HY-PRO FILTRATION

HP2K170L Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 290 PSI (20 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna) and Fluorocarbon (Viton). Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Parker	**Hy-Pro**
932016	HP2K170L5-12MV
932017	HP2K170L5-12MV
932017Q	HP2K170L5-12MV
932020	HP2K170L5-25MV
933468Q	HP2K170L5-25MB
932019	HP2K170L5-25AV
933467	HP2K170L5-3MV
933467Q	HP2K170L5-3MV
932018Q	HP2K170L5-6MV
MP Filtri	**Hy-Pro**
MP3818	HP2K170L5-12MV
MP3819	HP2K170L5-25MV
MP6059	HP2K170L5-25MV
MP3820	HP2K170L5-25AV
MP3816	HP2K170L5-3MV
MP3821	HP2K170L5-40MV
MP3817	HP2K170L5-6MV

ΔP FACTORS

Media Code	Element Length L5	
	psid/gpm	bar/lpm
1M	0.920	0.063
3M	0.565	0.038
6M	0.368	0.025
10/12A	0.279	0.019
10/12M	0.233	0.016
25A	0.177	0.012
25M	0.148	0.010
*W	0.031	0.002

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

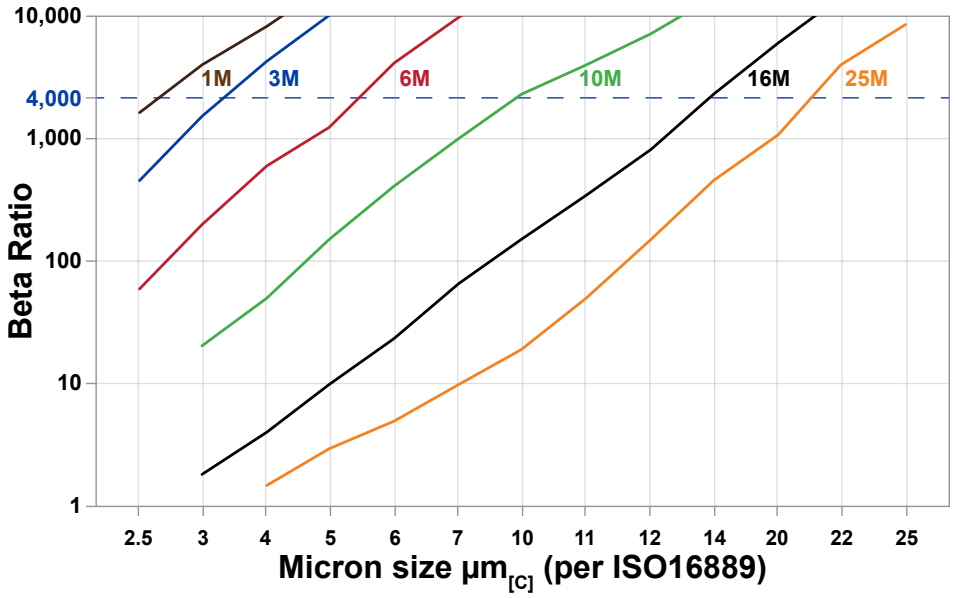
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP2K170L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
5	~5.350" (~13.589 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
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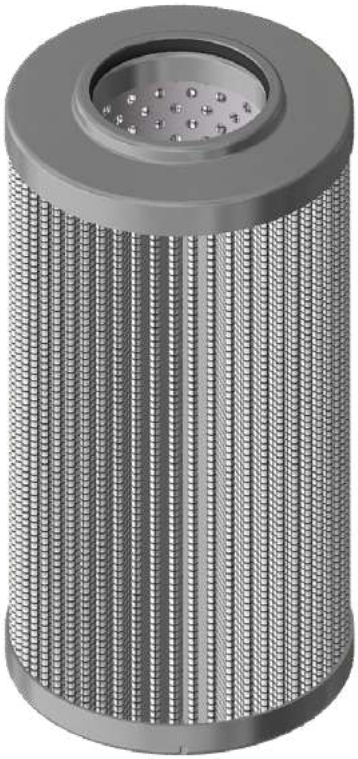
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION



HP32N Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 450 PSI (31 Bar)

Tested to ISO Quality Standards

ISO 2941	Collapse and burst resistance
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Media
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Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Argo	Hy-Pro
P3.0833-12	HP32NL12-25MB
V3.0833-03	HP32NL12-3MB
V3.0833-26	HP32NL12-60WB
V3.0817-09	HP32NL7-10MB
V3.0817-08	HP32NL7-25MB
V3.0823-06	HP32NL9-10MB
P3.0823-12	HP32NL9-25MB

Baldwin	Hy-Pro
PT9312-MPG	HP32NL4-10MB
PT9486-MPG	HP32NL5-25MB
PT9307-MPG	HP32NL7-25MB
PT9205	HP32NL9-10MB
PT9313-MPG	HP32NL9-25MB
PT8979-MPG	HP32NL9-3MB

Hydac	Hy-Pro
0250DN050WHC-V	HP32NL10-50WV
0250DN005BNHC	HP32NL10-6MB
0250DN074WHC-V	HP32NL10-74WV
3.833D10BNK	HP32NL12-10MB
1271574	HP32NL17-100WV
1250530	HP32NL17-10MB
0400DN200WHC-V	HP32NL17-200WV
1265322	HP32NL17-25MB

ΔP FACTORS

Media Code	Element Length L4		L5		L6	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.7346	0.01338	0.5946	0.01083	0.5273	0.00961
3M	0.4508	0.00821	0.3649	0.00665	0.3236	0.00589
6M	0.2936	0.00535	0.2377	0.00433	0.2108	0.00384
10/12A	0.2227	0.00406	0.1803	0.00328	0.1599	0.00291
10/12M	0.1856	0.00338	0.1503	0.00274	0.1332	0.00243
25A	0.1414	0.00258	0.1145	0.00209	0.1015	0.00185
25M	0.1178	0.00215	0.0954	0.00174	0.0846	0.00154
*W	0.0245	0.00045	0.0198	0.00036	0.0176	0.00032

Media Code	Element Length L6.3		L7		L9		L9.8		L10	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.5169	0.00941	0.4863	0.00886	0.3500	0.00637	0.3257	0.00593	0.3300	0.00601
3M	0.3172	0.00578	0.2984	0.00543	0.2148	0.00391	0.1999	0.00364	0.2025	0.00369
6M	0.2066	0.00376	0.1944	0.00354	0.1399	0.00255	0.1302	0.00237	0.1319	0.00240
10/12A	0.1567	0.00285	0.1474	0.00269	0.1061	0.00193	0.0988	0.00180	0.1001	0.00182
10/12M	0.1306	0.00238	0.1229	0.00224	0.0884	0.00161	0.0823	0.00150	0.0834	0.00152
25A	0.0995	0.00181	0.0936	0.00171	0.0674	0.00123	0.0627	0.00114	0.0635	0.00116
25M	0.0829	0.00151	0.0780	0.00142	0.0561	0.00102	0.0523	0.00095	0.0529	0.00096
*W	0.0172	0.00031	0.0162	0.00030	0.0117	0.00021	0.0109	0.00020	0.0110	0.00020

Media Code	Element Length L12		L15		L16		L17		L20	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.2429	0.00443	0.2137	0.00389	0.2034	0.00370	0.2015	0.00367	0.1567	0.00285
3M	0.1491	0.00272	0.1311	0.00239	0.1248	0.00227	0.1237	0.00225	0.0962	0.00175
6M	0.0971	0.00177	0.0854	0.00156	0.0813	0.00148	0.0806	0.00147	0.0626	0.00114
10/12A	0.0737	0.00134	0.0648	0.00118	0.0617	0.00112	0.0611	0.00111	0.0475	0.00087
10/12M	0.0614	0.00112	0.0540	0.00098	0.0514	0.00094	0.0509	0.00093	0.0396	0.00072
25A	0.0468	0.00085	0.0411	0.00075	0.0392	0.00071	0.0388	0.00071	0.0302	0.00055
25M	0.0390	0.00071	0.0343	0.00062	0.0326	0.00059	0.0323	0.00059	0.0251	0.00046
*W	0.0081	0.00015	0.0071	0.00013	0.0068	0.00012	0.0067	0.00012	0.0052	0.00010

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

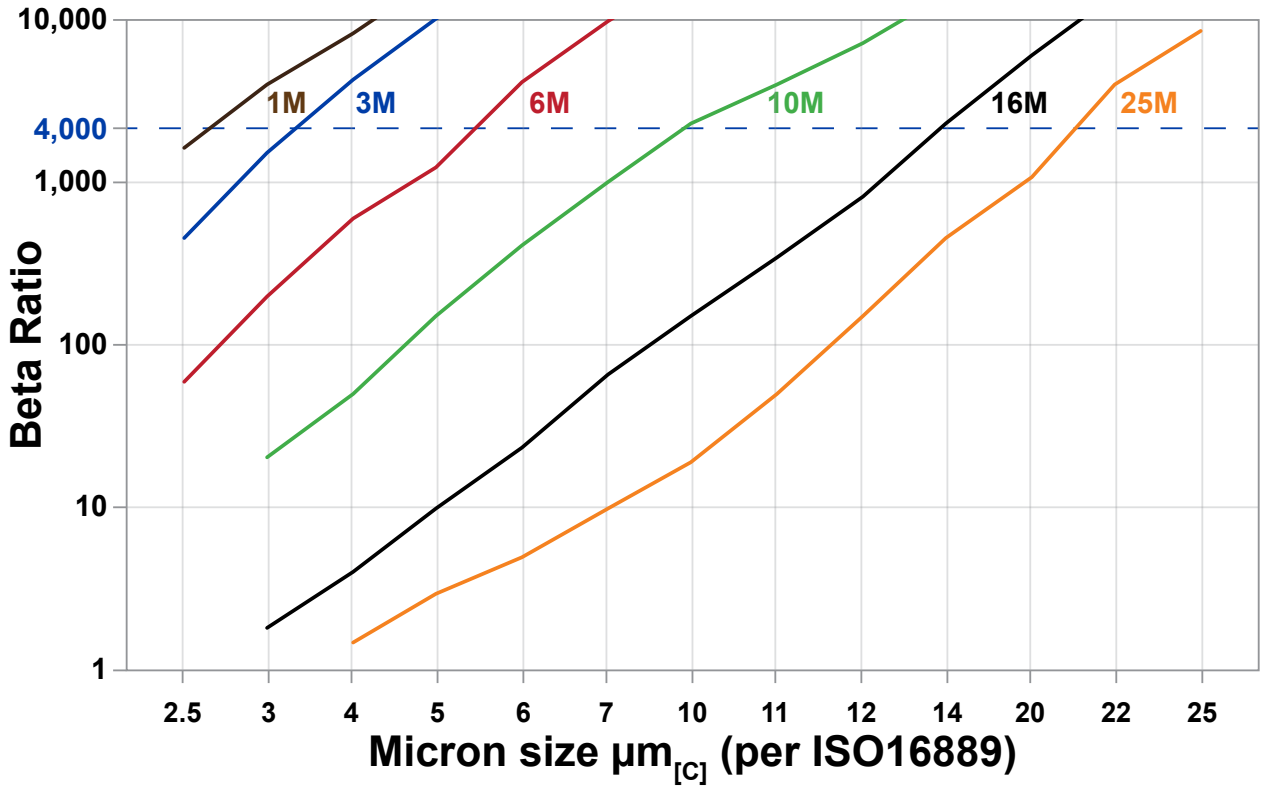
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP32NL [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
L4	~4.510” (~11.46 cm)
L5	~5.510” (~14.00 cm)
L6	~6.180” (~15.70 cm)
L6.3	~6.300” (~16.00 cm)
L7	~6.680” (~16.97 cm)
L9	~9.180” (~23.32 cm)
L9.8	~9.845” (~25.01 cm)
L10	~9.720” (~24.69 cm)
L12	~13.110” (~33.30 cm)
L15	~14.870” (~37.77 cm)
L16	~15.610” (~39.65 cm)
L17	~15.750” (~40.01 cm)
L20	~20.180” (~51.26 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
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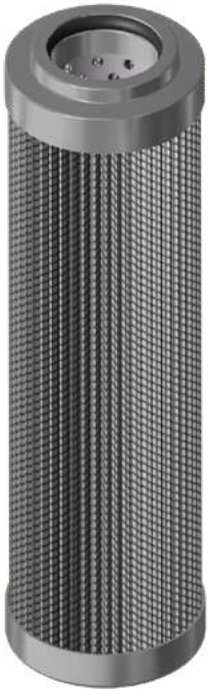
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION



HP43N Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 450 PSI (31 Bar)

Tested to ISO Quality Standards

ISO 2941	Collapse and burst resistance
ISO 2942	Fabrication and Integrity test
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Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

EPE	Hy-Pro
2.0004G10-AHZ-0-V	HP43NL3-100WV-N
2.0004AS10-AH0-0-M	HP43NL3-10AB
2.0004H3XL-A00-0-M	HP43NL3-3MB
2.0005G10-AH0-0-V	HP43NL4-10WV
2.0005G60-AH0-0-V	HP43NL4-60WV
2.0005G130-A00-0-M	HP43NL4-125WB
2.0008G10-AH0-0-V	HP43NL6-10WV
2.0008H10SL-A00-0-E	HP43NL6-10ME
2.0008AS1-A00-0-M	HP43NL6-1AB
2.0013H3XL-AH0-0-V	HP43NL10-3MV
2.0013H20SL-A00-0-P	HP43NL10-25MB
2.0013H40XL-A00-0-M	HP43NL10-40MB

Rexroth	Hy-Pro
R928007913	HP43NL3-25MB
R928035670	HP43NL3-74WV
R928045558	HP43NL3-40WV
R928007963	HP43NL4-10MB
R928045584	HP43NL4-40WV
R928036521	HP43NL4-500WB
R928008042	HP43NL6-3MV
R928006188	HP43NL6-10MV
R928038329	HP43NL6-60WV
R928045624	HP43NL10-40WV
R928045622	HP43NL10-500WB
R928007229	HP43NL10-10MB

ΔP FACTORS

Media Code	Element Length									
	L3		L4		L6		L10		L12	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	2.9712	0.05412	2.4784	0.04514	1.5097	0.02750	0.9689	0.01765	0.7761	0.01414
3M	1.8232	0.03321	1.5208	0.02770	0.9264	0.01687	0.5946	0.01083	0.4762	0.00867
6M	1.1877	0.02163	0.9907	0.01804	0.6035	0.01099	0.3873	0.00705	0.3102	0.00565
10/12A	0.9009	0.01641	0.7515	0.01369	0.4578	0.00834	0.2938	0.00535	0.2353	0.00429
10/12M	0.7507	0.01367	0.6262	0.01141	0.3815	0.00695	0.2448	0.00446	0.1961	0.00357
25A	0.5720	0.01042	0.4771	0.00869	0.2906	0.00529	0.1865	0.00340	0.1494	0.00272
25M	0.4767	0.00868	0.3976	0.00724	0.2422	0.00441	0.1554	0.00283	0.1245	0.00227
*W	0.0991	0.00180	0.0827	0.00151	0.0504	0.00092	0.0323	0.00059	0.0259	0.00047

