



PRESSURE FILTRATION SYSTEMS

FOR OIL, WATER AND SYNTHETIC COOLANTS



Model OPF-7 Modified Discharge Coolant Filter

THE CLEAR CHOICE FOR COOLANT FILTRATION





OBERLIN PRESSURE FILTERS

PROVEN PERFORMERS FOR MOST METALLIC AND
NON-METALLIC GRINDING OR MACHINING APPLICATIONS

- Gear grinding
- Creep feed grinding
- Surface grinding
- Slot grinding
- Tungsten carbide grinding
- Honing
- Machining systems
- Piston ring grinding
- Bearings: race, track and ball needle grinding
- ID, OD, centerless grinding
- Driveshaft, crankshaft, connecting rod grinding
- Non-metallic – countertops, fiberglass, phenolic resins, ceramics, powdered carbon grinding, sawing, sanding



Model 80/40 Modified Discharge

OBERLIN FILTERS ALLOW YOU TO PRODUCE BETTER RESULTS WHILE LOWERING YOUR OPERATING COSTS.

NEED:

FEATURE:

BENEFIT:

<ul style="list-style-type: none"> • Produce better grinding results 	<ul style="list-style-type: none"> • High performance media and depth filtration delivers < 10 ppm solids above 10 microns 	<ul style="list-style-type: none"> • Improved surface finish • Less wheel loading/burn • Better part size control • Less heat build-up
<ul style="list-style-type: none"> • Reduce metalworking costs 	<ul style="list-style-type: none"> • Virtually all particles > 25 microns removed • Filter cakes 90% by weight in typical steel grinding 	<ul style="list-style-type: none"> • Less tool wear • Less wheel dressing • Minimal coolant loss in cake, less makeup coolant • Extended coolant life
<ul style="list-style-type: none"> • Cut swarf disposal costs/increase reclamation revenues 	<ul style="list-style-type: none"> • Automatic drying of filter cake with compressed air 	<ul style="list-style-type: none"> • Reduced landfill costs • Easy reclamation
<ul style="list-style-type: none"> • Reduce medical costs and increase productive time 	<ul style="list-style-type: none"> • Clean coolant 	<ul style="list-style-type: none"> • Removal of fines cuts down on growth sites for bacteria and fungus • Reduces dermatitis
<ul style="list-style-type: none"> • Decrease filtration costs 	<ul style="list-style-type: none"> • High-pressure filtering • Completely automatic operation • Optional cleanable media 	<ul style="list-style-type: none"> • Lengthens water-based coolant life 5 to 10 times • No labor needed to unload • Less media usage

