

RAS



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SCOTT
SAFETY

CONTENTS

WARNINGS	1
INTRODUCTION	2
APPROVALS	2
LIMITATIONS OF USE	2
BREATHABLE AIR	2
COMPRESSED AIR AIRLINE SUPPLIES	2
PERSONNEL TRAINING	2
SERVICING	2
SPARE PARTS AND ACCESSORIES	3
WARRANTY	3
TECHNICAL DESCRIPTION	3
GENERAL	3
FILTERS	3
DEMAND VALVE HOSE	3
DEMAND VALVE (DV)	3
PANASEAL / VISION 3 / PROMASK FACEMASK	3
BANDOLIER AND WAISTBELT HARNESS	4
PRE-USE AND MONTHLY CHECKS	4
INSPECTION	4
BANDOLIER WAISTBELT	5
DV & FACEMASKS	5
AIRLINE CHECKS	5
DONNING PROCEDURES	6
ATTACHING THE FILTER	6
DONNING THE BANDOLIER	6
FACEMASKS	6
NEGATIVE PRESSURE TEST	7
POSITIVE PRESSURE TEST	7
FACE SEAL TEST	8
DEMAND VALVE TEST	8
AIRLINE SUPPLY	8
WHILE IN USE	8
DOFFING	9
AFTER USE	10
CLEANING	10
CHECK APPARATUS	10
STORAGE	10
SCHEDULED MAINTENANCE	10
MONTHLY	10
ANNUALLY	10










PRE-OPERATIONAL WARNINGS

Please Read Carefully and Fully Understand

This manual is intended for use by personnel who have been trained in the use and care of compressed-air breathing apparatus, and **MUST NOT** be used as a self-teaching guide by untrained users. Failure to understand or adhere to the **RAS** user instructions may result in injury or death.

Scott Safety has taken great care to ensure that the information in this manual is accurate, complete and clear. However, Training and Technical Support Services will be pleased to clarify any points in the manual and answer questions on Scott Safety breathing apparatus.

The following warnings are in accordance with certifying authority requirements and apply to the use of breathing apparatus in general:

-  Breathing apparatus users must be fully trained in the use and care of self-contained, compressed-air breathing apparatus.
-  Ensure that the selection of the apparatus type is sufficient for the tasks being undertaken and the hazards likely to be encountered. Please refer to National Regulations for guidance.
-  Adequate protection may not be provided in certain highly hazardous atmospheres.
-  The apparatus must be tested and serviced in accordance with Section - Scheduled Maintenance and the notes in Section - Personnel Training and Servicing.
-  The quality of air used to supply and charge breathing apparatus must meet the requirements of EN 12021:1999. See Section - Introduction for details.
-  Ensure that a good seal can be obtained between the face and facemask. The wearing of beards, side-burns or spectacles may adversely affect the sealing of a facemask to the wearer's face.
-  The apparatus is not designed for use underwater.
-  This apparatus does not protect against carbon dioxide, carbon monoxide or other toxic gases and vapours.
-  RAS is not approved for use in flammable or explosive atmospheres.

DISCLAIMER

Failure to comply with these instructions or misuse of the apparatus may result in: death, injury or material damage, and invalidate any warranty or insurance claims.

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INTRODUCTION

APPROVALS

RAS apparatus is 'CE' marked in accordance with EEC Directive EC/686/1986.

It is approved to European Standard EN 14593-1:2005 (Respiratory Protective Devices - Compressed air line breathing apparatus with demand valve).

Facemasks are approved to EN136:1998.

Scott Safety is quality assurance approved to: ISO 9001.

Notified Body

BSI (0086)

Kitemark Court,
Davy Ave,
Knowlhill,
Milton Keynes,
MK5 8PP.
England

LIMITATIONS OF USE

RAS must only to be used with **Scott Safety** breathing apparatus **Facemasks**.

Only to be used by competent personnel trained by **Scott Safety** Instructors, or their approved agents.

DO NOT use with spectacle side arms, beards (or other facial hair), or clothing that may prevent the facemask forming a good seal with the face.

BREATHABLE AIR

Air used to supply or charge breathing air may be natural or synthetic and must comply with EN 12021:1999.

COMPRESSED AIR AIRLINE SUPPLIES

Air for use with compressed air airlines must conform to EN12021:1999.