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

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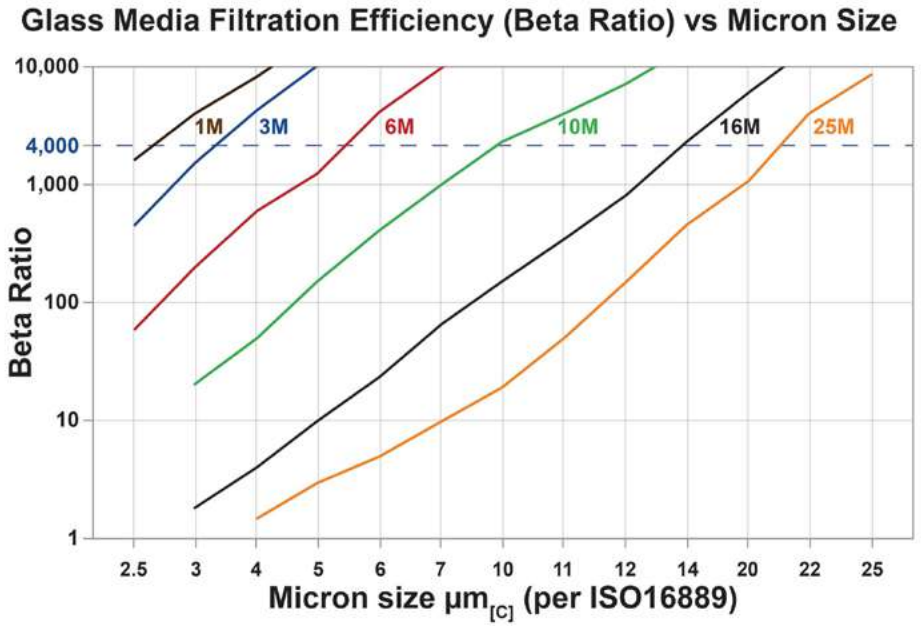
FILTER ELEMENT MEDIA PERFORMANCE



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP43NL [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
L3	~3.310” (~8.41 cm)
L4	~3.920” (~9.96 cm)
L6	~6.280” (~15.95 cm)
L10	~9.650” (~24.51 cm)
L12	~12.000” (~30.48 cm)

Table 3 Code	Seal
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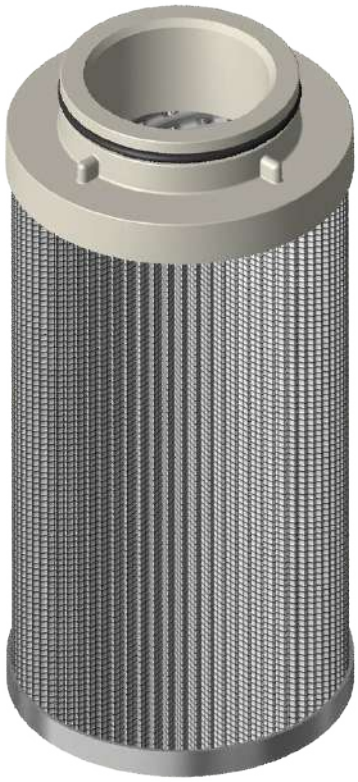

HP53 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

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- EPR: -70°F (-57°C) – 250°F (121°C)
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Standard Element Collapse
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Water Removal
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Dynamic Filter Efficiency
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Parker	Hy-Pro
FTCE2A10Q	HP53L13-10MB
FTCE2B10Q	HP53L13-10MV
FTCE2A20Q	HP53L13-20MB
G02087	HP53L13-20MV
G02084	HP53L13-25WV
929790Q	HP53L13-3MB
FTCE2B02Q	HP53L13-3MV
FTC1A10Q	HP53L8-10MB
G02082	HP53L8-10MV
FTC1A20Q	HP53L8-20MB
G02081	HP53L8-20MV
G02078	HP53L8-25WV
929784Q	HP53L8-3MB
FTCE1B02Q	HP53L8-3MV
FTC1A05Q	HP53L8-6MB
FTCE1B05Q	HP53L8-6MV

Fram	Hy-Pro
FR541G10	HP53L13-10MB
FR541G25	HP53L13-25MB
FR541T25	HP53L13-25WB
FR541T25V	HP53L13-25WV
FR541G03	HP53L13-3MB
FR540G10	HP53L8-10MB
FR540G25	HP53L8-25MB
FR540G03	HP53L8-3MB
FR540G06	HP53L8-6MB

HY-PRO

ΔP FACTORS

Media Code	Element Length			
	L8		L13	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.405	0.028	0.241	0.016
3M	0.249	0.017	0.148	0.010
6M	0.162	0.011	0.096	0.007
10/12A	0.123	0.008	0.073	0.005
10/12M	0.102	0.007	0.061	0.004
25A	0.078	0.005	0.046	0.003
25M	0.065	0.004	0.039	0.003
*W	0.014	0.001	0.008	0.001

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

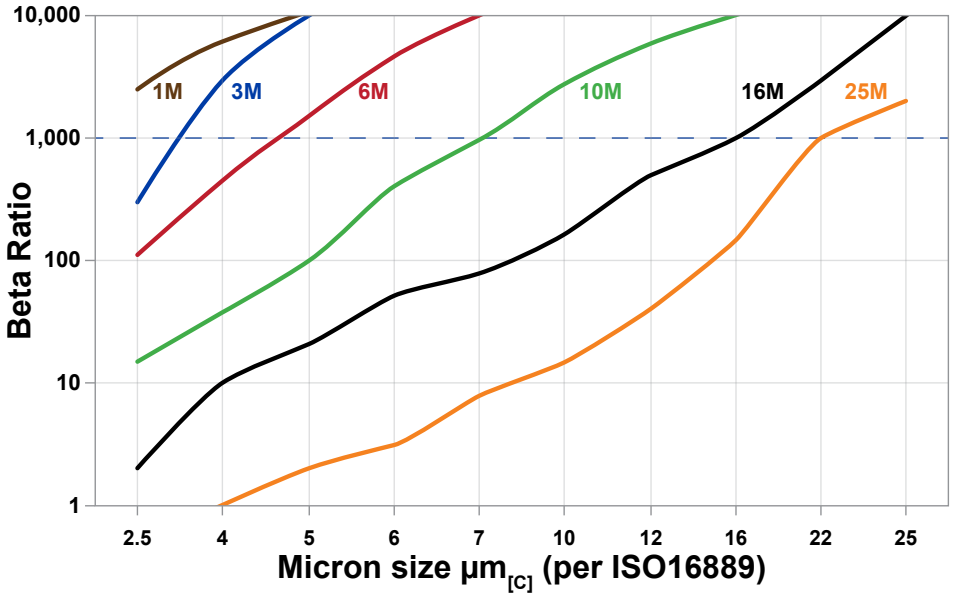
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP53L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
8	~7.970" (~20.243 cm)
13	~12.660" (~32.156 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 2.5_{[c]}$ = 1000 (β1 = 200)
3M	$\beta 5_{[c]}$ = 1000 (β3 = 200)
3A	$\beta 5_{[c]}$ = 1000 (β3 = 200) + Water Removal
3SF*	$\beta 5_{[c]}$ = 1000 (β3 = 200) Dynafuzz
6M	$\beta 7_{[c]}$ = 1000 (β6 = 200)
6A	$\beta 7_{[c]}$ = 1000 (β6 = 200) + Water Removal
6SF*	$\beta 7_{[c]}$ = 1000 (β6 = 200) Dynafuzz
10M	$\beta 12_{[c]}$ = 1000 (β12 = 200)
10A	$\beta 12_{[c]}$ = 1000 (β12 = 200) + Water Removal
10SF*	$\beta 12_{[c]}$ = 1000 (β12 = 200) Dynafuzz
25M	$\beta 22_{[c]}$ = 1000 (β25 = 200)
25A	$\beta 22_{[c]}$ = 1000 (β25 = 200) + Water Removal
25W*	25µ Nominal Wire Mesh
25SF*	$\beta 22_{[c]}$ = 1000 (β25 = 200) Dynafuzz
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HP61 Series

Hy-Pro Filter Element Upgrades for Pall HC9601

Hy-Pro G8 Dualglass

High Performance Filter Elements

Performance

Temperature: Buna: -45°F ~ 225°F, -43°C ~ 107°C
EPR: -65°F ~ 300°F, -53°C ~ 148°C
Viton: -20°F ~ 250°F, -29°C ~ 121°C

Standard Element Collapse: ΔP 3000 psi, ΔP 204 bar

Media

G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Dynamic Filter Efficiency

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.

Water Removal

Media code "A" specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 1000$ efficiency down to $1\mu / 2.5\mu_{[c]}$.

Fluid Compatibility

Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Tested to ISO Quality Standards

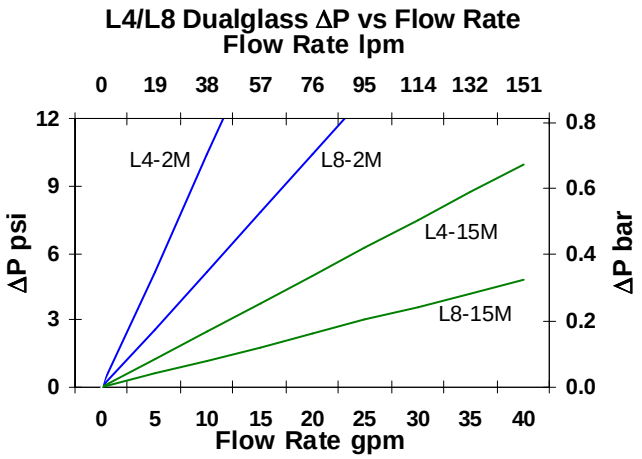
ISO 2941	Collapse and burst resistance
ISO 2942	Fabrication and Integrity test
ISO 2943	Material compatibility with fluids
ISO 3724	Flow fatigue characteristics
ISO 3968	Pressure drop vs. flow rate
ISO 16889	Multi-pass performance testing

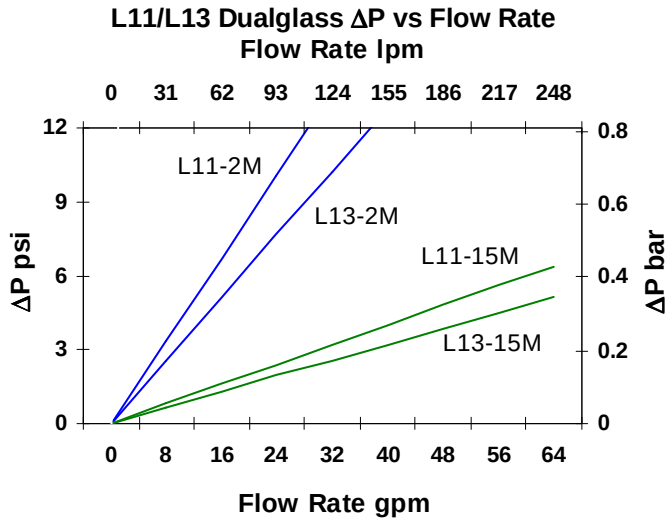
Interchange

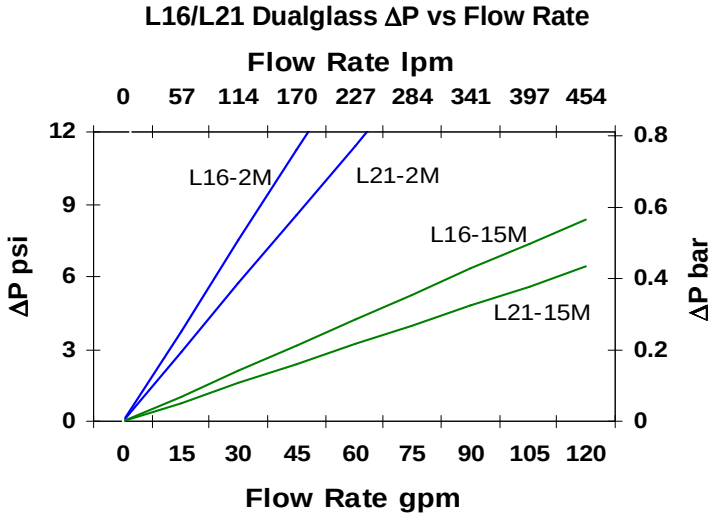
Pall	Hy-Pro
HC9601FDP11H	HP61L11-2MB
HC9601FDP11YGE	HP61L11-2MV
HC9601FDP11ZYGE	HP61L11-2MV
HC9601FDP13H	HP61L13-2MB
HC9601FDP16H	HP61L16-2MB
HC9601FDP21H	HP61L21-2MB
HC9601FDP21YGE	HP61L21-2MV
HC9601FDP21ZYGE	HP61L21-2MV
HC9601FDP4H	HP61L4-2MB
HC9601FDP8H	HP61L8-2MB
HC9601FDT11H	HP61L11-15MB
HC9601FDT13H	HP61L13-15MB
HC9601FDT16H	HP61L16-15MB
HC9601FDT21H	HP61L21-15MB
HC9601FDT4H	HP61L4-15MB
HC9601FDT8H	HP61L8-15MB

*For Viton seals (where Pall p/n ends with Z) replace the B in Hy-Pro p/n with a V.

FILTER ELEMENT FLOW vs PRESSURE DROP







Adjusted Pressure Drop : Pressure drop curves based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

Kinematic Viscosity in SUS: ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

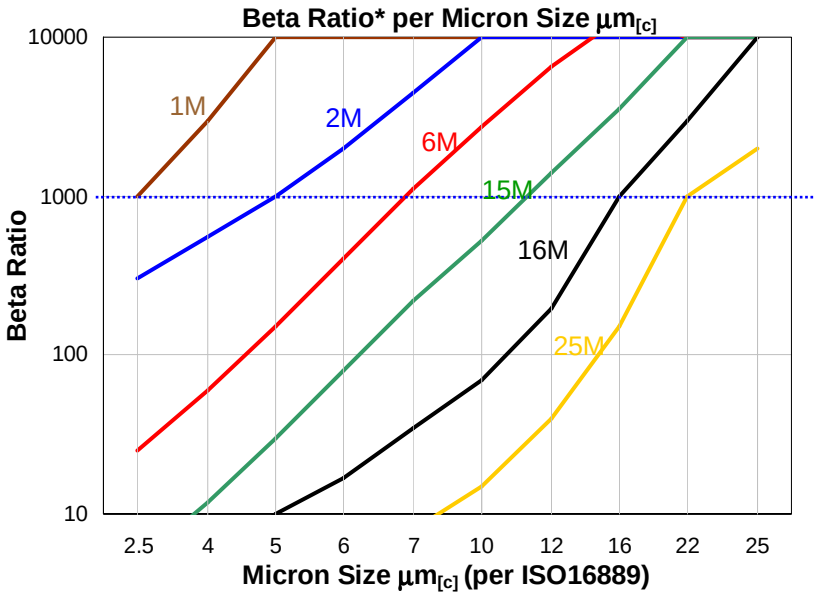
Kinematic Viscosity in cSt: ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion: 1 cSt = 4.63 SUS

HY-PRO FILTRATION

FILTER ELEMENT MEDIA PERFORMANCE

Efficiency, Apparent Dirt Holding Capacity, H_2O Capacity Numbers Based on Viscosity 150 SUS (32 cSt) at 100°F (40°C)



FILTER ELEMENT PART NUMBER GUIDE

Table 1 Table 2 Table 3

HP61L ___ - ___ ___

Table 1 Code	Overall Length
4	~4.650”
8	~8.224”
11	~11.300”
13	~12.950”
16	~16.930”
21	~20.870”

