



EFFECTIVE LIQUID FILTRATION SOLUTIONS



## CPH – 16 SILT & SAND SEPARATOR

Designed to handle removal of settleable solids in cooling systems, irrigation and industrial process as either pre-filter or primary filter.

Incorporates a highly efficient closely packed set of 16 hydro cyclones to reliably remove solids down to 1/2 microns.

Higher flow rates with high efficiency now possible.

Pre-filtration extends time between servicing as much as 5 times for standard bag, cartridge or media filter.

### Closely Packed Hydro Cyclone – CPH-16



FLOW RATES:  
13 TO 132 GPM  
50 TO 500 LPM

ACCOMMODATES  
HIGHER FLOW  
RATES WITH  
PARALLEL  
DESIGNS

SIXTEEN ONE-INCH HYDRO CYCLONES IN ONE VESSEL OFFERING 94% REMOVAL OF 15-MICRON SOLIDS & ABOVE AT 2.6 SPECIFIC GRAVITY.

## Principal of Operation for the CPH-16

The water flows in from the bottom and is directed upward and distributed to the one-inch hydro cyclones in the CPH-16 units, the solids are removed, and directed upwards through the outlet to provide clean water to the system.

- ❖ The separator removes solids at specific gravity of 2.6 down to below 5 micron with performance noted for single pass in graph below.
- ❖ Using this separator as a pre-filter typically reduces solids loading on media and barrier filters by as much as five times improving their performance and dramatically extending time for servicing or backflushing.
- ❖ Purge is typically 15-30 seconds saving significant amounts of water.
- ❖ Excellent as primary filter for cooling water

