

# High Performance, Corrosive Handling Pleated Filters

WARCO absolute rated filtration systems set the standard for demanding corrosive chemical process filters. WARCO highly engineered, glass-free thermoplastic vessels withstand the harshest chemistries for providing many years of service life.

WARCO SOLID thermoplastic filters are powered by equally robust seal-less magnetic pumps for a completely non-metallic filtration system, free of linings or coatings. Your source for corrosion proof, leak-free, absolute rated filtration technology.



**Absolute Rated Corrosion Proof Filters™**  
Zero Corrosion – Zero Leakage – Zero By-Pass™



**WARCO FILTERS™**



**Chemical Processing**

**Electroplating**

**PCB & Electronics**

**Water Treatment**

**Series-GH**

**High performance  
filter systems**

# Element Technology

## CHEMTREX™

### High Performance Pleated Elements

## Protect Your Process and Maximize Production

CHEMTREX™ pleated filter technology meets the most demanding process applications. CHEMTREX™ filter elements employ thermally bonded, micro-fiber filter media capable of filtering minute particles that elude other filtration methods.

Filtration at absolute Beta 5000 retention levels requires a system that can hold the captured particles without instantaneous blinding of the



media with removal efficiencies of 99.98%. This eliminates the guesswork associated with nominal filter systems that filter in the range of 50-70% efficiency. CHEMTREX™ filter technology meets critical quality control standards, as required in high purity electronics, fine decorative plating, plating on plastics (POP), and military applications.

The filtration affinity rule indicates that filter life is exponentially based upon surface area. Doubling surface area will theoretically quadruple filter life with the system criteria remaining constant. Conversely, predictable filter life is inversely proportional to media pressure drop at start-up. Therefore, highly porous, high surface area CHEMTREX™ filter elements can filter at even sub-micron levels that were never achievable in the past, while offering exceedingly long life.



Pleated Filter Sectional

- (A) Standard Bag Filter Design
- (B) High Performance Pleated Filter
- (C) 226 High Capacity Filter Design

## Retrofits

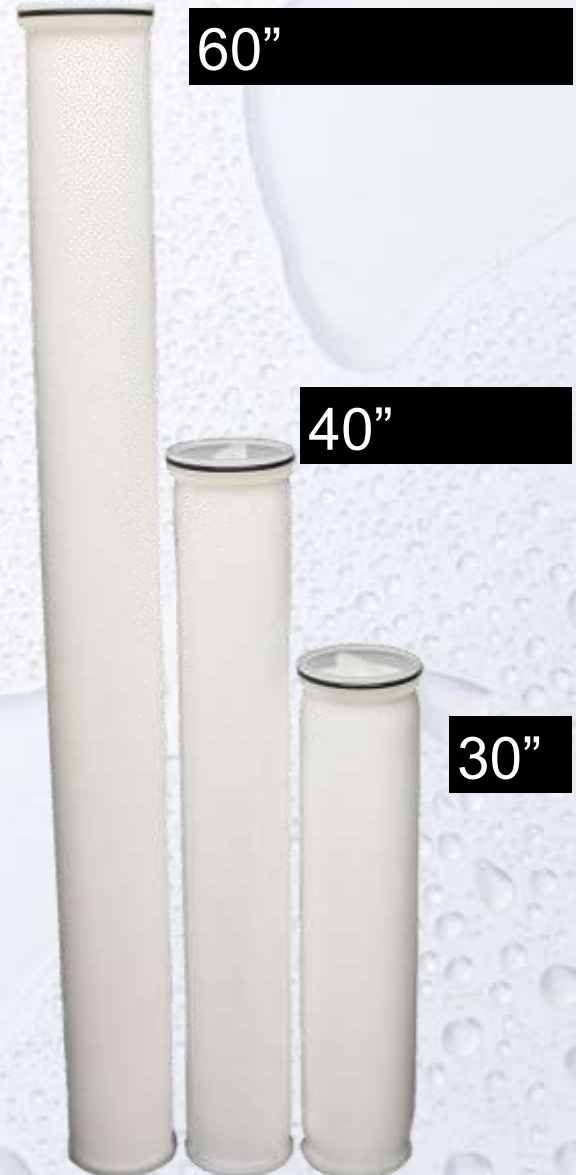
Pall Ultipleat® High Flow & Ultipor® Filter Cartridges & Elements

