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SAR Systems

Supplied Air Respirator

Welding Safety and Health

QUICK SPECS

OSHA Classification
Loose-fitting supplied air respirator (no fit test required)

Assigned Protection Factor (APF)
25

Certifications
- ANSI Z87.1+ 2020, meets CSA Z94.3 (helmet)
- ANSI/ISEA Z89.1, meets CSA Z94.1 (hard hat)
- NIOSH 42 CFR 84 (SAR system)

To provide a NIOSH-approved respiratory system, the SAR system must be used with Miller® helmet, hoses, connectors and other components recommended by Miller

Enhanced comfort, active cooling and visibility maximize all-day wearability — increasing productivity, safety and regulatory compliance.

C50 air regulator

Available with the following head assemblies

T94i-R™ | T94i-R™ XL | T94iH-R™ with hard hat

TRUE BLUE® WARRANTY

C50 air regulator is warrantied for one year, parts.
Auto-darkening lens is warrantied for four years, parts.
BreatheAir boxes/panels are warrantied for one year, parts.
CO monitor is warrantied for two years, parts.

Miller®

Miller Electric Mfg. LLC
An ITW Welding Company
1635 West Spencer Street
P.O. Box 1079
Appleton, WI 54912-1079 USA

Equipment Sales US and Canada
Phone: 866-931-9730
International Phone: 920-735-4554

MillerWelds.com

Certified System ISO 9001 Quality

C50 Air Regulator Specifications (Subject to change without notice.)

VALVE	TEMPERATURE	FLOW RATE – LOW	FLOW RATE – HIGH	SUSPENSION	CERTIFICATION	DIMENSIONS	NET WEIGHT
Cooling	≤50°F (28°C) cooling	≥170 lpm (liters per minute)	379 lpm (liters per minute)	Belt	NIOSH 42 CFR 84	H: 2.75 in. (70 mm) W: 11.75 in. (298 mm) D: 4.13 in. (105 mm)	0.9 lb. (0.4 kg)

C50 Air Regulator Assembly Features

C50 air regulator cools Grade-D breathing air by up to 50 degrees Fahrenheit (28°C) under your hood, heightening productivity and relieving heat stress (performance under different applications may vary). Lightweight and versatile, it can be positioned horizontally or vertically to naturally align with body movements, and 360-degree swivel air hose connection alleviates hose coiling, reducing potential trip hazards.

Enhanced comfort and cooling maximize all-day wearability — increasing productivity, safety and regulatory compliance.

Low-profile breathing-tube attachment eases on/off process while flexible tube material reduces breathing tube snags in work cell.

Quick-release belt design allows for seamless system on/off.

Complete system with T94i-R™ helmet assembly shown with straight air hose (sold separately).

Comes complete with:

- C50 air regulator
- Belt assembly
- Breathing tube
- Flame-resistant breathing tube cover
- Flowmeter
- Tool bag
- T94i-R™, T94i-R™ XL or T94iH-R™ helmet assembly

Note: Required straight or coiled air hoses must be ordered separately.

Air Hose and Fittings Specifications*

MODEL	FITTING TYPE	AVAILABLE LENGTHS	MATERIAL	PRESSURE TYPE	ALLOWABLE CONNECTIONS	HOSE LENGTH	HOSE PRESSURE
Straight Air Hose	Industrial Interchange	25 or 100 ft.	Rubber	High	1 hose	25–100 ft.	64–66 psi
					2 hoses	125–200 ft.	74–76 psi
					3 hoses	225–300 ft.	81–84 psi
Coiled Air Hose	Industrial Interchange	25 or 100 ft.	Rubber	High	1 hose	25–100 ft.	64–66 psi

Note: Per OSHA 29 CFR 1910.134(i)(8), breathing air fittings must be incompatible with outlets for non-respirable worksite air or other gas systems. Therefore, Schrader-style fittings are available for use with the above air hoses, in place of Industrial Interchange. Must order separately.

Straight air hose

Coiled air hose

BreatheAir™ Filtration Systems Specifications*

MODEL	NUMBER OF OPERATORS	NUMBER OF OUTLETS	INLET THREAD SIZE	DIMENSIONS	NET WEIGHT
BreatheAir Portable Box	Up to 2	2	1/2 in. Industrial Interchange	H: 13 in. (330 mm) W: 19 in. (483 mm) D: 7 in. (178 mm)	19.7 lb. (8.9 kg)
	Up to 4	4	1/2 in. Industrial Interchange	H: 17 in. (432 mm) W: 24 in. (610 mm) D: 8.5 in. (216 mm)	26.4 lb. (12.0 kg)
BreatheAir Panel	Up to 2	2	1/2 in. Industrial Interchange	H: 23 in. (584 mm) W: 22 in. (559 mm) D: 8 in. (203 mm)	19.7 lb. (8.9 kg)
	Up to 4	4			26.4 lb. (12.0 kg)

Three-stage filtration process supplies respiratory users with Grade-D breathing air while monitoring for CO during use, ensuring compliance and worker safety.

