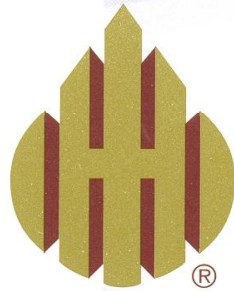


Constant Contamination Control™



HARVARD
CORPORATION

CONTAMINATION KILLS

But Harvard Corporation's Constant Contamination Control™ Systems Can Save Your Life

Mobile Applications

Harvard Corporation's Constant Contamination Control™ Systems are perfectly suited to your mobile system needs. Adding the Constant Contamination Control™ System to your lubrication, transmission or hydraulic system removes particles as small as 1 micron, without restricting oil flow. This keeps harmful contaminants such as **fuel soot and wear particles** out of your systems. Combine this with the Constant Contamination Control™ System's ability to **remove moisture and glycol**, and your system's oil is kept virtually free of destructive contaminants.

What can that mean? **Increased Equipment Life, Increased Service Intervals, and Reduced Incidence Of Repair.**

It can also mean **Extended Fluid Life and Reduced Hazardous Waste.**

Typical Applications include the Engines, Transmissions and Hydraulic Systems on:

- Over-The-Road Trucks
- Off-Road Vehicles
- Buses
- Trains
- Mining Equipment
- Earth Moving Equipment
- Cranes
- Cherry Pickers
- Mobile Generators
- Farm Equipment
- Automobile Fleets
- Marine Vessels

Industrial Applications

Industrial machinery is plagued by problems with stiction, overheating and component failure. The Reason? Fluid Contamination. Machinery today relies on pumps, gears, servo-valves and other close-tolerance components that are particularly sensitive to small particulate contamination. Particles of 5 microns or less can cause servo-valve stiction. Particles as small as 1 micron form lapping compounds that literally wear your components out.

Harvard Corporation's Constant Contamination Control™ Systems can prevent this, **extending component and equipment life well beyond normal expectations.**

With the added benefit of **longer fluid life**, this can also reduce your need for replacement fluid and spent fluid disposal costs.

The Constant Contamination Control™ Systems are suitable for such Industrial Applications as:

- Individual Lube and Hydraulic Systems
- Centralized Lube and Hydraulic Systems
- Injection Molders
- Hydraulic Presses
- EDM Machines
- Transformer Oils
- Compressors
- Test Stands
- Extruders
- Generators

Cutting/Coolant Fluids

Coolant and Cutting Fluids have special problems that require special solutions. Bacteria, Acid, Stagnation and Metal Fines all conspire to reduce the effective lives of these fluids. The Bacteria and Acid cause dermatological and eye irritation. The Stagnation results in a malodorous work environment. The Metal Fines cause heat retention, fluid oxidation, and machining inaccuracies.

Harvard Corporation's Constant Contamination Control™ Systems have proven themselves capable of solving these problems.

The specially developed Coolant/Cutting Oil Filter, with its ability to remove contaminants in the 1 micron range, **removes bacteria**, thereby **reducing the need for costly, acid-forming biocides**, and **minimizing the incidence of skin and eye irritations.**

Stagnation is eliminated through the removal of bacteria, coupled with the Harvard Corporation's Constant Contamination Control™ System's ability to provide constant circulation for the coolant reservoir.

With the removal of contaminants down to 1 micron, Metal Fines are taken out of cutting oils and coolants. This allows for **enhanced heat dissipation and clean, accurate machining.**

Harvard Corporation's Constant Contamination Control™ Systems have afforded many customers **indefinite coolant/cutting oil life**, slashing costs for replacement and disposal.

Environmentally Conscious Operation
Extended Component and Equipment Life
Extended Fluid Life
Reduced Maintenance and Repair Costs
Better Machining Quality
Minimized Waste Disposal and Management

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COMPARE RESULTS, not specifications or cost alone in determining the best filter.

HARVARD™ BRAND ELEMENTS

Harvard™ brand filters eliminate contaminants as small as a single micron while removing moisture – greatly prolonging the life of lubricants, coolants, and the equipment they protect. Benefits include: less downtime, longer machine life, and reduction of disposal problems, “Keep it clean and reduce your waste stream” with Harvard Corporation’s *Constant Contamination Control™* recycling and filtration products. You can prevent lubricants and coolants from becoming quickly contaminated with particles, moisture, and bacteria.