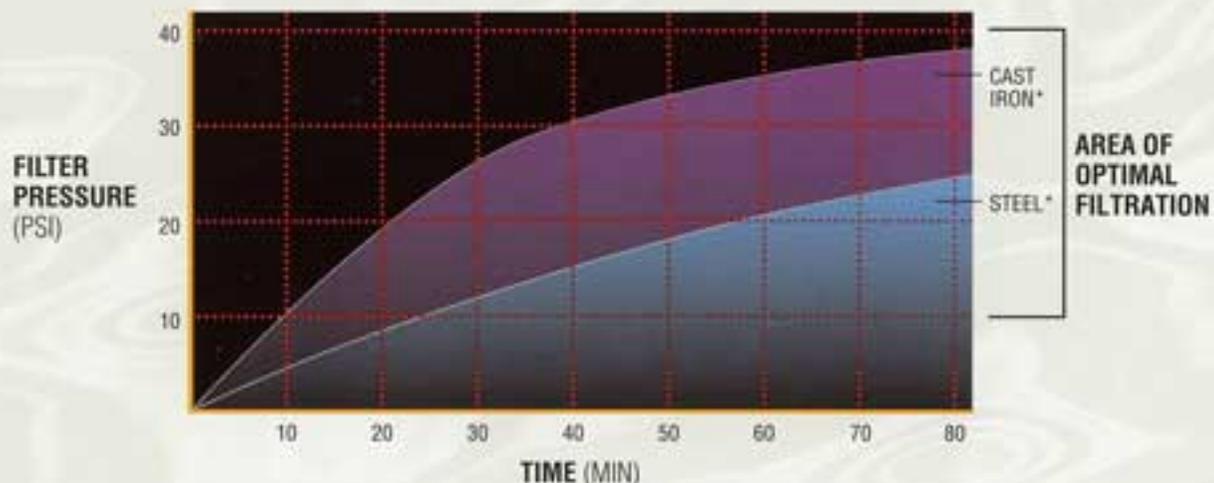
OBERLIN PRESSURE FILTERS

BASIC CONCEPT: DIRT FILTERS DIRT. GOAL: ECONOMICAL FILTRATION.



The idea is to pass liquids contaminated with solids through media, trapping the unwanted solids in, then on, the media. The goal for the most economical filtration cost is to lengthen the filter's cycle time. This maximizes the quantity of the unwanted solids per area of media to reduce media costs. Long cycles means the filtration process is working with fewer interruptions for media changes. This increases the capacity of a filter. Smaller filters cost less and take up less space than larger filters. As the unwanted solids build up on the media, the flow of the liquid is impeded. Unless the liquid is highly pressurized, the flow of the liquid through the filter will drop quickly and not satisfy the flow capacity required.

Oberlin Filters pressurize the liquid by pumping it into a chamber whose only outlet is through the unwanted solids on the media. The pressure is limited only by the size of the pump, not by atmospheric pressure. 30-40 psi is typical of an Oberlin Filter. This is about three to four times more pressure than gravity or vacuum filters can develop. The time it takes to reach 10 psi is much less than the time to reach 30-35 psi in many applications. The graph below shows a typical relationship of filter pressure versus time.



* Actual cycle times will vary from application to application and even on the same coolant and machine depending on the workpiece material, wheel, stock removal, particle size removed and amount of wheel dressing.



EXTEND YOUR OIL OR WATER-BASED COOLANT SERVICE LIFE. OBERLIN'S THICKER CAKES TRAP FAR MORE GRINDING FINES.

- Filter cakes over 90% solids by weight in typical steel grinding.
- Lengthens water-based coolant life 5-10 times.
- High performance media and depth filtration typically delivers less than 10 ppm solids above 10 microns.
- Accepts most commercial disposable media — low-cost/ light weight or heavy/high-performance types.
- Optional, cleanable, semi-permanent belts available for certain applications.
- Discharges a dry cake with less coolant loss.

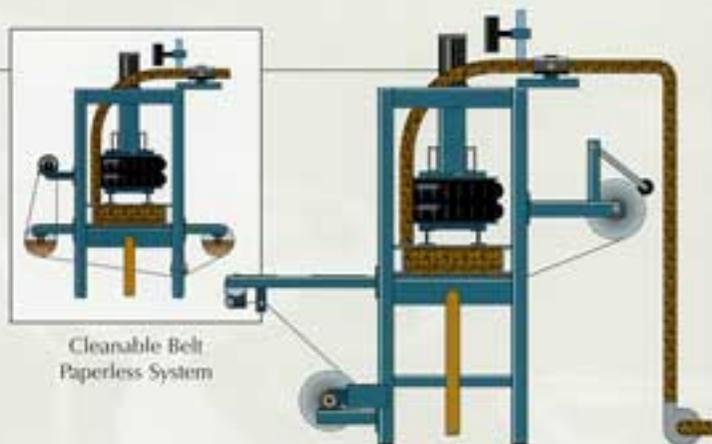


OBERLIN PRESSURE FILTERS

HOW THE FILTER WORKS

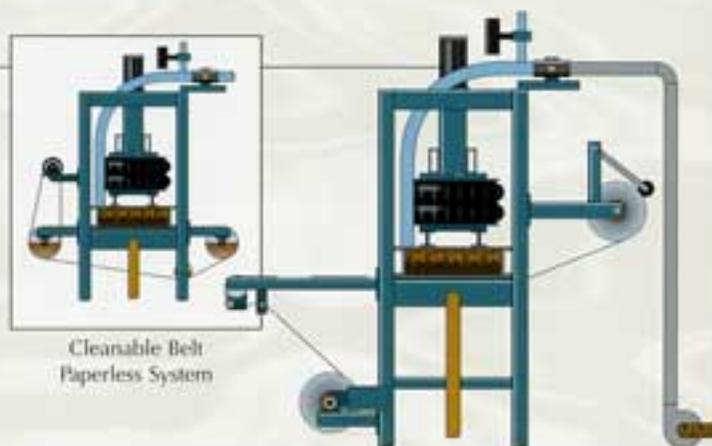
1. FILTERING CYCLE:

