



FAQ

How does the system work?



The system is set up with three housings in series.

The First stage is a 3 Micron Filter. This is to remove any particulate; however there is typically no particulate at the end of a Biodiesel Process.

The Second and Third Stage

These housings hold the proprietary ColdClear cartridges. The cartridge is pleated outside with the media held within. This media adsorbs and absorbs all the polar and non-polar compounds that cause crystallization, impurities that precipitate out in cold weather or blending and oxidation instability.



A common analogy is Rock Candy. If you have a super saturated solution of sugar and water in a jar, place a stick or string in the solution and crystals will start to form. However, if no stick or string is introduced, no crystals will form. Essentially the ColdClear is removing the sticks and strings from the Biodiesel. The loss in yield is negligible.

The filter is not removing anything that adds value to the Biodiesel.

The operation is simple, pump the biodiesel through system under 100°F and above 40°F at the recommended flow rate.

What is the expected life?

The ColdClear cartridge (BCCPOLISH or BCCQ39POL) will need to be changed out periodically:

BCC100 – 5GPM – Change out every 15,000 gallons

BCC300 – 15GPM – Change out every 40,000 gallons

BCC600 – 45GPM – Change out every 120,000 gallons

BCC1500 – 75 GPM – Change out every 200,000 gallons

Some customers choose to use a larger unit and not flow to the maximum capacity so it keeps the change out rate lower.

Please note that the typical producer does achieve a longer change out time. (Can be 1-8% longer on average)

What does it cost?

Using the cost of the cartridges divided by the amount of gallons in the expected life will result in a consistent price of \$0.03 cents per gallon. This applies to all BCC models no matter the size. However, there are bulk discounts available and better quality fuel will always give the cartridges a longer life, lowering cost.

How many Cartridges are there in each BCC model? (Also see Drawing at bottom of FAQ)

BCC100 – 1st stage has three (3) Prefilters (BCCPREFILTER) stacked on top of each other.

2nd stage has three (3) ColdClear Proprietary cartridges (BCCPOLISH) stacked on top of each other.

3rd stage has three (3) ColdClear Proprietary cartridges (BCCPOLISH) stacked on top of each other.

BCC300 – 1st stage has one (1) Prefilter (BCCQ39PRE).

2nd stage has one (1) ColdClear Proprietary cartridge (BCCQ39POL).

3rd stage has one (1) ColdClear Proprietary cartridge (BCCQ39POL).

BCC900 – 1st stage has three (3) Prefilters (BCCQ39PRE) together in a pod.

2nd stage has three (3) ColdClear Proprietary cartridges (BCCQ39POL) together in a pod.

3rd stage has three (3) ColdClear Proprietary cartridges (BCCQ39POL) together in a pod.

BCC1500-1st stage has five (5) Prefilters (BCCQ39PRE) together in a pod.

2nd stage has five (5) ColdClear Proprietary cartridges (BCCQ39POL) together in a pod.

3rd stage has five (5) ColdClear Proprietary cartridges (BCCQ39POL) together in a pod.

Is it Ion Exchange Resin in the cartridges?

No. Ion exchange works of the principle of attracting an Ion and giving off a hydrogen (H). In addition, IONX are commonly used to remove the major contaminants like free glycerin, catalyst, soaps and sometimes methanol. The proprietary material in the ColdClear unit is a pure adsorbent and absorbent and will not give anything back to the biodiesel during the life span. All impurities and compounds are held within the media in the cartridge.

What to do with the cartridges after use?

The cartridges are made of biodegradable material with stainless steel caps. It is recommended that the producer remove the caps and sell as scrap to produce another side income stream. The other material can be crushed and land filled or a better option would be to use the material as a BTU source in a burner/boiler combination.

How to install?

This is an easy one! The ColdClear units come with either a NPT or Flanged fitting on the inlet and outlet. You will need to simply pipe in a manifold into the existing end of your biodiesel process and pipe in the ColdClear unit. It is also recommended to install a flow totalizer behind the ColdClear system so the total flow through the system is known. This helps with determining when to change the cartridges.

How soon can I receive my ColdClear system?

