Chapter 3
Operation of Breathing Apparatus

To ensure their safe and efficient operation, BA sets need to be properly operated and maintained.

This chapter covers:
- pre-operational checks and tests;
- correct donning, starting-up and closing down; and
- after-use testing and maintenance.

Pre-operational Checks and Tests

Pre-operational checks and regular tests are designed to ensure that BA sets are ready for immediate operational use. Testing should occur at least once per month.

The checks and tests involve:
- checking the contents of the cylinder;
- performing a high pressure test;
- checking the low pressure warning whistle;
- ensuring that the harness straps are fully released and all the twist are removed;
- testing the Distress Signal Unit; and
- checking all auxiliary equipment.

High pressure test

To conduct a high pressure test, follow these steps.

1. Open the cylinder valve and listen for audible leaks. Allow at least one minute for pressure stabilisation.

2. Check the pressure gauge reading; if it is less than 160 bar replace it with a new cylinder.

3. Close the cylinder valve.

4. Note the pressure. The pressure must not drop more than 10 bar in one minute.

5. Record the pressure drop during the test on the Compressed Air Breathing Apparatus record card for the set.
Recording the checks and tests

On completion of the checks and tests, record the date and relevant information on the CABA record card.

Donning, Starting-up and Closing-down Procedures

The following three terms are used in relation to BA operations.

- **Donning** – placing the BA set on the back and carrying out preliminary checks;
- **Starting-up** – fitting the BA face mask, conducting the final checks and getting to work while wearing breathing apparatus.
- **Closing-down** – resetting the BA into standby mode (where applicable) and removing the face mask.

Often donning and starting-up are combined. However, firefighters may be told to don BA but not to start-up until advised further e.g. when a working BA team is about to be relieved.

When donning, starting-up and closing-down, current Fire Ground Practices (FGPs) **must** be followed.

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**Low pressure test**

To conduct a low pressure test, follow these steps.

1. On completion of the high pressure test, open the bypass valve very slightly to slowly vent the air from the system.
2. Check the low pressure warning whistle sounds clearly at approximately 42 bar.

**Check Distress Signal Unit**

To conduct a DSU test, follow these steps.

1. Check the operation of the pre-alarm and motion sensor.
2. Check the full alarm activation.
3. Check the manual alarm activation.

Refer to Chapter 4, Safety Equipment.
After-use Maintenance and Testing of Equipment

After a BA set has been used at an incident or training, the following maintenance is to be performed.

- Rinse the facemask with fresh water to remove the majority of particles and contaminants.
- Mix disinfectant in a suitable container (as per the instructions on the container – it is essential that the correct ration of disinfectant is used) and completely submerge the mask for 10 minutes. Agitate if possible. **Do not exceed 10 minutes.**
- Thoroughly rinse the mask in clean water. Running water can be applied directly to the exhalation valve area. Agitation under water can also be used to the same effect.

![Figure 19 – rinsing the exhalation valve](image)

- Using the neck strap, hang the mask vertically. This will aid in draining any moisture away from the exhalation valve. In the event that a set must be returned to operational stowage immediately, re-attach the mask to the BA set and allow to air-dry in the locker without the covers attached.

**Note:** non-approved heat drying equipment such as hair dryers are not to be used under any circumstances.

- Drain the mask of water; agitation can displace excess moisture. Gentle flexing of the mask rubber can aid in draining. Moisture can also be drawn from the mask with a lint-free cloth e.g. Chux®.
Notes
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Summary

- All BA sets need to be tested and maintained regularly to make sure they are ready for operational use.
- Procedures implemented are based on the manufacturers’ and CFA requirements.
- When donning, starting-up and closing down, current FGP must be followed.
Chapter 3
Self Assessment

Activities

Under supervision and in accordance with current CFA procedures:

- perform a pre-operational check/test;
- don and start-up a BA set;
- practice donning and starting-up until you can consistently do it correctly, smoothly and expeditiously;
- close down a BA set;
- demonstrate after-use maintenance and testing;
- complete the CABA record card; and
- complete your personal record card.

If you have any problems understanding the material or supplying satisfactory answers, see your supervisor for clarification and help.