


1 For your safety


1.1 General safety statements


- Before using this product, carefully read the Instructions for Use.
- Strictly follow the Instructions for Use. The user must fully understand and strictly observe the instructions. Use the product only for the purposes specified in the Intended Use section of this document.
- Do not dispose of the Instructions for Use. Ensure that they are retained and appropriately used by the product user.
- Only fully trained and competent users are permitted to use this product.
- Comply with all local and national rules and regulations associated with this product.
- Only trained and competent personnel are permitted to inspect, repair and service the product. Dräger recommends a Dräger service contract for all maintenance activities and that all repairs are carried out by Dräger.
- Properly trained service personnel must inspect and service this product as detailed in the maintenance section of this document.
- Use only genuine Dräger spare parts and accessories, or the proper functioning of the product may be impaired.
- Do not use a faulty or incomplete product, and do not modify the product.
- Notify Dräger in the event of any component fault or failure.
- Before occupational use of this respirator a written respiratory protection program must be implemented meeting all the local government requirements. In the United States employers must comply with OSHA 29 CFR 1910.134 which includes medical evaluation, training, and fit testing.

1.2 Definitions of alert icons

Alert icons are used in this document to provide and highlight text that requires a greater awareness by the user. A definition of the meaning of each icon is as follows:

 **WARNING**
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION**
Indicates a potentially hazardous situation which, if not avoided, could result in physical injury or damage to the product or environment. It may also be used to alert against unsafe practices.

 **NOTICE**
Indicates additional information on how to use the product.

2 Description

2.1 Product overview

This variant of the Dräger PAS Colt Series provides respiratory protection for working in a contaminated environment using an airline (supplied airline respirator – SAR). During use, the PAS Colt is connected to a breathing-quality independent air supply.

The features of the equipment are:

- The carrying system is a bandolier shoulder harness and waist belt.
- The lung demand regulator (LDR) has a reset button (Fig 1, Item 1) that switches off the air flow through the regulator, and a purge button (Fig 1, Item 2) that can be used to deliver an additional airflow into the face mask when required by the wearer during airline use. The holder (Fig 2, Item 1) provides a stowage point to protect the regulator coupling and O-ring against damage when it is not fitted in the face mask.
- The airline connector (Fig 2, Item 3) is a male coupling that is used to connect an independent air supply for SAR (supplied airline respirator) use.
- A low-pressure whistle is fitted on the airline manifold (Fig 2, Item 2) of some variants of this product. If the PAS Colt is fitted with a low-pressure whistle, the whistle sounds during airline use to warn the wearer that the independent air supply has fallen below the required pressure. See the technical data (Section 9) for the whistle operating pressures.

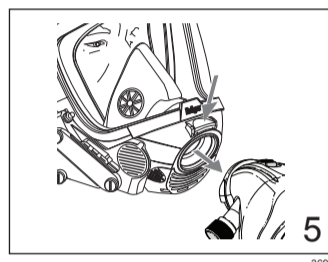
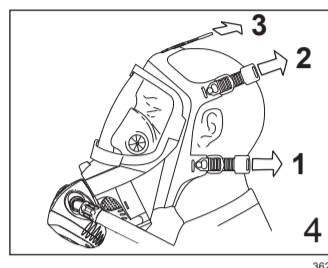
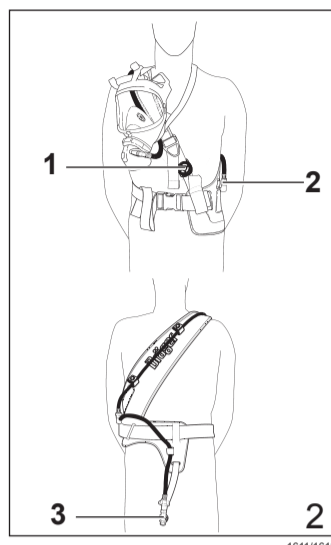
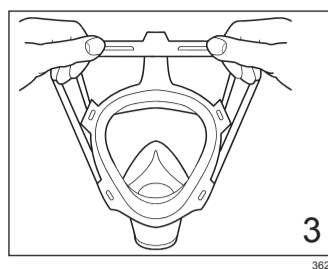
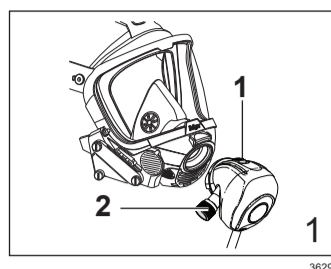
2.2 Intended use

When this product is used with an approved face mask and independent air supply, it provides the wearer with respiratory protection for working in contaminated conditions. It is intended for use in applications where a high level of respiratory protection is required.

