



Your gateway to a world

of miniature fluid control

Pneuchange Mk.3 Series

Automatic Gas Cylinder Change-Over Unit



Installation and operating instructions
All PC, PC-VFC, PC-VFC/ACHRO & PC/HER variants

Pneuchange has been designed for CO₂ and other inert gases

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»»» INSTALLATION

Pneuchange can be installed at any point in the gas supply lines between the gas bottle regulators and the equipment being served, most conveniently situated where the operator can monitor it's operation. Pneuchange can be free-standing on a horizontal surface or wall mounted.

This unit will release small amounts of gas into the working area when the automatic change-over takes place, when the outlet regulator is adjusted. Suitable ventilation must be present at all times when the unit is in use.

Pneuchange can be wall mounted on suitable screws (not supplied) secured in keyholes as detailed in Fig.1.

Please Note: Opening the unit will invalidate the warranty.

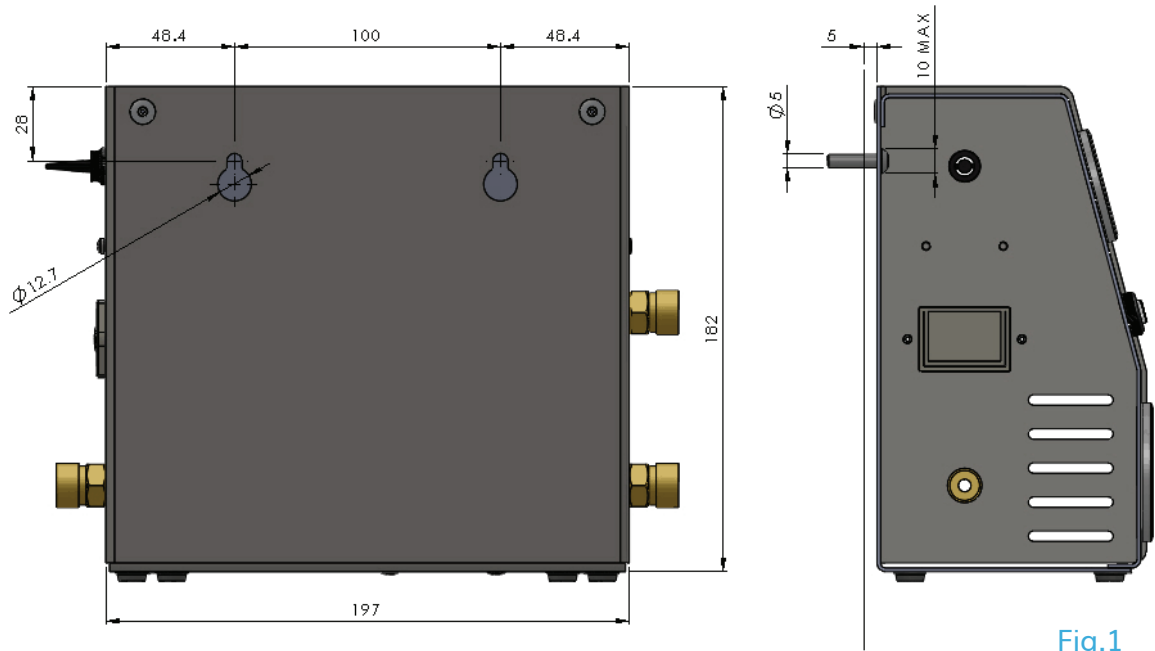


Fig.1

»»» CONNECTING GAS SUPPLIES

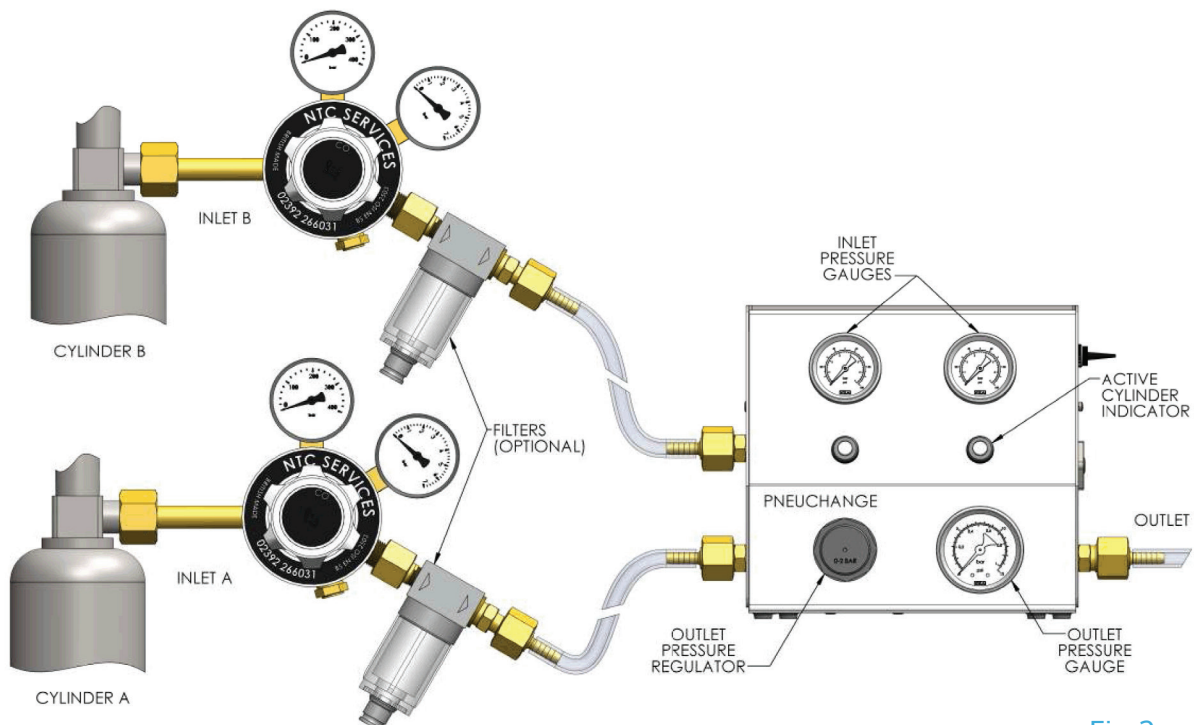


Fig.2

Gas cylinders feeding Pneuchange units must be fitted with suitable regulators to reduce the supply pressure to less than 6.9bar [100psi]. The range of NTC regulators are recommended.