The lead time right now is:

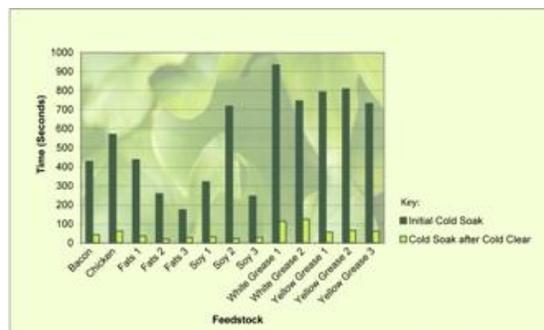
4-6 weeks for a BCC100

6-8 weeks for a BCC300

10-12 weeks for a BCC900, BCC1500

Will it work with all feedstocks?

Yes. Within all literature we have provided documented trials with various feedstocks ending in the same result; a significantly lower cold soak time. The ColdClear unit removes the compounds and impurities in all feedstocks that cause the cold flow issues.



What if my Biodiesel already passes ASTM D6751 Cold Soak?

How much does it pass by?

The requirement is 360 seconds at this time. If a producer is close to that number it would be recommended to have a solution that ensures passing consistently. It is also recommended by the industry that any biodiesel used in 10°C (50°F) be a 200 second or less fuel.

What happens if a batch or production run fails Cold Soak?

If this happens the material will need to be either sold as off spec, or reprocessed. This will cost the producer more than the 3 cents per gallon it costs to run the ColdClear unit. The ColdClear can be an inexpensive insurance policy.

Biodiesel passes Cold Soak but precipitates out impurities when cold or blending.

This is another common issue the ColdClear can help with. If the biodiesel is already passing Cold Soak, and is having these issues, the ColdClear can remove the impurities that precipitate out. In addition, when the fuel is a higher quality like this example, the producer can expect a longer expected life, lowering cost.

What about Biodiesel Blends?

The ColdClear system will work with any blend, from B2 – B99. Blenders typically use the ColdClear system for a couple specific reasons. It allows the blender to have a superior cold weather fuel and it removes the impurities that typically precipitate out when blending.

Will the ColdClear help with Cloud Point or Pour Point?

It can, however it highly depends upon the quality of the original B100. The Cloud Point and Pour Point are typically characteristics of the feedstock itself and can not be changed. However, some producers experience a high contamination of impurities that drives the Cloud Point and Pour Point up, the ColdClear will help lower those back to where they need to be.

How much will the ColdClear lower my Cold Soak?

The ColdClear will lower your Cold Soak times into passing the ASTM D 6751 required 360 seconds. The higher the impurities in your fuel will determine the life span of the ColdClear cartridges. However, most fuels will allow the cartridges to last the estimated life span and experience a passing cold soak through out the time frame.

Can the ColdClear remove moisture?

Yes. The ColdClear system is not specifically designed to remove large moisture content, however if there is a dissolved or free moisture issue the ColdClear system can help. If there is a large amount of moisture the life expectancy on the cartridges can be expected to lower, however it can still be an economically feasible solution.

Where was this technology developed?

This technology was in development for the last year and a half by Schroeder Biofuels and partners in Leetsdale, Pennsylvania. All systems and cartridges are made in the USA.

How is Dexter Biodiesel Solutions associated with Schroeder Biofuels?

Dexter Biodiesel Solutions is an official distributor of the ColdClear product and accessories. The ColdClear system is only available through the official network of distributors. Dexter Biodiesel Solutions has no territory and can assist any customer domestically and internationally.

Is it possible for the 3rd stage to last longer?

Yes. The 2nd stage will perform to the life expectancy, however in some cases the 3rd stage will still have some capacity left. Most producers will find it easier to change all the cartridges at once; however for those who would like to take the time to monitor the life expectancy of the third stage may find savings. It is recommended to change all the cartridges at once to provide maximum efficiency and ease of use. The 3 cents per gallon is assumed when all cartridges are changed at once.

Is the aluminum base an issue with Biodiesel?

