

Introduction	2
General description	3
System description and operation	5
Features of the AfroxPac Escape Type Breathing Apparatus	9
Donning procedure during escape	13
Operating instructions for user at rest	17
Inspection and maintenance	18
Specifications	23
Ancillary / Accessory products	24
Training materials	24

INTRODUCTION

This manual serves to describe the **AfroxPac Escape Type Breathing Apparatus** and the proper use of the unit. Key components, their functions and correct donning procedures are explained and demonstrated. Daily care and inspection procedures are also discussed.

Legislation, as promulgated by the **Chief Inspector of Mines**, rules that all persons who may be dependent for survival on self-contained self-rescuers (**ResQpacs**) must be thoroughly trained in the operation and use of the unit. All training aids referred to in this manual are designed to meet the requirements of the **Department of Minerals and Energy**.

The **AfroxPac** has been developed to be carried on a belt around the waist. However, in some work categories it may not be possible to carry the unit on the belt. In such cases it may be carried on the chest by means of a specially designed chest harness. It can also be stored in specially designed protective boxes, manufactured from stainless steel and fixed to vehicles in such a place that is easily accessible to the user.

It is imperative for all persons proceeding underground to carry an **AfroxPac** as a means of securing their own safety in time of need. Special attention should therefore be taken to the contents of this manual.

Note: ResQpac is the generic name given to all body-worn escape type self-contained self-rescuers (SCSRs). The name self-contained self-rescuer is synonymous with ResQpac as used in this manual.

GENERAL DESCRIPTION

The AfroxPac is a self-contained closed circuit breathing apparatus capable of producing breathable air for a period of approximately 30 minutes at a breathing rate of 30 – 35 litres per minute. Its operation is completely independent of the surrounding atmosphere protecting the wearer by isolating him/her from potentially harmful or toxic gases.

The unit has been certified for use in mines by the Department of Minerals and Energy and the South African Bureau of Standards.

The apparatus produces oxygen on demand, i.e., with more physical activity it would generate enough oxygen to sustain that effort. Such activity would naturally affect the duration of the unit during actual use. Factors affecting the duration of the AfroxPac are:

- The amount of work required to escape. Low seam heights, steep inclines and irregular (undulating) foot walls increase the work required to escape. Less work results in greater duration.
- Physical condition or fitness of the user. A high heart rate, obesity, and age implies inferior levels of fitness. The fitter the user, the longer the duration.
- The user's mass. The lower the weight, the greater the duration.

- The user's breathing rate. The rate can be increased by excitement and fear. The lower the breathing rate, the greater the duration.
- The degree of training and familiarity with the equipment. The more training and experience a person has with an SCSR, the more his/her breathing will be controlled. If an escapee is familiar with a particular escape way, it may improve the mechanics of his/her escape. The better the person is trained and the more familiar he/she is with the escape route, the greater the duration.
- Talking can increase the resistance by allowing saliva to enter the breathing hose and possibly enter the chemical canister. Minimising talking and increasing swallowing ones saliva, increases the duration.

Note: All SCSRs place some limited stress on the user due to increased breathing resistance and the temperature of the inspired air. For this reason it is always advisable to limit the level of exertion, if possible, while wearing any SCSR.

WARNING: The AfroxFac was designed and approved solely as an exit and escape device. The AfroxFac is not intended as a rescue breathing apparatus. It is not designed or approved for fire-fighting or underwater breathing.