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Since The Hilliard Corporation was established in 1905, it has been a reliable source of quality industrial products. Today, Hilliard offers a full line of motion control and fluid filtration products.

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**HILCO® Filter Cartridges**  
Revolutionizing the Filtration Industry





### Filter Cartridges

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All cartridges listed in this section are available in various sizes and flow rates depending on your particular application.

## Cartridge Selection Table\*

\*NOTE: This table is intended only as a useful reference tool. Final cartridge selection must also consider the ingress rate and protection requirements of the application.

Cartridge Type	Application	Fluid Types	Contaminants To Be Removed
<b>Microgard™ pleated paper</b>	Close tolerance hydraulic Refrigeration compressors (tube & coolant) Gas turbines Centrifugal lubrication couplings High-pressure fluid filtration Test stands	Insulating oil Lapping oil Hydraulic oil Fuel oil Coolants Bearing packing grease	Very fine particulate matter
<b>Safeguard 3™ pleated paper</b>	Hydraulic systems Test stands	Hydraulic oil	Fine particulate matter
<b>Safeguard 5™ pleated paper</b>	Diesel, gas, or dual fuel engines Compressors Paper machines Turbo chargers Low-pressure hydraulic Turbine lube Bearings Test stands	Ethylene Fuel oil Seal oil Quench oil Amine Gear lube Draw oil Roll oil Natural gas Nitrogen Butane	Particulate matter
<b>Safeguard 10 &amp; 20™ pleated paper</b>	Diesel, gas, or dual fuel engines Compressors-lube	Fuel oil Coolant Cutting oil Seal oil Lube Oil	High contaminant level of particulate matter
<b>Hilsorb™ pleated paper</b>	Transformers Circuit breakers Voltage regulators Load tap changers	Insulating oil Hydraulic oil	Water and some fine particulate matter
<b>Hilite™ fuller's earth</b>	Transformers Vacuum pumps Diffusion pumps EDM machines Refrigeration compressors	Roll oil Heat transfer fluid Draw oil Seal oil Insulating oil Coolant	Acid Varnish Tar Lacquer Gum Particulate matter
<b>Hilite-A™ activated alumina</b>	Hydraulic systems Transformers Vacuum pumps Diffusion pumps EDM machines	Fire-resistant synthetic fluids Phosphate esters Per-flourinated polyester (fomblin fluids)	Acid Varnish Tar Lacquer Gum Particulate matter
<b>Selexsorb™</b>	Gas turbines Steams turbines EHC control systems	Phosphate ester hydraulic fluids Lubricants	Acid Metal Water
<b>PH pleated synthetic media</b>	Diesel, gas or dual fuel engine turbine lube	Amines Lube and seal oil EDM coolants Fuel oils Glycol Hydraulic fluids	Particulate
<b>Saflow™ &amp; Saflow D™ disc</b>	Speed reducers Diesel, gas, or dual fuel engines Gas compressors w/ common lube systems Gun drilling Frequent cold starts Oil bath or air filters	Hydraulic oil Quench oil Insulating oil Lube oil Edible oil Air filter liquid	Particulate and small amount of water

# Filter Cartridges

## Coalescer HC 628-01-CSP Cartridges

Originally developed for the U.S. Air Force for refueling B-1 bombers, the coalescer is capable of reducing water in fuel from ½% or 5000 ppm to under 10 ppm at 71 GPM per cartridge with inhibited jet fuel. This cartridge also works in No. 2 diesel at a flow rate of 35 GPM and on light oils up to ISO 32 in viscosity, flowing at 4 GPM per cartridge.

Cartridge Dimensions	Max. Flow Rate
6" x 28"	1 micron



## Separator HS 611-200-CSP Cartridges

The separator is a hydrophobic screen element to be used in series downstream from the coalescer. Its function is to prevent coalesced water drops from being swept out of the vessel with the clean fuel before they drop into the sump.