No. According to the National Biodiesel Board:

B100 Material Compatibility

B100 may degrade some hoses, gaskets, seals elastomers, glues and plastics with prolonged exposure. Natural or nitrile rubber compounds, polypropylene, polyvinyl, and Tygon materials are particularly vulnerable. More testing is being done to extend this list of vulnerable materials. Most elastomers used after 1993 are compatible with B100 (Viton/Teflon). Before handling or using neat biodiesel (B100) contact the equipment vendor to determine compatibility with fatty acid methyl esters.

Teflon, Viton, and Nylon have very little reaction to biodiesel and are among the materials that can be used to update incompatible equipment. B100 suppliers and equipment vendors should be consulted to ensure the most recent findings on compatibility. For the bulk fuel handlers of biodiesel it is highly recommended to speak with your hose suppliers to source hoses that are compatible with neat biodiesel.

Most tanks designed to store diesel fuel will be adequate for storing B100. **Acceptable storage tank materials include aluminum, steel, fluorinated polyethylene, fluorinated polypropylene, Teflon, and most fiberglasses.**

Brass, bronze, copper, lead, tin, and zinc may accelerate the oxidation process of biodiesel creating fuel insolubles or gels and salts. Lead solders and zinc linings should be avoided, as should copper pipes, brass regulators, and copper fittings. **Affected equipment should be replaced with stainless steel, carbon steel, or aluminum.**

http://www.biodiesel.org/pdf_files/fuelfactsheets/Materials_Compatibility.pdf

What are other advantages of the ColdClear system?

All producers should consider what options the ColdClear can open. ColdClear can allow a producer to utilize a lower grade feedstock like yellow grease and fats or third generation feedstocks like Palm and Jatropha. If a producer is able to produce a gallon of B100 for 10 Cents cheaper with a certain feedstock and the operating cost of the ColdClear system is only 3 cents, than that can generate an additional 7 cents of profit.

The ColdClear system can provide a higher quality product consistently with peace of mind. Knowing that the biodiesel produced will consistently pass cold soak, not cause issues in cold weather and generally solve other contaminant issues is priceless.

Easy installation and operation. The ColdClear unit is a drop in system ready to be simply piped into the end of a producers facility. The unit only requires a change out at the predetermined intervals.

Is the ColdClear unit mobile?

Yes. The largest ColdClear unit is only the size of a pallet. So it can be moved to a specific tank or part of the process.

How to size a ColdClear unit for production?

The ColdClear system is based off of GPM (gallons per minute).

To find the gallons per minute:

(Gallons produced Daily(X)/Hours in production (Y))/60 minutes (constant) = GPM

EX: 20,000 gallons produced per day in a 16 hour day.

$20,000/16 = 1,250$ gallons per hour

$1,250/60 = 20.8$ gallons per Minute (GPM)

It is always recommended to size a Cold Clear unit slightly over expected GPM to allow for production surges.

In this case we would recommend:

Two (2) BCC300 units (15GPM each to total 30GPM). This would allow for flow rate and surges as well as ease of use. The combined units running in Parallel would need four (4) cartridges changed only every 80,000 gallons or 4 days.

What if my biodiesel temperature is over 100°F when it reaches the Cold Clear system?

Temperatures slightly over 100°F (100-110°F) will cause a slight loss in efficiency and life expectancy. The Maximum recommended temperature is 100°F with the optimum temperature being 70°F, and minimum is 40°F.

For Temperatures over 100°F it would be recommended to lower within the required temperature. Typically a producer can use a heat exchanger to convert that heat energy back into the incoming feedstock or other part of the process needing heat. This will save the producer energy as well. If there is no need for the heat to be used, the producer can use a heat exchanger and a cooling source like water in a closed loop cooling tower.

Where in the process can the Cold Clear be used?

The recommended placement would be at the end of the process in what is considered B100. The placement can be inline, connected to a tank farm or any other place at the end of the process.

It can be used in the front of the process with the cleaned feedstock, however the Cold Clear will work more efficiently at the end of the process.

What is the Operating Pressure?

The pressure can be between 1psi and 100psi, depending upon how contaminated the prefilter is.