3M® Series High Flow & 8000



### Pleated Elements Selection Chart

15" Pleated Elements for GH6.2M15CCS3 15" Filter Housing				
Part Number	Micron Rating Efficiency			Max Temp °F
	99.98%	98%	90%	
WH6.2M15CC05P3	5	2	1	167°F
WH6.2M15CC10P3	10	5	3	167°F
WH6.2M15CC20P3	20	10	7	167°F
30" Pleated Elements for GH6.2M30CCS3 30" Filter Housing				
Part Number	Micron Rating Efficiency			Max Temp °F
	99.98%	98%	90%	
WH6.2M30CC05P3	5	2	1	167°F
WH6.2M30CC10P3	10	5	3	167°F
WH6.2M30CC20P3	20	10	7	167°F
40" Pleated Elements for GH6.2M40CCS3 40" Filter Housing				
Part Number	Micron Rating Efficiency			Max Temp °F
	99.98%	98%	90%	
WH6.2M40CC05P3	5	2	1	167°F
WH6.2M40CC10P3	10	5	3	167°F
WH6.2M40CC20P3	20	10	7	167°F
60" Pleated Element for GH6.2M60CCS3 60" Filter Housing				
Part Number	Micron Rating Efficiency			Max Temp °F
	99.98%	98%	90%	
WH6.2M60CC05P3	5	2	1	167°F
WH6.2M60CC10P3	10	5	3	167°F
WH6.2M60CC20P3	20	10	7	167°F



# Chamber Technology



## CHEMAG Polypropylene Filter Systems meet OEM Standards

*Why does every major plating line manufacturer standardize on engineered polypropylene construction for tanks and piping systems?*

*Simple, the utmost in chemical resistance, durable long life and optimal purity!*

CHEMAG Series GH filtration systems are constructed of rugged, fusion welded SOLID Simona™ polypropylene, including the chambers, bases, mixing tanks, piping and fittings for years of reliable service.



### Chamber Selection Chart

Chamber Model Number	FLOW REQ. GPM	CHAMBER SIZE	TYPE OF CARTRIDGE	FLOW RATED GPM	FT <sup>2</sup>	TOP INLET PORT
GH6.2M15CCS3	50 gpm	15"	1-6" x 15"	90	25	1.5"
GH6.2M30CCS3	90 gpm	30"	1-6" x 28"	175	45	1.5"
GH6.2M40CCS3	150 gpm	40"	1-6" x 40"	250	63	2"
GH6.2M40CCS3	175 gpm	40"	1-6" x 40"	250	63	2"
GH6.2M60CCS3	225 gpm	60"	1-6"x 60"	375	95	2"
GH6.2M60CCS3	350 gpm	60"	1-6" x 60"	375	95	2"

CHEMAG filter vessels are guaranteed against deterioration for 5 years to protect your investment.



### Common Applications

- \* Copper Sulphate (Acid Copper)
- \* Activator Solution
- \* Bright Nickel
- \* E-Nickel
- \* Electroless Nickel
- \* Chrome Etch
- \* Tin Lead
- \* Anodizing Solutions
- \* Precious Metals (Gold, Silver, Palladium)
- \* Cyanide Baths
- \* Caustic Cleaners
- \* Rinse Tanks
- \* Process Water
- \* Carbon Treatment Polishing
- \* R.O. & Ion Exchange Pre-Filtration
- \* Waste Water Treatment



OUTLET PORT (S)	MAX PRESS. SYSTEM	ELEMENT Max Pressure	MAX TEMP. °F	HP RANGE	PUMP MODEL NO.
1.5"	50 PSI	15 psi	140°F	1.0	M7.0H1APTT31
1.5"	50 PSI	15 psi	140°F	1.5/3.0	M7.5H1APTT31
2"	75 PSI	15 psi	140°F	3.0/5.0	M8.5H1APTT31
2"	75 PSI	15 psi	167°F	3.0/5.0	MCH28000P3F1
2"	75 PSI	15 psi	167°F	7.5/10.0	MCH51000P3F1
2"	75 PSI	15 psi	167°F	20/30	*MCH81001P3F1

# Pump

## Technology

### Zero Leakage- Zero Corrosion™

WARCO thermoplastic seal-less mag-drive pumps protect precious process chemistry while ensuring production uptime.