LUBE AND HYDRAULIC FILTER ELEMENTS

- Removes Contaminants as Low as 1-Micron
- Filters Synthetic and Petroleum-Base Fluids
- Removes Water from Fluids

WATER-BASED FLUIDS

- Removal of Machining Fines to 1-Micron
- Greatly Reduces Bacteria
- Removal of Odor Caused by Bacteria

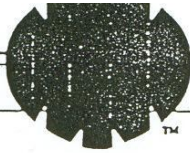
APPLICATIONS

- Mobile, Stationary, Industrial
- Engines
- Hydraulic
- Transmissions
- Gear Boxes
- Manufacturing
- Machine Shops
- Injection Molding
- Machine Tools
- Holding Tanks
- Water EDM Machines

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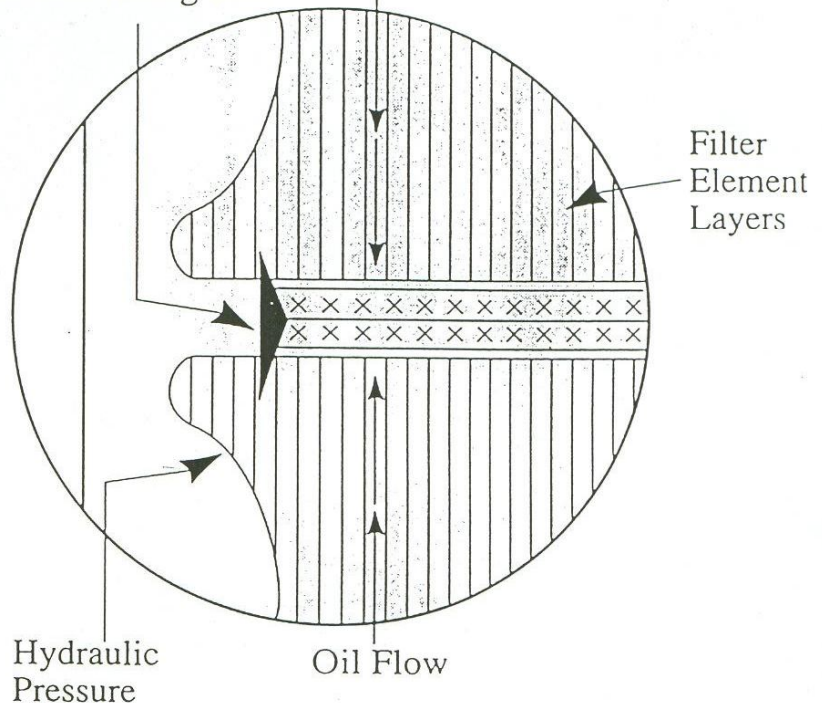
The Filter Makes The Difference

The filter is designed as a multiple element filter.

The Harvard™ patented non-channeling seal forms a positive barrier to channeling. The flow of oil carries the contaminants into the depths of the filter media with no flow restriction from surface loading. Each element will remove water from wet oils.

The hydraulic pressure of the oil compresses the layers of filter media against the patented non-channeling seal and toward the center of the element creating a constant pressure to avoid channeling. This compression along with the pressure against the filtering surface of the element causes the elements to become more compact, trapping contaminants as small as one micron. Oil flow travels through the layers of the element and into the oil return tube of the filter housing.

The Harvard™ Patented Non-Channeling Seal



Harvard™ Fluid Maintenance Systems are designed to provide the best in fluid filtration.