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester Use Viton

Table 2 Code	Media Selection
1M	$\beta 2.5_{[c]} = 1000$ ($\beta 1 = 200$)
2M	$\beta 5_{[c]} = 1000$ ($\beta 3 = 200$)
3SF*	$\beta 5_{[c]} = 1000$ ($\beta 3 = 200$) Dynafuzz
6M	$\beta 7_{[c]} = 1000$ ($\beta 6 = 200$)
6SF*	$\beta 7_{[c]} = 1000$ ($\beta 6 = 200$) Dynafuzz
10SF*	$\beta 12_{[c]} = 1000$ ($\beta 12 = 200$) Dynafuzz
15M	$\beta 12_{[c]} = 1000$ ($\beta 12 = 200$)
25M	$\beta 22_{[c]} = 1000$ ($\beta 25 = 200$)
25A	$\beta 22_{[c]} = 1000$ ($\beta 25 = 200$) + Water Removal
25W*	25µ Nominal Wire Mesh
25SF*	$\beta 22_{[c]} = 1000$ ($\beta 25 = 200$) Dynafuzz
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HY-PRO FILTRATION

HP61 Series

Hy-Pro Filter Element Upgrades for Pall HC9601

Hy-Pro G8 Dualglass

High Performance Filter Elements

Performance

Temperature Rating

Buna:	-30°F (-34°C) – 250°F (121°C)
EPR:	-70°F (-57°C) – 250°F (121°C)
Viton:	-15°F (-26°C) – 400°F (204°C)

Standard Element Collapse

ΔP 3000 PSI (204 Bar)

Tested to ISO Quality 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 testing

Media

G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, and Dynafuzz (Stainless Fiber Media). Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility

Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Dynamic Filter Efficiency

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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Pall	Hy-Pro
HC9601FDP11H	HP61L11-2MB
HC9601FDP11YGE	HP61L11-2MV
HC9601FDP11ZYGE	HP61L11-2MV
HC9601FDP13H	HP61L13-2MB
HC9601FDP16H	HP61L16-2MB
HC9601FDP21H	HP61L21-2MB
HC9601FDP21YGE	HP61L21-2MV
HC9601FDP21ZYGE	HP61L21-2MV
HC9601FDP4H	HP61L4-2MB
HC9601FDP8H	HP61L8-2MB
HC9601FDT11H	HP61L11-15MB
HC9601FDT13H	HP61L13-15MB
HC9601FDT16H	HP61L16-15MB
HC9601FDT21H	HP61L21-15MB
HC9601FDT4H	HP61L4-15MB
HC9601FDT8H	HP61L8-15MB

ΔP FACTORS

Media Code	Element Length L4		L8		L9		L11	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.927	0.063	0.502	0.034	0.450	0.031	0.361	0.025
3M	0.569	0.039	0.308	0.021	0.276	0.019	0.222	0.015
6M	0.371	0.025	0.201	0.014	0.180	0.012	0.144	0.010
10/12M	0.234	0.016	0.127	0.009	0.114	0.008	0.091	0.006
25M	0.149	0.010	0.080	0.005	0.072	0.005	0.058	0.004
*W	0.031	0.002	0.017	0.001	0.015	0.001	0.012	0.001

Media Code	Element Length L13		L16		L21		L26	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.314	0.021	0.239	0.016	0.193	0.013	0.151	0.010
3M	0.193	0.013	0.146	0.010	0.118	0.008	0.093	0.006
6M	0.125	0.009	0.095	0.006	0.077	0.005	0.061	0.004
10/12M	0.079	0.005	0.060	0.004	0.049	0.003	0.038	0.003
25M	0.050	0.003	0.038	0.003	0.031	0.002	0.024	0.002
*W	0.010	0.001	0.008	0.001	0.006	0.000	0.005	0.000

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

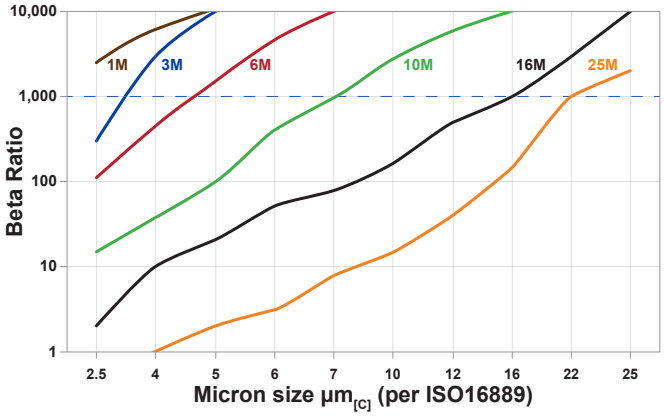
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP61L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
4	~4.650" (~11.811 cm)
8	~8.224" (~20.888 cm)
9	~9.130" (~23.190 cm)
11	~11.300" (~28.702 cm)
13	~12.961" (~32.920 cm)
16	~16.941" (~43.030 cm)
21	~20.881" (~53.038 cm)
26	~26.511" (~67.338 cm)

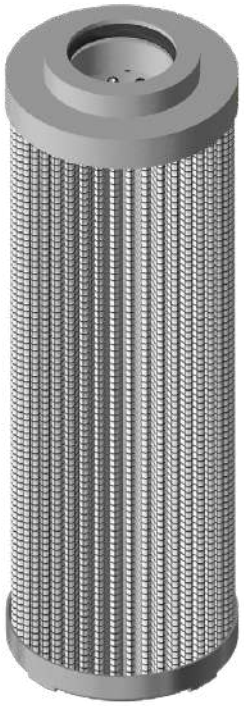
Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 2.5_{[c]}$ = 1000 (β1 = 200)
2/3E_-NSD**	$\beta 5_{[c]}$ = 1000 (β3 = 200)
2M	$\beta 5_{[c]}$ = 1000 (β3 = 200)
3SF*	$\beta 5_{[c]}$ = 1000 (β3 = 200) Dynafuzz
6M	$\beta 7_{[c]}$ = 1000 (β6 = 200)
6E_-NSD**	$\beta 7_{[c]}$ = 1000 (β6 = 200)
6SF*	$\beta 7_{[c]}$ = 1000 (β6 = 200) Dynafuzz
10SF*	$\beta 12_{[c]}$ = 1000 (β12 = 200) Dynafuzz
15M	$\beta 12_{[c]}$ = 1000 (β12 = 200)
12/15E_-NSD**	$\beta 12_{[c]}$ = 1000 (β12 = 200)
17E_-NSD**	$\beta 17_{[c]}$ = 1000 (β17 = 200)
25M	$\beta 22_{[c]}$ = 1000 (β25 = 200)
25E_-NSD**	$\beta 22_{[c]}$ = 1000 (β25 = 200)
25W*	25µ Nominal Wire Mesh
25SF*	$\beta 22_{[c]}$ = 1000 (β25 = 200) Dynafuzz
40E_-NSD**	$\beta 35_{[c]}$ = 1000 (β40 = 200)
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)
**"E_-NSD" Designates Non-Spark Discharge Media
"-NSD" will be added on after Table 3

HY-PRO FILTRATION



HP075N Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 450 PSI (31 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Hydac	Hy-Pro
0035D010BNHC	HP075NL3-10MB
0035D025W/HC-V	HP075NL3-25WV
0055D100WHC	HP075NL5-100WB
0055D020BNHC	HP075NL5-20MB
P566655	HP075NL7-6MV
0075D200WHC	HP075NL7-200WB
0095D020BNHC	HP075NL9-20MB
0095D005BN4HC-V	HP075NL9-6MV

Main Filter	Hy-Pro
MF0060374	HP075NL5-10MV
MF0060489	HP075NL7-10MB
MF0060486	HP075NL7-6MB

Parker	Hy-Pro
937058Q	HP075NL3-20MB
938154Q	HP075NL9-10MB
938309Q	HP075NL9-10MV

Vickers	Hy-Pro
V0512V5C20	HP075NL5-25MV
V0512B5C03	HP075NL5-3MB
V0512V7C10	HP075NL7-10MV
V0512B7C20	HP075NL7-20MB
D47B10GV	HP075NL9-10MV

ΔP FACTORS

Media Code	Element Length							
	L3		L5		L7		L9	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	2.2756	0.04145	1.2916	0.02353	0.8733	0.01591	0.6991	0.01273
3M	1.3964	0.02543	0.7926	0.01444	0.5359	0.00976	0.4290	0.00781
6M	0.9096	0.01657	0.5163	0.00940	0.3491	0.00636	0.2794	0.00509
10/12A	0.6900	0.01257	0.3916	0.00713	0.2648	0.00482	0.2120	0.00386
10/12M	0.5750	0.01047	0.3264	0.00594	0.2207	0.00402	0.1766	0.00322
25A	0.4381	0.00798	0.2486	0.00453	0.1681	0.00306	0.1346	0.00245
25M	0.3651	0.00665	0.2072	0.00377	0.1401	0.00255	0.1121	0.00204
*W	0.0759	0.00138	0.0431	0.00078	0.0291	0.00053	0.0233	0.00042

Adjusted Pressure Drop

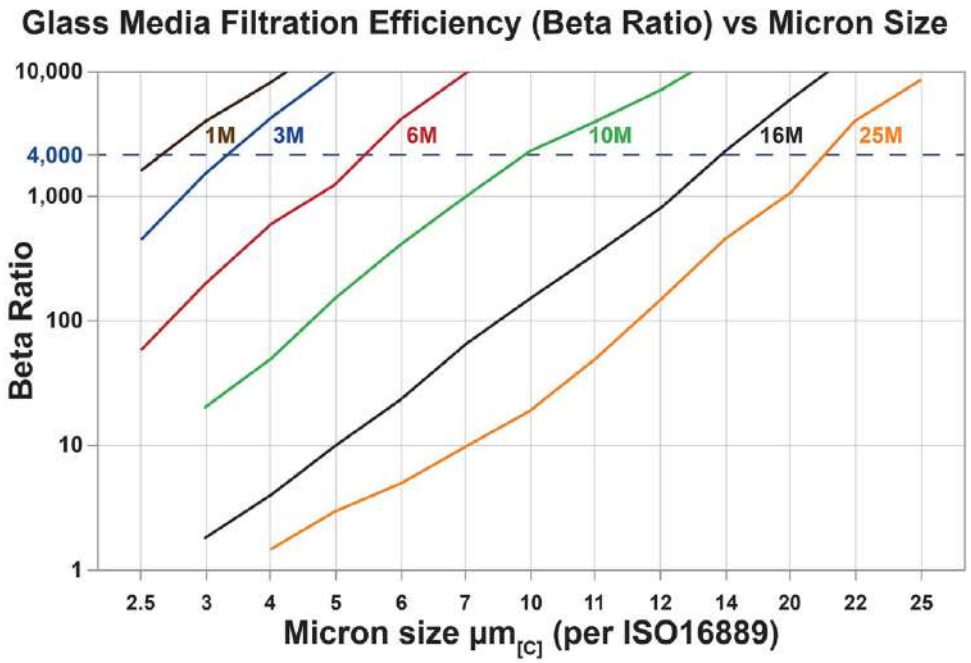
Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP075NL [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
L3	~2.830” (~7.19 cm)
L5	~4.640” (~11.79 cm)
L6	~5.750” (~14.61 cm)
L7	~6.690” (~16.99 cm)
L9	~8.265” (~20.99 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
16M	$\beta 16_{[c]} \geq 4000$
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HP77N Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 450 PSI (31 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton). Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

EPE	Hy-Pro
2.0630G80-A00-0-M	HP77NL16-74WB
2.0630P10-AH0-0-V	HP77NL16-10MV
2.1000G100-A00-0-P	HP77NL25-100WB
2.1000H3XL-AH0-0-V	HP77NL25-3MV

Hydac	Hy-Pro
0630DN010ON	HP77NL16-10MB
0630DN020BNHC	HP77NL16-25MB
1000DN005ON	HP77NL25-6MB
1000DN003BN3HC	HP77NL25-3MB

Mahle	Hy-Pro
Pi23063DNSMX10	HP77NL16-10MB
Pi25063DN	HP77NL16-25MB
Pi37100DNDRG60	HP77NL25-60WB
Pi36100DNDRG40	HP77NL25-40WB

Rexroth	Hy-Pro
R928022392	HP77NL16-100WV
R928006973	HP77NL16-10AB
R928007049	HP77NL25-25WV
R928007023	HP77NL25-3MB

Stauff	Hy-Pro
NL630E10B	HP77NL16-10MB
NL630E16B	HP77NL16-16MB
NL630E25B	HP77NL16-25MB

HY-PRO

ΔP FACTORS

Media Code	Element Length			
	L16		L25	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.1957	0.00356	0.1230	0.00224
3M	0.1201	0.00219	0.0755	0.00137
6M	0.0782	0.00142	0.0492	0.00090
10/12A	0.0593	0.00108	0.0373	0.00068
10/12M	0.0494	0.00090	0.0311	0.00057
25A	0.0377	0.00069	0.0237	0.00043
25M	0.0314	0.00057	0.0197	0.00036
*W	0.0065	0.00012	0.0041	0.00007

Adjusted Pressure Drop

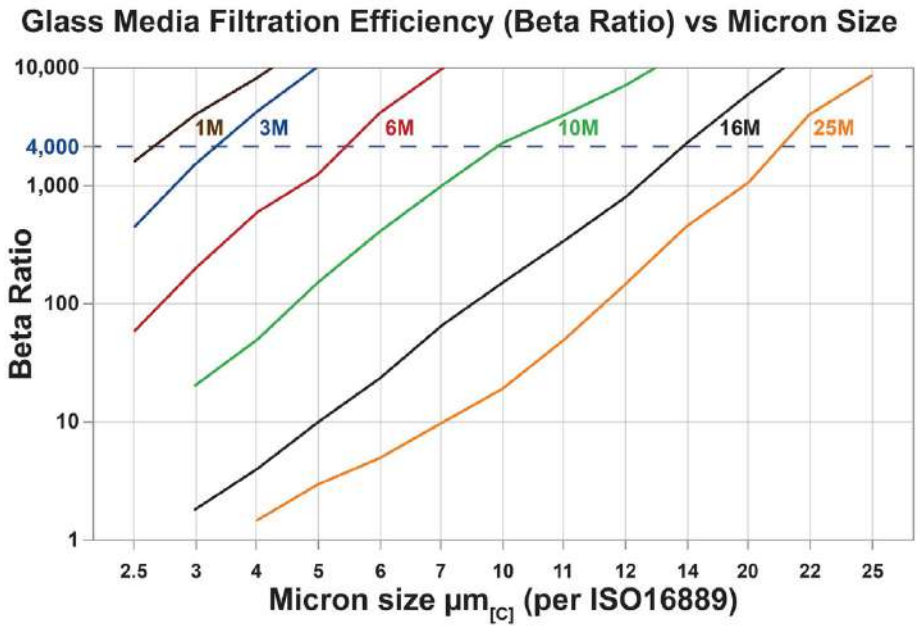
Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP77NL [Table 1] - [Table 2] [Table 3]

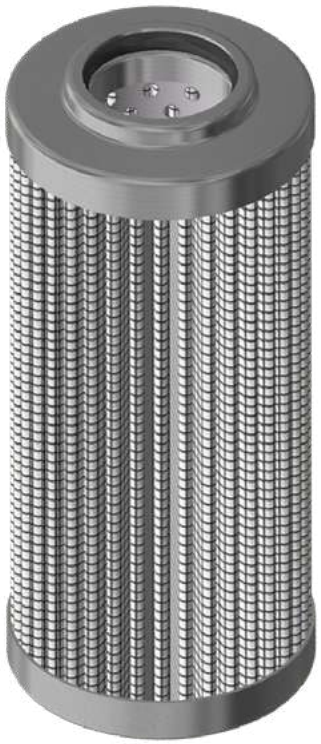
Table 1 Code	Overall Length
L16	~15.740” (~40.00 cm)
L25	~24.800” (~62.99 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION



