



FC Filter Cart

Flow rate up to 22 gpm (82 lpm)

Ideal for hydraulic fluids
(ISO VG22 ~ ISO VG68)

Filter new fluids during transfer and
replenishment (top-off)

Flush fluids already in service with
high efficiency elements in addition
to existing filtration.

Remove particulate and water.

Condition bulk oil before use.

Materials of Construction

Assembly Frame: Painted Steel
Tires: Rubber (inflated)
Filter Assembly: Aluminum head, Steel canister
25 psid bypass valve
True differential pressure indicator
Hoses: Reinforced synthetic
Wands: Steel wands standard

Operating Temperature

Nitrile (Buna) -40f to 150f
-40c to 66c

Fluorocarbon (Viton)* -15f to 200f
-26c to 93c

*High temperature / phosphate ester design

Fluid Compatibility

Petroleum and mineral based fluids (standard).
For polyol ester, phosphate ester, and other
specified synthetics use Viton seal option or
contact factory.

Weight

FC1: 110 Lbs (49.90 kg) approximate
FC1: 120 Lbs (54.43 kg) approximate
FC1: 160 Lbs (72.58 kg) approximate

Electrical Service Requirements

115VAC 60Hz 1P / 120VAC 50Hz 1P (standard)
see options table for other selections

Electric Motor Specifications

TEFC or ODP, 56C frame
FC1: 1 HP, 1750 RPM, thermal overload reset
FC2: 1 HP, 1750 RPM, thermal overload reset
FC3*: 3 HP, 1750 RPM, thermal overload reset
*230VAC 1P or 440VAC 3P required for FC3

Recommended Viscosity Range

FC1*: 28 SSU ~ 2000 SSU, 6 cSt ~ 400 cSt
FC2*: 28 SSU ~ 1000 SSU, 6 cSt ~ 200 cSt
FC3*: 28 SSU ~ 1000 SSU, 6 cSt ~ 200 cSt

*At maximum viscosity clean element pressure drop with
3M media code < 12 psid/0.85 bar. Check maximum
viscosity of oil in coldest condition. For high viscosity
lubricating oils consider the FCL series filter cart.

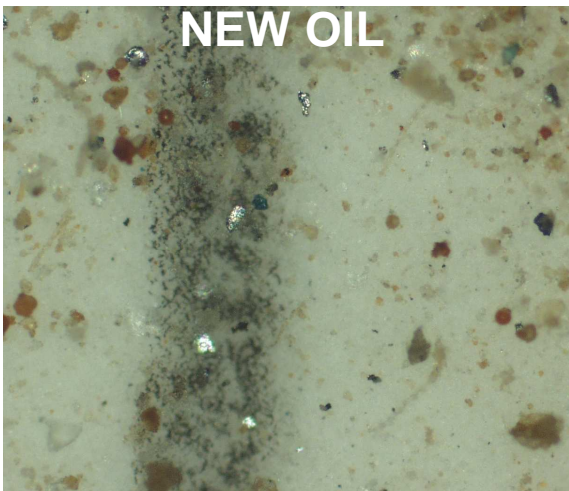
Pump Specifications

Gear pump
Internal relief full flow 100 psi, 6 bar standard

Explosion Proof Option

Class 1 explosion option is available.

FC1, FC2, FC3 FILTER CART APPLICATION INFO



Filtering New Oil - Particulate and Water

New oil is typically not clean oil, and might not be suitable for use in hydraulic and lube systems. During the production and transportation process new oil collects high levels of solid contaminant and water. A common ISO code for new oil is 24/22/19. New oil is one of the worst sources of particulate contaminant system ingress.

The FC will effectively remove free water while capturing particulate with high efficiency. Free and dissolved water in hydraulic and lube systems leads to accelerated abrasive wear, corrosion of metal surfaces, increased electrical conductivity, viscosity variance, loss of lubricity, fluid additive breakdown, bearing fatigue, and more. The FC series filter cart includes a wide range of element combination options to tackle any challenge. The HP75L8-25AB water removal element holds 23 ounces of water while controlling particles with a beta ratio of $\beta_{25} = 200$, $\beta_{22[c]} = 1000$.

Flush and Condition Existing Systems

The FC is also effective for condition fluids that are already in service. Equipping hose ends and reservoirs with quick disconnect fittings allows you to use the FC as a portable side loop system that can service several machines.



FC1, FC2, FC3 FILTER CART APPLICATION INFO

Cleaner Fluid, Greater Reliability

When establishing a target ISO cleanliness code first identify the most sensitive component. New oil added should be cleaner than the target ISO code for the system.