## CPH-16 Cut-Away

16 One-Inch Hydro Cyclones



## Single Pass Removal Efficiency

Single Pass Test with 2.6 Specific Solids Using Medium Arizona Test Dust Media

Sand Separator Test Sand Removal %

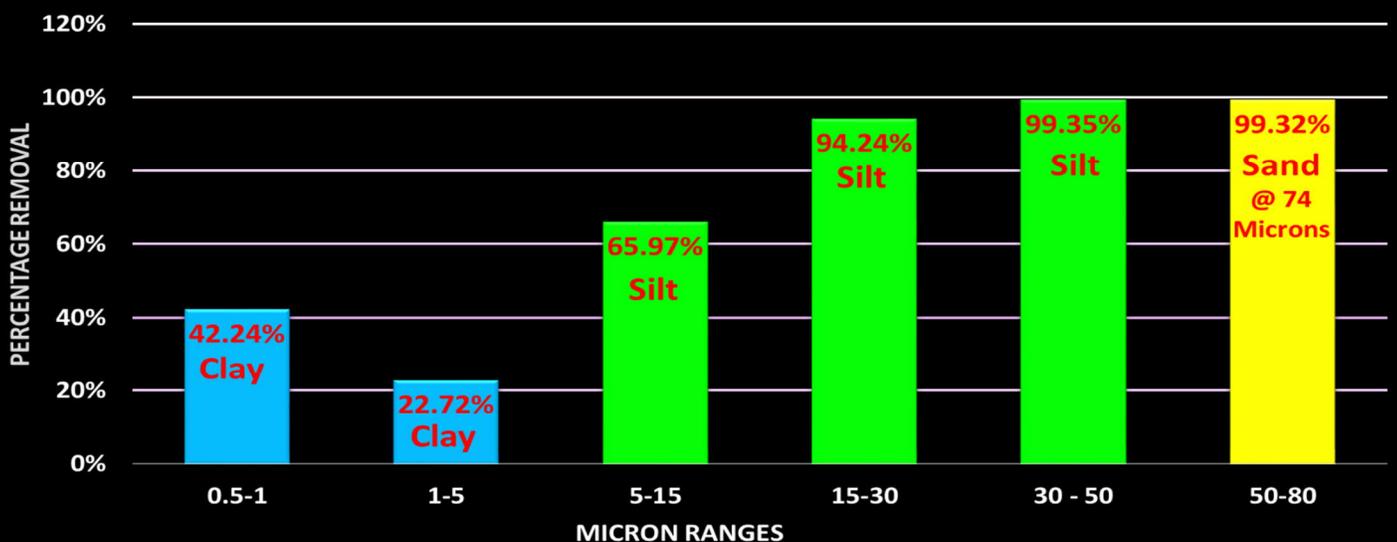
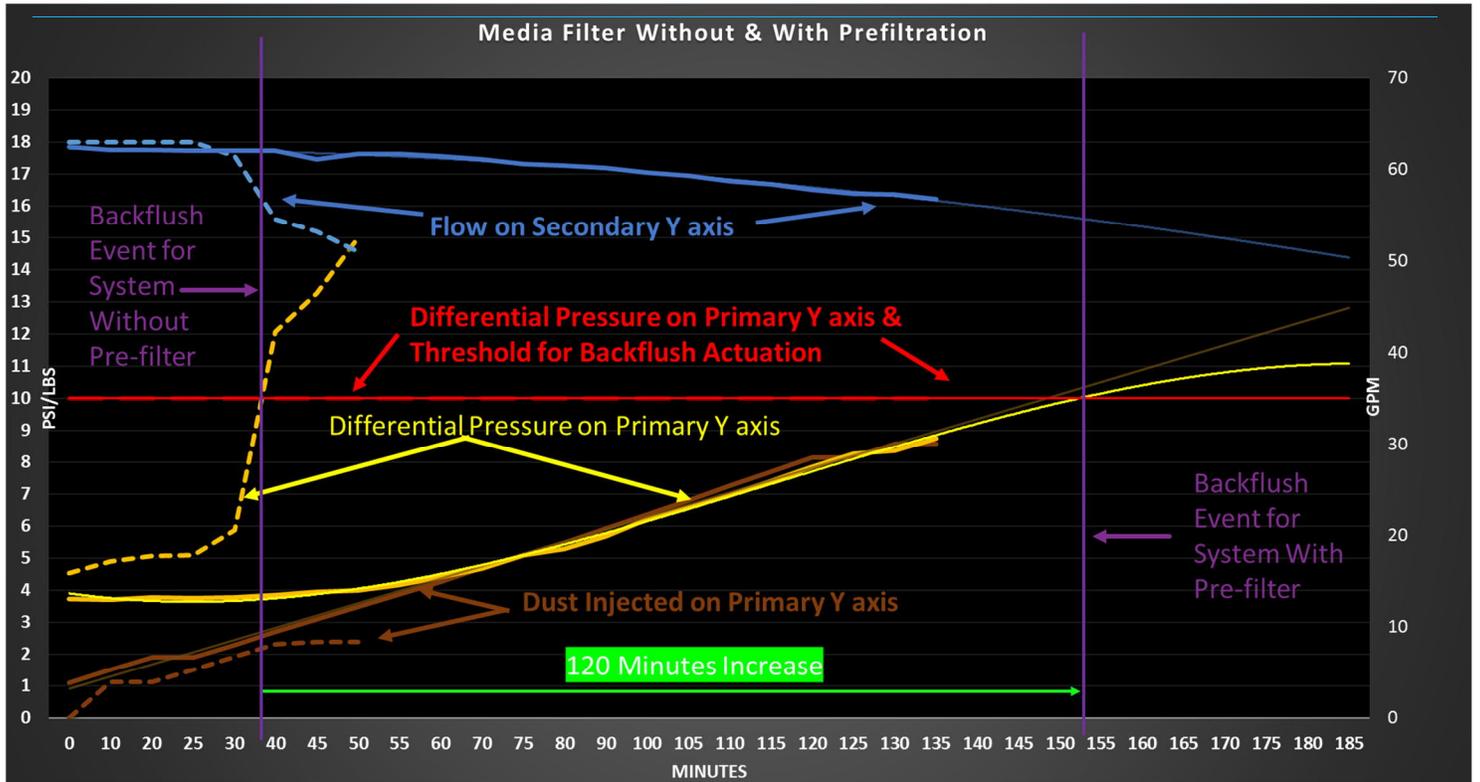


Chart below shows that using pre-filtration along with cartridge media or barrier filters increases the time between servicing by as much as five times. Dotted **Yellow** line differential pressure for media filtration only. Solid **Yellow** line differential pressure for pre-filtration followed by media filtration.



