



ST53™
SERIES

**VERSATILE
PROTECTION**
FOR SPECIAL OPERATIONS

AVON
PROTECTION

ST53™ SERIES

VERSATILE PROTECTION

FOR SPECIAL OPERATIONS

Avon's revolutionary ST53 multi-role Respiratory Protective Equipment (RPE) system has been developed specifically for specialist applications where the user needs to respond to changing operational conditions.



- **DEFENCE** - ASSAULT TEAMS, EXPLOSIVE ORDNANCE DISPOSAL (EOD), CBRN ENTRY AND CLEAN UP
- **FIRST RESPONDER** - HAZMAT & CBRN
- **LAW ENFORCEMENT**
- **URBAN SEARCH & RESCUE**
- **DECONTAMINATION TEAMS**
- **CLANDESTINE DRUG LAB ENTRY & REMEDIATION**
- **SPECIALIST ENTRY TEAMS**
- **CHEMICAL SPILL CLEAN UP**
- **BIO IDENTIFICATION & CLEAN UP**

FM53



ST53 Full back frame system offering 4.7 litre, 6.8 litre and 9 litre lightweight carbon cylinder options.

CYLINDER VALVE

- Nickel – plated brass cylinder valve with option of locking and non-locking configurations.

CYLINDER CONTENT MONITORING

- Remotely accessible, chest mounted pressure gauge for monitoring of pressure.
- Whistle for end of service alarm which has the ability to be disabled if required.

COMPACT DEMAND VALVE (CDV)

- World's smallest chemically hardened first breath demand valve provides constant positive pressure.
- Option to mount on either side of the mask.
- CDV is attached to the mask via the standard 40mm thread connection.



Cylinder options	Free air volume	Approximate duration*
4.7 litre lightweight carbon wrapped 300 bar	1269 litres	32 minutes
6.8 litre lightweight carbon wrapped 300 bar	1836 litres	45 minutes
9.0 litre lightweight carbon wrapped 200 bar	1826 litres	45 minutes
9.0 litre lightweight carbon wrapped 300 bar	2430 litres	60 minutes +

* Please note that these are 'approximate' durations that are based on standard CE breathing rates of 40 litres per minute.

STPAPR

- Integrated CDV enables the user to switch instantly from powered air to positive pressure SCBA mode when required.
- Speed selector provides a high flow rate of up to 165 litres per minute.
- Lithium Sulphur Dioxide battery option with a minimum 7 hour battery life.
- Lithium Ion rechargeable battery option with a minimum 6 hour battery life.
- Incorporates two 40mm standard NATO thread filters.



ST53SD

FEATURES

- 1 and 2 litre cylinder options, ideal for short-term tactical operations.
- Choice of belt or harness carry option.
- Can be fitted with STPAPR in back mounted configuration.

CYLINDER VALVE

- Nickel – plated brass cylinder valve in the non-locking configuration.

CYLINDER CONTENT MONITORING

- Option of remote whistle and pressure gauge or single pressure gauge attached directly to the regulator body.

COMPACT DEMAND VALVE (CDV)

- World's smallest chemically hardened first breath demand valve provides constant positive pressure.
- Option to mount on either side of the mask.
- CDV is attached to the mask via the standard 40mm thread connection.



Cylinder options	Free air volume	Approximate duration*
1 litre lightweight carbon wrapped 300 bar	270 litres	7 minutes
2 litre lightweight carbon wrapped 300 bar	540 litres	14 minutes

* Please note that these are 'approximate' durations that are based on standard CE breathing rates of 40 litres per minute.

ACCESSORIES

FILTER OPTIONS

- The general purpose filter provides protection from a wide range of CBRN hazards.
- The lower inhalation resistance particulate filter can be used specifically for particulate challenges.
- Filter mounted left or right side – 40mm standard NATO connection.

