



FILTRATION



*Fluid  
Contamination Under  
Control with . . . Innovative  
Filtration Products,  
Support, and Solutions.*



**Fluxa Filtri S.p.A.**

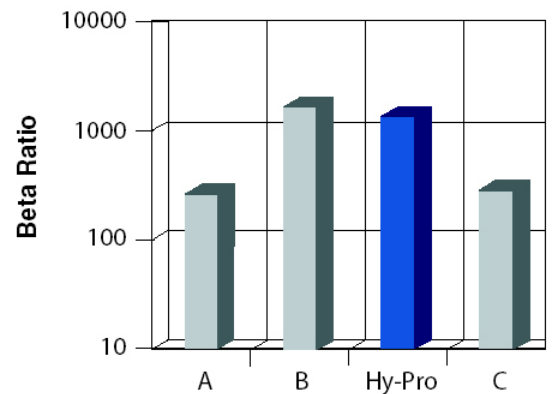
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# Fluid Contamination Under Control With...

## ISO 16889 Multipass Testing

Validation to antiquated minimum industry standard ISO 16889 testing guidelines.

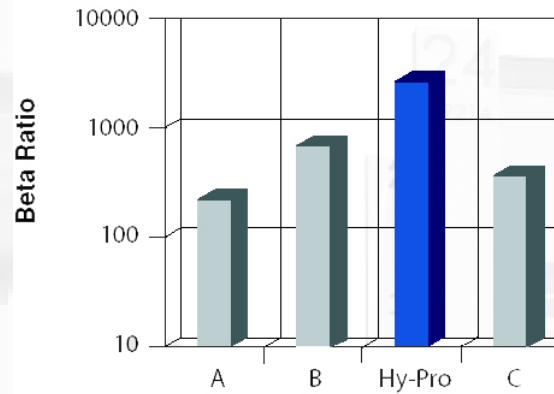
ISO 16889 Weighted Beta Ratio  
β5[c] rated element



## Dynamic Filter Efficiency Multipass Performance Testing

Hy-Pro has developed the highest industrial Standard for measuring filter performance. Performance in a dynamic system is simulated with rapid and frequent low rate changes that represent the stresses a filter experiences when in service.

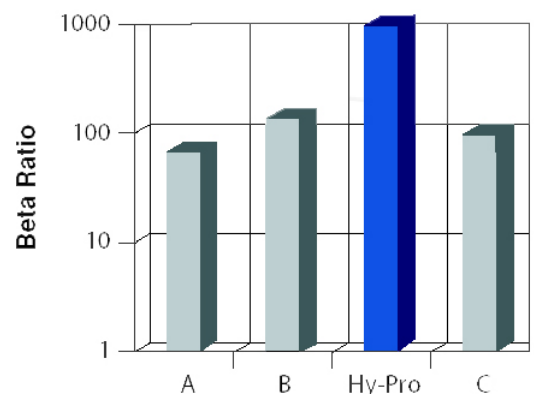
DFE Weighted Beta Ratio  
β5[c] rated element



## Contaminant Capture and Retention

Don't assume that a filter element will retain the particles it has captured. DFE testing reveals that filter elements designed and validated **ONLY** to antiquated industry standard ISO 16889 (ISO4572) multipass testing are prone to discharge previously captured contamination. When subjected to real world dynamic conditions highly concentrated clouds of contaminate are released by some filter elements. This can inhibit reliability, cause severe damage, and accelerate failure of sensitive components. With DFE rated Hy-Pro elements you get clean fluid under normal **AND** severe operating conditions.

DFE Real Time Beta Ratio  
During Transient Flow Stress  
β5[c] rated element



DFE A Competitive Advantage

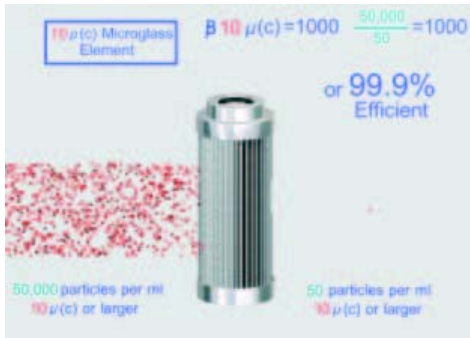
## Develop a Target Fluid Cleanliness Program.

