

ST54TM

BUILT FOR PURPOSE

NFPA 1986:2023
COMPLIANT



Self-Contained Breathing Apparatus

AVON
PROTECTION

ST54™

BUILT FOR PURPOSE



Avon Protection's state-of-the-art ST54™ NFPA 1986:2023 Compliant Tactical Operator SCBA has been developed specifically for tactical officer and technician applications where the operator needs to respond to ever changing operational conditions.

Unlike other SCBA systems, the ST54™ provides users with a customizable high-performance respiratory protection system that is easily integrated into tactical kit profiles.

Boasting enhanced comfort, improved durability, optimized weapon sighting and conformity to the strict requirements of NFPA 1986:2023 - the ST54™ is designed to keep you moving, operating for longer and working more efficiently.

Designed with the tactical mission in mind, the ST54™ incorporates non-reflective black components and warning whistle which can be silenced (voids approval) if required.

NFPA 1986:2023

COMPLIANT



FM54™

- Available in 4 sizes for custom fit for all operators.
- 5 interchangeable silicone nose cups for improved comfort and performance.
- Comfortable reflex seal with low profile brow for helmet compatibility.
- Designed for integration with Tactical Gear and optimized for Weapons Sighting.
- FM54™ is supplied with a clear outsert to provide enhanced abrasion resistance to the APR visor that meets the stringent requirements of NFPA 1986:2023.
- NIOSH CBRN Approved with Avon Voice Projection and TMC Radio communication interface systems.
- Right and left CDV mounting options.

Cylinders

The ST54™ two-piece clamshell composite backframe accommodates a variety of 4500 psi carbon cylinders in durations of 30, 45 or 60 minutes. Both natural and stealth black cylinder finishes are available along with optional stealth cylinder bag covers. A quick release universal cylinder band allows for fast and easy cylinder exchange.

End-of-Service-Time Indicators (EOSTI)

The ST54™ backframe includes a remotely accessible, chest mounted pressure gauge (available with stealth black and luminescent face options) for monitoring of cylinder pressure and an end-of-service whistle alarm that can be disabled (voids approval) if required.

Compact Demand Valve (CDV)

The world's smallest, most compact chemically hardened demand valve provides constant positive pressure. With the option to mount on either side of the respirator, the CDV is unobtrusive and allows excellent integration with weapons and other tactical gear. The CDV is attached to the respirator via a standard 40mm thread connection.

Additional Features

Multiple customization options are available for the ST54™ including Rapid Intervention Coupling (RIC), Remote Lightning Fill, Universal Emergency Breathing Safety System (UEBSS) and now also Remote Dual Transfill options.

ACCESSORIES/OPTIONS

SCBA

- Rapid Intervention Coupling (RIC) fitting located at the cylinder valve allows for emergency filling of a cylinder in operation. The RIC is fitted with a fully encapsulated Over-Pressurization Protection Device (OPPD) which protects the system from over-pressurization during filling from any charging port.
- Remote Lightning Fill located on the right side of the waist belt allows rapid cylinder filling by a single unassisted operator to extend mission time.
- Universal Emergency Breathing Safety System (UEBSS) located on the left side of the waist belt allows two operators to share cylinder air for immediate egress in an emergency without disconnecting in an IDLH atmosphere.
- Remote Dual Transfill located on the users right side of the waist belt provides a connection to rapidly transfill between two SCBAs. Unlike the Remote Lightning Fill, the Remote Dual Transfill is capable of filling in both directions.
- CGA or quick disconnect cylinder options.



Remote Dual Transfill



Rapid Intervention Coupling (RIC)



UEBSS (Buddy Breather)



Remote Lightning Fill

COMMUNICATIONS

- Next generation voice projection unit (VPU)/amplifier with internal waterproof microphone assembly.
- 3-pin electronic communications port (ECP) for radio interface.
- Compatible / Approved for use with Avon TMC Tactical Communication Systems.