- First stage removes 95 percent of liquids and particulate down to 5.0 microns.
- Second stage removes 99.99 percent of fine oil mists and particulate down to .01 microns in size.
- Third stage removes organic vapors, odors and tastes.

Filter change indicators clearly notify users of needed change, eliminating guesswork and amplifying unit performance.

- Unmatched filter change process is quick and easy, minimizing downtime.
- Automatic condensation drain extends filter life.
- Internal monitor continuously monitors carbon monoxide (CO) levels in the breathing air.

External warning lights and alarms quickly notify users of heightened CO levels, reducing user reaction time.

Calibration of CO monitors takes less than two minutes, reducing operator downtime while increasing safety.

Durable construction designed to perform in the toughest industrial applications.

Systems available in portable or stationary configurations, supporting up to two or up to four operators each, with CO monitors set to either 10 ppm (USA) or 5 ppm (Canada).

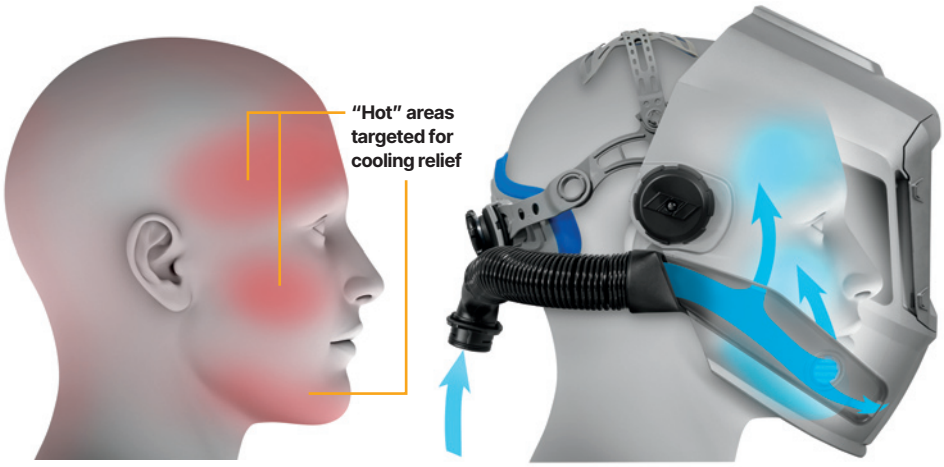
Recommended for use with the C50 SAR system.

BreatheAir portable box

BreatheAir panel

*Specifications are subject to change without notice.

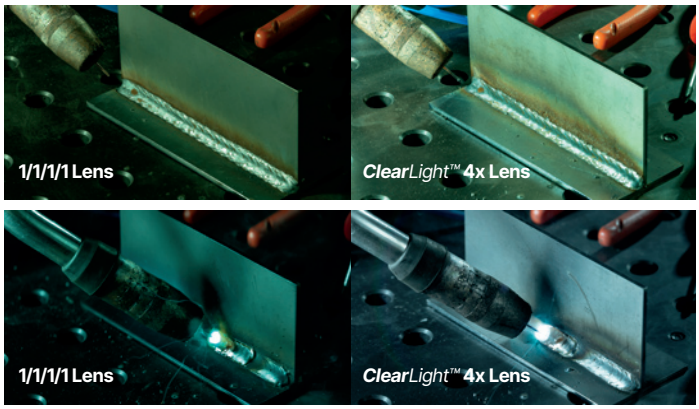
Dualtec™ Manifold System



Patented Dualtec manifold design with six-point airflow distribution system maximizes cooling through targeted air placement.

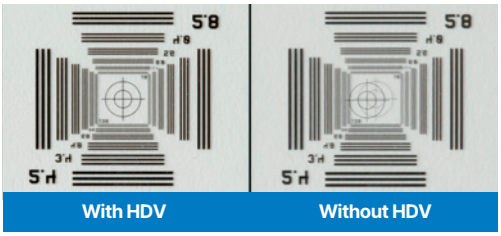
- System targets body's natural thermal regulation system to minimize operator heat stress.
- Six-point airflow distribution system targets "hot" areas within the face for immediate cooling relief, without causing eye and/or nose irritation.
- Adjustable interior vents allow for customized flow depending on user preference.

