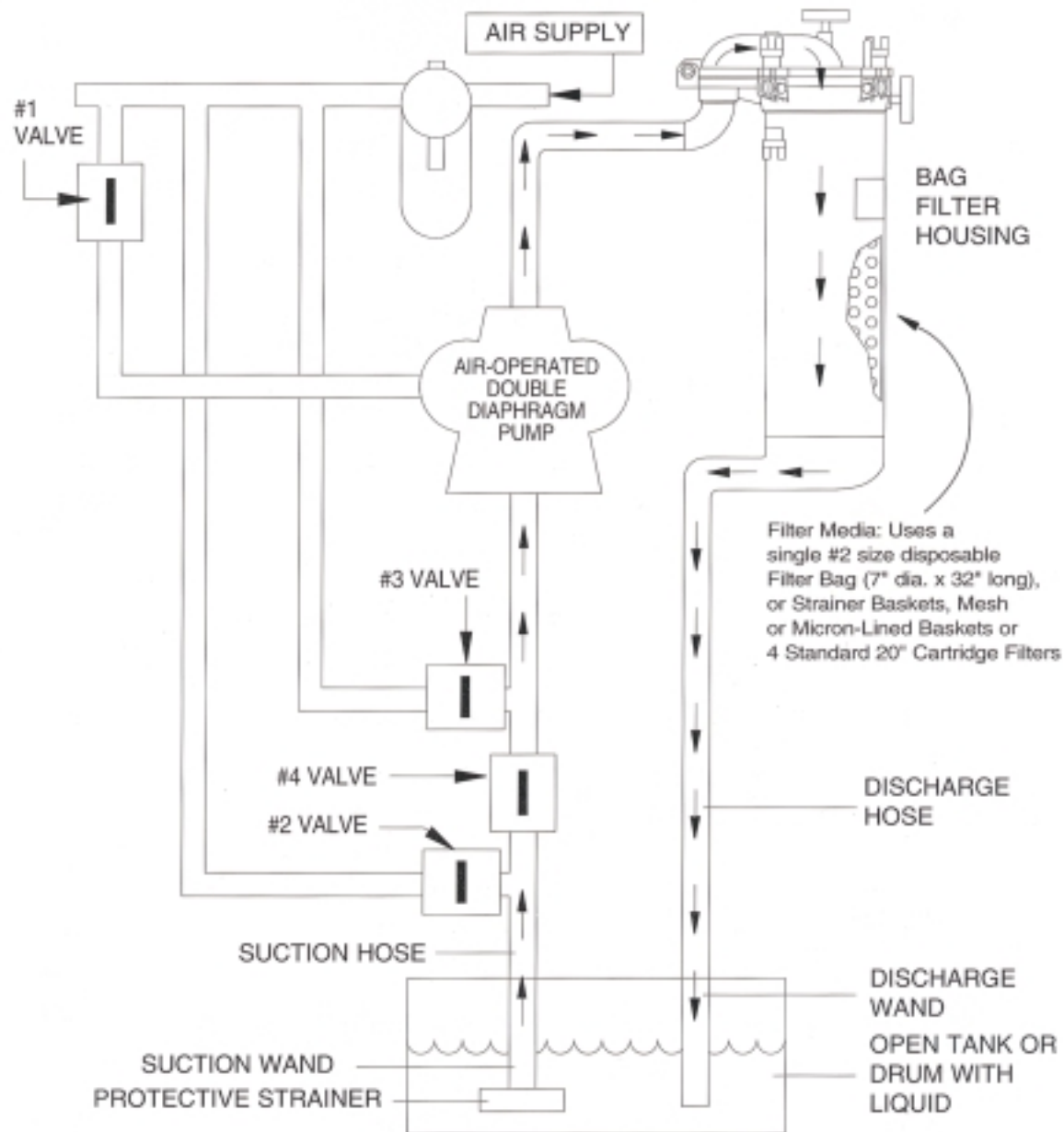
### OUTCOME

- First stage can handle larger particles, Second stage can filter finer particulate

- Improved performance with two filters (same micron) back-to-back for greater efficiency and capture rates

- Less Expensive Prefilters (Disposable or Reusable) can be used for the First stage, whereas "Absolute Rated" media can filter as the Second stage

## TYPICAL FLOW DIAGRAM



### OPERATION

- Pumping and Filtering (Operational Mode)
- Downstream Purge (Cleaning Mode)
- Upstream Purge (Cleaning Mode)

### VALVES OPEN

- 1 and 4
- 3
- 2

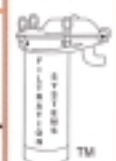
### VALVES CLOSED

- 2 and 3
- 1, 2 and 4
- 1, 3 and 4

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**Product Warranty:** In the event any vessel is found to be defective in material or workmanship for a period of one year from date of purchase, Filtration Systems only liability will be to repair or replace the product. The manufacturer reserves the right to change specifications without notice. There are no express or implied warranties, with respect to product merchantability and/or fitness for specific purpose. Filtration Systems will not be liable for any incidental damages from the use or misuse of our products under any circumstances.

Manufactured by:  
**Filtration Systems™**



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