What are the Test ports? (The yellow ports at the base of the unit, Code UU)

The ports allow the producer to pull samples pre and post each stage. This will allow complete efficiency of the Cold Clear unit.

Can I receive a unit skid mounted or pre piped a certain way?

Yes. Schroeder does not do custom fabrication, however Dexter Biodiesel Solutions can custom fabricate units to the customers' specifications.

What are other Cold Soak Solutions?

Distillation – This can cost upwards of 20-30% of the cost of the entire Biodiesel Facility.

Cold filtration – This only removes the waxes or saturated fats and can have a loss in cold weather yield from 6-30%.

Additives – Do not always work and are expensive to use, typically 10-20 cents per gallon.

What is the capital cost of the BCC models?

The cost will vary with the different adders and will fall between:

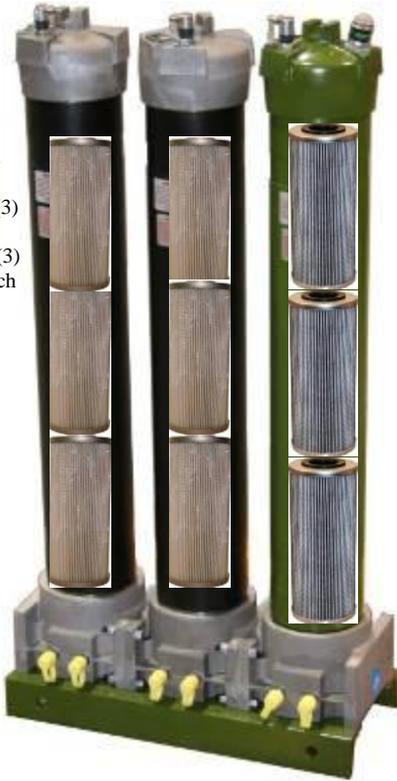
BCC100	\$3,200 - \$4,010	5GPM
BCC 300	\$16,000 - \$17,070	15GPM
BCC 900	\$48,000 - \$49,970	45GPM
BCC1200	\$53,000 - \$54,970	60GPM
BCC 1500	\$58,000 - \$59,970	75GPM

*Cost on all BCC models includes the initial installation of the Prefilters and the proprietary Cold Clear Cartridges.

What do you mean by stacked Cartridges and Pods?

[FOR MORE INFORMATION VISIT: WWW.DEXTERBIODIESEL.COM](http://WWW.DEXTERBIODIESEL.COM)

The BCC100 has
three stages:
Stage 1 – Three (3)
Prefilters
Stage 2-3 Three (3)
CC cartridges each

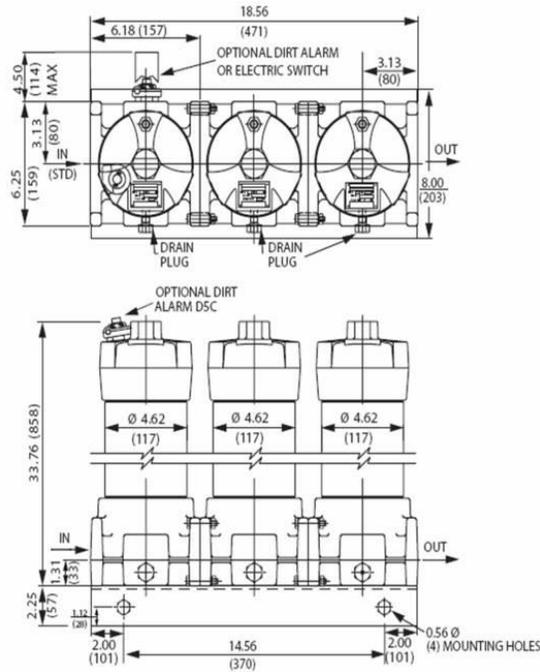


The BCC300 has
three stages:
Stage 1 – One (1)
Prefilter
Stage 2-3 One (1)
CC cartridge each



[FOR MORE INFORMATION VISIT: WWW.DEXTERBIODIESEL.COM](http://WWW.DEXTERBIODIESEL.COM)

BCC100 Drawing



Metric dimensions in ().