Cartridge Dimensions	Mesh Rating
6" x 11"	200



## Bag Filter Cartridges

HILCO's Bag Filters line of pleated cartridges fit into a standard basket to increase dirt-holding capacity and overall efficiency. The cartridge is designed with an external O-ring that seals on the inside diameter of the basket, eliminating potential bypass problems. A wide range of media efficiencies is available. All industry-standard sizes are available with optional connections in carbon and stainless steel. Contains an O-ring seal between the basket and cartridges. Multiple basket, duplex, and specials are also available.



The Hilliard Corporation reserves the right to change specifications and dimensions at any time. Please contact the factory for the most current information.

ENGINEERED TO SOLVE PROBLEMS



**At HILCO®** we know filtration. We've seen many changes since our first oil reclaimer was built in 1925. The problems have become more complicated and the filtration techniques more sophisticated. Hilliard is first and foremost an engineering company. Every one of our products have been developed and tested by our dedicated engineering staff to bring fluid contamination problems under control.

Since developing our first filtration system, HILCO® has continued to revolutionize the filtration industry by developing products based solely on solving our customers complex filtration needs, and many of these solutions are still counted on today.

## Cartridge Manufacturing Capabilities: Creating the HILCO® Advantage

**Raw inventory:** We stock 20 different element media's in master rolls to be slit as customer requirements come in, as well as several different sizes of steel mesh for strainers. Additionally we have a machine shop to make custom end caps and "O" ring inserts.

**Sizing for need:** Our current cartridge sizes range from 2" in diameter x 4" long to 20" in diameter x 50" long and all sizes in between. Our custom fabricated pleaters are capable of producing elements with pleat heights from 5/32" to 2-5/32" and widths to 51-3/32" wide. This allows us to create our controlled radius pleats providing the end user with more measurable dirt holding capacity.

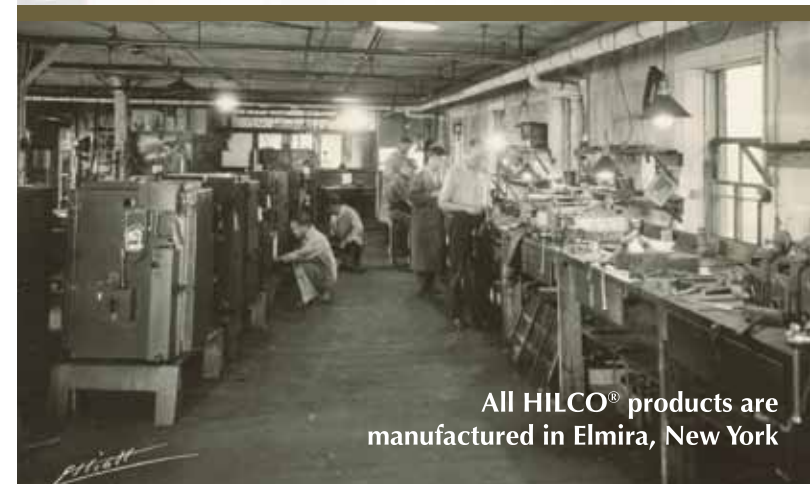
**Center Tubes:** The backbone of cartridge construction is the center tube. HILCO® has center tube manufacturing machines capable of producing louvered tubes from 1-5/8" diameter to 15" in diameter ranging in length from 4" to over 50" long.

**Assembly:** With several semi-automated assembly machines and presses to produce disc style cartridges we are capable of producing 25,000 plus cartridges a month depending on the mix.

**Custom/Stock and Delivery:** With most cartridges kept in stock HILCO® is ready to ship the same day to fulfill our customers' needs. With our excellent engineering staff and manufacturing expertise we are capable producing a custom cartridge in as little as 2 weeks.

**On Site Testing Facility:** HILCO's laboratory can analyze fluid samples and provide the most cost effective solutions.

**Bring us your fluid contamination problems and we are confident that we can provide a solution!**



All HILCO® products are manufactured in Elmira, New York





# FILTER CARTRIDGES

Long Life. Superior Quality.