**Increases period between flushes by as much as 5 times**

## CPH -16 - 04 PARALLEL DESIGN

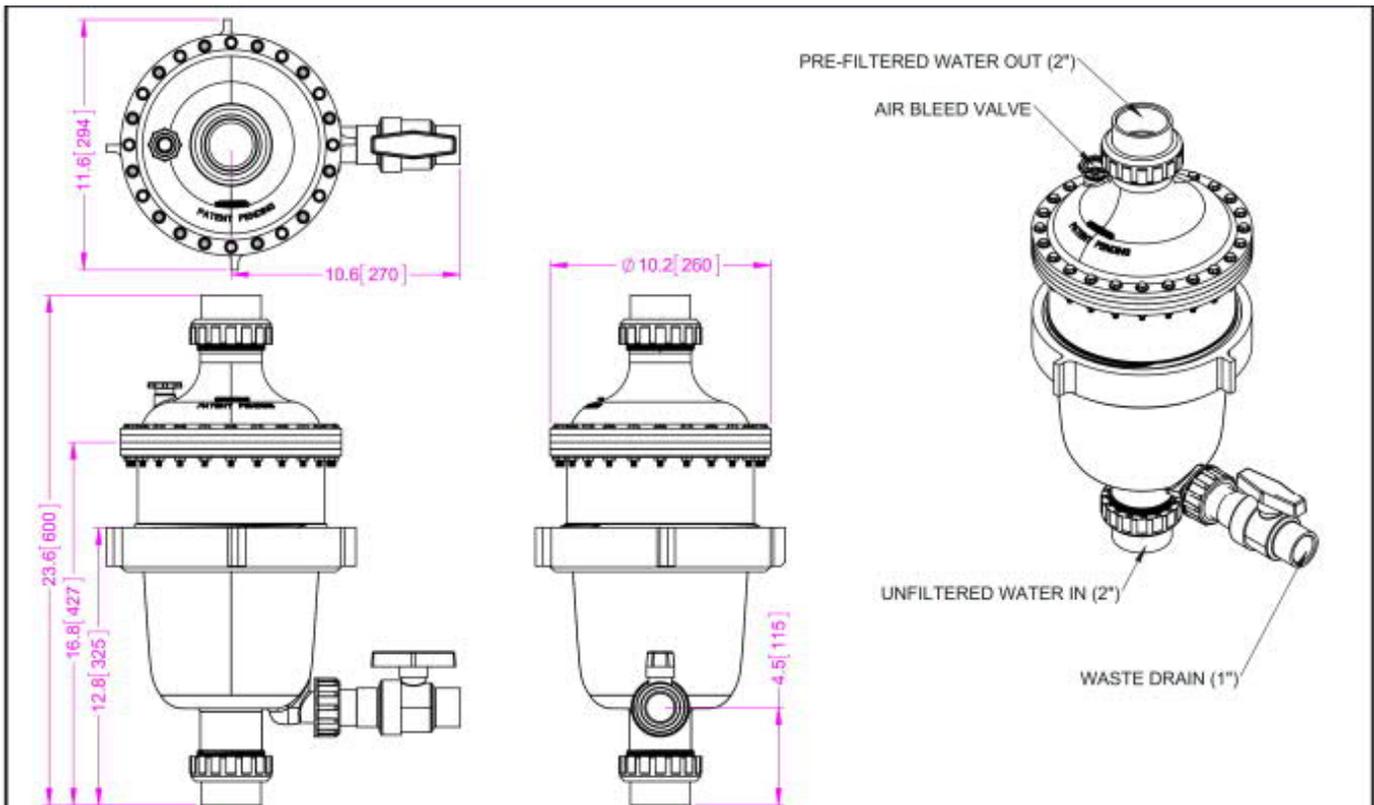
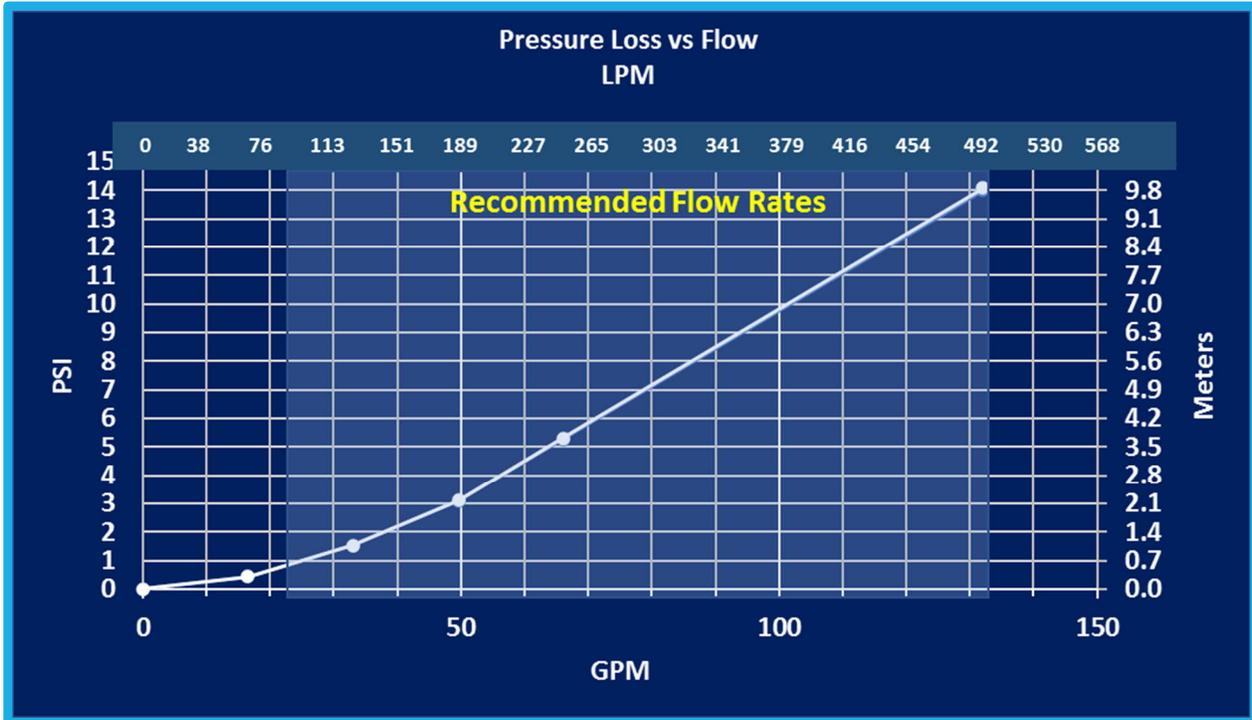