OPTIONAL EXTRAS

- Airline/ decontamination attachments available.
- Wide range of compatible accessories such as hydration canteens, vision correction system, clear and sunlight outserts and a range of storage and carry bags.
- Rapid Intervention Coupling (RIC) enables a rescue team to attach a rescue cylinder to the SCBA.

COMMUNICATION

- Optional Voice Projection Unit (VPU) with internal microphone can be connected via the Electronic Communication Port (ECP).
- Additional external communication systems can be attached via the ECP using an appropriate lead.

ST53 Options

FM53

APR Mode with unique conformal filter.



FM53

ST53

Provides option to switch between APR mode and positive pressure SCBA with a range of longer duration cylinder options. Can be fitted with PAPR.



FM53



ST53

ST53SD

Provides option to switch between APR mode and positive pressure SCBA with 7 or 14 minute cylinder duration. Can be combined with ST53 + ST53SD



FM53



ST53SD

STPAPR

Provides option to switch between APR mode and powered air supply.



FM53



STPAPR

ST53 with STPAPR

Provides option to switch between APR mode, positive pressure SCBA with a range of longer duration cylinder options and powered air supply.



FM53



ST53



STPAPR

ST53SD with STPAPR

Provides option to switch between APR mode, positive pressure SCBA with 14 minute cylinder duration and powered air supply.



FM53



ST53SD



STPAPR

ST53 Technical Data

Breathing performance in SCBA mode		Breathing performance in STPAPR mode	
Breathing rate	103 litres per minute with mask pressure above ambient	Breathing rate	125 - 165 litres per minute
Environmental range	The operating range is -30°C to +60°C		
End of cylinder air	Able to sustain positive pressure down to 10 bar cylinder pressure		

Breathing performance in APR mode	
Breathing resistance	Exhalation breathing resistance of no greater than 20mm of water at 85 lpm in a negative pressure mode
Inhalation resistance including General Purpose Filter	50mm of water at 85 lpm

Live agent permeation performance							
Challenge chemical	Requirements		Actual		Test agent	NIOSH CBRN requirements	Typical performance
	Max Peak (mg/m ³)	Max Cumulative (mg-min/m ³)	Max Peak (mg/m ³)	Max Cumulative (mg-min/m ³)			
Sarin (GB)	0.6	6	0.004	0.203	Sarin (GB)	6 Hours	>6 Hours
Mustard (HD)	0.087	6	0.005	0.8	Mustard (HD)	6 Hours	>6 Hours

Materials used	
FM53 mask	Chlorobutyl / Silicone rubber and polyurethane visor
Harness on ST53 SCBA	Kevlar webbing with stainless steel and nylon hardware
Harness on ST53SD SCBA	Nylon cordura
Backplate	Glass reinforced polycarbonate
Cylinder valve	Nickel-plated brass
STPAPR	GE noryl with a 10% glass fill

Weight for ST53 units (based on empty cylinders)		Weight for ST53SD units (based on empty cylinders)	
ST53 (excluding cylinder and mask)	3.0 kg (6.6 lbs)	ST53SD 2.0 litre (includes 2 litre cylinder but no mask)	2.4 kg (5.2 lbs)
Carbon fibre fully wrapped, 200 bar, 9.0 litre	3.9 kg (8.5 lbs)	ST53SD 1.0 litre (includes 1 litre cylinder but no mask)	1.8 kg (4.0 lbs)
Carbon fibre fully wrapped, 300 bar, 4.7 litre	3.8 kg (8.4 lbs)		
Carbon fibre fully wrapped, 300 bar, 6.8 litre	4.7 kg (10.4 lbs)		
Carbon fibre fully wrapped, 300 bar, 9.0 litre	5.8 kg (12.7 lbs)		

Weight for STPAPR		Weight for mask only	
STPAPR without CDV, battery or cartridges	1.1 kg (2.5 lbs)	FM53 mask (excluding filter)	0.6 kg (1.3 lbs)
STPAPR with CDV, two general purpose filters and a lithium Sulphur Dioxide battery	2.0 kg (4.4 lbs)		

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