We'll help you formulate a plan to achieve and maintain target fluid cleanliness levels. Arm yourself with the training, tools and practices to operate more efficiently and save money.

Current ISO Code	Target ISO Code 2 x Life	Target ISO Code 4 x Life	Target ISO Code 5 x Life
23/21/18	19/17/14	15/13/10	14/12/9
22/20/17	18/16/13	15/13/10	13/11/8
21/19/16	17/15/12	13/11/8	-
20/18/15	16/14/11	-	-
19/17/14	16/13/10	-	-
18/16/13	14/12/9	-	-

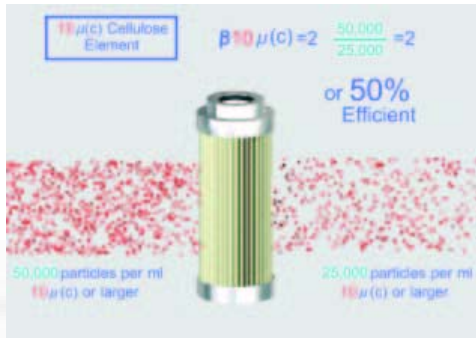


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### Achieve a Higher Efficiency

Hy-Pro filter elements are validated to achieve  $\beta_{x(c)} = 1000$  and greater beta ratios. Glass media elements only rated to  $\beta_{x(c)} = 75\sim 200$  can allow ISO fluid cleanliness codes to increase by two to three codes per size. This will lengthen the time interval necessary to achieve target cleanliness codes.



### Upgrade Cellulose to G8 Glass for Cleaner Fluid

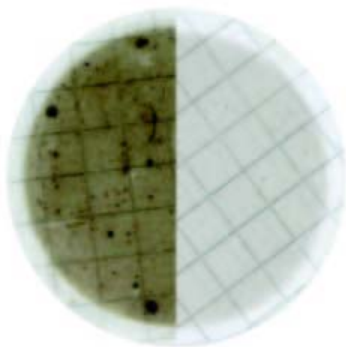
Glass media is the standard for high performance filters yet many systems still use antiquated cellulose media technology. Recapture control of runaway contamination levels and high ISO cleanliness codes by upgrading all cellulose filters to Hy-Pro elements featuring G7 Glass media. Once the system has stabilized the glass element will outlast the cellulose by 3-5 times.

DFE A Competitive Advantage



### See the Hy-Pro Difference

The Hy-Pro Oil Analysis Patch Kit (PTK1) provides an inside look at system contamination levels and particle type. Reference manual allows quick visual correlation from patch result to approximate ISO Code. Reference manual also helps to identify various types of contamination visually.



### The difference is Clear - Cleaner Fluid

The patch test collects all contaminate 1.2 $\mu$  and larger in 25ml of fluid from a fluid sample 100x field microscope magnification. The dirty patch shows the fluid condition with an inferior element, and the clean patch shows the difference in cleanliness after the Hy-Pro element was installed.

Current ISO Code	Target ISO Code 2 x Life	Target ISO Code 4 x Life	Target ISO Code 5 x Life
23/21/18	19/17/15	18/16/13	17/15/12
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21/19/16	18/16/13	16/14/11	15/13/10
20/18/15	17/15/12	15/13/10	14/12/9
19/17/14	16/14/11	14/12/9	14/12/8
18/16/13	15/13/10	13/11/8	-

### Cleaner Fluid, Longer Component Life

Lab and field tests prove time and again that Hy-Pro filters deliver lower ISO cleanliness codes, and do it with greater consistency. Improving and stabilizing fluid cleanliness can increase hydraulic component and bearing life exponentially. Cleaner fluid also yields reduced downtime, more reliable equipment performance, fewer maintenance hours, longer fluid life, and reduces costly component replacement or repair expenses.

## *Fluid Contamination Under Control With...*

### **High Performance Filter Elements**

Reduce vendors, consolidate inventory and clean up your system by replacing all major filter manufacturers and OEM spare elements with Hy-Pro upgrades. Replacements for Pall, Parker, Hydac, Schroeder, PTI, EPE, Internormen, Donaldson, Stauff, MP Filtri, Mahle, Fairey Arlon, General Electric, Hilco, Taisei Kogyo, Bosch, Rexroth, Kaydon, and many more.