Airline pressure must be between 5.0 - 9.0 bar (70 - 130psi). Airflow supply capacity for a single airline is given in Table 1. Generally - each additional wearer requires an extra 150 litres/minute, each additional pair of wearers requires 300 L/min for one wearer and 450 L/min for two wearers (see Table 1). All measurements must be taken at the wearer end of the airline. An airline flow tester (Article Number 1035978) is available from **Scott Safety**.

Example: for 8 users (4 pairs) the recommended flow is $4 \times (300 + 150) = 1800$ litres/minute.

Table 1 Wearer Air Consumption

No. of Wearers	Airflow (L/min.)
1	300
2	450
3	750
4	900

Airline hoses used with **Scott Safety** breathing apparatus must be **Scott Safety** products, approved to EN14593-1:2005.

PERSONNEL TRAINING

Personnel who use breathing apparatus must be fully trained in accordance with Local National Regulations and these instructions.

These instructions cannot replace an accredited training course run by fully qualified instructors in the proper and safe use of **Scott Safety** breathing apparatus.

Contact **Training & Technical Support Services** or a **Scott Safety** distributor for training information.

Training & Technical Support Services, Scott Safety,

Pimbo Road, West Pimbo,
Skelmersdale, Lancashire,
WN8 9RA, United Kingdom.
Tel: +44 (0) 1695 711711
Fax: +44 (0) 1695 711775

SERVICING

RAS must be serviced at scheduled intervals by personnel who have completed a formal training course and hold a current certificate for the servicing and repair of **Scott Safety** breathing apparatus. Details of the servicing schedule are contained in the **Scott Safety RAS** Service Manual, copies of which can only be obtained by registered holders of a current certificate.

Your distributor or **Training and Technical Support Services** at **Scott Safety** will be pleased to provide training course details and quotes for service contracts.

SPARE PARTS AND ACCESSORIES

Customer Services provide an efficient, friendly, customer contact point for ordering new apparatus, spare parts and accessories. The team can also provide general information on **Scott Safety** products.

WARRANTY

The products manufactured at our factories in Skelmersdale and Vaasa carry a warranty of 12 months (unless stated otherwise) for parts, labour and return to site. The warranty period runs from the date of purchase by the end user.

These products are warranted to be free from defects in materials and workmanship at the time of delivery. **Scott Safety** will be under no liability for any defect arising from wilful damage, negligence, abnormal working conditions, failure to follow the original manufacturer's instructions, misuse or unauthorised alteration or repair.

Evidence of purchase date will need to be provided for any claims arising during the warranty period. All warranty claims must be directed through **Customer Services** and in accordance with our sales return procedure.

TECHNICAL DESCRIPTION

GENERAL

RAS is a positive pressure airline apparatus with a bandolier and waistbelt harness. The supply airline hose connects to a CEN connector that supplies the facemask mounted demand valve via a length of medium pressure air hose. The facemask with filter and can be fitted with a suitable **Scott Safety** Particulate filter when entering, or leaving the hazard area with the airline disconnected. In this mode the facemask functions as a negative pressure device.

WARNING: RAS must not be used in oxygen deficient or hazardous atmospheres when disconnected from the Airline supply.

A NRV in the airline connector prevents contaminant entering the breathing hose while the wearer is disconnected from the airline.

FILTERS

The service life of the filters is dependent on the environment and the use-by-date marked on the filter. DO NOT use damaged, wet, clogged, or time expired filters.

The filter screws into the facemask's screw connector. A filter cover is provided to preserve the filter when an airline is in use. A blank-plug is provided to seal the mask when a filter is not fitted. Filters must conform to EN14387:2004+A1:2008 or EN143 with an EN148-1 standard thread and must be appropriate for the known work place hazards.

RAS apparatus may be used with up to 90 metres (297 feet) of medium pressure airline hose, with a burst pressure in excess of 80 bar.

When likely to come into contact with corrosive fluids or materials, it is recommended that only anti-static hoses are used.

DEMAND VALVE HOSE

The hose has a working pressure of 16 bar and a burst pressure in excess of 80 bar.

The airline manifold assemblies have an integral particle filter to remove contaminant from the air supply.

The **RAS** airline manifold assemblies incorporate a NRV.

DEMAND VALVE (DV)

The DV operates in conjunction with the exhale valve in the facemask to maintain a positive pressure within the facemask.

The DV has a reset button that enables wearers to close the airflow through the DV, allowing the facemask to be removed without loss of cylinder air.

When the apparatus is donned the DV is normally 'reset' (closed), and is opened (activated) when the wearer takes a first breath.