Highly engineered hydraulic designs, high torque magnetic couplings, and oversized shaft and internal bearings provide reliable continuous performance. Constructed from robust, molded or machined thermoplastics to resist both internal and external corrosion, and equipped with magnetic drive couplings for a process free of leakage or mechanical seal maintenance.

The SOLID thermoplastic pump casings are impervious to permeation, even within hot electroplating and metal treatment processes containing HCL, H2SO4, caustics and other corrosive mediums.



### Pump Selection Chart

Model No	US gpm	HP	Material	Gaskets	Suction Ports	Max Temp
M7.0H	50	1.0	PP	EPDM	1.5" NPT	140° F
M7.5H	90	1.5/3.0	PP	EPDM	2" NPT	140° F
M8.5H	150	3.0/5.0	PP	EPDM	2" NPT	140° F
MCH51001P3F1	175	7.5/10.0	PP	EPDM	3" FLANGE	140° F
*MCH81003P3F1	350	20/30	PP	EPDM	4" FLANGE	140° F
M7.0H	50	1.0	PVDF	Viton	1.5" NPT	180° F
M7.5H	90	1.5/3.0	PVDF	Viton	2" NPT	180° F
M8.5H	150	3.0/5.0	PVDF	Viton	2" NPT	180° F
MCH51001F3F1	175	7.5/10.0	PP/PVDF	Viton	3" FLANGE	180° F
*MCH81003F3F1	350	20/30	PP/PVDF	Viton	4" FLANGE	180° F



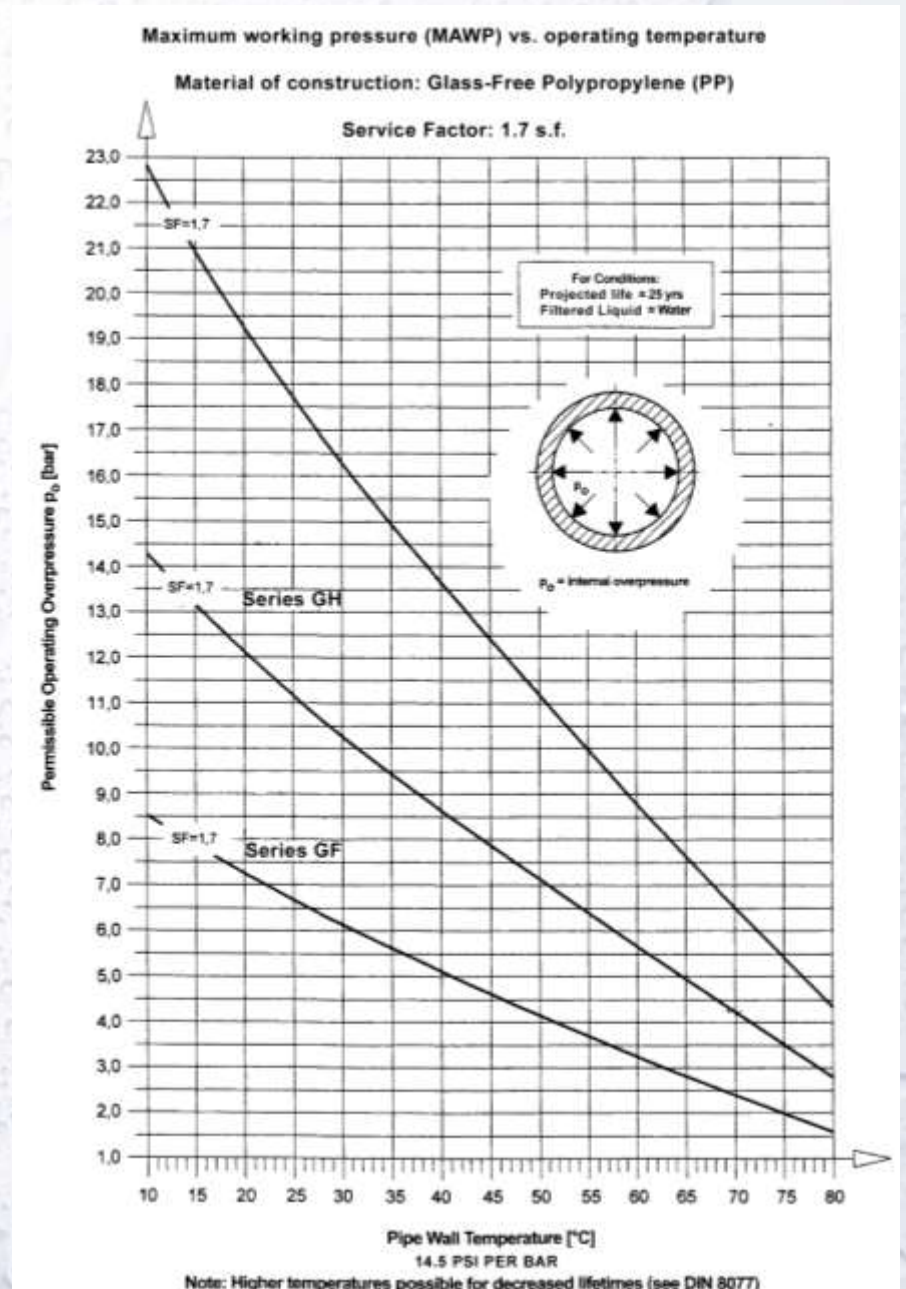
**Note: Refer to pressure/temperature curve for maximum system pressure.**



