CLAIMS

1. An apparatus for delivery of a gases flow to a user, the apparatus comprising:

a first inlet for receiving a supplementary gases flow,

a second inlet configured to receive a supplementary gases flow,

a blower to receive a gases flow from one or both of the first inlet and second inlet and generate a gases flow for delivery to the user,

a first flow path and second flow path for guiding a gases flow from the first inlet and second inlet respectively to the blower,

a valve and a sensor each located within the second flow path, and

a controller configured to

detect the disconnection of a gases source from the second inlet or the cessation of provision of a supplementary gases flow through the second inlet, and

respond by operating the valve to close the second flow path.

2. The apparatus of claim 1, wherein the controller detects the disconnection of a gases source from the second inlet or the cessation of provision of a supplementary gases flow through the second inlet based on a signal received from the sensor located within the second flow path.

3. The apparatus of claim 1 or 2, wherein subsequent to detecting the disconnection of a gases source from the second inlet or the cessation of provision of a supplementary gases flow through the second inlet the controller triggers a first alarm.

4. The apparatus of claims 1 or 2, wherein subsequent to detecting the disconnection of a gases source from the second inlet or the cessation of provision of a supplementary gases flow through the second inlet the controller triggers a first alarm and operates the valve to a closed position to shut the second flow path.

5. The apparatus of claim 3 or 4, wherein the first alarm indicates that a gases source has been disconnected from the second inlet and/or that a supplementary gases flow has ceased to be provided through the second inlet.

6. The apparatus of any one of claims 3 to 5, wherein the apparatus further comprises a gases composition sensor to measure a concentration of one or more supplementary gases within the gases flow for delivery to the user.

7. The apparatus of claim 6, wherein the gases composition sensor is located downstream of the blower.

8. The apparatus of claim 6 or 7, wherein subsequent to responding by operating the valve to a closed condition and triggering the first alarm the controller performs the step of comparing a supplementary gas concentration sensed by the gases composition sensor to a threshold of supplementary gas concentration.

9. The apparatus of claim 8, wherein there is a time delay between a) the step of detecting the disconnection of a gases source from the second inlet or the cessation of provision of a supplementary gases flow through the second inlet and b) the step of comparing the sensed concentration against the threshold of supplementary gas concentration.

10. The apparatus of claim 8, wherein the controller operates the valve to close the second flow path and wherein there is a time delay between the step of operating the valve and the step of comparing the sensed concentration against the threshold of supplementary gas concentration.

11. The apparatus of any one of claims 8 to 10, wherein the threshold of supplementary gas concentration comprises a decaying threshold from an initial threshold of supplementary gas concentration which is above a second inlet supplementary gases concentration when supplementary gases are being supplied through the second inlet, and to a final threshold of supplementary gas concentration which is below a minimum supplementary gases concentration when supplementary gases are supplied through the first inlet and above an ambient air concentration of the supplementary gas, and the threshold of supplementary gas concentration decays at a rate slower than an expected rate of flushing of second inlet supplementary gases from the apparatus.

12. The apparatus of any one of claims 8 to 11, wherein if the sensed supplementary gas concentration exceeds the threshold of supplementary gas concentration the controller determines that a supplementary gases flow is being provided through the first inlet.

13. The apparatus of claim 12, wherein subsequent to determining that a supplementary gases flow is being provided through the first inlet the controller operates the apparatus in a first mode, and the first mode is dependent on the supply of supplementary gases from the first inlet.

14. The apparatus of claim 12, wherein if the controller determines that a supplementary gases flow is being provided through the first inlet the controller triggers a second alarm, and the second alarm optionally indicates that a supplementary gases flow is being provided through the first inlet.

15. The apparatus of claim 14, wherein the second alarm indicates that the apparatus may be operated in a first mode, wherein the first mode is dependent on the supply of supplementary gases from the first inlet.

16. The apparatus of claim 15, wherein the second alarm either includes a prompt by which an operator may instruct the apparatus to be operated in the first mode and/or indicates that the apparatus will be operated in the first mode.

17. The apparatus of any one of claims 13 to 16, wherein in the first mode a closed loop gas control function may not be activated.

18. The apparatus of any one of claims 8 to 13, wherein if the sensed supplementary gas concentration does not exceed the threshold of supplementary gas concentration the controller determines that a supplementary gases flow is not being provided through the first inlet and the controller operates the apparatus in a second mode wherein the controller operates the valve to control a supplementary gases flow delivered through the second inlet.

19. The apparatus of claim 18, wherein the operation of the apparatus in the second mode is dependent on the controller determining that a supplementary gases flow is being provided to the second inlet, and the controller determines that a supplementary gases flow is being provided to the second inlet if a sensed value from the sensor within the second flow path is above a sensor threshold.

20. The apparatus of claim 18 or 19, wherein in the second mode a closed loop gas control function may be activated.