Pneuchange is fitted with 3/8" BSPP male hose coupler ports to which standard UK regulator hosedails can be fitted. Hosedails for 6.4mm [1/4"] ID, hose are supplied. Other sizes can be purchased separately. For best results CFILT filters should be fitted to the inlet ports to prevent gas borne particles fouling internal valves. (See page 5).

Hoses should be secured with "Jubilee"® or other suitable clips. Adaptors to connect Pneuchange to alternative pipework are listed on page 5.

The 3/8" BSPP port connectors are designed to seal between the faces of the convex hose coupler and the concave port without sealant. No sealant paste or PTFE tape necessary. Connect supply pipework to inlet ports.

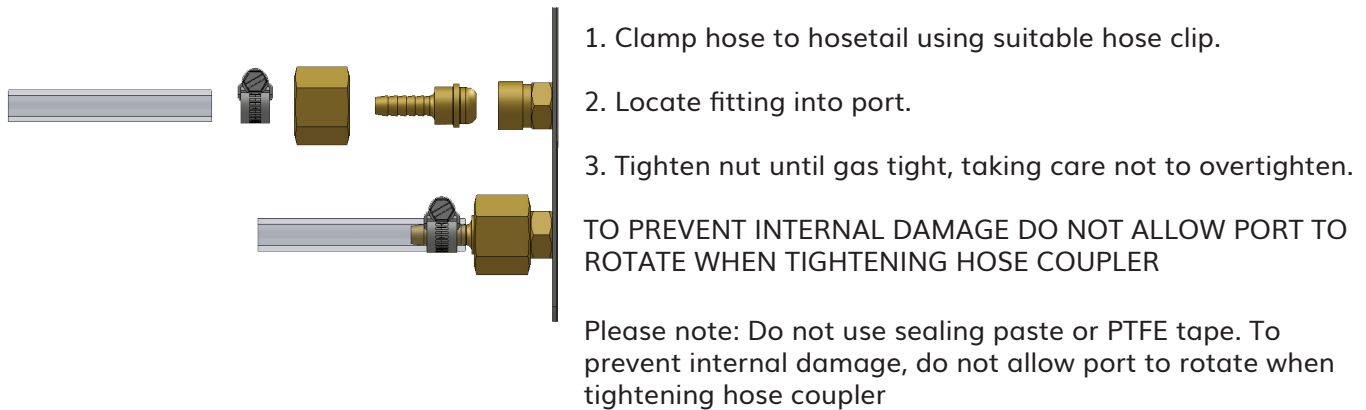


Fig.3

OPERATION

Starting with two full cylinders regulated down to between 3.1 to 6.9bar [45 to 100psi], ensure Pneuchange inlet gauges indicate cylinder regulator outlet pressures. Set the Pneuchange outlet pressure to that required by the equipment being served. This will be found in the manufacturer's instructions. The unit will feed from the first connected cylinder until this exhausts then the unit will automatically feed from the other cylinder.