The face mask and other accessories used with this product must be certified Dräger components, assembled in an approved configuration; otherwise the operation of the device may be impaired. It is essential that flushing and non-flushing face masks and lung demand regulators should not be mixed (i.e. only a flushing-type face mask should be used with a flushing-type lung demand regulator). Contact Dräger for further information.

2.3 Limitations on use


This product is not suitable for use in IDLH (immediately dangerous to life and health) atmospheres, and is not approved for use in CBRN applications.



2.4 Approvals

The PAS Colt Series of airline respiratory protection equipment conforms to the 19C requirements of NIOSH. This product is approved for use as a supplied airline respirator (SAR).

3 Use

 **WARNING**
The airline air quality shall meet the requirements for breathing air according to CGA G-7.1 Grade D or higher quality.

Before using airline equipment, ensure that the independent air supply meets the air quality requirements and complies with pressure, flow and hose length requirements in the technical data (see Section 9), and has been issued with a permit for use if necessary.


If using a PAS Colt without an integral low-pressure whistle, Dräger recommend that a low-pressure warning device is fitted to the independent air supply.

3.1 Preparation for use

3.1.1 Visual inspection

Carry out a visual inspection, checking the full breathing equipment including all component parts and accessories. Check that the equipment is clean and undamaged, paying particular attention to pneumatic components, hoses and connectors. Typical signs of damage that may affect the operation of the breathing apparatus include impact, abrasion, cutting, corrosion and discoloration. Report damage to service personnel and do not use the apparatus until faults are rectified.

3.1.2 Functional testing

 **WARNING**
If PAS Colt fails to meet any of the standards or parameters described in the functional tests, or if an immediate leak is evident, there is a system fault. Report the fault to trained service personnel or contact Dräger. Do not use the breathing apparatus until the fault condition is rectified.

Leak and flow test

1. Press the reset button (Fig 1, Item 1) of the lung demand regulator.
2. Connect the independent air supply to the male coupling (Fig 2, Item 3). If the independent air supply air supply has a shut-off valve, open the valve.
 - There should be no audible leak. If there is any leak, investigate and repair the leak before use. If necessary, use a soapy solution to locate the leak.

 **WARNING**
Do not direct the airflow on to the face, eyes or skin.

3. Press the purge button (Fig 1, Item 2) for 3 to 5 seconds. An unobstructed airflow should flow from the outlet of the lung demand regulator.
4. Isolate and disconnect the independent air supply.
5. Press the purge button (Fig 1, Item 2) to vent the system and then press the reset button (Fig 1, Item 1) to switch off positive pressure.


3.1.3 Putting on the PAS Colt (ready position)


Refer also to Fig 2 which shows the PAS Colt worn in the ready position.

1. Open the waist belt buckle and fully extend the waist and shoulder strap.
2. Place the left arm through the shoulder harness, taking the harness over the head and on to the right shoulder, positioning the strap diagonally across the body.
3. Loop the waist belt around the waist and fasten the buckle – do not tighten.
4. Grip the airline manifold (Fig 2, Item 2) with the left hand and lift until the waist belt is in line with the waist. Then tighten the waist belt strap until the equipment is secure and comfortable on the waist. Pull down to adjust the shoulder strap.
5. Inspect the face mask as defined in the relevant instructions for use.
6. Check that the face mask port and the regulator O-ring clean and undamaged.
7. Remove the lung demand regulator from the holder and press it into the port of the face mask until it latches in position. Check the attachment by gently attempting to pull the coupling apart.
8. Put the neck strap of the face mask over the head then insert the neck strap stud into the hole in the centre strap of the head harness.

3.1.4 Putting on the face mask

1. Press the reset button (Fig 1, Item 1) of the lung demand regulator to switch off the positive pressure.
2. Connect the independent air supply to the male coupling (Fig 2, Item 3). If the independent air supply air supply has a shut-off valve, open the valve.

 **WARNING**
Correct fit of the face mask can only be achieved if the complete face mask seal makes contact with skin. Head hair, facial hair (including beard stubble and sideburns), earrings, other facial piercings and normal spectacles will interfere with the face mask seal and are not permitted in the sealing area. Additionally, head hair that could affect the face mask fit (buns, pony-tails, hairpieces, etc.) is not permitted.

 **NOTICE**
Refer also to the face mask instructions for use.

3. Detach the neck strap stud from the center strap of the head harness.
4. Spread the head harness (Fig 3). Place the chin into the chin cup of the face mask and pull the harness over the head locating the harness center plate on back of the head.
5. Referring to Fig 4, tighten both lower (1) and then upper straps (2) evenly towards back of the head. If necessary, tighten the center strap (3). The wearer's first inhalation after achieving a face seal will automatically switch on the air supply into the face mask.
6. Check that the head has a full range of movement without pulling against the regulator hose. If any resistance to movement is felt, readjust the hose routing and then recheck. If resistance is still felt, **do not** use the breathing apparatus and contact Dräger.