BCC300

Technical drawing of the BCC300 unit. The front view shows a rectangular unit with a total height of 58.82 mm and a total width of 42.00 mm. It features three stages of filtration. Key dimensions include a distance of 10.50 mm from the left edge to the first stage, a distance of 6.88 mm from the bottom edge to the test points, and a distance of 36.00 mm between the test points. An indicator is located on the top left of the first stage. The side view shows a total width of 39.50 mm and a height of 15.00 mm. It includes a pre filter, a 1/2" coupling with plug, and four mounting holes with a diameter of 6.3 mm. The distance between the mounting holes is 19.75 mm. The distance from the left edge to the first stage is 6.88 mm. The distance from the bottom edge to the test points is 6.88 mm. The distance between the test points is 14.50 mm. The distance from the right edge to the test points is 13.00 mm.

MODEL NUMBER					
BOX 1 MODEL CODE	BOX 2 SEALS	BOX 3 INLET PORTING	BOX 4 OUTLET PORTING	BOX 5 STAGE 1 INDICATOR	BOX 6 TEST POINTS
BCC300	V=VITON	P24=1" 1/2" NPT P32=2" NPT P32=2" SAE 4-BOLT FLANGE CODE 61	P24=1" 1/2" NPT P32=2" NPT P32=2" SAE 4-BOLT FLANGE CODE 61	OMIT=NONE DQ=VISUAL POP-UP DSC=VISUAL POP-UP IN CAP DPG=DIFFERENTIAL PRESSURE GAUGE MS10=ELECTRICAL W/DIN CONNECTOR (MALE END ONLY)	OMIT=NONE UU=TEST POINTS IN EACH STAGE

REPLACEMENT CARTRIDGE		
STAGE	PART NUMBER	QTY.
1	BCC39QPRE	1
2	BCC39QPOL	1
3	BCC39QPOL	1

PRELIMINARY
ALL DIMENSIONS SHOWN ARE CHANGES PENDING FINAL DESIGN. IF DIMENSIONS SHOWN MUST BE HELD WITHIN A CERTAIN TOLERANCE, PLEASE INFORM SCHWEDER INDUSTRIES LLC FOR APPROVAL.

SALES DRAWING OF BCC300 SKID

INDUSTRIES LLC
SCALE: 1/4"=1' SHIT. 1 OF 1

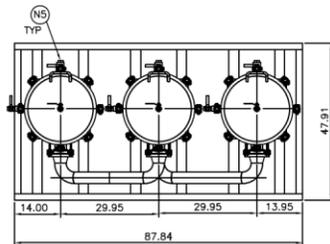
BCC 900, 1200, 1500

(same housing size, more cartridges installed per flow rate)

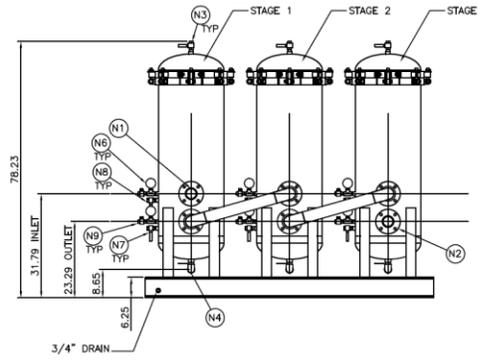
DESIGN DATA			
DESIGN PRESSURE	149 PSIG		
MIN./MAX. DESIGN TEMP.	40°F-100°F (70° IDEAL)		
VESSEL OPENING SCHEDULE			
MK. NO.	SIZE	TYPE	REMARKS
N1	*	*	INLET
N2	*	*	OUTLET
N3	3/4"	FNPT	VENT
N4	1"	FNPT	CLEAN DRAIN
N5	1"	FNPT	DIRTY DRAIN
N6/N7	1/2"	FNPT	DPI
N8/N9	1/2"	FNPT	TEST PT.