FEATURES

- Removes Contaminants as Low as 1-Micron
- Removes Water from Petroleum Base Fluids
- Filters Most Synthetic and Oil Base Fluids
- Contact Distributor for Additional Information

APPLICATIONS

- Manufacturing
- Machine Shops
- Injection Molding
- Oil EDM Machines
- Transmissions
- Injection Molding
- Hydraulic
- Holding Tanks
- Machine Tools
- Mobile and Stationary Equipment
- Gear Boxes
- Engines
- Mobile and Stationary Equipment

INCREASES

- Fluid Life
- Machine Life
- Equipment Life

DECREASES

- Downtime
- Hazardous Waste Generated
- Replacement Fluid Costs
- Waste Disposal Costs

Viscosity, operating temp, and generated contamination will affect sizing and flow rates of filtration equipment

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*Flow Rates Established Using S606
Hydraulic Oil @ 100°F



1000H-PC PRESSURE & FLOW CONTROLLED HOUSING

APPLICATIONS

- Injection Molding
- Hydraulic Systems
- Transmissions
- Holding Tanks
- Mobile and Stationary Equipment

SUMP CAPACITY

- Up to 300 Gallons

EASY TO INSTALL

Viscosity, operating temp, and generated contamination will affect sizing and flow rates of filtration equipment

SPECIFICATIONS

- Overall Dimensions
39 lbs. Weight
25.25" Height
10.62" Width
10.75" Depth
- Max AMBAC Inlet Pressure 3000 PSI
- Max Housing Operating Pressure 80 PSI
- Housing Capacity 20 Quarts
- 1/4" NPT Ports
- Flow Rate* from .5 to 1.5 GPM

PART NUMBERS

#900296 Plated with 1/4" NPT

ELEMENT

Model 1002H #0673 Optional
Model 1004H #0672 Included

NOTICE

NOT RECOMMENDED FOR
INSTALLATION ON SYSTEM
PRESSURE OVER 1500 PSI
OR MOBILE EQUIPMENT.
IF IN QUESTION CALL
1-800-523-1327

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*Flow Rates Established Using 560c
Hydraulic Oil @ 100°F

OIL DOES NOT WEAR OUT

"...bearings are insensitive to lubricant viscosity changes whether contributed by polymeric thickeners, or by changes in the petroleum base stocks, the optimum engine operating conditions can be achieved by simply keeping the oil constantly clean of both solid and liquid foreign matter."

W.D. Sims
Shell Development Company

Particulate contaminant (1 micron and smaller) is a contributing factor to wear in valve lifters.

Standard full flow filters do not remove 1 micron particles and thus do not adequately protect against wear-causing particles.

Filters must be capable of dealing with particles 1 micron and smaller to control wear.

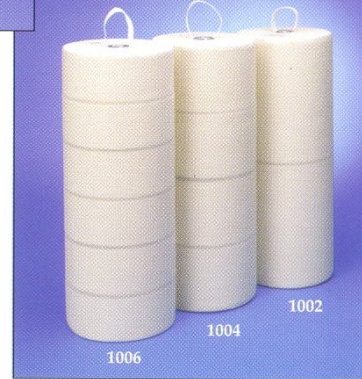
REFERENCE: SAE Paper No.
65086 dated November 1965 by
P.E. Pfeifer and F.T. Fionnigan,
Pure Oil Co., Division of Union
Oil Co. of California.

"Oil does not wear out mechanically, but must be changed due to excess contamination."

The U.S. Bureau of Standards
Bulletin No. 86

"Oil does not wear out." That is to say, after the removal of carbon, dirt, gasoline, etc., the oil is still with its original inherent properties, plus the more resistant molecules of the original oil. In a sense, this is better oil than it was before use.

Professor Ashman
Bradley Polytechnic University



Harvard™ Brand Filter elements are state-of-the-art fluid filtration. They are protected under one or more US patent numbers Pat. 4792397, Pat 4780204, and other patents pending. Harvard™ brand filter elements have a nominal rating of one micron.

WATER-BASED ELEMENTS

1004W #3902

Designed to filter water-based fluids, coolants, and water-based EDM fluids.
Four section 7.50" dia. x 19.75" lg.

500W #4706

Designed to filter water-based fluids, coolants, and water-based EDM fluids.
Two section 7.50" dia. x 10.06" lg.

HYDRAULIC ELEMENTS

1200H #5442

Designed to filter fluids in hydraulic systems on industrial equipment, heavy equipment, and transmissions.
Two section 11.50" dia. x 7.75" lg.

1006H #3212

Designed to filter oil-based EDM fluids and high viscosity hydraulic oils.
Six section 7.50" dia. x 19.75" lg.