PANASEAL / VISION 3 / PROMASK FACEMASK

The Panaseal, Vision 3 and Promask facemasks are available, manufactured in non-dermatitic Neoprene or Silicone and have a 5-point head harness. A neckstrap is provided. The polycarbonate visor is impact resistant.

An inner mask minimises CO2 dead space and visor misting. A speech diaphragm is fitted.

Buckles on both apparatus are black nylon and stainless steel.

In addition to the QF bayonet connector; there is a right screw connector for attaching the replaceable air filter.

A blanking plug is provided which must be fitted if the facemask is used without a filter.

BANDOLIER AND WAISTBELT HARNESS

The bandolier and waistbelt harness is easy clean webbing or standard fabric with nylon buckles. Airline pull is taken by the harness, via a D-ring sewn into the bandolier. The airline connector manifold is attached to the D-ring by a shackle.

PRE-USE AND MONTHLY CHECKS

WARNING: Do not use apparatus that fails any of the following inspections or checks.

INSPECTION

Check that:

The apparatus is complete, clean and in good condition.

All buckles are in good condition and close and open freely.

Waistbelt and shoulder straps are fully slackened and ready for use.

Check that the orange O-ring on the DV outlet is clean and in good condition.

The facemask, especially the visor, is in good condition with the harness fully slackened.

When airline hoses are used, check that:

Hoses are in good condition: free of splits, abrasions and crush damage.

Couplings are in good condition and can be made and broken easily.

The air supply conforms to EN 12021:1999 (See Introduction).

Check that the filter is suitable for the workplace hazard and within its use-by date (see filter label). If a filter is not fitted the blanking plug must be fitted.

Check that the O-ring on the filter or blanking plug is in good condition.

BANDOLIER WAISTBELT

WARNING: Do not use the apparatus if the shackle is missing or damaged.



Check there is no damage or excess wear in the bandolier and that the shackle is securely attached to the D-ring. If necessary tighten the shackle nut.

Ensure that the CEN airline connector is clean and in good condition.

Equipment that is damaged or shows signs of excessive wear should be returned to a **Scott Safety** service centre.

DO NOT use the equipment if it fails any of the above checks.

Check the airline supply pressure.

DV & FACEMASKS

Press the black rubber reset button on the side of the DV.

Check that the red bypass switch is turned so that the flat on the bypass switch aligns with the DV outlet.

Check that the facemask is clean and undamaged.

Check that the orange DV O-ring is clean and in good condition.

Fit the DV to the facemask and turn it in the facemask fitting until the red locking catch engages fully. Twist the DV gently to confirm that it has engaged.

AIRLINE CHECKS

Check the supply airline flow and pressure.

Remove connector dust caps and check for wear and damage.

Make connection to an appropriate connector capable of supplying breathable compressed air (See Introduction, Compressed Airline Supplies).

Check that the connection is secure and that the connector releases easily, without sticking.

Press the DV reset button.

Pressurise the attachment and check all connections for leaks. On airline attachments check that the female connector does not leak.

DO NOT use attachments that show signs of excessive wear, or damage or that leak excessively.

Replace dust caps.

DONNING PROCEDURES

ATTACHING THE FILTER

WARNING: When breathing from an airline, a filter cover, or blanking plug must be in place to ensure that the first breath will activate.



Check that the cord from the filter cover is around the filter connector. Check that the filter is in-date (see filter label).



Check that the filter O-ring is in place and in good condition. Screw the filter to the facemask.



If a filter is not used a blank plug must be fitted in its place.

DONNING THE BANDOLIER

Hang the facemask from the neckstrap and don the bandolier so that the DV hose is over the right shoulder.



Fasten the waistbelt and adjust the shoulder strap for a comfortable fit.

FACEMASKS



Hold the head harness lower straps, place chin in chin-cup and pull straps over back of head, brushing hair away from faceseal.



Tighten the straps in sequence: bottom, side then top. DO NOT over-tighten as this distorts the faceseal.

NEGATIVE PRESSURE TEST

Disconnect the airline supply.



Attach the filter seal cord to the neckstrap and fit the filter seal to the mask.



Use a thumb to seal the airline coupling.



Press the filter seal with the palm of the hand to seal the filter inlet, and inhale. Hold your breath for 10 seconds. Check that the facemask pulls on to the face and does not pull away during the 10 seconds.

Re-connect the airline supply.

POSITIVE PRESSURE TEST



Check that the bypass switch is in the closed position and inhale sharply to activate the first breath mechanism.

Insert a finger under the mask seal and check for a steady outward flow of air.