On replacing the empty cylinder **the unit will continue to feed from the currently active cylinder** until this is exhausted and the sequence will then repeat. No manual resetting is required.

Pressure gauges should not be operated continuously above 70% of scale

ALARM FACILITY

Pneuchange PC and PC/HER variants are fitted with an audible changeover alarm operated from a 9 volt PP3 type battery or equivalent. It is accessed via the battery drawer on the right hand side of the unit.

The alarm switch has two reset positions, one of which is constantly active.

- To use the alarm facility set the alarm switch to the inactive reset position.
- When cylinder changeover occurs, the alarm will sound.
- Switching to the opposite reset position will silence the alarm and set the unit for the next changeover alarm signal.
- Replace the empty cylinder as detailed above.

Please note: Alarm may sound prior to changeover

Setting the alarm to the 'off' position will remove the audible alarm facility, but Pneuchange will continue to change cylinders as required.

The Pneuchange alarm system detects differential pressure when Inlet B is active. The pressure switch requires minimum 1.4bar [20psi] rising pressure on side B to switch state before detecting 1.4bar [20psi] falling pressure as cylinder empties. **The alarm will not function if the unit inlet pressure is below 1.7bar [25psi].** When side B is active, supplied above 1.7bar [25psi] and the alarm switch is in the upper reset position, the alarm will remain silent until the supply pressure to port B falls to below 1.7bar [25psi].

WARRANTY AND SERVICING

The NTC range of equipment supplied by The West Group Ltd carries a 12 month warranty. No special maintenance is required. Any attempted repair by unauthorised parties will invalidate the warranty. In line with BCGA codes of practice, we recommend that changeover units, regulators and hoses are replaced after 5 years.

If the battery is replaced in PC or PVC/HER variants, ensure it is disposed of in manner compliant with WEEE regulations

PORT ADAPTORS

The following hoesetails and adaptors can be purchased separately.

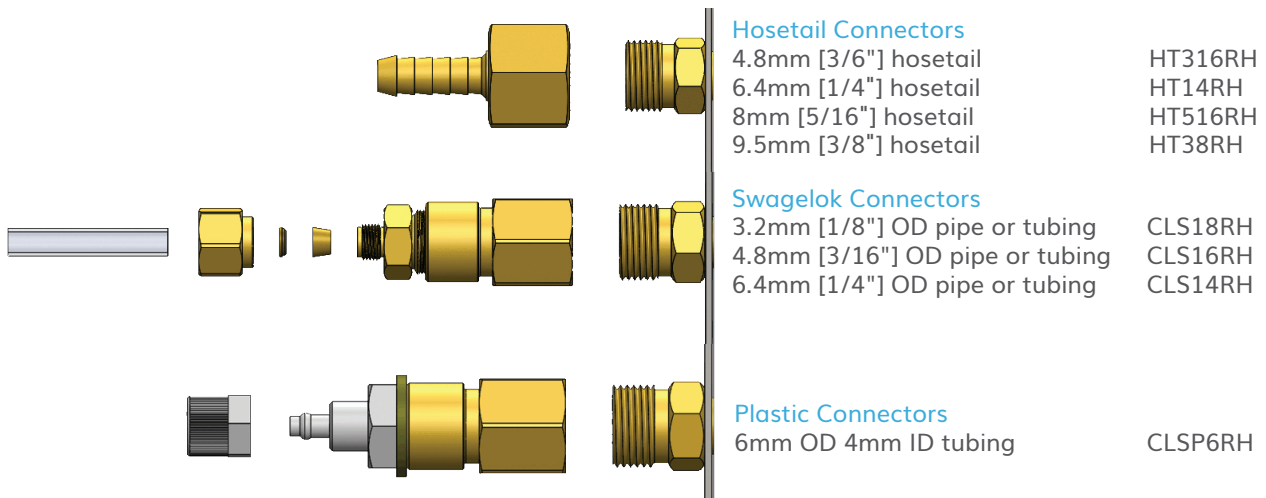
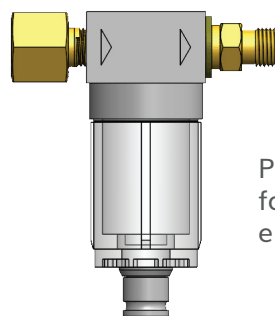