1004H #0672

Designed to filter fluids in hydraulic systems on industrial equipment, heavy equipment, and transmissions.
Four section 7.50" dia. x 19.75" lg.

1002H #0673

Designed to filter fluids in hydraulic systems on industrial equipment, heavy equipment, and for transmissions.
Two section 7.50" dia. x 19.75" lg.

750 H 0783

Designed to filter fluids in hydraulic systems on industrial equipment and heavy mobile equipment, as well as transmissions.
Two section 7.50" dia. x 15.00" lg.

500H #0778

Designed to filter fluids in hydraulic systems on industrial equipment, small mobile equipment and transmissions.
Two section 7.50" dia. x 10.06" lg.

156H #3940

Designed to filter fluids in hydraulic systems on industrial equipment.
Two section 5.50" dia. x 16.62" lg.

150H #0697

Designed to filter fluid in hydraulic systems on industrial equipment.
Two section 5.50" dia. x 8.81" lg.

152H #3938

Designed to filter fluid in hydraulic systems on industrial equipment.
Single section 5.50" dia. x 4.94" lg.

LUBE ELEMENTS

1200L #5444

Designed to filter lube oil in large diesel engines and heavy equipment or to filter lube oils in industrial equipment.
Two section 11.50" dia. x 7.75" lg.

1006L #3210

Designed to filter gear oil and other high viscosity oils.
Six section 7.50" dia. x 19.75" lg.

1004L #0682

Designed to filter lube oil in large diesel engines and heavy equipment or to filter lube oils in industrial equipment.
Four section 7.50" dia. x 19.75" lg.

1002L #0678

Designed to filter lube oil in large diesel engines and heavy equipment or to filter lube oils in industrial equipment.
Two section 7.50" dia. x 19.75" lg.

750L #0785

Designed to filter medium size diesel engine lube oil in heavy and mobile equipment or to filter lube oils in industrial equipment.
Two section 7.50" dia. x 15.00" lg.

500L #0780

Designed to filter engine lube oil or to filter lube oils in industrial equipment.
Two section 7.50" dia. x 10.06" lg.

156L #3939

Designed to filter engine lube oil or to filter lube oils in industrial equipment.
Two section 5.50" dia. x 16.62" lg.

150L #0696

Designed to filter engine lube oil or to filter lube oils in industrial equipment.
Two section 5.50" dia. x 8.81" lg.

152L #3937

Designed to filter engine lube oil or to filter lube oils in industrial equipment.
Single section 5.5" dia. x 4.94" lg.

SPIN-ON ELEMENTS

Harvard™ "Spin-On" filters provide filtration for light industrial applications, cars, campers, vans, trucks, and tractors.

Hydraulic	Lube
Model H 61	Model L 61
Model 125-S	Model L 71
	*Model 750-S

*Can replace O.E.M. bypass lube filters. Convenient spin-on feature.

Model 750-SV-Tank Vent Filter

Specifications:

Maximum operating pressure: 80 PSI
Flow rate: SAE 30 @ 180°F: .5 GPM
Filter capacity: (make-up oil) L&H-61 1.0 qts.
Filter capacity: (make-up oil) L&H-71 1.5 qts.
Filter capacity: (make-up oil) 125-S and 750-S 2.5 qts.

Mounting base kit required for spin-on filters sold separately.



HYDRAULIC HOUSINGS

Applications: mobile, industrial, and stationary equipment, transmissions, injection molding, machine tools, hydraulic systems
Max. operating pressure: 80 PSI

Harvard™ brand H-PC Series, such as the model 1000H-PC pictured above, controls the pressure and flow and can be connected to systems up to 1500 PSI.

1200 Specifications:

Dimensions: 44.0"H x 16.75"W x 16.75"D
 1 1/2" NPT Inlet, Outlet, Drain STD
 Element Lifters Included

1000H Specifications:

Dimensions: 23.87"H x 10.62"W x 10.75"D
Flow rate: from 2.75 to 5.25 GPM
Housing capacity: 20 qts.

750H Specifications:

Dimensions: 19.25"H x 10.62"W x 10.75"D
Flow rate: from 2.75 to 5.25 GPM
Housing capacity: 16 qts.