### **High Pressure Filter Assemblies**

High pressure applications require cleaner fluid. Achieve and maintain target fluid cleanliness even under severe operating conditions. Rated up to 8700 psi (615 bar).



### **Turbine Oil and Diesel Coalesce Conditioning**

Meet target cleanliness levels and rapidly remove water to saturation point. Automatic water drain and 24/7 unattended operation.



### **Off-line and Mobile Filtration Systems**

Filter new fluids during transfer and replenishment (top-off). Flush fluids already in service with high efficiency elements (portable side loop) in addition to existing filtration. Remove particulate and water contamination. Condition bulk oil before use.



### **Vacuum Dehydrator**

Remove free and dissolved water from hydraulic, lube and transformer oils down to 20 PPM with Hy-Pro Vac-U-Dry. Extend fluid and component life by removing harmful water contamination. See the process rapidly remove water with clear vacuum chamber and condensate tank covers.



**Innovative Filtration Products**



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### Coreless Filter Elements

Reduce rising disposal costs and minimize environmental impact. Hy-Pro elements do not sacrifice performance or structural integrity for disposability.

Innovative Filtration Products



### Duplex Filter Assemblies

A range of sizes, ports, and bypass valve settings are available along with true differential pressure indicators. Available up to 3,000 psi (210 bar) with flow rates up to 4,500 gpm (16,875 lpm).



### In-Tank Return and Spin-On Filter Assemblies

A range of sizes, ports, and bypass valve settings are available along with true differential pressure indicators. Available upto 150 psi (10 bar) with flow rates up to 200 gpm (750 lpm).



### High Flow Filter Assemblies

Featuring coreless element technology with single element and multi-element vessel designs. Ideal for lube, off-line, process fluid, bulk oil handling, and other high flow applications. ASME code stamps available. Rated up to 4000 gpm (15000 lpm).



### Hy-Dry Desiccant Breathers and Suction Strainers.

Remove water from the air that your system inhales and capture oil mist and fume exhaust. Prolong fluid life, maintain fluid lubricity, minimize rust, oxidation and acid production. Hy-Dry also works to enhance filter performance by removing particulate contamination down to 2 micron with 100% efficiency. No reservoir or gearbox should be without one. Suction strainers are available with stainless mesh media with and without bypass.

# Fluid Contamination Under Control With...

## Focused

At Hy-Pro, controlling fluid contamination is our focus. We devote all R&D, time and effort to products and support.



## Anytime ... Anywhere

Experienced and available, Hy-Pro sales and service team members are well versed in all aspects of hydraulic and lube systems. We understand the impact and relationship of filters and cleanliness to the entire system. We are here to help tackle your fluid contamination challenge in any industry, anywhere!



## Mill and Plant Level Training

Our distributor partners go through extensive filtration and applications training. We offer that same technical training to maintenance and engineering personnel on the frontline. The training includes preventative maintenance tips, bottle sampling technique, oil analysis, and target cleanliness programs in addition to filtration and contamination basics.



## Experienced Engineering Design

The Hy-Pro Engineering and Design team is ready to partner with you to find a solution driven by combining customer requirements with the most suitable application of our technology.

## Difficult to Source Replacement Elements

Unknown manufacturer, incomplete or no part number, or just unlisted in our interchange guide... No problem! We are continuously adding new part numbers to our cross reference. If we cannot identify the element by number we can make a replacement from a sample or the right combination of detailed information.



Support and Solutions



### **Flexible**

We take pride in being flexible from product range to delivery. In an emergency or if you need a customized product, we want to help in any way we can. Let your challenge become our challenge too.

## **Support and Solutions**



### **Knowledgeable, Attentive Customer Service and Tech Support**

Our customer support team undergoes extensive filtration, applications, and product training. Put our customer support team to work for you.



### **Quick Delivery**

Extensive stock coupled with our flexible manufacturing approach allows us to define delivery in days not weeks. We see rush orders as an opportunity to prove our value to you.



### **Distributor Value Added Services**

We work shoulder to shoulder with our network of distributors to offer immediate response, applications expertise, and local stocking. Our distributor partners offer many value added services including inventory consolidation, system trouble shooting, training, oil analysis, fluid conditioning, scheduled filter change outs, system upgrades, power units, and much more.