## Long Life. Superior Quality.

The reliability and efficiency of any filtration system is chiefly dependent on the quality of the cartridges used in it.

We've worked hard to develop a full line of quality HILCO® cartridges for virtually every application. HILCO® can restore many oils and coolants to a like-new condition.

Our full line of filter cartridges includes various sizes, filtration efficiencies and dirt-holding capacities.

Carefully consider the many requirements of your particular application before choosing a cartridge. Factors to be considered include type of contaminant, contaminant levels, type of fluid, flow rate, working pressure, pressure drop and other operating conditions.

All of our filter cartridges are developed to provide long service life and high quality. HILCO® cartridges feature quality design and construction.

We also make HILCO®-quality replacements for other brands of cartridges used in lube oil and fuel oil applications.

Fuel gas, process gas, seal gas, H2O injection, and transformer oil applications can also be accommodated by HILCO®.

Many different media are specially selected, formulated and fine tuned on a regular basis to provide the most effective combination of fluid compatibility, particle-separation efficiency, low pressure drop and structural properties.

- Our controlled radius pleats are designed to maximize filtration area and dirt-holding capacity while resisting pinching, distortion and rupture.
- Gasket materials and adhesives are selected based on their compatibility with the fluids and operating temperatures of each application.
- To reduce pinch-offs, caused by sharp pleats which stress the filter media, we've developed a process which features a larger outside radius and a smaller inside radius for stronger, more uniform nesting of pleats. This process is referred to as controlled radius pleating.
- Cartridges feature rugged plated steel center tubes which resist collapse at high pressure differentials. Special center tube adapters are also available for reuse.



## Hilite-A™ Cartridges for acid reduction

These cartridges feature a special activated alumina media for the adsorption of acids and other oxidation products from synthetic fluids and petroleum oil. A water-resistant media, activated alumina will minimize the forming of precipitates or gels when used with phosphate-ester fluids. Hilite-A Cartridges are available in various sizes and flow rates.

Cartridge Dimensions	Fits Centerpost	Max. Flow @ 5 PSID w/200 SUS Fluid
3"x10" to 11"x19"	3/4" to 2"	.4 to 2 GPM



## Typical Applications Include:

- Hydraulic systems
- Transformers
- Vacuum pumps
- Diffusion pumps
- EDM machines

## Selexsorb™ GT Cartridges are specially formulated for phosphate ester fluids

Selexsorb GT is a patented adsorbent specifically designed for use with phosphate ester fluids such as AKZO Chemical's Fyrquel®. It maintains the original quality of fluids for prolonged periods, thus reducing the need for fluid changeouts and increasing equipment life.

These cartridges feature metal ambients for added strength, as well as a polyester media retainer for both chemical resistance and media retention. Other features include lifting handles and lifting tabs for added convenience in handling.

Cartridge Dimensions	Fits Centerpost	Max. Flow @ 5 PSID w/200 SUS Fluid
7"x18" to 11"x19"	1-1/2" to 2"	.5 GPM



## Typical Applications Include:

- Gas turbines
- Steams turbines
- EHC control systems

## Coolant Coalescer and Oily Water Separator Cartridges

Inside-out flow for rates up to 6 GPM. Single-stage polypropylene media for use in industrial machine coolants, quench rinse water, bilge water, air compressor condensate and oily mop water. Ideal for any separation requiring removal of free tramp oil from water or water-based fluids. Laboratory tests have reduced coolants to under 150 ppm free oil. In water applications contaminated with oil, laboratory testing removed oil from the water to under 10 ppm.

The coalescer will extend coolant life by removing oil and solids that promote bio growth. Tramp oil causes smoke when it contacts hot-machined parts. Processing with the coolant coalescer removes the tramp oil and thus reduces the amount of smoke in the machine shop atmosphere. In addition, when the separator is used on oil-contaminated water, it can lower oil content to an acceptable limit for legal disposal. Local ordinances need to be reviewed to need to be reviewed to define acceptable levels.