500H Specifications:

Dimensions: 14.25"H x 10.62"W x 10.75"D
Flow rate: from 1.6 to 5.25 GPM
Housing capacity: 12 qts.

156H Specifications:

Dimensions: 21"H x 6.87"W x 8"D
Flow rate: from 1.0 to 1.6 GPM
Housing capacity: 9 qts.

150H Specifications:

Dimensions: 12"H x 6.87"W x 8"D
Flow rate: from .5 to 1.0 GPM
Housing capacity: 5 qts.

152H Specifications:

Dimensions: 9.5"H x 6.87"W x 8"D
Flow rate: from .5 to 1.0 GPM
Housing capacity: 3 qts.
 *Other Sizes Available

LUBE HOUSINGS

Applications: engines, mobile, industrial, and stationary equipment
Max. operating pressure: 80 PSI

1200 Specifications:

Dimensions: 44.0"H x 16.75"W x 16.75"D
 1 1/2" NPT Inlet, Outlet, Drain STD
 Element Lifters Included

1000L Specifications:

Dimensions: 23.87"H x 10.62"W x 10.75"D
Flow rate: 2.0 GPM
Housing capacity: 20 qts.

750L Specifications:

Dimensions: 19.25"H x 10.62"W x 10.75"D
Flow rate: 1.25 GPM
Housing capacity: 16 qts.

500L Specifications:

Dimensions: 14.25"H x 10.62"W x 10.75"D
Flow rate: 1.25 GPM
Housing capacity: 12 qts.

156L Specifications:

Dimensions: 21"H x 6.87"W x 8"D
Flow rate: .7 GPM
Housing capacity: 9 qts.

150L Specifications:

Dimensions: 12"H x 6.87"W x 8"D
Flow rate: .7 GPM
Housing capacity: 9 qts.

152L Specifications:

Dimensions: 9.5"H x 6.87"W x 8"D
Flow rate: .7 GPM
Housing capacity: 3 qts.

1002 Specifications:

Dimensions: 23.87"H x 10.62"W x 10.75"D
Flow rate: 5 to 10 GPM
Housing capacity: 40 qts.



Model 156 HP

156HP Specifications:

Dimensions: 22"H x 8"W x 9"D
Applications: transmissions, injection molding, compressors, hydraulic systems, rough duty
Flow rate: from 1.0 to 1.6 GPM
Housing capacity: 9 qts.



Oil should be filtered each time it is transferred from one vessel to another because additional contamination is inevitably introduced whenever oil is handled.

DECREASES HAZARDOUS WASTE

- Waste Disposal Costs
- Replacement Fluid Costs
- Downtime

INCREASES PROFITABILITY

- Fluid Life
- Equipment Life

Easy To Use

Manual Included

Minimal Training

Use Existing Personnel

PORTABLE FILTRATION SYSTEM

Removes contaminants to a single micron, removes water and glycol. Portable design moves easily from site to site, increases fluid life, decreases hazardous waste disposal. Use on most synthetic and petroleum-based fluids. Operation/service manual included.

Applications: for most hydraulic and lube oil reservoirs in manufacturing, machine shops, injection molding, oil EDM machines.

Configurations: single housing, dual housing, optional bag filter.

Flow rate: 5 - 8 GPM

PORTABLE COOLANT SYSTEM

Removes contaminants to a single micron. Portable design moves easily from site to site. Increases coolant and tool life.

Decreases hazardous waste disposal.

Applications: manufacturing, machine shops, water EDM machines

Configuration: single housing, bag filter optional coalescer

Flow rate: 4.5 GPM

WALL MOUNT, FLOOR MOUNT AND STATIONARY SYSTEMS

These custom systems can be built to your configurations and specifications. The same Harvard™ Brand quality will reduce waste generated significantly.



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Beta	3 Micron	5 Micron	10 Micron	15 Micron	20 Micron
Ratio	B ₃ =91.99	B ₅ =229.10	B ₁₀ =1078.28	B ₁₅ =3002.86	B ₂₀ =4937.68

Beta Ratio is run on Harvard™ 1000 4-piece filters using 5606 hydraulic oil at 100° F.