HP80 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 290 PSI (20 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Baldwin	**Hy-Pro**
H8109	HP80L4-12MB
H8114	HP80L8-25MB
EPE	**Hy-Pro**
16.9800H3LL-115RP	HP80L4-3MB
16.9800SH10SL-E00-0-V	HP80L8-12MV
16.9800TH6SL-E00-0-P	HP80L13-6MB
Fram	**Hy-Pro**
FD120G06AV	HP80L4-6MV
FD121G10A	HP80L8-12MB
FD122G06AV	HP80L13-6MV
Hydac	**Hy-Pro**
1.13.04D12BN/-V	HP80L4-12MV
02069319	HP80L8-3MV
H-9800/13-005BN	HP80L13-6MB
Pall	**Hy-Pro**
HC9800FKP4H	HP80L4-3MB
HC9800FMZ6H	HP80L6-1MB
HC9800EOS8Z	HP80L8-100WV
HC9800FMN13Z	HP80L13-6MV
Parker	**Hy-Pro**
R980-Z-0425A	HP80L4-25MB
930198Q	HP80L8-6MV
FC7103Q003BS	HP80L13-3MB
Stauff	**Hy-Pro**
SP024E20B	HP80L4-25MB
SP030E03V	HP80L8-3MV
SP035E03B	HP80L13-3MB

ΔP FACTORS

Media Code	Element Length L3		L3.51		L4	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	2.3282	0.04241	2.0069	0.03655	1.5395	0.02804
3M	1.4286	0.02602	1.2315	0.02243	0.9447	0.01721
6M	0.9306	0.01695	0.8022	0.01461	0.6154	0.01121
10/12A	0.7059	0.01286	0.6085	0.01108	0.4668	0.00850
10/12M	0.5883	0.01071	0.5071	0.00924	0.3890	0.00709
25A	0.4482	0.00816	0.3864	0.00704	0.2964	0.00540
25M	0.3735	0.00680	0.3220	0.00586	0.2470	0.00450
*W	0.0777	0.00141	0.0669	0.00122	0.0513	0.00094

Media Code	Element Length L6		L8		L13	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	1.0924	0.01990	0.8336	0.01518	0.5202	0.00947
3M	0.6703	0.01221	0.5115	0.00932	0.3192	0.00581
6M	0.4367	0.00795	0.3332	0.00607	0.2079	0.00379
10/12A	0.3312	0.00603	0.2527	0.00460	0.1577	0.00287
10/12M	0.2760	0.00503	0.2106	0.00384	0.1314	0.00239
25A	0.2103	0.00383	0.1605	0.00292	0.1001	0.00182
25M	0.1752	0.00319	0.1337	0.00244	0.0835	0.00152
*W	0.0364	0.00066	0.0278	0.00051	0.0173	0.00032

Adjusted Pressure Drop

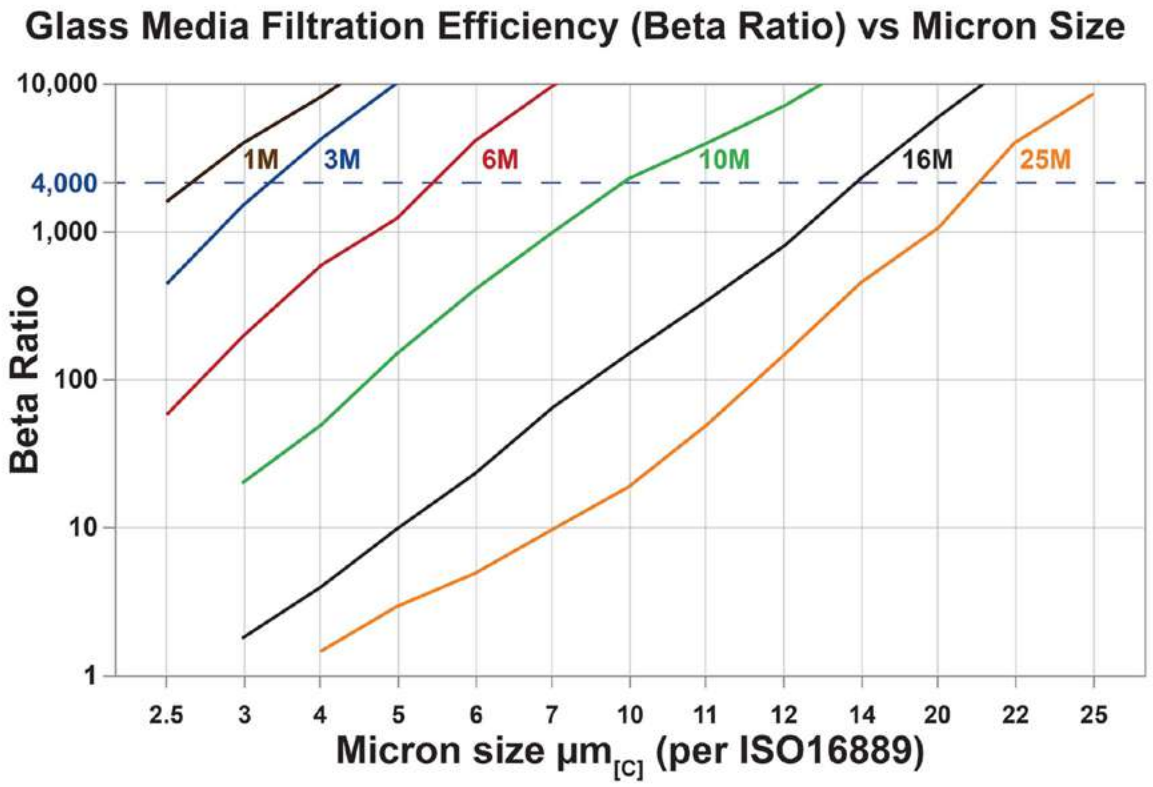
Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP80L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
L3	~3.060” (~7.77 cm)
L3.51	~3.510” (~8.92 cm)
L4	~4.520” (~11.48 cm)
L6	~6.240” (~15.85 cm)
L8	~8.100” (~20.57 cm)
L13	~12.830” (~32.59 cm)

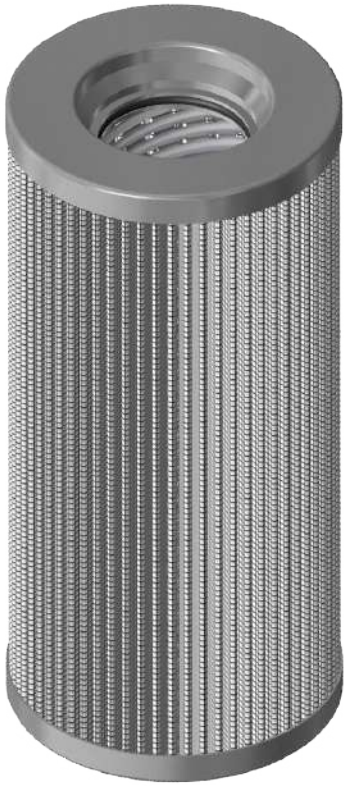
Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION



HP85 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 250 PSI (17 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Pall	Hy-Pro
HC8500F#N8H	HP85L8-6MB
HC8500F#P8H	HP85L8-3MB
HC8500F#S8H	HP85L8-12MB
HC8500F#T8H	HP85L8-25MB
HC8500F#Z8H	HP85L8-1MB
HC8500F#N13H	HP85L13-6MB
HC8500F#P13H	HP85L13-3MB
HC8500F#S13H	HP85L13-12MB
HC8500F#T13H	HP85L13-25MB
HC8500F#Z13H	HP85L13-1MB
HC8500F#N26H	HP85L26-6MB
HC8500F#P26H	HP85L26-3MB
HC8500F#S26H	HP85L26-12MB
HC8500F#T26H	HP85L26-25MB
HC8500F#Z26H	HP85L26-1MB

*For Fluorocarbon seals where Pall number ends with “Z” change “B” in Hy-Pro number to “V”. Call or consult the Hy-Pro on line interchange guide at www.filterelement.com

ΔP FACTORS

Media Code	Element Length					
	L8		L13		L26	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.314	0.021	0.197	0.013	0.098	0.007
3M	0.193	0.013	0.121	0.008	0.060	0.004
6M	0.126	0.009	0.079	0.005	0.039	0.003
10/12A	0.095	0.006	0.060	0.004	0.030	0.002
10/12M	0.079	0.005	0.050	0.003	0.025	0.002
25A	0.060	0.004	0.038	0.003	0.019	0.001
25M	0.050	0.003	0.032	0.002	0.016	0.001
*W	0.010	0.001	0.007	0.000	0.003	0.000

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

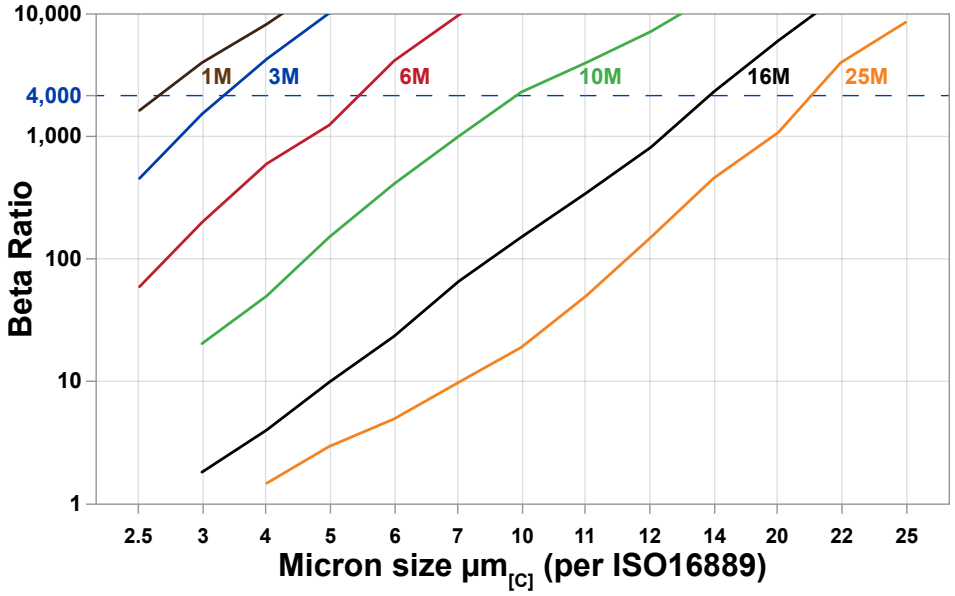
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP85L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
8	~8.040" (~20.421 cm)
13	~12.770" (~32.435 cm)
26	~25.560" (~64.922 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
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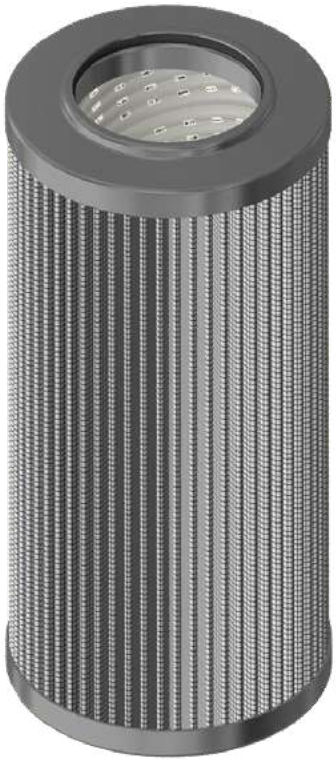
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION



HP89 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 290PSI (20 Bar)

Tested to ISO Quality 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 testing

Media
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Fluid Compatibility
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Water Removal
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Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Hydac	Hy-Pro
H-8900/8-005BN3-V	HP89L8-6MV
H-8900/13-020BN3	HP89L13-25MB
H-8900/16-010BN3-V	HP89L16-12MV
1.08.26D06BN/-V	HP89L26-6MV
1.08.39D25BN	HP89L39-25MB

MP Filtri	Hy-Pro
MP3601	HP89L8-3MV
MP5342	HP89L13-1MB
MP3612	HP89L16-25MV
MP3624	HP89L26-1MV
MP5364	HP89L35-12MB

Pall	Hy-Pro
HC8900EOR8H	HP89L8-74WB
HC8900EOS13Z	HP89L13-100WV
HC8900EOK16H	HP89L16-18WB
HC8900FCS26Z	HP89L26-12MV
HC8900FDZ35H	HP89L35-1MB
HC8900EOT39Z	HP89L39-200WV

Parker	Hy-Pro
933194Q	HP89L8-6MV
934354Q	HP89L13-12ME
933213Q	HP89L16-25MV
FC1394Q003BS	HP89L26-3MB
937180Q	HP89L39-6MV

HY-PRO

ΔP FACTORS

Media Code	Element Length L8		L13		L16		L18	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.3149	0.00574	0.1976	0.00360	0.1522	0.00277	0.1412	0.00257
3M	0.1932	0.00352	0.1213	0.00221	0.0934	0.00170	0.0867	0.00158
6M	0.1259	0.00229	0.0790	0.00144	0.0609	0.00111	0.0565	0.00103
10/12A	0.0955	0.00174	0.0599	0.00109	0.0462	0.00084	0.0428	0.00078
10/12M	0.0796	0.00145	0.0499	0.00091	0.0385	0.00070	0.0357	0.00065
25A	0.0606	0.00110	0.0380	0.00069	0.0293	0.00053	0.0272	0.00050
25M	0.0505	0.00092	0.0317	0.00058	0.0244	0.00044	0.0227	0.00041
*W	0.0105	0.00019	0.0066	0.00012	0.0051	0.00009	0.0047	0.00009

Media Code	Element Length L26		L30		L35		L39	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.0983	0.00179	0.0842	0.00153	0.0733	0.00134	0.0651	0.00119
3M	0.0603	0.00110	0.0517	0.00094	0.0450	0.00082	0.0400	0.00073
6M	0.0393	0.00072	0.0337	0.00061	0.0293	0.00053	0.0260	0.00047
10/12A	0.0298	0.00054	0.0255	0.00047	0.0222	0.00040	0.0197	0.00036
10/12M	0.0248	0.00045	0.0213	0.00039	0.0185	0.00034	0.0165	0.00030
25A	0.0189	0.00034	0.0162	0.00030	0.0141	0.00026	0.0125	0.00023
25M	0.0158	0.00029	0.0135	0.00025	0.0118	0.00021	0.0104	0.00019
*W	0.0033	0.00006	0.0028	0.00005	0.0024	0.00004	0.0022	0.00004

