



Instruction Manual for CarLab 60 and CarLab 100

The CarLab range of laboratory test filter housings are simple units which have been designed to simulate full scale filtration. The filter housing can take the full Carlson range of filter media / carbon treatment media and can be used with either an inline lab pump or compressed gas to control the rate of filtration through the media.

General Description

The housing comes in 2 different formats, either inline or with a self-contained product reservoir.

The inline 6 cm unit is used with a small lab pump and can operate up to 1 bar differential pressure. It is available to purchase as a single unit or as part of a kit including peristaltic pump and tubing.



The 6 cm unit with the self-contained reservoir is filled with product and a compressed gas is used to displace this volume of product. This unit can be used with a simple hand pump or regulated compressed air (gas type used is dependent on the product compatibility). The units are made up of only a few components: 1 x base nut, 1 x support screen, 1 x top closure/reservoir, 1 x top closure o-ring (white, fitted into the closure body), 1 x top filler cap, 1 x top filler cap viton o-ring and 1 x standard Schrader valve connector.

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Preparation:

Place support screen in the base nut.

Fit the required grade media disc (smooth face against the support screen) onto the support screen.

Screw the top closure/reservoir down onto the media and hand tighten as much as possible. As the media is dry it will require re-tightening once wetted out. This can either be done with product or flushed with water as required.

Operation:

Set the filter unit into a suitable lab clamp holder.

For the inline filter connect the feed to the inlet of the filter unit and position the filtrate beaker under the outlet. Start the product feed and allow the filter media to wet out and re-tighten top closure. Filter product as required monitoring differential pressure and flowrate.

For the self-contained filter remove the top filler cap and fill reservoir with flush water or product, replace top filler cap. Position the filtrate beaker under the outlet of the filter unit. Apply pressure (air or other gas) via the valve connector on top of the top filler cap. The pressure required should be approximately 2 to 3psi (0.1 to 0.2bar). Allow the filter media to wet out and re-tighten top closure/reservoir. Filter product as required monitoring feed pressure and flowrate. Gas pressure can be applied via a constant feed and pressure regulator (preferred method) or via a simple hand pump via the Schrader valve.

Calculate the required flowrate from the conversion charts *on page 3* and ensure the filtrate flow matches this.

The filtrate sample can be collected in a suitable beaker or piped away to another receptacle.

Filtration Completion.

At the end of the filtration process remove the filtrate from under the filter unit to ensure no contamination.

For the inline filter, if you are using a peristaltic pump and this can be reversed, use this function to empty the feed pipework to the filter.

Remove the filter unit and unscrew the base nut from the top closure, be aware there may be a residue of product still within the unit. Remove the used filter media and wash/clean the filter unit as required ready for the next trial.

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Flow rate conversion charts

CarLab 60

Required Flowrate in l/ m2/hr	Actual lab filter flow in ml/min
100	2.7
200	5.3
300	8.0
400	10.6
500	13.3
600	15.9
700	18.6
800	21.2
900	23.9
1000	26.5

CarLab 100

Required Flowrate in l/ m2/hr	Actual lab filter flow in ml/min
100	11.3
200	22.6
300	34.0
400	45.3
500	56.6
600	67.9
700	79.2
800	90.5
900	101.9
1000	113.2

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