## Quality

The same commitment to quality that helped us achieve ISO 9000 certification is an integral part of the culture of Hy-Pro. Quality is in the fiber of everything we do whether it is customer service, engineering, manufacturing, product development, or customer training and support. Put the Hy-Pro team to work for you.

## Industry Standards

All Hy-Pro filter and element designs are validated per ISO industry standards.

**ISO 2941 Collapse and burst resistance**

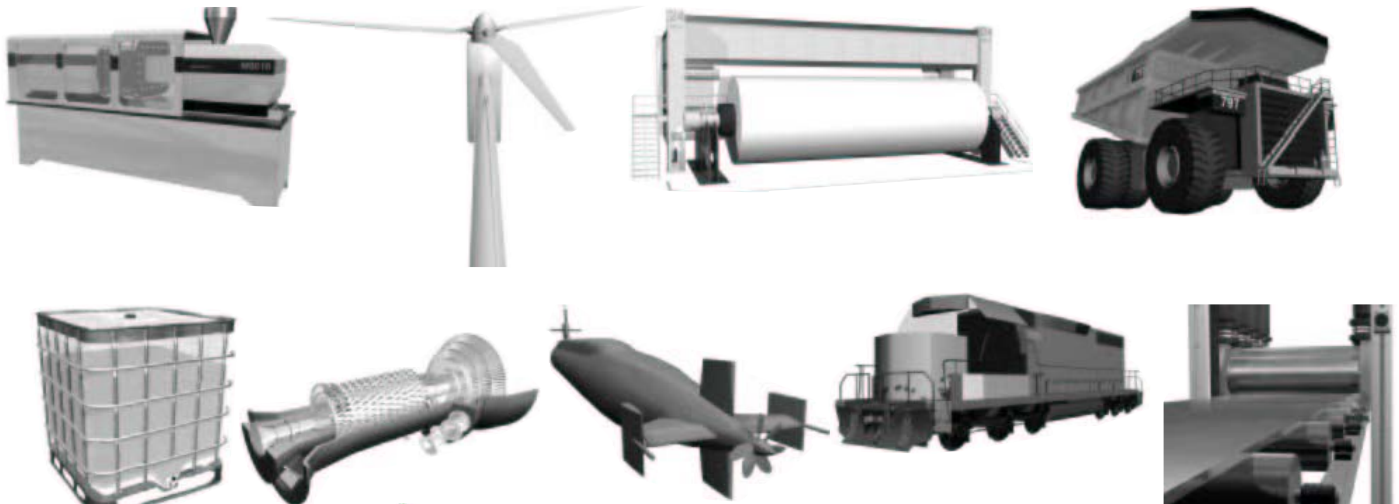
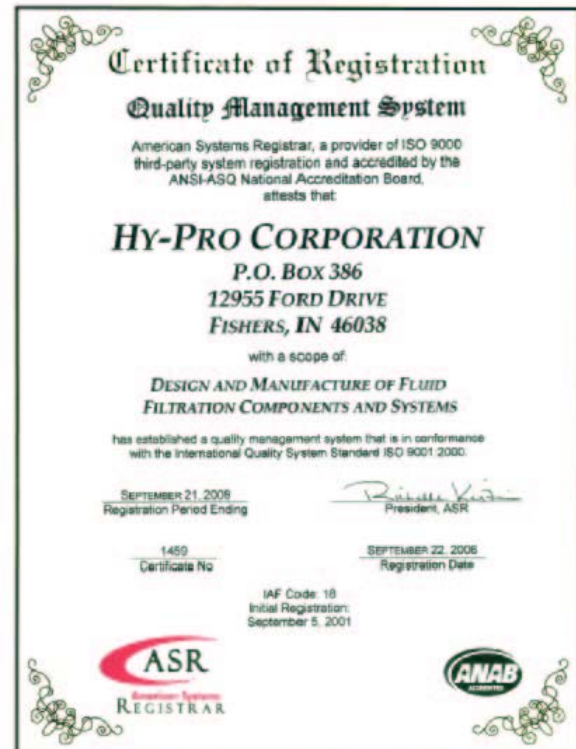
**ISO 2942 Fabrication and integrity test**

**ISO 2943 Material compatibility with fluids**

**ISO 3724 Flow fatigue characteristics**

**ISO 3968 Pressure drop vs flow rate**

**ISO 16889 Multi-Pass performance test**



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