Adjusted Pressure Drop

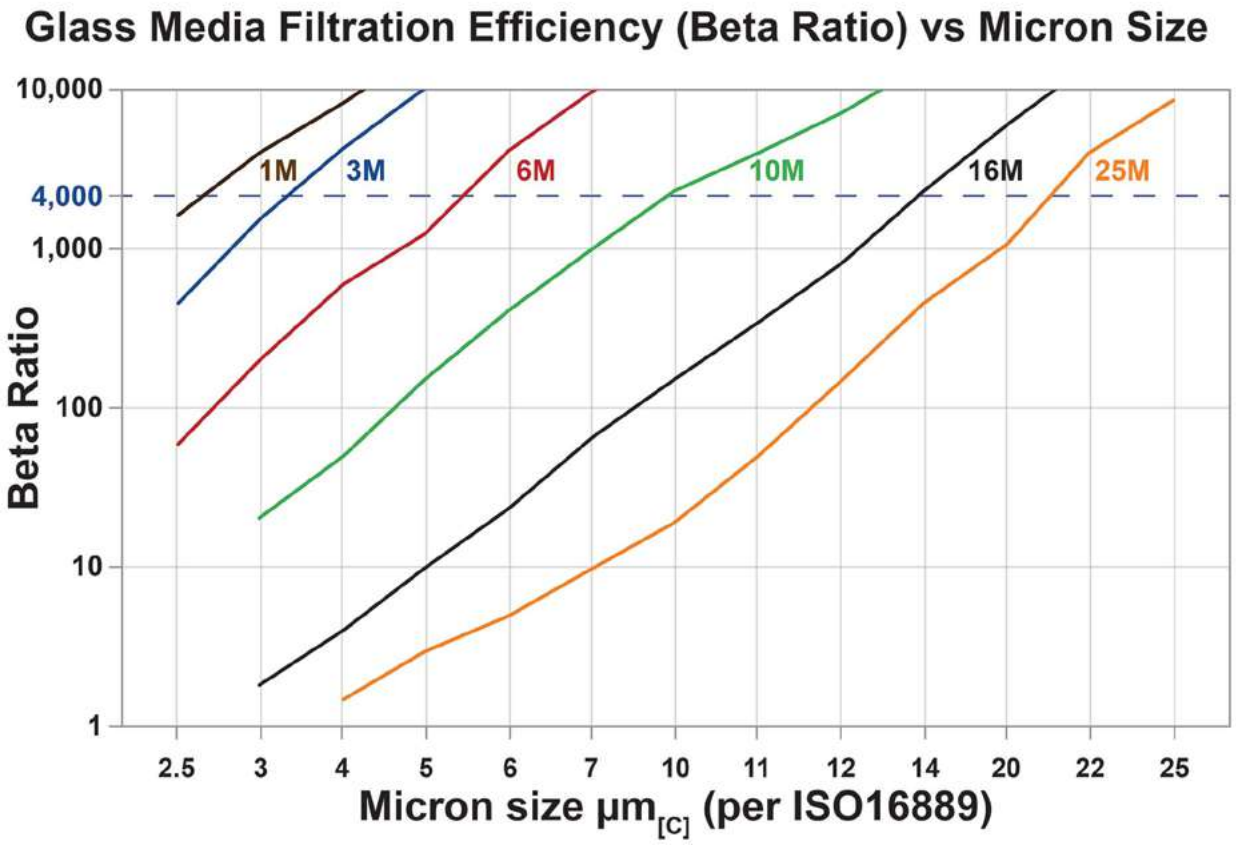
Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP89L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
L8	~8.223” (~20.89 cm)
L13	~12.940” (~32.87 cm)
L16	~16.720” (~42.47 cm)
L18	~18.000” (~45.72 cm)
L26	~25.740” (~65.38 cm)
L30	~30.000” (~76.20 cm)
L35	~34.440” (~87.48 cm)
L39	~38.746” (~98.41 cm)

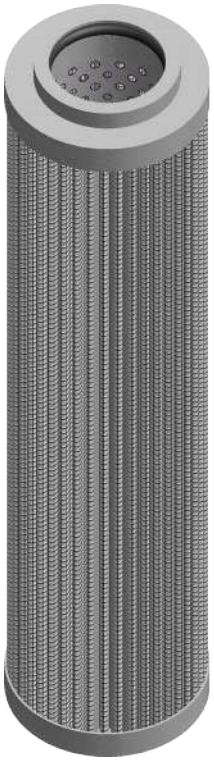
Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION



HP98 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 150 PSI (10 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna) and Fluorocarbon (Viton). Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 1000$ efficiency down to 1µ / $2.5\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

EPE	Hy-Pro
1.0040H10XL-A00-0-M	HP98L4-10MB
1.0063H20XL-A00-0-M	HP98L6-25MB
1.100H3XL-A00-0-M	HP98L9-3MB
1.100H6XL-A00-0-M	HP98L9-6MB

Hydac	Hy-Pro
0040RN010BN4HC	HP98L4-10MB
0063RN025BN4HC	HP98L6-25MB
0100RN003BN4HC	HP98L9-3MB
0100RN006BN4HC	HP98L9-6MB

Pall	Hy-Pro
HC0251FDS4H	HP98L4-10MB
HC0251FKT6H	HP98L6-25MB
HC0251FKP6H	HP98L6-3MB
HC0251FKN10H	HP98L9-6MB

Rexroth	Hy-Pro
R928005837	HP98L4-10MB
R928005856	HP98L6-25MB
R928005871	HP98L9-3MB
R928005872	HP98L9-6MB

Mahle	Hy-Pro
Pi13004RN	HP98L4-10MB
Pi15006RN	HP98L6-25MB
Pi21010RN	HP98L9-3MB
Pi22010RN	HP98L9-6MB

ΔP FACTORS

Media Code	Element Length					
	L4		L6		L9	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	1.806	0.123	1.056	0.072	0.653	0.044
3M	1.108	0.075	0.648	0.044	0.401	0.027
6M	0.722	0.049	0.422	0.029	0.261	0.018
10/12A	0.548	0.037	0.320	0.022	0.198	0.013
10/12M	0.456	0.031	0.267	0.018	0.165	0.011
25A	0.348	0.024	0.203	0.014	0.126	0.009
25M	0.290	0.020	0.169	0.012	0.105	0.007
*W	0.060	0.004	0.035	0.002	0.022	0.001

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

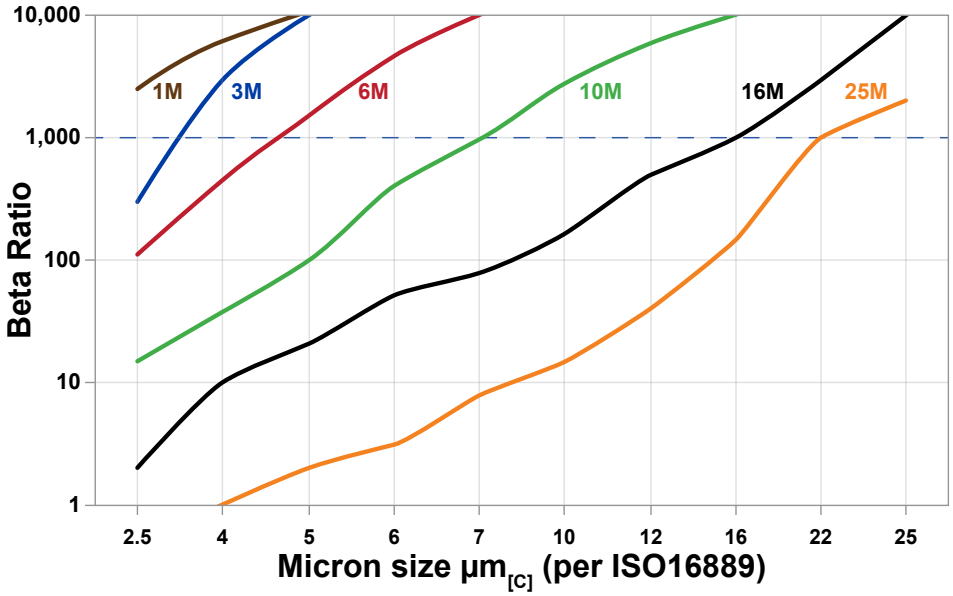
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP98L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
4	~3.940” (~10.007 cm)
6	~6.300” (~16.002 cm)
9	~9.810” (~24.917 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 2.5_{[c]}$ = 1000 (β1 = 200)
3M	$\beta 5_{[c]}$ = 1000 (β3 = 200)
3A	$\beta 5_{[c]}$ = 1000 (β3 = 200) + Water Removal
3SF*	$\beta 5_{[c]}$ = 1000 (β3 = 200) Dynafuzz
6M	$\beta 7_{[c]}$ = 1000 (β6 = 200)
6A	$\beta 7_{[c]}$ = 1000 (β6 = 200) + Water Removal
6SF*	$\beta 7_{[c]}$ = 1000 (β6 = 200) Dynafuzz
10M	$\beta 12_{[c]}$ = 1000 (β12 = 200)
10A	$\beta 12_{[c]}$ = 1000 (β12 = 200) + Water Removal
10SF*	$\beta 12_{[c]}$ = 1000 (β12 = 200) Dynafuzz
25M	$\beta 22_{[c]}$ = 1000 (β25 = 200)
25A	$\beta 22_{[c]}$ = 1000 (β25 = 200) + Water Removal
25W*	25µ Nominal Wire Mesh
25SF*	$\beta 22_{[c]}$ = 1000 (β25 = 200) Dynafuzz
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HP101 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 150 PSI (10.3 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

General Electric	**Hy-Pro**
358A8836P002	HP101L18-25MV
347A5773P01	HP101L18-6LB
Hydac	
02062282	HP101L18-12MB
02069216	HP101L18-25MB
02058776	HP101L18-3MB
Kaydon	
KF601810	HP101L18-25MB
A910204	HP101L36-3MB
A910269	HP101L36-3MB
OFS	
OFS-820-3B	HP101L18-3MB
OFS-820-6B	HP101L18-6LB
OFS-840-12B	HP101L36-12MB
OFS-840-25B	HP101L36-25MB
Pall	
HC0101FDS18H	HP101L18-12MB
HC0101FKS18H	HP101L18-12MB
HC0101FMS18H	HP101L18-12MB
HC0101FUS18H	HP101L18-12MB
Schroader	
SBF600036Z25B	HP101L36-25MB
SBF600036Z25V	HP101L36-25MV
SBF600036S1B	HP101L36-3MB
SBF600036Z3B	HP101L36-3MB

HY-PRO

ΔP FACTORS

Media Code	Element Length							
	L7		L10		L10.75		L12	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.1434	0.00261	0.1139	0.00208	0.0957	0.00174	0.0857	0.00156
3M	0.0880	0.00160	0.0699	0.00127	0.0587	0.00107	0.0526	0.00096
6L	0.0573	0.00104	0.0455	0.00083	0.0383	0.00070	0.0343	0.00062
10/12A	0.0435	0.00079	0.0346	0.00063	0.0290	0.00053	0.0260	0.00047
10/12M	0.0362	0.00066	0.0288	0.00052	0.0242	0.00044	0.0217	0.00039
25A	0.0276	0.00050	0.0219	0.00040	0.0184	0.00034	0.0165	0.00030
25M	0.0230	0.00042	0.0183	0.00033	0.0154	0.00028	0.0137	0.00025
*W	0.0048	0.00009	0.0038	0.00007	0.0032	0.00006	0.0029	0.00005

Media Code	Element Length									
	L14		L16		L18		L26		L29	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.0703	0.00128	0.0638	0.00116	0.0567	0.00103	0.0388	0.00071	0.0346	0.00063
3M	0.0432	0.00079	0.0392	0.00071	0.0348	0.00063	0.0238	0.00043	0.0212	0.00039
6L	0.0281	0.00051	0.0255	0.00046	0.0226	0.00041	0.0155	0.00028	0.0138	0.00025
10/12A	0.0213	0.00039	0.0193	0.00035	0.0172	0.00031	0.0118	0.00021	0.0105	0.00019
10/12M	0.0178	0.00032	0.0161	0.00029	0.0143	0.00026	0.0098	0.00018	0.0087	0.00016
25A	0.0135	0.00025	0.0123	0.00022	0.0109	0.00020	0.0075	0.00014	0.0067	0.00012
25M	0.0113	0.00021	0.0102	0.00019	0.0091	0.00017	0.0063	0.00011	0.0055	0.00010
*W	0.0023	0.00004	0.0021	0.00004	0.0019	0.00003	0.0013	0.00002	0.0012	0.00002

Media Code	Element Length									
	L30		L31		L34		L36		L54	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.0335	0.00061	0.0330	0.00060	0.0297	0.00054	0.0281	0.00051	0.0388	0.00071
3M	0.0206	0.00037	0.0203	0.00037	0.0182	0.00033	0.0172	0.00031	0.0238	0.00043
6L	0.0134	0.00024	0.0132	0.00024	0.0119	0.00022	0.0112	0.00020	0.0155	0.00028
10/12A	0.0102	0.00019	0.0100	0.00018	0.0090	0.00016	0.0085	0.00016	0.0118	0.00021
10/12M	0.0085	0.00015	0.0084	0.00015	0.0075	0.00014	0.0071	0.00013	0.0098	0.00018
25A	0.0065	0.00012	0.0064	0.00012	0.0057	0.00010	0.0054	0.00010	0.0075	0.00014
25M	0.0054	0.00010	0.0053	0.00010	0.0048	0.00009	0.0045	0.00008	0.0062	0.00011
*W	0.0011	0.00002	0.0011	0.00002	0.0010	0.00002	0.0009	0.00002	0.0013	0.00002

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

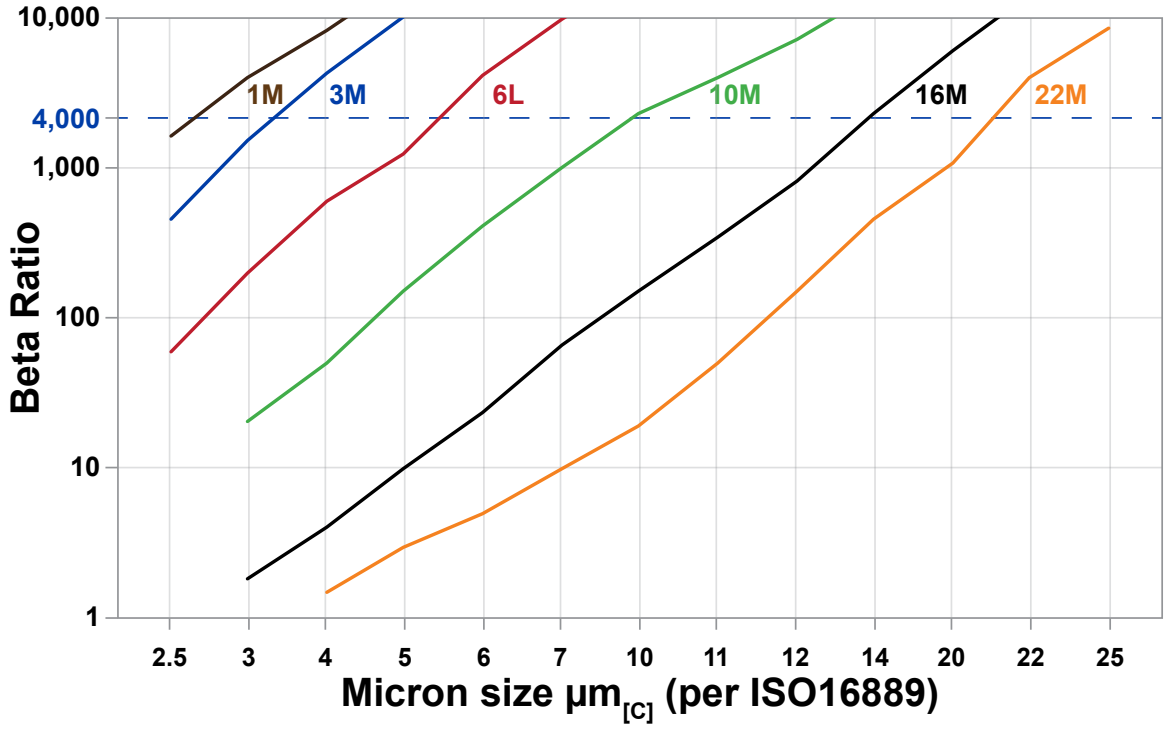
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP101L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
7	~7.326” (~18.61 cm)
10	~9.125” (~23.18 cm)
10.75	~10.796” (~27.42 cm)
12	~12.016” (~30.52 cm)
14	~14.566” (~37.00 cm)
16	~16.046” (~40.76 cm)
18	~17.996” (~45.71 cm)
20	~19.500” (~49.53 cm)
22	~21.940” (~55.73 cm)
26	~26.000” (~66.04 cm)
27	~26.700” (~67.82 cm)
28	~28.750” (~73.03 cm)
29	~29.266” (~74.34 cm)
30	~30.186” (~76.67 cm)
32.5	~32.625” (~82.87 cm)
34	~34.046” (~86.48 cm)
36	~35.956” (~91.33 cm)
43	~43.250” (~109.86 cm)
44	~43.800” (~111.25 cm)
54	~53.966” (~137.07 cm)

