

## SentrySuite™ Quality Management (SeS QM) Workflow Quick Guide DLCO Linearity Check with QM Syringe

Vyntus™ ONE, Vyntus™ ONE DL, Vyntus™ ONE PFT, Vyntus™ BODY

**SETUP:** The 'QM Syringe 3L with Ventilator' (V-720000-13) is required.

- 2 x lithium batteries CR2477 are needed. *Confirm battery in good state.*
- A MicroGard™ II filter is needed and the DLCO gas turned ON.
- A new volume verification and gas calibration MUST be performed prior to DLCO validation.

The QM Syringe 3L with Ventilator has 3 different volumes settings using the adjustable collar; the 3 L and 2 L positions will be used for the DLCO Checks.

Patient: **SeS QM 3**  
VC=3L, FRC=0L



Patient: **SeS QM 2**  
VC=2L, FRC=1L



### A. DLCO Check with 3L of test gas (weekly per ATS)

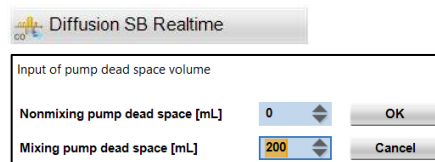
1. Perform a patient search: Select the patient type "**SeS QM Validation**" and click "**Search**". Select the patient with ID: "**SeS QM 3**", and then "**Add New Visit**".



*By using a SeS QM patient, the system is configured for mechanical quality control:*

- The predicted values for all relevant parameters in the parameter table are automatically set.
- The ATPS BTPS correction and the CO2 correction are deactivated.

2. Click on "**Measurement**" and select "**Diffusion SB Realtime**".



**Note:** Confirm correct settings, select "**Settings**" and then "**Program Settings**" from top menu bar. The "**Nonmixing pump dead space**" should = 0 mL and the "**Mixing pump dead space**" = 200 mL

3. Click <F1> "**Start**" to begin the control measurement and wait for zeroing to finish.  
(The syringe should NOT be connected to the system during zeroing phase.)



4. Connect the QM Syringe 3L with Ventilator with MicroGard™ filter to the breathing circuit and pump slowly.  
(Check that the collar on the syringe is correctly set to the 3L position and fitted securely.)

5. After 5 slow and regular pump strokes (3L), a horizontal red dashed line is displayed.



6. With handle extended, click <F1> "**Maneuver**", then push the piston completely in.  
(This simulates the full exhalation prior to the inhalation of the test gas.)



7. Pull the piston completely out (3L inhalation) and wait for 15 seconds - **Press the switch** in the knob on the syringe shaft during this (15s) phase for internal gas mixing.



8. After the 15-second breath hold time (BHT), push the piston completely in (3L exhalation). (This simulates the "Exhalation" of the test gas after BHT; let go of the switch.)

9. Results for the **3L DLCO Check** will be displayed after a few seconds

ATS/ERS expected values: **VA = 2.70-3.30 L** and **DLCO\_SB < 0.5ml/min/mmHg**

If needed, edit Parameter Table to add parameters 'VA\_SB' and 'DLCO\_SB'

		Pred	LLN	ULN	Best	Tr 1	Tr 2	Tr 3
DLCO_SB ml/(min*mmHg)					«0.07	«0.07		
VA_SB (B)	L	3.00	2.70	3.30	3.00	3.00		
IVC_SB	L	3.00	2.92	3.08	2.99	2.99		

<< To demonstrate analyzer linearity, repeat the quality control measurement at 2 Liters (below). >>

## B. DLCO Check with 2L of test gas (monthly per ATS)\*\*

1. Patient Search: select the patient with ID: "SeS QM 2", and then "Add New Visit".



Note: The 2L DLCO Check requires the movement of the collar during the measurement.

- Start: Adjust the collar on syringe shaft to the 2L position fitted securely in the 2nd hole
- During BHT: The collar will be moved back to 3L position during the 15 second breath hold.

2. Click on "Measurement" and select "Diffusion SB Realtime"



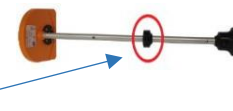
3. Click <F1> "Start" to begin the control measurement.



(The syringe should NOT be connected to the system during zeroing phase.)

4. Connect the QM Syringe 3L with Ventilator with MicroGard™ filter to the breathing circuit.

(Confirm the collar on the syringe is correctly set to the **2L position** and fitted securely.)



5. Pump 5 full strokes (2L), slowly and regularly (wait for horizontal red dashed line)

6. With handle extended, click <F1> "Maneuver", then push the piston completely in.

(This simulates the full exhalation prior to the inhalation of the test gas.)



7. Pull the piston completely out (2L inhalation) and wait for 15 seconds - **Press the switch** in the knob on the syringe shaft during this (15s) phase for internal gas mixing.



**DURING the BHT, move the collar back to the 3L position on the syringe shaft!**



8. After the 15-second BHT, push the piston completely in (3L exhalation).

(This simulates the "Exhalation" of the test gas after BHT; let go of the switch).

9. Results for the **2L DLCO Check** will be displayed after a few seconds

ATS/ERS expected values:

**VA = 2.70-3.30 L** and

**DLCO\_SB < 0.5 ml/min/mmHg**

		Pred	LLN	ULN	Best	Tr 1	Tr 2	Tr 3
DLCO_SB ml/(min*mmHg)					«0.06	«0.06		
VA_SB (B)	L	3.00	2.70	3.30	2.97	2.97		
IVC_SB	L	2.00	1.94	2.06	2.00	2.00		

**\*\*IMPORTANT: Flush the syringe with at least 10 full pump strokes in between each measurement to sufficiently clear residual test gas from the syringe and MicroGard™ filter.**

**\*\*Successful DLCO Checks at 3L and 2L are needed to demonstrate DLCO gas analyzer linearity.**