* PER MODEL CODE CHART

REPLACEMENT CARTRIDGE		
STAGE	PART NUMBER	QTY.
1	BCC390PRE	3
2	BCC390POL	3
3	BCC390POL	3



MODEL NUMBER					
BOX 1 MODEL CODE	BOX 2 SEALS	BOX 3 INLET PORTING	BOX 4 OUTLET PORTING	BOX 5 STAGE 1 INDICATOR	BOX 6 TEST POINTS
BCC900	V=VITON	P32=2" NPT A32=2" ANSI 150# FLANGE	P32=2" NPT A32=2" ANSI 150# FLANGE	OMIT=NONE RDS=VISUAL POP-UP DPC1=DIFFERENTIAL PRESSURE GAUGE RMS10=ELECTRICAL W/DIN CONNECTOR (MALE END ONLY)	OMIT=NONE UU=TEST POINTS IN EACH STAGE



NOTES:

- INLET/OUTLET FLANGE BOLT HOLES SHALL STRADDLE NORMAL VESSEL CENTERLINES UNLESS NOTED.
- COATING:
 - INTERNAL: NONE
 - EXTERNAL: STAGE 1 - IMRON GREEN
STAGE 2 - IMRON BLACK
S.I. SPEC. #144, 145, 146
- HOUSING WILL ACCOMMODATE CARTRIDGE PER REPLACEMENT CHART.
- ESTIMATED EMPTY WEIGHT: 2000 LBS.

PRELIMINARY
ALL DIMENSIONS SHOWN MAY CHANGE PER FINAL DESIGN. IF DIMENSIONS SHOWN MUST BE HELD WITHIN A CERTAIN TOLERANCE, PLEASE INFORM SCHEDULED INDUSTRIES, LLC FOR APPROVAL.

MATERIAL	<table border="1"> <tr> <td>1/2</td> <td>1/2</td> <td>1/2</td> <td>1/2</td> <td>1/2</td> <td>1/2</td> </tr> </table>	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	SALES DRAWING OF BCC900 SKID		REV. DRAWING NO. 1 D-11094 SCALE: 3/4"=1' (SEE 1 OF 1)
1/2	1/2	1/2	1/2	1/2	1/2																							
1/2	1/2	1/2	1/2	1/2	1/2																							
1/2	1/2	1/2	1/2	1/2	1/2																							
1/2	1/2	1/2	1/2	1/2	1/2																							

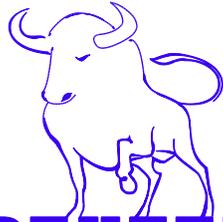
FOR MORE INFORMATION VISIT: WWW.DEXTERBIODIESEL.COM

All Units?

	BCC100	BCC300	BCC900	BCC1200	BCC1500
Flow GPM (L/min)	5 (19)	15 (57)	45 (170)	60 (227)	75 (285)
Throughput (gal)	15,000	40,000	120,000	160,000	200,000
Max Operating Pressure psi (bar)	50 (4)	50 (4)	50 (4)	50 (4)	50 (4)
Operating Temp °F	70 Optimal Allowable 40-100				
Element Case Material	Steel	Steel	Steel	Steel	Steel
Porting Base & Cap Material	Cast Aluminum	Ductile Iron	Housing Construction: Steel	Housing Construction: Steel	Housing Construction: Steel
Element Change Clearance- in (mm)	8.5 (215)	33.8 (859)	33.8 (859)	33.8 (859)	33.8 (859)
PreFilter Cartridge Part Number	BCCPREFILTER	BCC39QPRE	BCC39QPRE	BCC39QPRE	BCC39QPRE
Polish Cartridge Part Number	BCCPOLISH	BCC39QPOL	BCC39QPOL	BCC39QPOL	BCC39QPOL
Number of housings per stage	1	1	3	4	5
Number of Cartridges per Stage	3	1	3	4	5
Cartridges Case Lot Quantity	12	1	1	1	1

*Updated 1.12.2010.

Question is not here?
Contact:



DEXTER

BIODIESEL SOLUTIONS

Dexter Biodiesel Solutions, LLC

Nathan DeMartino

P: 713.384.3870

Nathan@DexterBiodiesel.com

www.DexterBiodiesel.com