RESPIRATOR

- Vision correction system supporting +8 to -10 diopter.
- Range of stowage carriers.

NIOSH CBRN APPROVED CONFIGURATION

When not used as part of the ST54™ CBRN NFPA 1986 compliant SCBA system, the FM54™ is also NIOSH CBRN approved as negative pressure APR.

- NIOSH CBRN Approved with Avon CBRNCF50™ filter



CBRNCF50™



Clear Outsert Assembly

Sunlight Outsert Assembly

BlueBlocker Outsert Assembly

Laser Outsert Assembly

Shade 5 Cutting Outsert Assembly

Mirrored Outsert Assembly

Live Agent Performance

Challenge chemical	Requirements			Test agent	NIOSH CBRN requirements	Typical performance
	Challenge concentration (mg/m3)	Max peak (mg/m3)	Max cumulative (mg-min/m3)			
Distilled Mustard (HD)	300 for 30 min	0.600	6.0	Sarin (GB)	6 hours	>6 hours
Sarin (GB)	2000 for 30 min	0.087	2.1	Mustard (H)	6 hours	>6 hours

Part Number	Pressure (psi)	Material	Free Air Capacity	NIOSH rated duration @ 40 lpm	Cylinder & valve charged weight	Cylinder Diameter	Hydrostatic interval
124053	4500	Full wrapped carbon, black	1274 liters 45 cu. ft.	30 min	9.9 lbs	5.4 in	5 Years
124054	4500	Full wrapped carbon, black	1840 liters 65 cu. ft.	45 min	14.8 lbs	6.3 in	
124055	4500	Full wrapped carbon, black	2462 liters 88 cu. ft.	60 min	16.7 lbs	6.9 in	
124028	4500	Full wrapped carbon, natural	1274 liters 45 cu. ft.	30 min	9.9 lbs	5.4 in	
124029	4500	Full wrapped carbon, natural	1840 liters 65 cu. ft.	45 min	14.8 lbs	6.3 in	
124030	4500	Full wrapped carbon, natural	2462 liters 88 cu. ft.	60 min	19.2 lbs	6.9 in	
606260	4500	Lightweight Full wrapped carbon, natural	1274 liters 45 cu. ft.	30 min	9.4 lbs	5.4 in	
606261	4500	Lightweight Full wrapped carbon, natural	1840 liters 65 cu. ft.	45 min	13.9 lbs	6.3 in	
606262	4500	Lightweight Full wrapped carbon, natural	2462 liters 88 cu. ft.	60 min	16.7 lbs	6.9 in	

SCBA Breathing Performance (NFPA 1986:2023)

Breathing rate	103 lpm
Environmental range	0°F to +140°F
End of cylinder air	Able to sustain positive pressure down to 290 psi

APR Breathing Performance (NIOSH CBRN)

Breathing resistance	Exhalation breathing resistance of no greater than 20mm of water at 85 lpm in a negative pressure mode
Inhalation resistance (including filter)	65 mmWC at 85 lpm initial, 80 mmWC at 85 lpm at end of service life

Materials Used

54 Series Respirators	Chlorobutyl / silicone rubber and polyurethane visor
Harness	Kevlar® webbing with stainless steel and nylon hardware
Backframe	Anodized aircraft aluminum
Backframe Housing	Radel® PPSU (polyphenylsulfone) thermoplastic
Cylinder valve (non-locking)	PTFE impregnated, hard anodized aluminum



National Fire Protection Association (NFPA)
As an SCBA (Positive Pressure System), the ST54 conforms to NFPA1986:2023 and NIOSH CBRN under the provisions of CFR84 TC-13F

Approval Number
TC-13F-0955CBRN (30 Min)
TC-13F-0956CBRN (45 Min)
TC-13F-0957CBRN (60 min)



Industry Certified Protection Factors
As an APR the FM54 carries a NIOSH CBRN approval as a stand-alone Negative pressure APR under the provisions of CFR42 TC-14G

Approval Number
TC-14G-0327 (FM54 and Filter)


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