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6L	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
16M	$\beta 16_{[c]} \geq 4000$
16A	$\beta 16_{[c]} \geq 4000$ + Water Removal
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

HY-PRO FILTRATION

HP120 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 450 PSI (31 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

EPE	Hy-Pro
1.0120G100-A00-0-M	HP120L30-100WB
1.0120G100-A00-0-P	HP120L30-100WB
1.0120G100-A00-0-V	HP120L30-100WV
1.0120AS10-AH0-0-M	HP120L30-10AB
1.0120AS10-AH0-0-V	HP120L30-10AV
1.0120H10SL-A00-0-P	HP120L30-10MB
1.0120P10-A-00-0-P	HP120L30-10MB
1.0120H10SL-A00-0-V	HP120L30-10MV
1.0120P10-A-00-0-V	HP120L30-10MV
1.0120G10-AH0-0-M	HP120L30-10WB

Rexroth	Hy-Pro
R928031986	HP120L30-100WB
R928005749	HP120L30-10AB
R928007605	HP120L30-10AB
R928005767	HP120L30-10AV
R928007623	HP120L30-10AV
R928007177	HP120L30-10MB
R928005747	HP120L30-10MB
R928007603	HP120L30-10MB
R928007179	HP120L30-10MV
R928005765	HP120L30-10MV
R928007621	HP120L30-10MV
R928005743	HP120L30-10WB
R928007599	HP120L30-10WB

HY-PRO

ΔP FACTORS

Media Code	Element Length L30	
	psid/gpm	bar/lpm
1M	0.0443	0.00081
3M	0.0272	0.00050
6M	0.0177	0.00032
10/12A	0.0134	0.00024
10/12M	0.0112	0.00020
25A	0.0085	0.00016
25M	0.0071	0.00013
*W	0.0015	0.00003

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

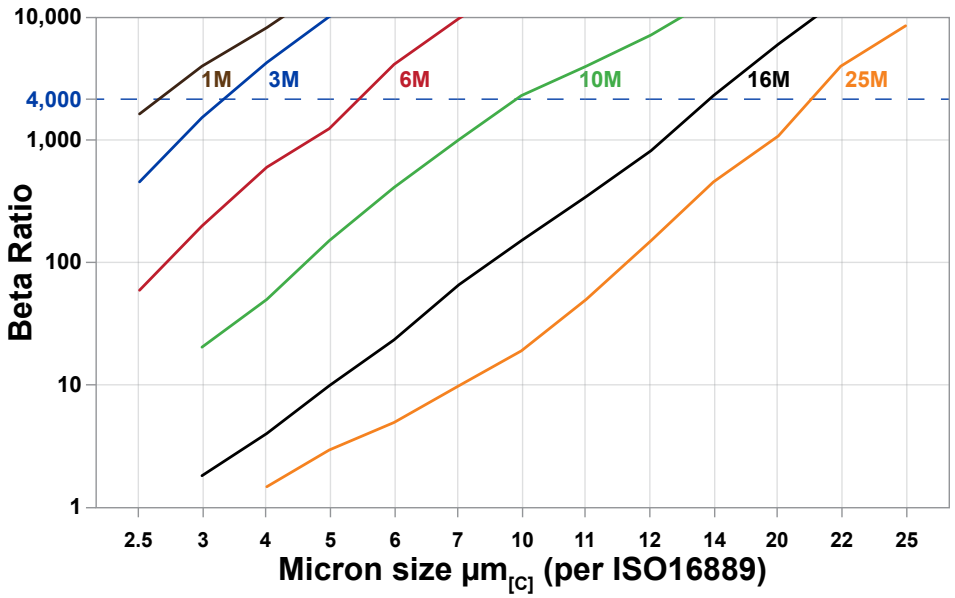
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

	Table 1		Table 2		Table 3
HP120L	30	-			

Table 1 Code	Overall Length
30	~29.858" (~75.84 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HP150 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Standard Element Collapse
ΔP 450 PSI (31 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Hydac	Hy-Pro
2050D149W	HP150L4-149W
2050D20BN	HP150L4-25M
2050D50W	HP150L4-50W
2050D05BN3	HP150L4-6M

Mahle	Hy-Pro
Pi8505DRG100	HP150L4-100W
Pi1105	HP150L4-10M
Pi8605DRG200	HP150L4-149W
Pi4105PS25	HP150L4-25M

MP Filtri	Hy-Pro
MP3295	HP150L4-25W
MP12001	HP150L4-3M
MP3296	HP150L4-40W
MP3294	HP150L4-6M

Parker	Hy-Pro
PR2831Q	HP150L4-10M
935219Q	HP150L4-25M
G02830	HP150L4-3M
935218Q	HP150L4-6M

Stauff	Hy-Pro
SL014B100V	HP150L4-100W
SL014D10V	HP150L4-10M
SL014B25B	HP150L4-25W
SL014E03B	HP150L4-3M

ΔP FACTORS

Media Code	Element Length L4	
	psid/gpm	bar/lpm
1M	2.0852	0.03798
3M	1.2796	0.02331
6M	0.8335	0.01518
10/12A	0.6323	0.01152
10/12M	0.5269	0.00960
25A	0.4014	0.00731
25M	0.3345	0.00609
*W	0.0695	0.00127

Adjusted Pressure Drop

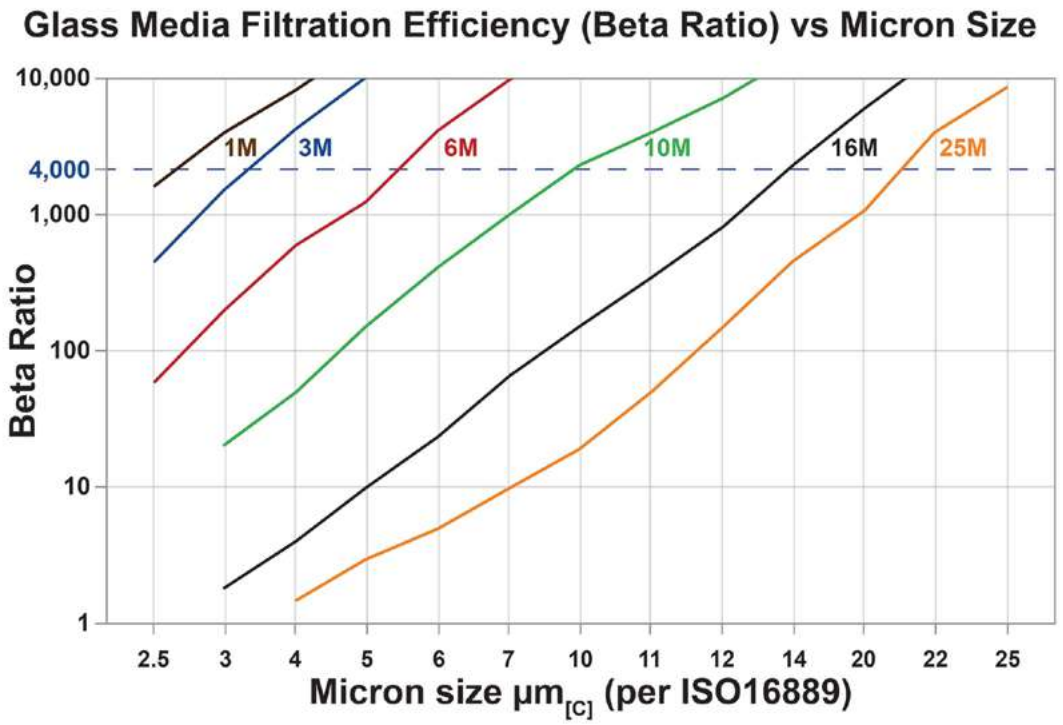
Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP150L [Table 1: 4] - [Table 2:]

Table 1 Code	Overall Length
L4	~3.669" (~9.32 cm)

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HP191 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating

Buna:	-30°F (-34°C) – 250°F (121°C)
EPR:	-70°F (-57°C) – 250°F (121°C)
Viton:	-15°F (-26°C) – 400°F (204°C)

Standard Element Collapse

ΔP 3000 PSI (206 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, and Dynafuzz (Stainless Fiber Media). Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Parker	Hy-Pro
G04292	HP191L5-10MB
G04296	HP191L5-10MV
G04293	HP191L5-20MB
G04297	HP191L5-20MV
G04290	HP191L5-3MB
G04294	HP191L5-3MV
G04291	HP191L5-6MB
G04295	HP191L5-6MV
G04300	HP191L9-10MB
G04304	HP191L9-10MV
G04301	HP191L9-20MB
G04305	HP191L9-20MV
G04302	HP191L9-3MV
G04299	HP191L9-6MB
G04303	HP191L9-6MV

ΔP FACTORS

Media Code	Element Length					
	L5		L9		L10	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	1.968	0.134	1.034	0.070	0.906	0.062
3M	1.208	0.082	0.634	0.043	0.556	0.038
6M	0.787	0.054	0.413	0.028	0.362	0.025
10/12M	0.497	0.034	0.261	0.018	0.229	0.016
25M	0.316	0.021	0.166	0.011	0.145	0.010
*W	0.066	0.004	0.034	0.002	0.030	0.002

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

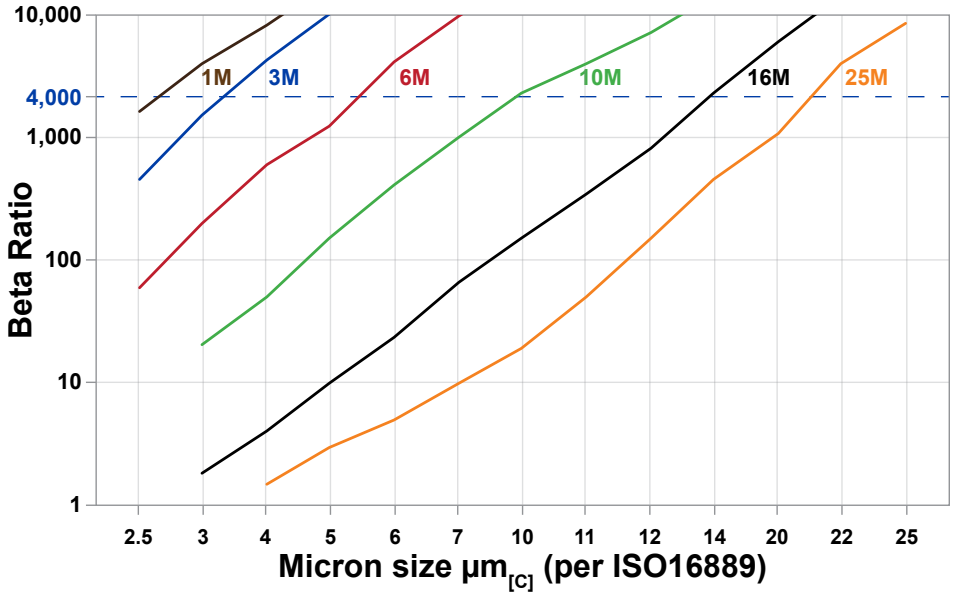
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP191L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
5	~4.896" (~12.4358 cm)
9	~8.636" (~21.935 cm)
10	~9.750" (~24.765 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HP219 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 150 PSI (10.3 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Main Filter	Hy-Pro
UE219AS13H	HP219L13-12EB
UE219AS13Z	HP219L13-12EV
UE219AS20H	HP219L20-12EB
UE219AS20Z	HP219L20-12EV
UE219AS04H	HP219L4-12EB
UE219AS04Z	HP219L4-12EV
UE219AS08H	HP219L8-12EB

Pall	Hy-Pro
MF0592896	HP219L13-12EV
UE219AZ13H	HP219L13-1EB
940414Q	HP219L20-12EV
UE219AZ20H	HP219L20-1EB
940402Q	HP219L4-12EV
UE219AZ04H	HP219L4-1EB
MF0592899	HP219L8-12EV

Parker	Hy-Pro
MF0594277	HP219L8-3EV
UE219AN08H	HP219L8-6EB
MF0594262	HP219L4-3EV
UE219AN04H	HP219L4-6EB
UE219AN20Z	HP219L20-6EV
940413Q	HP219L20-6EV
940409Q	HP219L13-6EV

ΔP FACTORS

Media Code	Element Length							
	L4		L8		L13		L20	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1E	1.1282	0.02055	0.6672	0.01215	0.3377	0.00615	0.2247	0.00409
3E	0.6923	0.01261	0.4094	0.00746	0.2072	0.00377	0.1379	0.00251
6E	0.4510	0.00821	0.2667	0.00486	0.1350	0.00246	0.0898	0.00164
10/12EA	0.3421	0.00623	0.2023	0.00368	0.1024	0.00186	0.0681	0.00124
10/12E	0.2851	0.00519	0.1686	0.00307	0.0853	0.00155	0.0568	0.00103
25EA	0.2172	0.00396	0.1284	0.00234	0.0650	0.00118	0.0433	0.00079
25M	0.1810	0.00330	0.1070	0.00195	0.0542	0.00099	0.0361	0.00066
*W	0.0376	0.00069	0.0223	0.00041	0.0113	0.00021	0.0075	0.00014

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

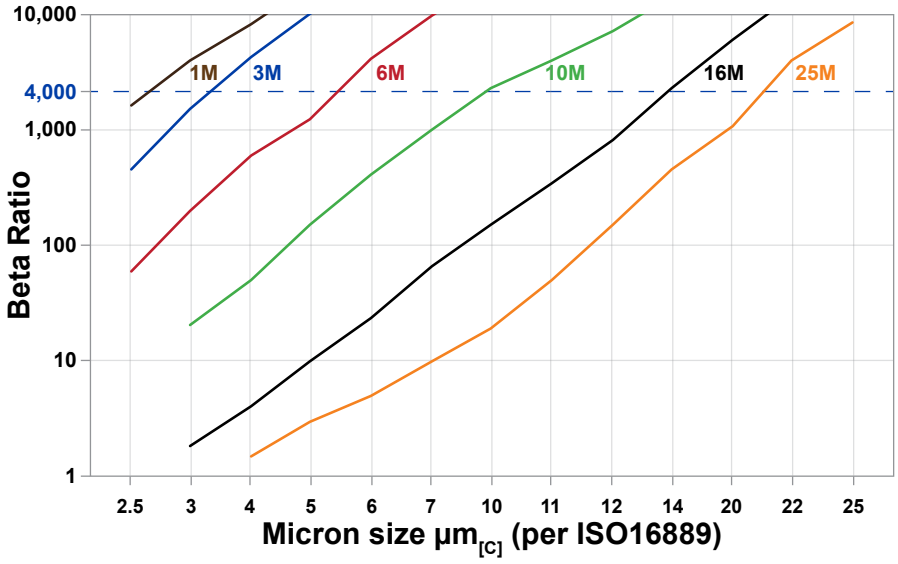
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP219L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
4	~4.741" (~12.04 cm)
7	~7.495" (~19.04 cm)
8	~8.757" (~22.24 cm)
13	~14.072" (~35.74 cm)
20	~20.764" (~52.74 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E	EPR