Remove the finger and allow the mask to re-seal.

FACE SEAL TEST

Hold your breath for 10 seconds and listen carefully for leaks.

If the facemask fails the leak test: open the cylinder valve loosen the headharness adjust the facemask and repeat steps 1 to 3 until a full seal is achieved.

DO NOT use apparatus that leaks.

DEMAND VALVE TEST



Open the bypass switch and check that there is a steady flow of air into the facemask.

Close the bypass switch.

AIRLINE SUPPLY

Connect the airline to the apparatus and close the cylinder valve.

If necessary, take a sharp breath to activate the DV, and then breathe normally.

WHILE IN USE

In the unlikely event that the DV fails to supply air - open the bypass switch and go immediately to a safe breathable atmosphere.

In the unlikely event that the DV fails to supply air, even when the bypass is open - go immediately to a safe breathable atmosphere.

DO NOT remove the facemask while in a hazardous atmosphere.

Ensure that the airline does not become trapped, snagged, kinked or crushed.

Ensure that the airline air supply is sufficient for the duration of the tasks to be undertaken.

When air is supplied by a compressor, ensure that the air at the air intake is clean and free of contaminant and exhaust fumes.

When air is supplied from an airline trolley, ensure that the trolley is monitored by a competent person.

Ensure filter cover is in place when breathing from the airline supply.

Leave the hazardous area if you taste, or smell contaminant.

DOFFING

WARNING: Do not remove the apparatus until well clear of the hazard area.



Hold your breath and press the DV reset button.



Release the head harness by pulling the buckles forward, and remove the facemask.



Push the airline couplings together and pull back the CEN collar to disconnect the airline hose.

Open the DV bypass to vent any compressed air from the facemask and close the bypass.



Replace the dustcap on the coupling.

Release the waistbelt, and remove the apparatus.

Clean and check the apparatus in accordance with Section - After Use Cleaning and Testing before returning it to service.

AFTER USE

CLEANING

Cautions:

DO NOT immerse the DV in water.

USE ONLY the specified methods and materials. DO NOT use bleach, solvent, detergent or abrasive cleaners.

Dry thoroughly, away from direct heat and sunlight, prior to storage.

Disconnect DV from the facemask.

Wash and disinfect the mask thoroughly in a solution of disinfectant and hand-hot warm water.

Rinse the mask thoroughly in clean running water. Pay particular attention to flushing out the exhale valve.

Hang mask by its neckstrap and allow it to dry thoroughly away from direct heat or sunlight.

When dry, sanitise the faceseal with **Distel** disinfectant wipes.

Note: **Distel** disinfecting wipes are available in packs of 20 sachets, (Article No. 2004225) or drums of 100 wipes (Article No. 1017652).

Polish the visor inside and out with a clean, lint-free cloth and slacken the head harness, ready for use.

Sponge the harness with a mild soap and warm water solution. Rinse thoroughly and dry in a well-ventilated room away from direct heat and sunlight.

Cautions:

DO NOT immerse the DV.

DO NOT store until completely dry.

Fit the yellow cap on the DV outlet.

If required use a small brush (tooth brush) and a mild solution of soap and warm water to clean around the locking catch and bypass switch.

Clean the valve body using a lint free cloth moistened in a mild solution of soap and warm water.

CHECK APPARATUS

Operate the DV locking catch and bypass switch several times and check that they do not stick. If either is not free moving, attach explanatory note and return for service.

Check that the harness is not worn or damaged, and that buckles and fastenings are fully operational. Apparatus with major defects must be returned for service, with an explanatory label attached.

Check apparatus in accordance with Section - Pre-Use and Monthly Checks.

STORAGE

Device must be protected from damage during transportation.

The apparatus must be stored in a clean dry environment away from direct heat and sunlight.

Storage temperature should not exceed +40°C to -10°C.

SCHEDULED MAINTENANCE MONTHLY

Test **RAS** in accordance with the instructions given in Section - Pre-use and Monthly Checks of this Manual. Record test details in the apparatus' BA Logbook. This record is mandatory in the UK and most EC countries; and must be kept up to date and available for inspection. Please see Section - Check Apparatus for details.

ANNUALLY

RAS must be returned for a workshop service annually and for a major workshop service at six-yearly intervals.

After each workshop service, perform the user checks detailed in Section - Pre-use and Monthly Checks of this Manual prior to returning **RAS** to service.

Check that workshop service details have been recorded in the apparatus' BA Log.



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