Cartridge Dimensions	Max. Flow Rate
3"x10" to 7"x18"	6 GPM



# Filter Cartridges

Long Life. Superior Quality.

## O-ring Sealed Cartridges

Housings for o-ring sealed CG cartridges are used for critical seal applications. O-rings provide a better seal, higher tolerance of misalignment, and greater compatibility with cartridge material. O-rings are more durable than standard flat gaskets with a higher resistance to heat and water.



## Coreless Cartridges cut costs

HILCO® coreless cartridges utilize a vessel with an integral center support that eliminates the need for the cartridge to have a built-in center core to support the element against differential pressure. Initial cost of the cartridge is reduced because it is made with a built-in metal center core. Fluid costs are reduced by maximizing fluid life through the use of high-efficiency filtration and long element life. And costs associated with disposal of used cartridges are minimized.



Cartridge	Dimensions	Weight (lbs.)
PH720-CGW	7" x 9"	4
PH818-CGW	9" x 18"	6
PH830-CGW	9" x 30"	6

## Hilite™ Cartridges for acid reduction for petroleum-based transformer and turbine lube oils

Hilite Cartridges feature a high-grade calcined fullers' earth media which is superior because of its greater water resistance. They provide a combination of neutralization and adsorption to remove acids, gums and other oxidation products to restore TAN and color. These cartridges come in various sizes and flow rates. These cartridges are recommended for acid reduction, to stop hydrolytic degradation and to promote fluid stability.

Cartridge Dimensions	Fits Centerpost	Max. Flow @ 5 PSID w/200 SUS Fluid
3"x10" to 11"x19"	3/4" to 2"	.4 to 2 GPM

## Typical Applications Include:

- Transformers
- Vacuum pumps
- Diffusion pumps
- EDM machines
- Refrigeration compressors



## Microgard™ Cartridges for highest efficiency available

Microgard cartridges feature three filtration layers: outer cellulose media layer for coarse filtration; an intermediate glass media for micro-filtration; and an inner cellulose-media layer for added support.



Cartridge Dimensions	Fits Centerpost	Max. Flow @ 3 PSID w/200 SUS Fluid	Micron Rating
3"x10" to 7"x18"	3/4" to 3"	3 to 20 GPM	1 to 5 microns

## Typical Applications Include:

- Close tolerance hydraulic
- Refrigeration compressors (tube & coolant)
- Gas turbines
- Centrifugal lubrication couplings
- High-pressure fluid filtration
- Test stands

## Safeguard™ Cartridges

Safeguard single-layer pleated paper cartridges are economical for use in applications requiring general rather than fine particulate filtration. These disposable cartridges feature molded urethane ends on 3"x10", 5"x11", 5"x18" sizes and zinc-plated metal end caps on 7"x18" size with controlled-radius pleats to maximize filtration area.



Cartridge Dimensions	Fits Centerpost	Max. Flow @ 3 PSID w/200 SUS Fluid	Micron Rating
3"x10" to 7"x18"	3/4" to 3"	10 to 60 GPM	10 to 50 microns

## Typical Applications Include:

- Hydraulic systems
- Test stands
- Diesel, gas, or dual fuel engines
- Compressors
- Paper machines
- Turbo chargers
- Low-pressure hydraulic
- Turbine lube
- Bearings

## Pleated Synthetic Media PH Cartridges have polyester reinforced glass fibers for maximum flow

These durable cartridges stand up to continued use without softening and deterioration caused by exposure to water. The key is an advanced synthetic media that provides maximum filtration with minimum pressure drop. In addition to the standard flow-rate series, we also offer a special series of high-flow 7"x20" and 7"x39" PH Filter Cartridges. These allow you to replace many non-synthetic industry-standard 718- or 310-style cartridges with just one high-flow PH cartridge. This can mean a 50% reduction of first cost and also greatly simplified changeouts.