First the pneumatic airbag holds the filter upper chamber against the lower chamber. Platen seals on the perimeter of the chambers create a liquid-tight seal completely around the filter media or cleanable belt. Solids-bearing liquid is pumped into the upper chamber. Pump pressure forces the liquid through the filter media or cleanable belt. The filtered liquid is collected in the lower chamber and drains out. Solids are held back by the filter media or cleanable belt.



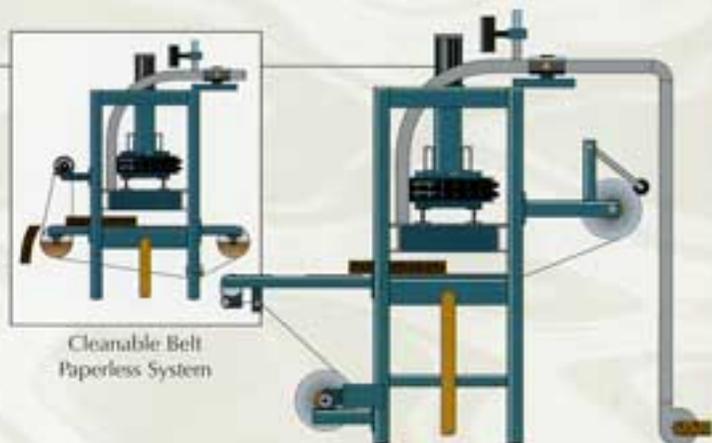
2. DRYING CYCLE:

When the filter pressure reaches 30-40 psi (or higher in some applications), pressurized air or gas is fed into the upper chamber. This forces the liquid through the filtered solids and media or cleanable belt. After the solids are dried, determined by the back pressure and time elapsed, the chamber is lifted.



3. DISCHARGE CYCLE:

The solids are automatically discharged using a disposable media roller or an endless cleanable belt conveyor. The belt discharges the filtered solids into a hopper. After discharging, the upper chamber automatically descends and a new filtration cycle starts.



OBERLIN COMPLETE COOLANT SYSTEMS

DESIGNED TO MEET YOUR SPECIFIC REQUIREMENTS

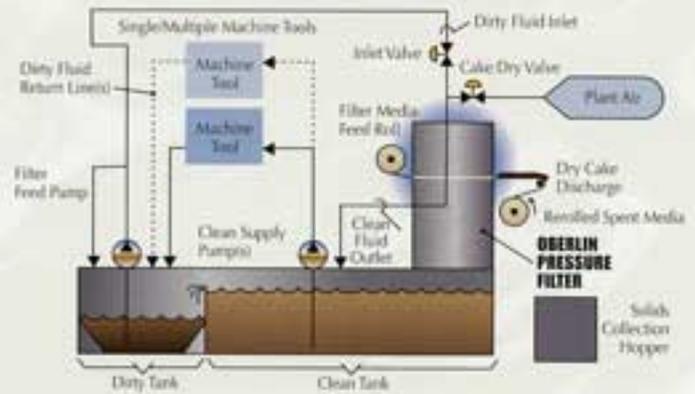


High-Performance Filtration for Grinding Applications

When your need is for 100% filtration, an Oberlin high-performance stand-alone system will provide you with a continual flow of the highest quality clean coolant. Installing an Oberlin high-performance pressure filter is your assurance that your machine tools always receive clean coolant and never need to stop for filter cycling.

How a high-performance system works: used coolant flows by gravity or is pumped into the dirty compartment. From there, the used coolant is pumped into the filter where it gravity flows out of the filter into the clean compartment. Excess flow from the clean compartment overflows to the dirty tank where it is refiltered. When the filter pauses to dry and discharge, the dirty tank acts as a buffer and stores coolant. When the filter comes back on line in 1 1/2 - 2 minutes, the dirty fluid level is lowered and the clean compartment returns to full.