Figure 1 details the improvements in component life as the ISO cleanliness is improved for roller contact bearings. Improving and stabilizing fluid cleanliness codes can increase hydraulic component and bearing life exponentially.

Lab and field tests prove time and again that Hy-Pro filters deliver lower ISO cleanliness codes, and do it with greater consistency.

Figure 1

Current ISO Code	Target ISO Code 2 x Life	Target ISO Code 3 x Life	Target ISO Code 4 x Life	Target ISO Code 5 x Life
28/26/23	25/22/19	22/20/17	20/18/15	19/17/14
27/25/22	23/21/18	21/19/16	19/17/14	18/16/13
26/24/21	22/20/17	20/18/15	19/17/14	17/15/12
25/23/20	21/19/16	19/17/14	17/15/12	16/14/11
25/22/19	20/18/15	18/16/13	16/14/11	15/13/10
23/21/18	19/17/14	17/15/12	15/13/10	14/12/9
22/20/17	18/16/13	16/14/11	15/13/10	13/11/8
21/19/16	17/15/12	15/13/10	13/11/8	-
20/18/15	16/14/11	14/12/9	-	-
19/17/14	15/13/10	13/11/8	-	-
18/16/13	14/12/9	-	-	-

The Right Element Combination

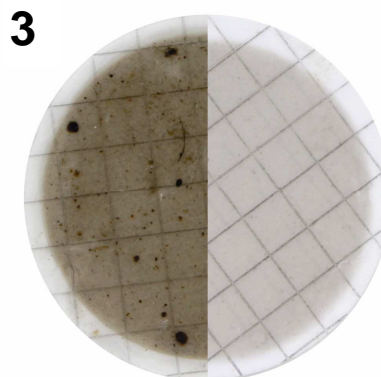
Figure 2 illustrates some possible combinations to use on the FC series cart. When water removal is desired use the 12A or 25A media code as a pre-filter. A finer media can be used on the main filter (second) to capture smaller particulate and reduce the ISO code. When conditioning a tote or flushing a fluid already in use the 1M media code will yield the quickest result on particulate.

Figure 2

Current Condition	Pre-Filter	Main-Filter
ISO 25/24/22 (New oil) with High water content	HP75L8-25AB β22[c] = 1000 + water removal	HP75L8-3MB β5[c] = 1000
ISO 25/24/22 (New oil)	HP75L8-12MB β12[c] = 1000	HP75L8-1MB β2.5[c] = 1000
ISO 21/19/16	HP75L8-3MB β5[c] = 1000	HP75L8-1MB β2.5[c] = 1000

Don't Put Dirty Oil Into Your System

Figure 3 shows the difference in particulate contamination between unfiltered new fluid with an ISO Cod of 24/22/19 and fluid that has been conditioned to an ISO Code of 16/14/11.



Prepared using PTK1 patch test kit

FILTER MEDIA . . . THE HEART OF A FILTER

Dynamic Filter Efficiency (DFE) Testing

Revolutionary test methods assure that DFE rated elements perform true to rating even under demanding variable flow and vibration conditions. Today's industrial and mobile hydraulic circuits require elements that deliver specified cleanliness under ALL circumstances. Wire mesh supports the media to ensure against cyclical flow fatigue, temperature, and chemical resistance failures possible in filters with synthetic support mesh. Contact your distributor or Hy-Pro for more information and published articles on DFE testing.

Media Options

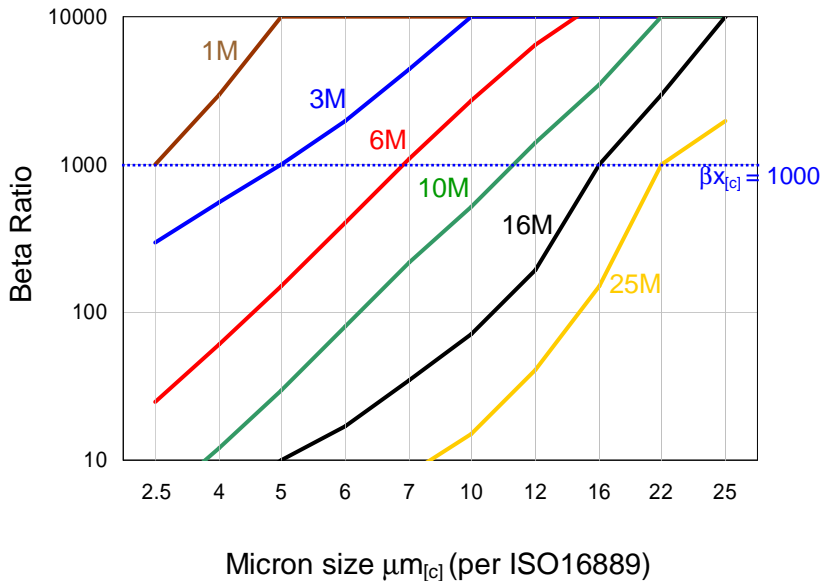
Through extensive testing we have developed media choices to handle any application. Options include G7 Dualglass, G7 Dualglass + Water Removal and Stainless steel wire mesh.