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HP489 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 250 PSI (17 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Fleetguard	Hy-Pro
HF28975	HP489L11-16MB
LF741	HP489L11-16MB
HF6356	HP489L11-25MB

Komatsu	Hy-Pro
0706301142	HP489L11-16MB
0706351142	HP489L11-16MB
706301142	HP489L11-16MB
706351142	HP489L11-16MB
070630-01210	HP489L18-10MB

Luber-Finer	Hy-Pro
LH8543	HP489L11-16MB

HY-PRO

ΔP FACTORS

Media Code	Element Length			
	L11		L18	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.1601	0.00292	0.1066	0.00194
3M	0.0983	0.00179	0.0654	0.00119
6M	0.0640	0.00117	0.0426	0.00078
10/12A	0.0486	0.00088	0.0323	0.00059
10/12M	0.0405	0.00074	0.0269	0.00049
25A	0.0308	0.00056	0.0205	0.00037
25M	0.0257	0.00047	0.0171	0.00031
*W	0.0053	0.00010	0.0036	0.00006

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

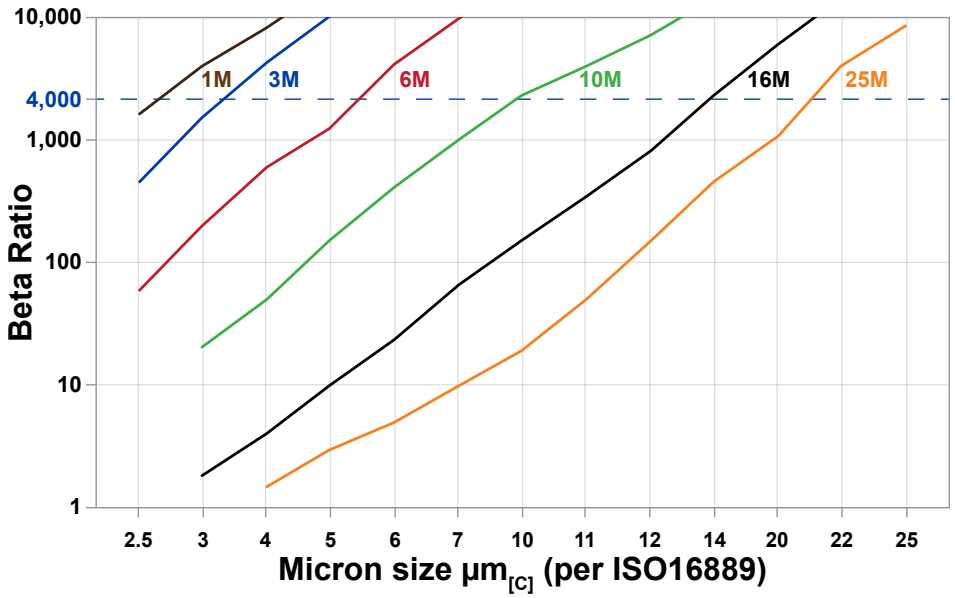
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP489L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
11	~11.788" (~29.94 cm)
18	~17.675" (~44.84 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
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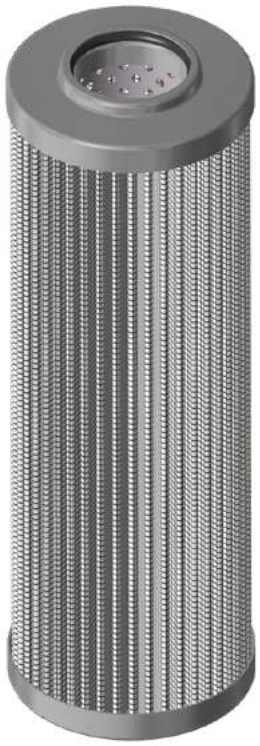
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION



HP900 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 290 PSI (20 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

EPE	Hy-Pro
16.9100TH10XL-E00-0-V	HP900L13-12MV
16.9100TH20XL-E00-0-M	HP900L13-25MB
16.9100RH20XL-E00-0-V	HP900L4-25MV
16.9100SH3XL-E00-0-V	HP900L8-3MV
16.9100SH6XL-E00-0-M	HP900L8-6MB

Parker	Hy-Pro
944093Q	HP900L13-3MV
944094Q	HP900L13-6MV
938164Q	HP900L8-12MV
938165Q	HP900L8-25MV

Hydac	Hy-Pro
1.12.13D25BN-V	HP900L13-25MV
1.12.13D03BN	HP900L13-3MB
1.12.04D12BN-V	HP900L4-12MV
1.12.04D25BN	HP900L4-25MB
1.12.08D03BN-V	HP900L8-3MV
1.12.08D06BN	HP900L8-6MB

Pall	Hy-Pro
HC9100EOS13Z	HP900L13-100WV
HC9100FKS13H	HP900L13-12MB
HC9100EOK16H	HP900L16-18WB
HC9100FKS4Z	HP900L4-12MV
HC9100EOY4H	HP900L4-149WB

ΔP FACTORS

Media Code	Element Length					
	L4		L8		L13	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.8454	0.01540	0.4528	0.00825	0.2830	0.00515
3M	0.5188	0.00945	0.2779	0.00506	0.1737	0.00316
6M	0.3379	0.00616	0.1810	0.00330	0.1131	0.00206
10/12A	0.2563	0.00467	0.1373	0.00250	0.0858	0.00156
10/12M	0.2136	0.00389	0.1144	0.00208	0.0715	0.00130
25A	0.1627	0.00296	0.0872	0.00159	0.0545	0.00099
25M	0.1356	0.00247	0.0726	0.00132	0.0454	0.00083
*W	0.0282	0.00051	0.0151	0.00028	0.0094	0.00017

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

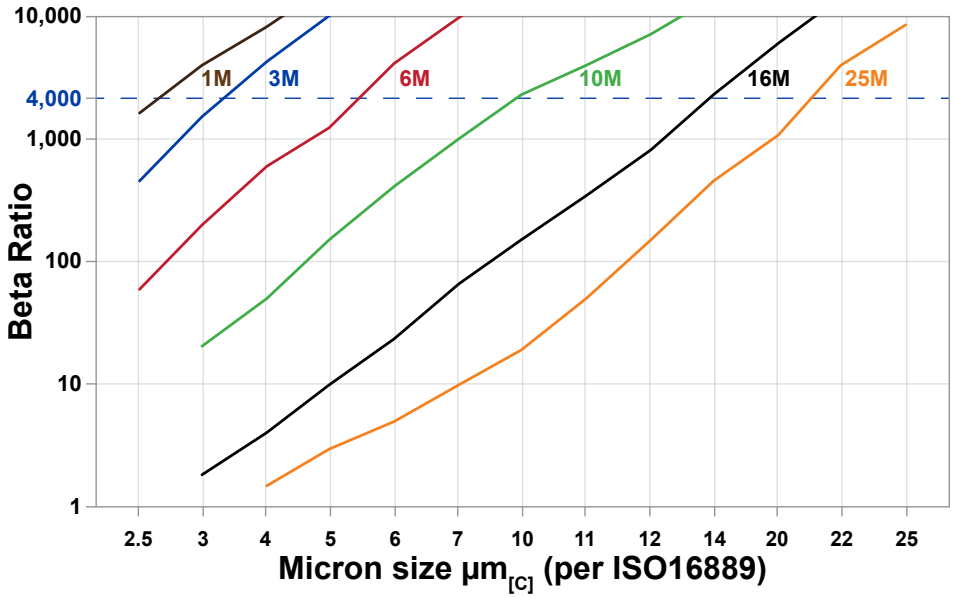
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP900L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
L4	~4.535" (~11.52 cm)
L8	~8.235" (~20.92 cm)
L13	~13.035" (~33.11 cm)

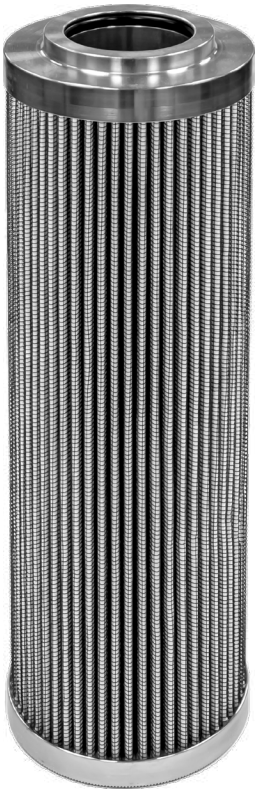
Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION



HP935 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 150 PSI (10.3 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), and Fluorocarbon (Viton). Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Dynamic Filter Efficiency
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.

Water Removal
Media code "A" specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Parker	Hy-Pro
935518Q	HP935L10-10MV
935519Q	HP935L10-20MV
935516Q	HP935L10-3MV
935517Q	HP935L10-6MV
935520Q	HP935L20-10MV
935521Q	HP935L20-20MV
935488Q	HP935L20-3MV
935458Q	HP935L20-6MV

ΔP FACTORS

Media Code	Element Length			
	L10		L20	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.2149	0.00392	0.1102	0.00201
3M	0.1319	0.00240	0.0676	0.00123
6M	0.0859	0.00156	0.0440	0.00080
10/12A	0.0652	0.00119	0.0334	0.00061
10/12M	0.0543	0.00099	0.0278	0.00051
25A	0.0414	0.00075	0.0212	0.00039
25M	0.0345	0.00063	0.0177	0.00032
*W	0.0072	0.00013	0.0037	0.00007

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

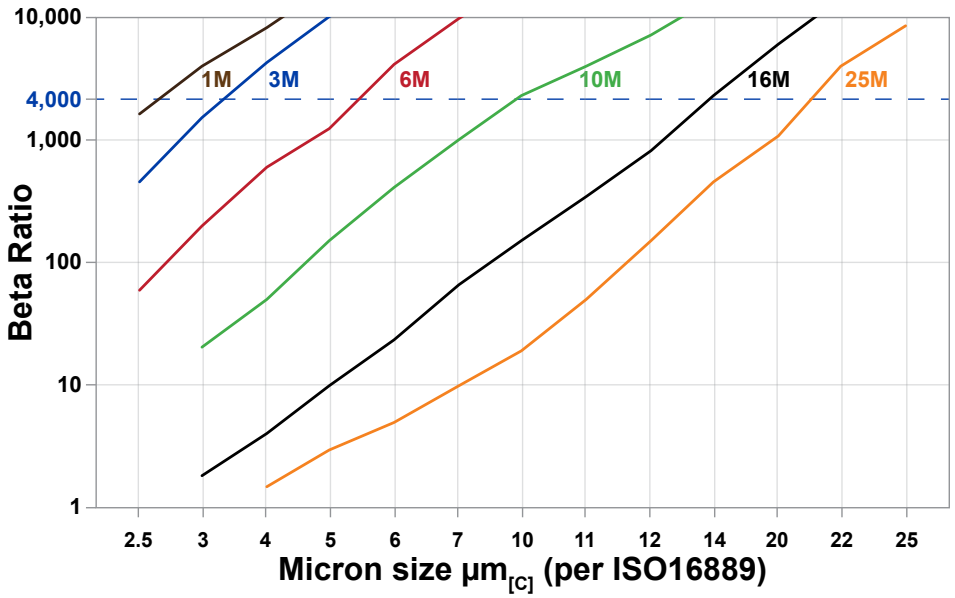
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP935L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
10	~10.610" (~26.95 cm)
20	~20.050" (~50.93 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HP8304 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 150 PSI (10.3 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Pall	Hy-Pro
HC8304FKN13H	HP8304L13-6MB
HC8304FKN16H	HP8304L16-6MB
HC8304FKN20H	HP8304L20-6MB
HC8304FKN26H	HP8304L26-6MB
HC8304FKN39H	HP8304L39-6MB
HC8304FKP13H	HP8304L13-3MB
HC8304FKP16H	HP8304L16-3MB
HC8304FKP20H	HP8304L20-3MB
HC8304FKP26H	HP8304L26-3MB
HC8304FKP39H	HP8304L39-3MB
HC8304FKS13H	HP8304L13-12MB
HC8304FKS16H	HP8304L16-12MB
HC8304FKS20H	HP8304L20-12MB
HC8304FKS26H	HP8304L26-12MB
HC8304FKS39H	HP8304L39-12MB
HC8304FKT13H	HP8304L13-25MB
HC8304FKT16H	HP8304L16-25MB
HC8304FKT20H	HP8304L20-25MB
HC8304FKT26H	HP8304L26-25MB
HC8304FKT39H	HP8304L39-25MB
HC8304FKZ13H	HP8304L13-1MB
HC8304FKZ16H	HP8304L16-1MB
HC8304FKZ20H	HP8304L20-1MB
HC8304FKZ26H	HP8304L26-1MB
HC8304FKZ39H	HP8304L39-1MB

HY-PRO

ΔP FACTORS

Media Code	Element Length			
	L13		L16	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.0906	0.00165	0.0648	0.00118
3M	0.0556	0.00101	0.0398	0.00072
6L	0.0362	0.00066	0.0259	0.00047
10/12A	0.0275	0.00050	0.0197	0.00036
10/12M	0.0229	0.00042	0.0164	0.00030
25A	0.0174	0.00032	0.0125	0.00023
25M	0.0145	0.00026	0.0104	0.00019
*W	0.0030	0.00006	0.0022	0.00004

Media Code	Element Length					
	L20		L26		L39	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.0455	0.00083	0.0393	0.00072	0.0249	0.00045
3M	0.0279	0.00051	0.0241	0.00044	0.0153	0.00028
6L	0.0182	0.00033	0.0157	0.00029	0.0100	0.00018
10/12A	0.0138	0.00025	0.0119	0.00022	0.0076	0.00014
10/12M	0.0115	0.00021	0.0099	0.00018	0.0063	0.00011
25A	0.0088	0.00016	0.0076	0.00014	0.0048	0.00009
25M	0.0073	0.00013	0.0063	0.00011	0.0040	0.00007
*W	0.0015	0.00003	0.0013	0.00002	0.0008	0.00002

