

# SERIES 'Y' BULK CARBON CHAMBER

OPERATION AND  
SERVICE GUIDE  
O-320B  
NOV. 1994

MODELS	
_ 360C	_ 3000C
_ 510C	_ 4450C
_ 1750C	

Refer to Bulletin R-102 and  
Parts List P-7700.

## SAFETY PRECAUTIONS

1. Read operating instructions and instructions supplied with chemicals to be used.
2. Refer to Chemical Resistance Data Chart for compatibility of materials with solution to be used.
3. Note temperature and pressure limitations.
4. Personnel should always wear suitable protective clothing; face mask or goggles, apron and gloves.
5. All piping must be supported and aligned independently of the chamber.
6. Always close valves slowly to avoid hydraulic shock.
7. Ensure that all fittings and connections are properly tightened.

## BEFORE CHANGING APPLICATION OR PERFORMING MAINTENANCE

1. Wear protective clothing as described in Item 4 above.
2. Discard carbon and flush chamber thoroughly with a neutralizing solution to prevent possible harm to personnel.
3. Verify compatibility of materials as stated in Item 2 above.

## INSTALLATION

These bulk carbon chambers are constructed of rubber lined or PVC lined steel, or 316 stainless steel with built-in trap filter cage assembly and a polypropylene bag for containing the bulk carbon. Flow enters at the cover and exits at bottom of the chamber. Refer to installation schematics, Fig. 1 and 2.

The quality of solution purification using granular activated carbon is dependent upon several factors. Such as: type of solution, temperature type and degree of impurities in solution, type of carbon, depth of carbon bed and solution contact time (flow rate). Controllable factors are flow rate and type of carbon. A longer contact time between solution and carbon requires a lower flow rate. System performance should be established to determine optimum adsorbancy vs. flow rate relationships. Table A gives suggested flow rates with the lower flow rate recommended for most plating solutions.

## PRE-START-UP

1. Install with proper size pipe of compatible material. It is recommended that flow control valves be installed on chamber inlet and outlet with a drain at the low point of either. Use short hose length or pipe union at inlet for convenience when removing cover.
2. If chamber was received with the granular carbon not installed, then remove cover, open polypropylene bag and fill with proper amount of granular carbon. Refer to Table A.

3. Tie bag, replace and tighten cover.
4. If carbon chamber was furnished with pump and filter, install all hoses (disconnected for shipping) and tighten hose clamps. Siphon breakers in the suction line to the pump and filter discharge to the tank should be installed as a further precautionary measure to limit and minimize the amount of liquid lost by back siphoning. An effective siphon breaker is a small hole drilled in suction & discharge line approximately 2" to 4" below normal solution level. Refer to Bulletin A-202, pg. 2.

## START-UP

1. With water or process solution, flush carbon with volume of liquid given in Table A, or until discharge runs clear. A drain valve on the outlet line is convenient for sampling discharge.
2. Adjust inlet flow control valve to establish purification rate given in Table A. The lower flow rate provides greater purification per gallon output.
3. Prior to exiting the chamber the solution passes through a trap filter cartridge assembly. Unless specified otherwise, these cartridges are 3 micron, polypropylene.
4. Carbon requires replacement when it no longer has its adsorbancy property. Trap filters require replacement when required minimum flow rate cannot be maintained.

## SERVICE

1. To Replace Carbon:
  1. Close inlet valve, open drain or outlet valve to drain chamber.
  2. Remove cover and internal snap ring located inside bag.
  3. Lift bag out of chamber by support straps and overhead hoist; or shovel carbon out of bag.\*
  4. Launder bag or replace with new bag and refill to original level, or to recommended weight given in Table A.
  5. Replacement carbon: Refer to Page 2.
2. To Replace Trap Filters:
  1. Follow steps 1 thru 3 above.
  2. Lift out support spacer which contains trap filters.
  3. Disassemble and replace cartridges. Refer to Table A, and Bulletin M-109.
  4. Reassemble and replace.

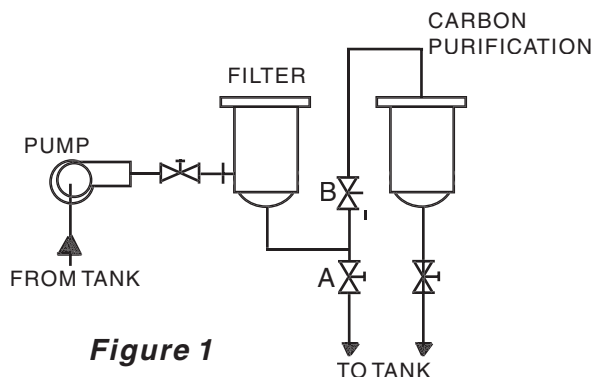
\* A wet/dry shop vac may be employed to remove carbon from chamber.

**TABLE A**

MODEL NO.	FLANGE CONNS.	PURIFICATION FLOW RATE	CARBON CONTENT	TRAP TYPE	CARTRIDGE QUANTITY	FLUSH WITH
_360C 2F-G5	2"	15 to 45 GPM	75 lbs.	SF-U3A6U	12	50 to 100 Gal.
_510C 2F-G5	2"	22 to 66 GPM	120 lbs.	SF-U3A6U	24	75 to 150 Gal.
_1750C 4F-G5	4"	35 to 105 GPM	230 lbs.	SF-U3A6U	35	200 to 400 Gal.
_3000C 4F-G5	4"	45 to 260 GPM	375 lbs.	SF-U3A6U	36	300 to 600 Gal.
_4450C 4F-G5	4"	85 to 260 GPM	930 lbs.	SF-U3A10U	48	500 to 1000 Gal.

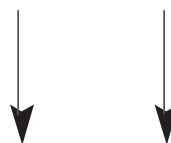
**PURIFICATION TIPS**

1. By-pass Purification: Carbon chamber is installed on filter discharge with control valve on chamber inlet. Flow thru carbon is adjusted approximately 5 to 10% of total flow thru filter. Continuous recirculation by this method should eliminate or significantly postpone batch treatment with powdered carbon.
2. Full-flow Purification: Valve "A" is closed, and valve "B" is opened to provide suitable flow. A low flow rate will provide optimum adsorbancy during transfer.
3. A regular analysis of carbon chamber discharge will establish ideal flow rate and disclose when carbon replacement is necessary.
4. A pressure gauge on carbon chamber inlet will permit valve adjustment for repeatedly obtaining identical flow rate.
5. Replacement carbon, trap filters and a bag should be ordered and placed in stock for immediate availability.



**Figure 1**

GRANULAR, ACTIVATED CARBON		
10# bags or 50# drums only		
	LBS.	PRICE CODE NO.
8 x 30 Mesh 99.5% sulfur-free (Standard)	10	99-0992
	50	99-0995
12 x 30 Mesh Sulfur-free (Acid washed)	10	99-0993
	50	99-0996



**Figure 2**



**SERFILCO, LTD.**

2900 MacArthur Blvd. Northbrook, IL 60062-2005 U.S.A.  
 e-mail: sales@serfilco.com  
 847-509-2900 800-323-5431  
 FAX: 847-559-1995  
 www.serfilco.com