Four CPH-16 Units in Parallel to accommodate flow rates from 54 to 540 GPM ( 200 to 2000 LPM).

Same high solids removal performance as the CPH-16.

Multiples of these CPH-16-04 In parallel offer unlimited flow rates.

# Performance & Technical Info – CPH-16



FILTER DATA (FOR EACH FILTER)		GENERAL NOTES:		DATE: ___/___/2018		DATE: ___/___/2018	
MAX WORKING PRESSURE:	102 PSI	1. MEDIA NOT REQUIRED WITH FILTER.		CUSTOMER:		ENG:	JS
MIN FLOW RATE:	13 GPM	2. MOUNTED ON SKID OR CONCRETE BY THIRD PARTY					
MAX FLOW RATE:	132 GPM	3. PLEASE REFER TO QUOTE FOR LIST OF ITEMS SUPPLIED.- PICTURE CONCEPT ONLY					
<b>ESTIMATED MEDIA AMOUNTS</b>		4. FILTER MADE FROM HIGH STRENGTH FIBERGLASS AND RESINS.		DATE: ___/___/2018	DATE: ___/___/2018		
SAND:	LBS.	5. ALL INTERNAL FILTER COMPONENTS CONSTRUCTED OF SCHEDULE 80 PVC.		PROD. MGR:	PG	DRN BY:	RWS, Jr.
GRAVEL:	LBS.						
<b>WEIGHTS (APPROXIMATE)</b>							
FILTER SHIPPING WEIGHT:	25 LBS.						
FILTER OPERATING WEIGHT:	LBS.						
<b>epiphene</b> EFFECTIVE LIQUID FILTRATION SOLUTIONS						CPH-16 Closely Packed Hydro Cyclone High Removal Efficiency	
						SCALE:	1:6
						DATE:	3/6/2018
						CUSTOMER:	
						SHEET:	1 OF 1
						REV:	0