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

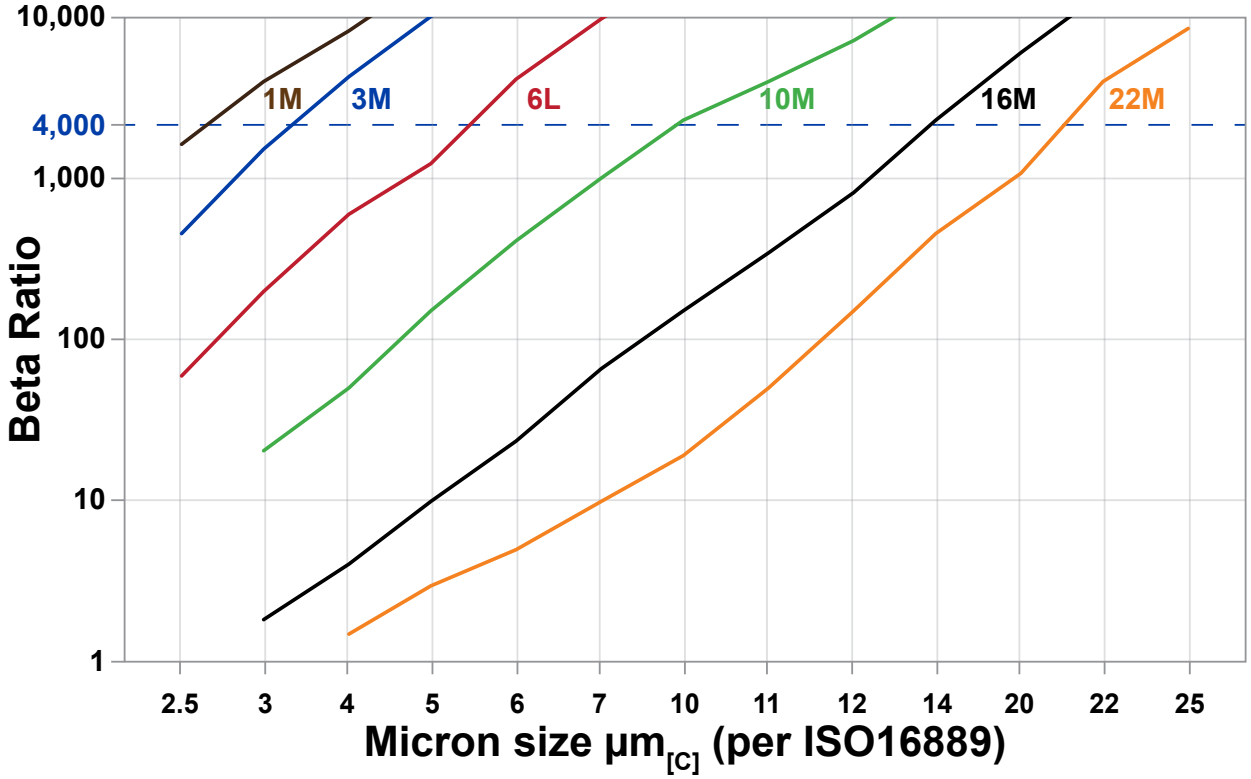
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HP8304L [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
13	~10.750” (~27.31 cm)
16	~14.630” (~37.16 cm)
20	~20.430” (~51.89 cm)
26	~23.500” (~59.69 cm)
39	~36.430” (~92.53 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 2.5_{[c]} \geq 1000$ ($\beta 1 \geq 200$)
3M	$\beta 5_{[c]} \geq 1000$ ($\beta 3 \geq 200$)
3A	$\beta 5_{[c]} \geq 1000$ ($\beta 3 \geq 200$) + Water Removal
3SF*	$\beta 5_{[c]} \geq 1000$ ($\beta 3 \geq 200$) Dynafuzz
6L	$\beta 7_{[c]} \geq 1000$ ($\beta 6 \geq 200$)
6A	$\beta 7_{[c]} \geq 1000$ ($\beta 6 \geq 200$) + Water Removal
6SF*	$\beta 7_{[c]} \geq 1000$ ($\beta 6 \geq 200$) Dynafuzz
10M	$\beta 12_{[c]} \geq 1000$ ($\beta 12 \geq 200$)
10A	$\beta 12_{[c]} \geq 1000$ ($\beta 12 \geq 200$) + Water Removal
10SF*	$\beta 12_{[c]} \geq 1000$ ($\beta 12 \geq 200$) Dynafuzz
25M	$\beta 22_{[c]} \geq 1000$ ($\beta 25 \geq 200$)
25A	$\beta 22_{[c]} \geq 1000$ ($\beta 25 \geq 200$) + Water Removal
25W*	25µ Nominal Wire Mesh
25SF*	$\beta 22_{[c]} \geq 1000$ ($\beta 25 \geq 200$) Dynafuzz
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HPB Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating
- Buna: -30°F (-34°C) – 250°F (121°C)
- EPR: -70°F (-57°C) – 250°F (121°C)
- Viton: -15°F (-26°C) – 400°F (204°C)

Standard Element Collapse
- ΔP 150 PSI (10.3 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Hydac	Hy-Pro
5.05.18R20BN	HPBL18-25MB
5.05.18R20BN/-V	HPBL18-25MV
5.05.18R03BN/-V	HPBL18-3MV
5.05.18R05BN	HPBL18-6MB
5.05.36R10BN/-V	HPBL36-12MV

MP Filtri	Hy-Pro
MP11442	HPBL18-12MB
MP2034	HPBL18-25MB
MP8500	HPBL18-3MB
MP2032	HPBL18-6MB

Parker	Hy-Pro
935119Q	HPBL18-12MB
935123Q	HPBL18-25MB
935123	HPBL18-25MB
935121	HPBL18-3MB
935121Q	HPBL18-3MB

Schroeder	Hy-Pro
BBS7	HPBL18-12MB
BBZ1V	HPBL18-1MV
BBS25	HPBL18-25MB
BBZ3V	HPBL18-3MV
BLZ10	HPBL36-12MB

ΔP FACTORS

Media Code	Element Length L9		L18		L36	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.2225	0.00405	0.1081	0.00197	0.0541	0.00098
3M	0.1365	0.00249	0.0663	0.00121	0.0332	0.00060
6M	0.0889	0.00162	0.0432	0.00079	0.0216	0.00039
10/12A	0.0675	0.00123	0.0328	0.00060	0.0164	0.00030
10/12M	0.0562	0.00102	0.0273	0.00050	0.0137	0.00025
25A	0.0428	0.00078	0.0208	0.00038	0.0104	0.00019
25M	0.0357	0.00065	0.0173	0.00032	0.0087	0.00016
*W	0.0074	0.00014	0.0036	0.00007	0.0018	0.00003

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

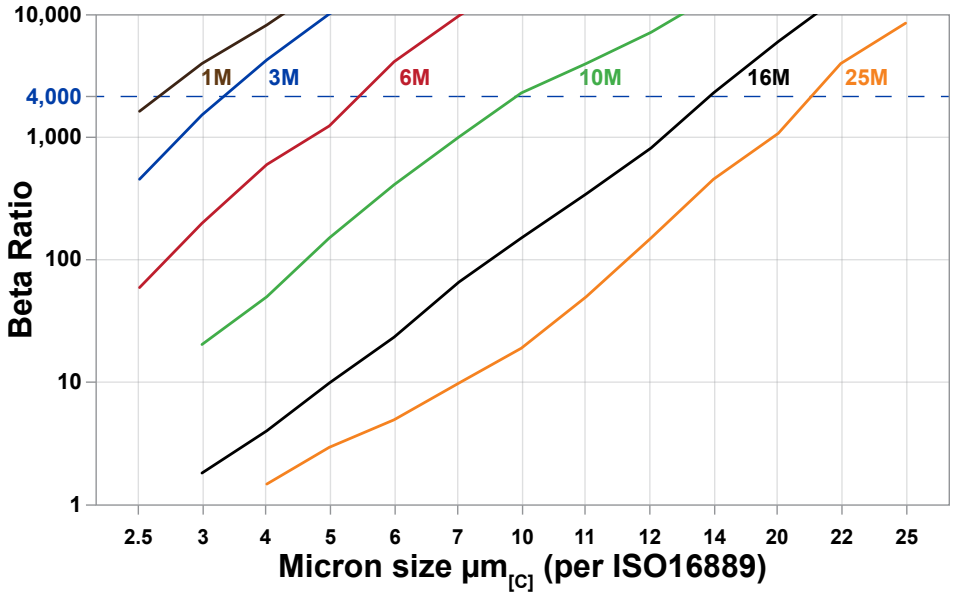
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HPBL [Table 1] - [Table 2] [Table 3]

Table 1 Code	Overall Length
L9	~9.000" (~22.86 cm)
L18	~18.245" (~46.34 cm)
L36	~36.210" (~91.97 cm)

Table 3 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®

Table 2 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

HY-PRO FILTRATION

HPGN181 Series
Hy-Pro Filter Element Upgrades

Hy-Pro G8 Dualglass
High Performance Filter Elements

Performance
Temperature Rating

Buna:	-30°F (-34°C) – 250°F (121°C)
EPR:	-70°F (-57°C) – 250°F (121°C)
Viton:	-15°F (-26°C) – 400°F (204°C)

Standard Element Collapse

ΔP 400 PSI (27.6 Bar)

Tested to ISO Quality 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 testing

Media
G8 media pleat pack features our latest generation of graded density glass media that delivers required cleanliness while optimizing dirt capacity.

Available media selections include G8 Dualglass, Stainless Steel Mesh Media, Dynafuzz (Stainless Fiber Media), and Water Removal Media. Seal options include Nitrile (Buna), Fluorocarbon (Viton), and EPR. Call or consult the Hy-Pro online Interchange Guide at www.hyprofiltration.com.

Fluid Compatibility
Petroleum based fluids, water glycols, polyol esters, phosphate esters, HWBF. Contact Hy-Pro for seal selection assistance.

Water Removal
Media code “A” specifies G8 Dualglass media co-pleated with water removal scrim to produce a filter that can remove water while maintaining $\beta x_{[c]} > 4000$ efficiency down to $3\mu_{[c]}$.

Dynamic Filter Efficiency
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.

Interchange (See Interchange Guide for Exact Cross Reference and Complete Part Numbers)

Indufil	Hy-Pro
SUR-Z-1813-A-PX03	HPGN181L40-3MB
ECR-S-883-A-GF03	HPGN181SL20-3MB
SUR-Z-1813-A-CC05	HPGN181L40-6MB
MPR-Z-883-A-CC05V	HPGN181L20-6MV
TMR-Z-1813-CC05V	HPGN181L40-6MV
VTR-Z-1813-A-GF10	HPGN181L40-10MB
VTR-S-883-A-GF10	HPGN181SL20-10MB
INR-S-1823-SS180-V	HPGN181SL40-10MV
INL-S-883-A-2-GF25	HPGN181SL20-25MB
INR-S-1800-API-SS050-V	HPGN181SL40-25MV
INR-Z-1813-A-GF25V	HPGN181L40-25MV

ΔP FACTORS

Media Code	Element Length					
	L20		L30		L40	
	psid/gpm	bar/lpm	psid/gpm	bar/lpm	psid/gpm	bar/lpm
1M	0.087	0.006	0.057	0.004	0.043	0.003
3M	0.053	0.004	0.035	0.002	0.026	0.002
6M	0.035	0.002	0.023	0.002	0.017	0.001
10/12A	0.026	0.002	0.017	0.001	0.013	0.001
10/12M	0.022	0.001	0.014	0.001	0.011	0.001
25A	0.017	0.001	0.011	0.001	0.008	0.001
25M	0.014	0.001	0.009	0.001	0.007	0.000
*W	0.003	0.000	0.002	0.000	0.001	0.000

Adjusted Pressure Drop

Pressure drop factor based on viscosity 150 SUS / 32 cSt, and specific gravity = 0.86. Element ΔP varies with viscosity and specific gravity. To adjust ΔP factor for different viscosities use the following formula:

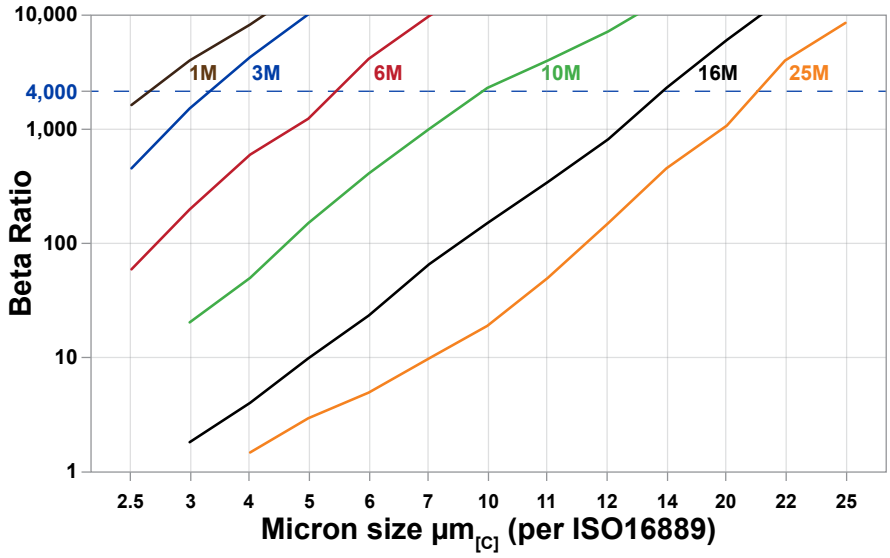
Kinematic Viscosity in SUS:
ΔP Element = ΔP Curve x Actual Viscosity SUS/150 x Actual SG/0.86

Kinematic Viscosity in cSt:
ΔP Element = ΔP Curve x Actual Viscosity cSt/32 x Actual SG/0.86

Centistoke to SUS conversion:
1 cSt = 4.63 SUS

FILTER ELEMENT MEDIA PERFORMANCE

Glass Media Filtration Efficiency (Beta Ratio) vs Micron Size



Efficiency, Apparent Dirt Holding Capacity, H_20 Capacity Numbers Based on Viscosity 150 SUS (32cSt) at 100°F (40°C)

FILTER ELEMENT PART NUMBER BUILDER

HPGN181 [Table 1] L [Table 2] - [Table 3] [Table 4]

Table 1 Code	End Cap and Support Tube Material
Omit	Plated Carbon Steel
S	Stainless Steel

Table 3 Code	Media Selection
1M	$\beta 3_{[c]} \geq 4000$
3M	$\beta 4_{[c]} \geq 4000$
3A	$\beta 4_{[c]} \geq 4000$ + Water Removal
3SF*	$\beta 4_{[c]} \geq 4000$ Dynafuzz
6M	$\beta 6_{[c]} \geq 4000$
6A	$\beta 6_{[c]} \geq 4000$ + Water Removal
6SF*	$\beta 6_{[c]} \geq 4000$ Dynafuzz
10M	$\beta 11_{[c]} \geq 4000$
10A	$\beta 11_{[c]} \geq 4000$ + Water Removal
10SF*	$\beta 11_{[c]} \geq 4000$ Dynafuzz
25M	$\beta 22_{[c]} \geq 4000$
25A	$\beta 22_{[c]} \geq 4000$ + Water Removal
25SF*	$\beta 22_{[c]} \geq 4000$ Dynafuzz
25W*	25µ Nominal Wire Mesh
40W*	40µ Nominal Wire Mesh
50W*	50µ Nominal Wire Mesh
74W*	74µ Nominal Wire Mesh
149W*	149µ Nominal Wire Mesh
250W*	250µ Nominal Wire Mesh

*Limited availability (call factory)

Table 2 Code	Overall Length
20	~19.821” (~50.345 cm)
30	~29.830” (~75.768 cm)
36	~36.375” (~92.392 cm)
40	~39.508” (~ 100.350 cm)

Table 4 Code	Seal
B	Nitrile (Buna)
V	Fluorocarbon (Viton)
E-WS**	EPR + Stainless Steel Support Mesh (Skydrol Specific Fluid Applications)

**For Phosphate Ester use Viton®