3.1.5 Function check

1. Isolate the independent air supply (close the valve or disconnect) and breathe normally to empty the system of air. When empty, the face mask should hold on to the face to indicate a positive seal.
2. Immediately reapply the independent air supply and breathe normally.
3. Inhale and hold your breath – there should be no audible leak. If a leak is detected, readjust the head harness and retest.
4. Resume breathing – exhaled air should flow easily out of the exhalation valve.
5. Momentarily press the purge button (Fig 1, Item 2) to check for additional airflow.

When the function check is satisfactorily completed, breathe normally and proceed to the working area.

3.2 During use

3.2.1 Escape procedure

 **NOTICE**
If the PAS Colt is fitted with a low-pressure whistle, during airline use the whistle sounds to indicate that the independent air supply has fallen below the required pressure. If the whistle sounds and then stops before the escape procedure is started, the air supply pressure could have been restored. The wearer **must** confirm that the correct pressure (87 to 125 psi) is available, or escape as described below.

If the independent air supply fails, breathe normally and immediately proceed as follows:

1. Disconnect the independent air supply from the PAS Colt.
2. Remove the lung demand regulator from the face mask (Fig 5) and place it in the holder (Fig 2, Item 1).
3. Immediately leave the hazardous area by the shortest and safest escape route.

3.3 After use

WARNING
Do not remove the equipment until in safe area, clear of the hazard.

CAUTION
Do not drop or throw down equipment as damage could occur.

- Loosen the face mask straps. Remove the face mask and fully extend all of the straps of the head harness.
- After airline use only (not required after an escape):
 - Disconnect the independent air supply from the PAS Colt. Refit the cap on to the airline connector.
 - Press the purge button (Fig 1, Item 2) to fully vent the system.
 - Remove the lung demand regulator from the face mask (Fig 5) and place it in the holder (Fig 2, Item 1).
- Unbuckle the waist belt, lift the shoulder strap buckle to loosen the harness and then remove the equipment.
- Carry out the after use maintenance tasks in the maintenance table (see Section 5.1).

4 Troubleshooting

The troubleshooting guide shows fault diagnosis and repair information applicable to breathing apparatus users. Further troubleshooting and repair information is available in instructions for use supplied with associated equipment (e.g. face mask).

Contact service personnel or Dräger when the remedy information indicates a service task, or if the symptom remains after all remedy actions have been attempted.

Symptom	Fault	Remedy
Air leak or failed leak test	Loose or dirty connector	Disconnect, clean and reconnect couplings and retest
	Faulty hose or component	Substitute user replaceable accessories and retest
Air leak from the outlet hose connection at the airline manifold (safety relief valve)	Faulty O-ring, retainer, spring or airline manifold	Service task
Poor sounding whistle (if fitted)	Whistle dirty	Clean whistle flute and retest
Whistle not functioning correctly (if fitted)	Activation mechanism fault	Service task

5 Maintenance

5.1 Maintenance table

Service and test the breathing apparatus, including out-of-use apparatus, in accordance with the maintenance table. Record all service details and testing. Refer also to the Instructions for Use for the lung demand regulator, face mask and other associated equipment.

Additional inspection and testing may be required in the country of use to ensure compliance with national regulations.

Component/System	Task	After use	Every month	Every year
Complete equipment	Visual inspection (see Section 3.1.1)	○	○	
	Clean and disinfect (see Section 5.2)	○		
	Functional test (see Section 3.1.2)	○	○	
	Flow and static tests (see Note 2)			○
Lung demand regulator O-ring	Check and lubricate if necessary (see Note 1)	○		

Notes

○ Dräger recommendations

- Lightly lubricate the O-ring of the lung demand regulator as required (recommended lubricant is Molykote 111). Products other than the recommended lubricant are not tested and may damage the equipment.
- These maintenance tasks may only be carried out by Dräger or trained service personnel. Details of the tests are contained in the technical manual which is issued to service personnel that have attended a relevant Dräger care and maintenance course.

5.2 Cleaning and disinfecting

CAUTION
Cleaning agents and disinfectants listed below are not manufactured by Dräger and have been reviewed only for compatibility when used to clean or disinfect the subject Dräger product(s). Read and comply with all instructions for use provided by the manufacturers of such agents and disinfectants. Dräger expressly disclaims all responsibility for any damage, personal injury or loss resulting from the use of such agents or disinfectants.

Do not exceed 86 °F (30 °C) for washing, disinfecting and rinsing solutions. Do not exceed 140 °F (60 °C) for drying, and remove components from the drying facility immediately when dry. Drying time in a heated dryer must not exceed 30 minutes.

Do not immerse pneumatic in cleaning solutions or water.