# Performance & Technical Info – CPH-16-04

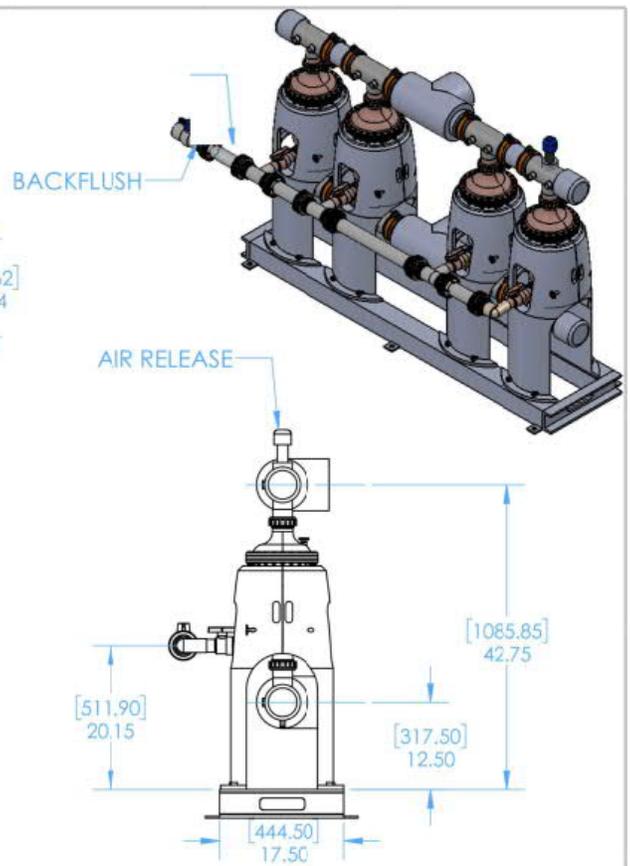
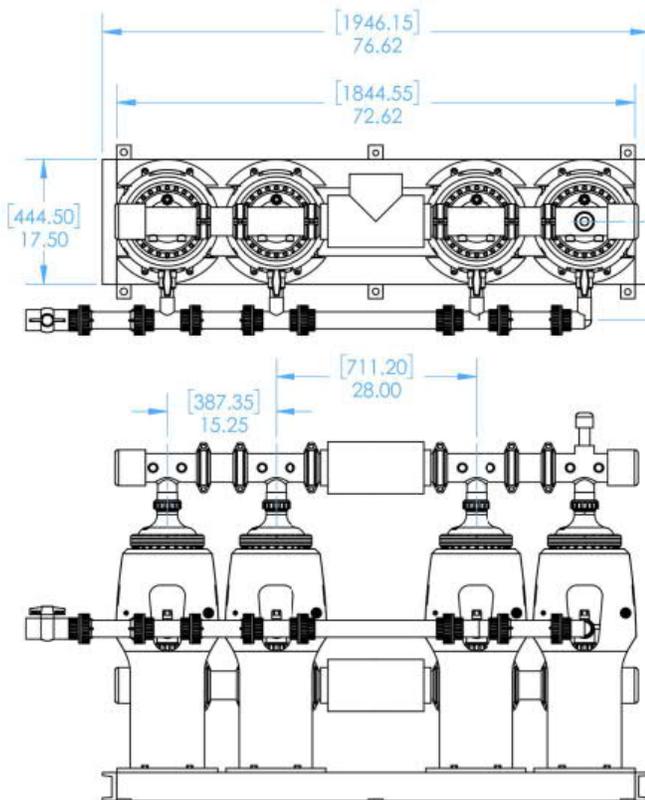
## USING CHARTS

The design matrices to the left of this block allow the user to figure out number of CPH-16-04 Units to use given target flow rates and pressure losses.