Fluid Compatibility

Petroleum based fluids, water glycol, polyol ester, phosphate ester, High water based fluids, and many other synthetics. Contact us for seal material selection assistance.

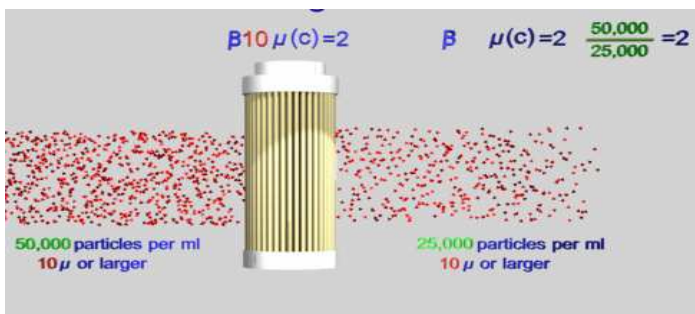
FILTER MEDIA SPECIFICATIONS

Glass Media Code Filtration Efficiency (Beta Ratio) vs Micron Size (per ISO16889 multipass)

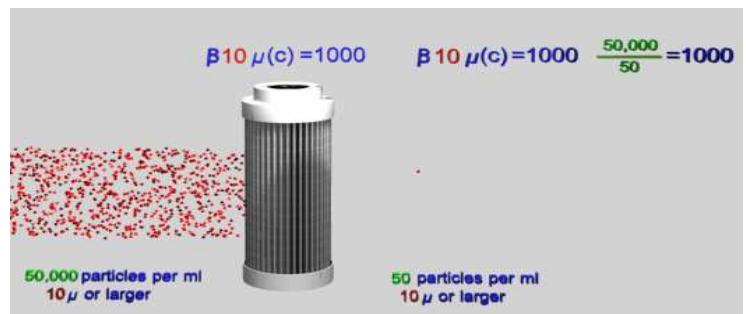


media code	media description
A	G7 Dualglass high performance media combined with water removal scrim. $\beta_{x[c]} = 1000$ ($\beta_x = 200$)
M	G7 Dualglass our latest generation of DFE rated, high performance glass media for all hydraulic & lubrication fluids. $\beta_{x[c]} = 1000$ ($\beta_x = 200$)
W	Stainless steel wire mesh media $\beta_{x[c]} = 2$ ($\beta_x = 2$) nominally rated

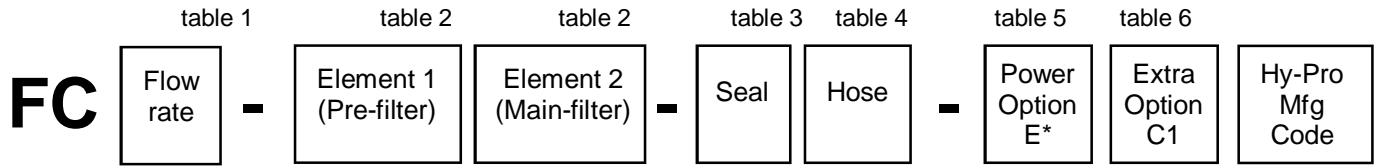
Typical cellulose media performance



G7 Dualglass media performance



FC1, FC2, FC3 FILTER CART PART NUMBER GUIDE



REPLACEMENT FILTER ELEMENT PART NUMBER GUIDE

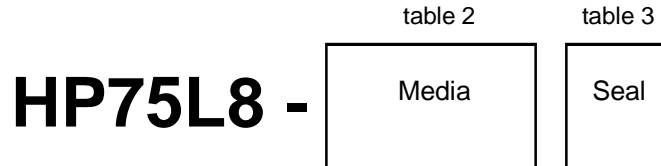


table 1 code	flow rate gpm (lpm)
1	5 gpm (18,7 lpm) 2 x S75, single element heads (in series)
2	10 gpm (37,5 lpm) 2 x S75, single element heads (in series)
3	22 gpm (82 lpm) 2 x S75D, dual element heads (in series)