If water is trapped and then freezes inside the pneumatic system of the breathing apparatus (such as the lung demand regulator), operation will be impaired. Prevent any liquid from entering, and thoroughly dry the breathing apparatus after cleaning to prevent this from occurring.

Refer also to the instructions for the face mask and other associated equipment.

5.2.1 Manual cleaning of the breathing apparatus (USA)

Cleaning and disinfecting materials:

- Cleaning agent – 1008 Green Liquid Hand Dish Wash
- Disinfecting agent – 800 Spur-Tex Disinfectant Cleaner-Deodorant (concentration: 1.6 % (2 fl oz per gallon))
- Use only clean lint-free cloths.

- Prepare cleaning solution as per manufacturer's instructions. Clean the breathing apparatus manually using a cloth moistened with cleaning solution to remove excess dirt.
- Prepare disinfecting solution as per manufacturer's instructions. Apply to all internal and external surfaces, ensuring that all surfaces remain visibly wet for 15 minutes.
- Rinse all components thoroughly with clean water to remove all cleaning and disinfecting agents.
- Dry all components using a dry cloth, in a heated dryer or in air.
- Contact service personnel or Dräger if disassembly of pneumatic or electronic components is required.

5.2.2 Manual cleaning of the breathing apparatus (Canada)

Cleaning and disinfecting materials:

- Cleaning agent – mild soap solution
- Disinfecting agent – Neutral Disinfectant Cleaner (concentration: 0.5 % (0.5 fl oz per gallon or 15 ml per 3.785 liters))
- Use only clean lint-free cloths.

- Prepare cleaning solution as per manufacturer's instructions. Clean the breathing apparatus manually using a cloth moistened with cleaning solution to remove excess dirt.
- Prepare disinfecting solution as per manufacturer's instructions. Apply to all internal and external surfaces, ensuring that all surfaces remain visibly wet for 10 minutes.
- Rinse all components thoroughly with clean water to remove all cleaning and disinfecting agents.
- Dry all components using a dry cloth, in a heated dryer or in air.
- Contact service personnel or Dräger if disassembly of pneumatic or electronic components is required.

6 Storage

- Store the equipment between 5 °F and 77 °F (-15 °C and +25 °C). Ensure that the environment is dry, free from dust and dirt, and does not subject the equipment to wear or damage due to abrasion. Do not store the equipment in direct sunlight. Note also the following:
- Extend the shoulder strap, the waist belt and the head harness straps of the face mask.
- For storage, place the face mask in a protective bag (contact Dräger for supply of a suitable bag).
- Route rubber hoses in such a way that the bend radius is not too acute and the hose is not stretched, compressed or twisted.
- Fix the apparatus securely to any raised mounting point to prevent it from falling.
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7 NIOSH Cautions and limitations

- D – Air-line respirators can be used only when the respirators are supplied with respirable air meeting the requirements of CGA G-7.1 Grade D or higher quality.
- E – Use only the pressure ranges and hose lengths specified in the User's Instructions.
- I – Contains electrical parts that may cause an ignition in flammable or explosive atmospheres.
- J – Failure to properly use and maintain this product could result in injury or death.
- M – All approved respirators shall be selected, fitted, used, and maintained in accordance with MSHA, OSHA, and other applicable regulations.
- N – Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.
- O – Refer to User's Instructions and/or maintenance manuals for information on use and maintenance of these respirators.
- S – Special or critical user's instructions and/or specific use limitations apply. Refer to User's Instructions before donning.

7.1 S – Special or critical user's instructions

- Approved for use at temperatures above -25 °F (-31.7 °C).
- If the independent air supply fails during use, immediately disconnect the independent air supply, remove the lung demand regulator from the face mask and proceed to fresh air.
- The independent air supply must meet the following criteria:
 - Airline pressure and flow requirements: pressure 87 to 125 psi, airflow rate at least 550 liters/minute.
 - Airline hose requirements: 5 feet to 300 feet of Dräger approved hose. (**Important note:** The airline hose must not be made up of more than 12 individual hoses.)

8 Disposal

When required, dispose of the PAS Colt in accordance with national or local regulations for waste disposal.

9 Technical data

- Lung demand regulator to face mask connection: push-in connector.
- Independent air supply:
 - Airline pressure and flow requirements: pressure 87 to 125 psi, airflow rate at least 550 liters/minute.
 - Airline hose requirements: 5 feet to 300 feet of Dräger approved hose. (**Important note:** The airline hose must not be made up of more than 12 individual hoses.)
- Low-pressure whistle activation pressure (if fitted): commences at 72.5 to 58 psi; ceases at 25 to 0 psi.

10 Contact details

Any issues with the equipment, including damage, malfunction, or failure of the breathing apparatus that may present a hazard to the user should be reported to Dräger US Customer Service – Phone 1-800-858-1737.

Contact with the certification organization may be reached at: NIOSH, NPPTL – Phone 1-412-386-4000