

ST54™

ENHANCED MULTI-MISSION
TACTICAL OPERATOR SCBA



Self-Contained Breathing Apparatus

AVON
PROTECTION

ST54™

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TACTICAL OPERATOR SCBA



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

The ST54 SCBA is the base to a multi-mission Respiratory Protection System that provides operational flexibility to operators and mission commanders in the field for a tailored PPE response based on available intelligence. Depending on the threat or operational situation at the scene of an incident, the ST54 SCBA can be configured to provide the appropriate protection.

The ST54 SCBA combines Avon Protection Systems' M53A1™, FM53™ and FM54™ respirators (see respirator datasheets for further details) with new and innovative modular breathing apparatus technology to provide positive pressure SCBA and/or PAPR capability. The ST54 system provides the operator with total flexibility to select the necessary level of protection quickly and efficiently without degradation of operational effectiveness. Designed with the tactical mission in mind, the system incorporates non-reflective black components and warning whistle which can be silenced.



FM53™ | M53A1™



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

Cylinders

The ST54 two-piece clamshell composite backframe accommodates a variety of 4500 psi carbon cylinders in durations of 30, 45 or 60 minutes, as well as a 5500 psi carbon cylinder in a 70-minute duration. 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 NIOSH 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.

AVON CS-PAPR™

COMBINATION SYSTEM POWERED
AIR PURIFYING RESPIRATOR



The Avon CS-PAPR™ is the newest generation of CBRN Powered Air Purifying Respirator (PAPR) designed for use in Combination Unit Respirators (CUR). The capability to change levels of protection dependent on the threat now provides the wearer with increased duration on target and safer operation.

Utilizing the Avon MP-PAPR™ module along with the patented combination hose module, the wearer can seamlessly switch between APR, PAPR and SCBA modes of protection. The single air hose connection for all modes allows the operator to retain a clear respirator cheek for optimum weapon sighting.

Optional Auto Filter Covers limit exposure of CBRN canisters to IDLH or unknown atmospheres when in SCBA mode.

APR
PAPR
SCBA



ACCESSORIES/OPTIONS

SCBA

- Rapid Intervention Crew (RIC) fitting located at the cylinder valve allows for emergency filling of a cylinder in operation
- 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

RESPIRATOR

- Hydration systems including traditional canteen and bladder systems
- Vision correction system supporting +8 to -10 diopter
- Quick attach outserts: clear, sunlight, blue blocker, laser, mirrored and shade-5
- Range of stowage carriers

COMMUNICATIONS



- Next generation voice projection unit (VPU)/amplifier with internal waterproof microphone assembly
- 3-pin electronic communications port (ECP) for radio interface

FILTER/CANISTER OPTIONS

- Respirator options include unique conformed close fitting filter/canister design, providing the operator with greater visibility and improved weapon sighting and ergonomics
- NIOSH approved options include the CBRNCF50 (CBRN) and CTCF50 (Riot Agent)
- MIL-SPEC options include General Purpose (GP) filter and CS/CN filter


Breathing Performance SCBA Mode		Breathing Performance PAPR Mode	
Breathing Rate	40 lpm	Flow Rate	120 lpm (constant flow)
Environmental Range	-15°F to +140°F (-26°C to +60°C)		
End Of Cylinder Air	Able to sustain positive pressure down to 10 Bar (145 psi) 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 Canister	50mm of water at 85 lpm

Live Agent 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)	0.600	6	0.004	0.203	Sarin (GB)	6 Hours	> 6 Hours
Mustard (HD)	0.087	6	0.005	0.800	Mustard (HD)	6 Hours	> 6 Hours

Material Used	
53/54 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
CS-PAPR	CBRN hardened butyl and Noryl™ PPE (polyphenylene ether) thermoplastic

Cylinders							
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.	11.0 lbs.	5.4 in.	5 years
124054			1840 liters 65 cu. ft.	45 min.	14.8 lbs.	6.3 in.	
124055			2462 liters 88 cu. ft.	60 min.	19.2 lbs.	6.9 in.	
124028	4500	Full wrapped carbon, natural	1274 liters 45 cu. ft.	30 min.	11.0 lbs.	5.4 in.	
124029			1840 liters 65 cu. ft.	45 min.	14.8 lbs.	6.3 in.	
124030			2462 liters 88 cu. ft.	60 min.	19.2 lbs.	6.9 in.	
602318	5500	Full wrapped carbon, black	2880 liters 102 cu. ft.	70 min.	20.4 lbs.	7.1 in.	

Certifications		Approval Number	Description
 <p>The ST54 carries a NIOSH Industrial Approval as a stand-alone Tactical SCBA with a variety of cylinders and respirator size combinations under the provisions of 42 CFR 84 TC-13F.</p> <p>The ST54 with CS-PAPR CUR carries no approvals as there is no NIOSH standard for combination units.</p>	TC-13F-0955	30 MIN 4500 PSIG	
	TC-13F-0956	45 MIN 4500 PSIG	
	TC-13F-0957	60 MIN 4500 PSIG	
	TC-13F-0958	70 MIN 5500 PSIG	

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