HIGH PERFORMANCE CENTRAL SYSTEM

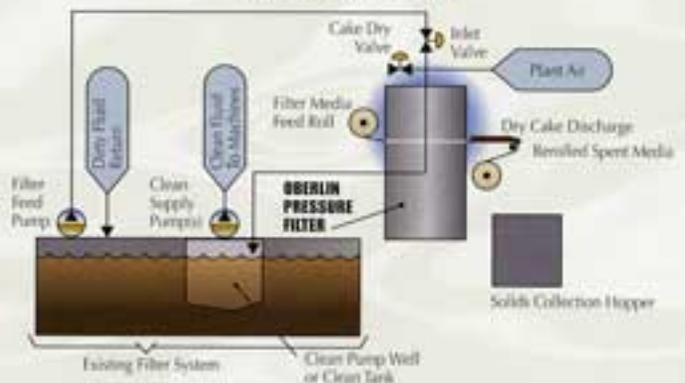


Polishing Systems for a Wide Range of Grinding or Machining Applications

For general machining applications requiring a high-flow capability, an Oberlin slipstream pressure filter will provide you with high-removal efficiency of fine, non-settling solids. With only 10 - 20% slipstreams, significant reductions in solids levels have been achieved.

How a high-flow slipstream system works: used coolant is pumped out of an existing tank to the filter. From there, the clean coolant flows back to the tank. There is minimal disruption to the existing system. The bulk of the solids are typically discharged with the existing dragout/conveyor.

SLIPSTREAM SYSTEM



Ancillary System Components

- Chillers
- Automatic Coolant Makeup
- Level Controls
- Tramp Oil Removal Systems
- Sump Tank Systems
- All components specially engineered to your requirements.



OBERLIN PRESSURE FILTERS

AVAILABLE IN A WIDE RANGE OF SIZES AND FLOWS

Oberlin Pressure Filter Specifications

Model	Filtering Area (Sq. Ft.)	Footprint (in.) L x W x H	Tank (Nominal) L x W x H	Capacity (gpm) Water Base*	200 SSu Oil**
OPF-1	1	46 x 48 x 66	60 x 72 x 24	40	15
OPF-2	2	80 x 50 x 68	60 x 72 x 24	100	40
OPF-4	4	84 x 56 x 72	72 x 90 x 24	160	65
OPF-7	7	96 x 64 x 72	92 x 120 x 30	280	115
OPF-12	12	96 x 90 x 96	Application Dependent	480	200
OPF-18	18	128 x 90 x 96	Application Dependent	720	300
OPF-24	24	144 x 90 x 96	Application Dependent	960	400
OPF-36	36	190 x 90 x 96	Application Dependent	1440	600
OPF-48	48	240 x 90 x 96	Application Dependent	1920	800

* Nominal rate for steel OD grinding with 60 grit wheel. Consult factory for more precise estimates.

** Nominal rate for gear grinding, decrease for higher viscosity, increase for lower viscosity oil.

UTILITY REQUIREMENTS

ELECTRICAL:

- All Voltages Supported Including 120, 230, 400, 460 VAC and 24 VDC
- 50 Hz and 60 Hz
- 5-Amp Base Power

AIR:

- 4-6 SCFM/ft. from 1-2 Minute Duration/Cycle
- 80-100 PSIG

WATER:

- Supply as Needed for Cake Wash & Cleaning Options (Application Specific)

PRESSURE LIMITS:

- 45 PSIG Standard

CAPACITY:

- Up to 3 ft³ Solids/hr/ft² of Filter Area

DESIGN STANDARDS:

- NFPA (Oberlin Standard), UL, CSA, IEC, NEMA, CE, Automotive

OBERLIN'S COMMITMENT TO QUALITY – ISO CERTIFIED SINCE 1998

Oberlin Pressure Filters are designed to be versatile and flexible.