Fig.4

FILTER ASSEMBLY (recommended option)

Inlet filters fitted to regulator outlet ports prevent foreign particles in the gas supply becoming trapped in the valve or regulator seals, causing malfunction. Filters will prolong the life of your Pneuchange unit and can be purchased in pairs.



Filter Assy
(Part No.
CFILT38FR6RHLR)

Please note: Before removing the filter bowl for cleaning or renewal of filter element, ensure the inlet line pressure is vented.

Fig.5

»»» FREQUENTLY ASKED QUESTIONS

- Q. Does the Pneuchange unit require electrical power to work?**
A. The Pneuchange unit does not require mains electrical power to operate. PC and PC/HER variant pneuchange units have an on board 9V PP3 battery (supplied) which powers the integral alarm.
- Q. What does the '-VFC' part number suffix mean?**
A. Pneuchange units with a VFC suffix are fitted with Volt Free Contacts (VFC) for use with remote alarms. A battery is not required and the integral buzzer is not present. The pneuchange unit is supplied with a quick release socket connector.
- Q. Do you have a remote alarm for use with PC-VFC and PC-VFC/ACHRO variants**
A. Please contact us if this is of interest.
- Q. What is the maximum input pressure to a Pneuchange unit?**
A. 6.9bar [100psi].
- Q. Do I need to use a pressure regulator on the gas cylinder?**
A. Yes. As the maximum input pressure for a Pneuchange unit is 100 psi, a regulator needs to be fitted to the gas cylinder. CO2 gas cylinders are typically 50 to 60bar [725 to 870psi] and nitrogen is typically 250bar [3625psi].
- Q. What are the input and output port connections?**
A. The input and output port connections are 3/8" BSPP with a 60 degree cone. Pneuchange units are supplied with brass hosetails to suit 6.4mm [1/4"] ID hose. Other size hosetails and adaptors are available to purchase separately.
- Q. What gases can I use the Pneuchange unit with?**
A. Pneuchange is designed for use with inert gases.
- Q. Can I use the Pneuchange unit with Oxygen?**
A. No. The Pneuchange unit is not suitable for use with oxygen.
- Q. Can I use the Pneuchange unit for Hydrogen?**
A. No. Hydrogen is a flammable gas and the pneuchange unit is not suitable for flammable gases.
- Q. Can the Pneuchange unit be used with CO2?**
A. Yes. The Pneuchange unit was specifically designed to be used with inert gases including CO2.
- Q. What is the most common application for the Pneuchange units?**
A. Pneuchange units are most commonly used to provide a continuous supply of CO2 to CO2 incubators in laboratories.
- Q. When should I replace my Pneuchange units?**
A. In line with BCGA recommendations, we recommend that all Pneuchange units and associated gas control equipment is replaced every 5 years.
- Q. Can you service/repair my broken Pneuchange unit?**
A. As the pneuchange units contain so many components, it is not cost effective for us to service pneuchange units.

»»» FREQUENTLY ASKED QUESTIONS CONTINUED

Q. Why are the needles in the pressure gauges bent?

A. If a pressure supply of over 6.9bar [100psi] has been applied to the Pneuchange unit, this will overpressurise the components including the gauges. The pneuchange unit must not be used and should be replaced.

Q. Why will the integral alarm not sound?

A. Ensure that a fully charged battery is correctly fitted into the battery compartment. Ensure the alarm switch is in the correct position. (Centre position turns alarm off). Consult manual for full details.

Q. How do I dispose of the battery once it has run out?

A. Batteries should be disposed of in accordance with WEEE directives if inside the EU. For advice, contact your waste disposal supplier.

Q. Can the Pneuchange unit be used for medical applications?

A. The Pneuchange unit is not designed for contact with patients.

Q. Does it matter which inlet port is utilised first?

A. No, the Pneuchange will automatically feed from the first connected cylinder.



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