table 2 code	filtration rating	media type
1M	$\beta_{2.5}[c] = 1000$ ($\beta_1 = 200$)	G7 Dualglass
3M	$\beta_{5}[c] = 1000$ ($\beta_3 = 200$)	G7 Dualglass
6M	$\beta_{7}[c] = 1000$ ($\beta_6 = 200$)	G7 Dualglass
12A	$\beta_{12}[c] = 1000$ ($\beta_{12} = 200$)	G7 Dualglass + Water removal
12M	$\beta_{12}[c] = 1000$ ($\beta_{12} = 200$)	G7 Dualglass
25A	$\beta_{22}[c] = 1000$ ($\beta_{25} = 200$)	G7 Dualglass + Water removal
25M	$\beta_{22}[c] = 1000$ ($\beta_{25} = 200$)	G7 Dualglass
74W	74u nominal	wire mesh
149W	149u nominal	wire mesh

table 3 code	seal material
B	Nitrile (Buna)
V	*Specified synthetics or High Temperature (>150F). Viton seals, metal wands, Teflon lined hoses.

*Phosphate Ester, Water Glycol & other synthetics.

table 4 code	hose arrangement
W	Female 3/4" SAE/JIC swivel hose ends with Wands
S	Female 3/4" SAE/JIC swivel hose ends (No Wands)
G	Female 3/4" BSPP swivel hose ends (No Wands)

table 5 code	power options
Omit	115 VAC, 60Hz, 1P (1750 RPM motor) 120 VAC, 50Hz, 1P (1450 RPM motor)
E2	230 VAC, 50Hz, 1P (1450 RPM motor) 230 VAC, 60Hz, 1P (1750 RPM motor)
E4	24 VDC (Consult factory for application)
E5	440-480 VAC, 60 Hz, 3P (1750 RPM motor)
E6	380-420 VAC, 50Hz, 3P (1450 RPM motor)

table 6 code	special options
C1	Explosion proof pump-motor, electrical (Class 1)



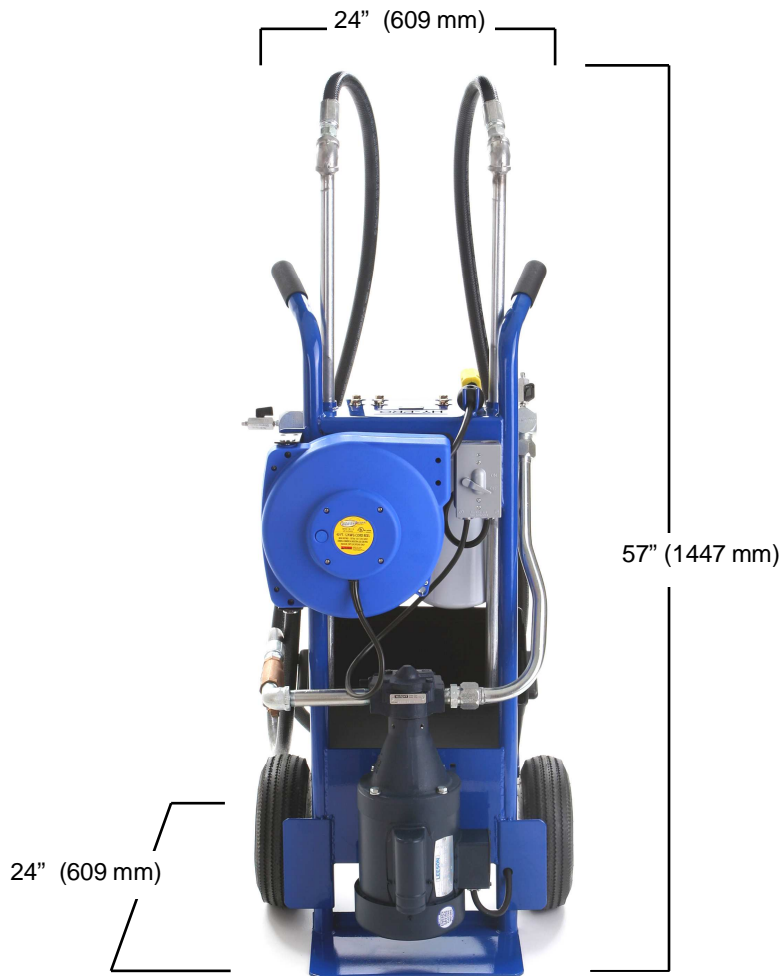
FILTRATION

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FC1, FC2 DIMENSIONS



FC1, FC2 SPARE PARTS

Part Number	Description
FCHOSE3/4SAE	3/4" SAE/JIC female swivel hose end, connects with Hy-Pro wands (sold individually)
FCHOSE3/4BSPP	3/4" BSPP female swivel hose end, Not compatible with wands (sold individually)
FCBATT	Removable drip pan
LFSV	Fluid sampling valve port
FCWANDST	Replacement wands steel
FCGRIPS	Cart handle grips (set of two)
FC1HPMTR	1 HP motor 115/230VAC 1P