- Equally effective on oil, water and synthetic coolants.
- Magnetic and non-magnetic metal fines removed (steel, cast iron, aluminum, etc).
- Non-metallic solids capability (resins, fiberglass etc).
- Utilizes most commercially available disposable media, both low cost/light weight and heavy/high-performance types.
- Filter aid addition systems available.
- Over 500 applications in grinding, honing and machining systems.
- Tanks can be configured at floor level or in pit.
- Optional, cleanable, semi-permanent belts available for certain applications.

Oberlin Pressure Filters are built for reliability and easy maintenance.

- Simple, heavy-duty construction.
- Complete access to all seals for easy inspection and replacement.
- Four-sided positive sealing. No bypass around media.
- No hydraulics, submersed dragouts, etc.

Central Systems available.

- A cost effective way to handle many machines with minimal floor space required.

OBERLIN MEDIA TECHNOLOGY GROUP

MICROFILTRATION PRODUCTS



Oberlin Sleeves, Cartridges, Bags and Rolled Stock

Oberlin's filtration medium allows for solids removal down to 1 micron ABSOLUTE! This will meet most local waste water discharge limits. When it comes to chemical processing this means 100% product solids recovery – or – near pure liquid product generation. The unique construction of Oberlin's medium allows for applications to work in the microfiltration range and is often used in place of ultrafiltration membrane (UF) systems. The benefits that Oberlin's medium offers are: outstanding chemical resistance to most acids, bases and salts; efficient submicron separation yielding a high quality filtrate; exceptional strength resistance to tears and punctures; smooth surface for excellent cake release.



Oberlin Cleanable Belts – "Paperless Filters"

Oberlin has been building paperless filters for over 25 years. Our cleanable belt systems have been saving customers thousands of dollars annually in media costs. In the case of a change in application or process, all Oberlin pressure filters are engineered for easy conversion for media utilization.

OBERLIN PRESSURE FILTERS FOR ALL YOUR FILTRATION NEEDS

LOW SOLIDS - POLISHING:

- Phosphating System
- Plating Baths
- Cooling Towers
- Alkaline/Caustic Cleaner Baths
- UF/RO Prefiltration
- Clarifier Overflows
- Metal Working Fluids and Coolants

HIGH SOLIDS/HIGH TEMPERATURE/ HIGH CORROSION:

- Crystalizers
- Wet Scrubbers
- Reactor Separations/Cleanouts
- Radioactive Processing

BACKWASH SEPARATIONS FROM TUBULAR/PRESSURE LEAFS:

- Brewery
- Winery
- Chlor-Alkali
- Juice Processing
- Chemical

BATCH PROCESSING:

- Specialty Chemical Separations
- Sludge Dewatering
- Catalyst Recovery
- Clarifier Underflows
- Pelletizer Water



OBERLIN FILTER COMPANY

OFFERS COMPLETELY INTEGRATED SERVICES



Oberlin Filter Company's modern, newly expanded offices and manufacturing facility are conveniently located on four acres in Waukesha, Wisconsin (a Milwaukee suburb). Our completely integrated operation includes lab, design and engineering, prototyping, manufacturing with total quality control, startup and testing. We also offer continuing technical support for media selection and our industry-wide database allows us to ensure that you are getting optimal results for your filtration. The plant warehouses a large inventory of components and disposable media to support all Oberlin Pressure Filters along with other brands.



LABORATORY

We offer free testing for process evaluation and equipment sizing. Small samples can be analyzed for dewatering rate, filtrate quality and cake solids. Upon test completion, a report summarizing the results is issued. Filters are also available for field tests. Laboratory support is always available to our existing clients for process improvements.



ENGINEERING

Our engineering group works closely with our customers to develop system specifications and to insure all systems meet those specifications. All phases of design and manufacturing are documented as part of our quality program. A manual is provided with each filter complete with drawing, parts list, sequence of operations and maintenance.



SERVICE

As part of our commitment to quality, our service department was established for after-sale customer support. Our service and engineering staff are available 24 hours a day to answer technical questions, assist in troubleshooting and to ship out spare parts. Qualified field service personnel are available for onsite start-ups and maintenance work anytime, anywhere.



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ISO 9001 CERTIFIED

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