Cartridge Dimensions	Fits Centerpost	Max. Flow @ 3 PSID w/200 SUS Fluid	Micron Rating
3"x10" to 8"x39"	3/4" to 3"	400+ GPM	1 to 100 microns

## Typical Applications Include:

- Diesel, gas or dual fuel engine turbine lube





# Filter Cartridges

Long Life. Superior Quality.

## Hilsorb™ Dryer Cartridges for moisture and particulate control

Hilsorb dryer cartridges quickly and effectively remove solid and water contaminants from hydraulic, lube and insulating oils. They give high performance in applications where moisture control and filtration efficiency is of primary importance.

Made with patented four-ply construction, Hilsorb dryer cartridges are available in two efficiency ratings. The maximum moisture holding capacity of 2.54 quarts depends on flow rate and other variables.



### Typical Applications Include:

- Transformers
- Circuit breakers
- Voltage regulators
- Load tap changers

Cartridge Dimensions	Fits Centerpost	Micron Rating
3"x10" to 7"x18"	3/4" to 3"	1 to 44 microns

## High Pressure Hydraulic Fluid Filter Cartridges

High-pressure hydraulic cartridges are engineered for up to 3000 psi collapse pressure. The ability to withdraw high pressure permits placement in the high-pressure circuit to protect sensitive hydraulic components.

### Features include:

- Rugged, machined end caps
- Centertube designed to withstand collapse from high pressure differential and to prevent media extrusion
- Micro-glass filter media pleated between protective screens

Cartridge Dimensions	Fits Centerpost	Max. Flow @ 3 PSID w/200 SUS Fluid	Micron Rating
3"x11" to 3"x21"	3/4" to 3"	9 GPM	2 microns



## Saflow™ and Saflow D™ Cartridges withstand cold starts and high pressure differentials

Available in Saflow and Saflow D efficiencies, these specially designed stacked disc cartridges provide protection at high-pressure differentials brought on by cold starts and high viscosities. The stacked cellulose paper discs with labyrinth oil channels also provide depth filtration and high dirt-holding capacity.

Cartridge Dimensions	Fits Centerpost
6"x18" to 7"x36"	1-1/2"



### Typical Applications Include:

- Speed reducers
- Diesel, gas, or dual fuel engines
- Gas compressors w/ common lube systems
- Gun drilling
- Frequent cold starts
- Oil bath or air filters

## Center Tube Adapters for cartridge economy

If you have an application that requires large quantities of cartridges, save up to 25 percent through the use of cartridges without integral center tubes. To do this, use our separate center tube adapter, which is available in sizes to fit 630, 718, and 736 cartridges.



## Pleated Screen Filter Cartridges

The Pleated Screen Cartridge is a cleanable element with outside in flow. It is a direct replacement for a PL718 cartridge when cartridge disposal is a problem.

Available in 10, 25, 40, 60, 74, and 104 micron absolute screen meshes, this cartridge survives in fluids and conditions where standard PL and PH Series cannot perform.

Cartridge Dimensions	Fits Centerpost	Flow Rate w/ max. clean Pressure drop of 3 PSID and a viscosity of 200 SUS	Micron Rating
3"x10" to 7"x39"	2"	25 to 60 GPM	25 to 104 microns



## Pleated Strainer Baskets

The Pleated Strainer Basket contains 3.7 times the area of a plain, cylindrical basket. Recommended for high solids applications. Features inside-out flow and can easily be cleaned by hosing off in a part washing tank, or with steam or a high-pressure water jet (car wash type). Typical applications include very dirty lube oils, heavy fuels, fuels with catalyst fines, machine tool coolants and cooling or process water.

Basket Dimensions	Micron Rating (Absolute)
7"x24"	25 to 104 microns



## Strainer Baskets to remove large particulate

For use in place of or in conjunction with Hilco filter cartridges, these strainer baskets are available in 5"x11" and 7"x18" sizes. They are useful as pre-filters for the removal of particles of 75 to 100 micrometers and larger.