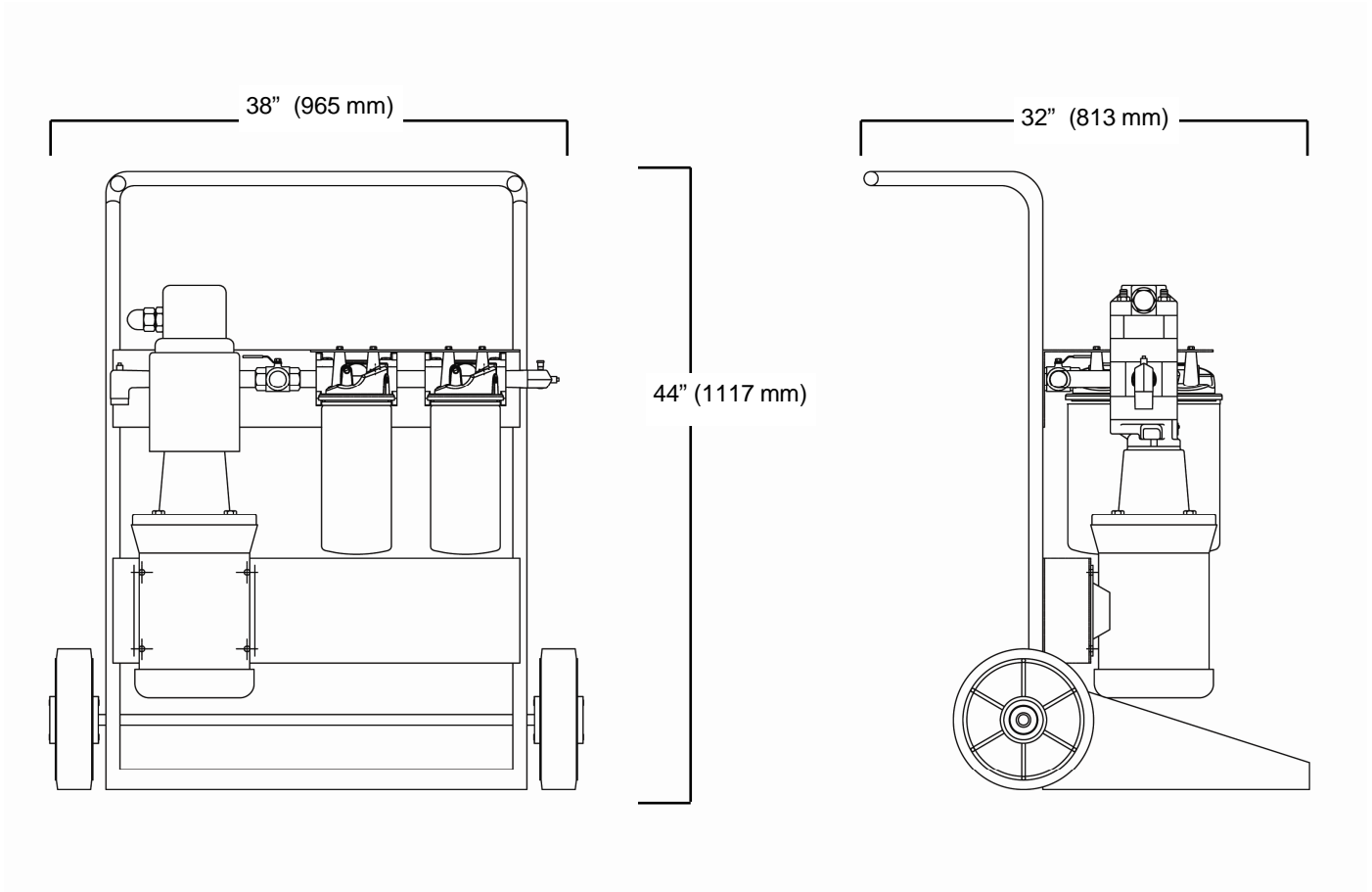
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