For Example, if we look at "4" below "# of 04 Units" and want to know what the flow rate would be at 5 PSI loss across the filters total. We look at the intersection of "4" and "Green "5" and see it is 1040 GPM. Metric flow rate in m<sup>3</sup>/hr

CPH-16-04-06 Units								
# of 04 Units	PSI Loss	1	3	5	7	10	12	15
1		100	200	260	320	396	460	528
2		200	400	520	640	792	920	1056
3		300	600	780	960	1188	1380	1584
4		400	800	1040	1280	1584	1840	2112
5		500	1000	1300	1600	1980	2300	2640
6		600	1200	1560	1920	2376	2760	3168

# of 04 Units	Bar Loss	0.069	0.207	0.345	0.483	0.689	0.827	1.034
1		22.71	45.42	59.05	72.68	89.94	104.48	119.92
2		45.42	90.85	118.10	145.36	179.88	208.95	239.84
3		68.14	136.27	177.16	218.04	269.82	313.43	359.77
4		90.85	181.70	236.21	290.72	359.77	417.91	479.69
5		113.56	227.12	295.26	363.40	449.71	522.39	599.61
6		136.27	272.55	354.31	436.08	539.65	626.86	719.53



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TWO PLACE DECIMAL ±  
THREE PLACE DECIMAL ±  
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TOLERANCING PER:  
MATERIAL  
FINISH

NAME: CS  
DATE: 11/22/2019  
DRAWN: CS  
CHECKED: [ ]  
ENG APPR: [ ]  
MOLD# [ ]  
COMMENTS: JASON KESTER

TITLE: 4 SEPARATORS WITH SKID

SIZE: [ ] DWG. NO.: CPH-16-04 REV: [ ]

# Technical & CPH Performance Criteria

Specifications & Operating Parameters												
Product Description	Min Flow Rate		Max Flow Rate		Max Working Pressure		Inlet & Outlet Pipe Size		Purge Pipe Size		Overall Weight	
	lpm	gpm	lpm	gpm	kPa	psi	mm	inches	mm	inches	(kg)	(lb)
CPH-16	49	13	500	132	703	102	50	2	25	1	11.34	25
CPH-16-04-4	204	54	1041	275	703	102	100	4	50	2	113.39	250
CPH-16-04-6	204	54	2044	540	703	102	150	6	50	2	117.94	260

CPH - Scope of Supply	
Part Number	Product Description
CPH-16	Epiphene Closely Packed Hydro Cyclone with 16 one inch hydro cyclones in single vessel. 102 PSI maximum recommended pressure rating and flow rate of between 25 and 132 gpm. Removal efficiency is 94% of 15 Micron and above at 2.6 specific gravity. Material of Construction is high strength fiberglass & resins. Internal piping utilizes schedule 80 PVC.
CPH-16-04-4	Epiphene 4 Unit CPH-16 with 16 one inch hydro cyclones in each vessel. 100 PSI maximum recommended pressure rating and flow rate of between 54 and 540 gpm. Removal efficiency is 94% of 15 Micron and above at 2.6 specific gravity. Material of Construction is high strength fiberglass & resins. Internal piping utilizes schedule 80 PVC. Manifold Piping Schedule 40 UVR PVC.
CPH-16-04-6	Epiphene 4 Unit CPH-16 with 16 one inch hydro cyclones in each vessel. 100 PSI maximum recommended pressure rating and flow rate of between 54 and 540 gpm. Removal efficiency is 94% of 15 Micron and above at 2.6 specific gravity. Material of Construction is high strength fiberglass & resins. Internal piping utilizes schedule 80 PVC. Manifold Piping Schedule 40 UVR PVC with 6" Piping Fittings Schedule 40 PVC Painted to match UVR for inlet and outlet piping

## Automatic Purge

WE HIGHLY RECOMMEND AUTOMATED PURGING. PLEASE CONTACT FACTORY FOR OPTIONS INCLUDING ELECTRICALLY ACTUATED BALL VALVE AND TIMER/CONTROLLER.

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