- Series "M" molded centrifugal mag-drive pumps are suitable for moderate services and available in 1/8 to 5 HP sizes in either PP or PVDF.
- Series "MCH" robust machined centrifugal mag-drive pumps are built for heavy duty services and available in 1 to 20 HP sizes in either PP or PVDF, standard end suction or the self-priming Series "MCSP".
- Series "MT" robust machined turbine mag-drive pumps can deliver low flows with high discharge heads and available in either PP or PVDF, standard design or the self-priming Series "MTSP".



PUMP MODEL	HP RANGE (NEMA FRAME)
M7.0H1APTT31	1.0 (56C)
M7.5H1APTT31	1.5/3.0 (143/5 TC)
M8.5H1APTT31	3.0/5.0 (182/4 TC)
MCH51000P3F1	5.0/7.5 (182/4 TC)
MCH52000P3F1	5.0/7.5 (182/4 TC)
MCH81001P3F1	20 (256 TC)
MCH81001P3F1	30 (284 TSC)



## LINEMAN™ Pump Power Monitors

**Advanced LINEMAN™ Power Monitors sense the motor power output of the pump with the ability of detecting every conceivable process upset, adverse conditions and predetermined minimum and maximum flow or pressure limits- prior to sustaining pump damage.**

The high load trip sensor will detect:

- Excessive Flow or Run-out
- Cavitation
- Vortexing
- Obstructed suction line

The low load trip sensor will detect:

- Throttled or Closed Discharge Valve
- Dry-run
- Dirty Filter Elements



LM-6



LM-3



LM-7

## EXAKT™ Thermoplastic Flowmeters

**EXAKT™ All Thermoplastic Rotameters provide an accurate direct reading flow capacity independent of pressure variations within the process. Pressure gauges are most accurate at start-up but can fluctuate over time due to potential damage, corrosion, tampering of hydraulic fluid or seal break.**

Options include:

- Wide Range of Union Connections including PVC, CPVC, PP or PVDF (socket or threaded)
- Magnetic Read Switch for detecting minimum and maximum flow settings



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