Helmet Lens Features



***Clear**Light*™ **4x Lens Technology (*Clear**Light*™ **2.0 Lens on T94i-R XL)** offers up to four times the clarity compared to welding helmets with 1/1/1/1 as per official USA ANSI certification of lens visibility.

High-definition view (HDV) technology provides a sharp detailed view at any angle with minimal distortion. This is found in the cover lens and the grind shield.



Quick-release one-piece cover lens simplifies lens changes, reducing downtime.

Half-shade settings for precise lens adjustment for optimized comfort and vision.

Four arc sensors and four modes: weld, cut, grind and X-Mode™. X-Mode electromagnetically senses the weld to reduce sunlight interference and continuously detects the arc even if sensors are blocked.

Memory function provides ability to switch between two preset customized memory settings.

InfoTrack™ 2.0 data monitoring technology tracks arc time and arc count.

Digital controls allow for precise lens adjustments to shade, delay and sensitivity.

Rotatable lens (T94i-R™ XL only) allows operators to position for maximum field of view.

T94i-R™ Helmet Features

WELD VIEWING AREA	9 sq. in. (58.1 sq. cm)
GRIND SHIELD VIEWING AREA	44 sq. in. (283.9 sq. cm)
APF	25
MODES (SHADES)	Weld (8–13) Cut (5–8) Grind (3) X-Mode™ (8–13)

Lightweight well-balanced design reduces neck torque, minimizing operator fatigue and strain leading to an increase in comfort.

Ergonomic four-point flexible headgear design with oversized pivoting back pad provides a secure fit, while avoiding major pressure points on the head, maximizing all-day wear. Customizable fit with seamless tilt, distance and tightness adjustments.

Shade 5.0 side windows and oversized clear HDV grind shield maximize downward and peripheral vision, amplifying sense of surroundings.

Large integrated grind shield with HDV provides 44 square inches of clear viewing area for grinding and other tasks, increasing helmet-on time and decreasing the potential for eye injuries. HDV technology provides a sharp detailed view at any angle with minimal distortion.

Flame-retardant washable standard head seal with ultra-soft outer cuff enhances wear without causing skin irritation.

Unique design can provide additional protection by covering the ears, or ease communication if placed in front of the ears.

T94i-R™ XL Helmet Features

WELD VIEWING AREA	13 sq. in. (83.9 sq. cm)
GRIND SHIELD VIEWING AREA	44 sq. in. (283.9 sq. cm)
APF	25
MODES (SHADES)	Weld (8–14) Cut (5–8) Grind (3) X-Mode™ (8–14)

*Note: T94i-R XL is only available with **Clear**Light™ 2.0.*

Lightweight well-balanced design reduces neck torque, minimizing operator fatigue and strain leading to an increase in comfort.

13-square-inch viewing area provides the largest viewing area for maximum visibility.

Rotatable lens allows operators to position for maximum field of view.

Ergonomic four-point flexible headgear design with oversized pivoting back pad provides a secure fit, while avoiding major pressure points on the head, maximizing all-day wear. Customizable fit with seamless tilt, distance and tightness adjustments.

Shade 5.0 side windows and oversized clear HDV grind shield maximize downward and peripheral vision, amplifying sense of surroundings.

Large integrated grind shield with HDV provides 44 square inches of clear viewing area for grinding and other tasks, increasing helmet-on time and decreasing the potential for eye injuries. HDV technology provides a sharp detailed view at any angle with minimal distortion.

Flame-retardant washable standard head seal with ultra-soft outer cuff enhances wear without causing skin irritation.

Unique design can provide additional protection by covering the ears, or ease communication if placed in front of the ears.

T94iH-R™ Helmet Features

SAR with T94iH-R Helmet includes MSA V-Gard hard hat.

WELD VIEWING AREA	9 sq. in. (58.1 sq. cm)
GRIND SHIELD VIEWING AREA	44 sq. in. (283.9 sq. cm)
APF	1,000 (heavy-duty head seal)
MODES (SHADES)	Weld (8–13) Cut (5–8) Grind (3) X-Mode™ (8–13)

Lightweight well-balanced design reduces neck torque, minimizing operator fatigue and strain leading to an increase in comfort.

MSA Fas-Trac® III ratchet-suspension headgear provides exceptional comfort, reducing pressure points while increasing stability.

Shade 5.0 side windows and oversized clear HDV grind shield maximize downward and peripheral vision, amplifying sense of surroundings.

Large integrated grind shield with HDV provides 44 square inches of clear viewing area for grinding and other tasks, increasing helmet-on time and decreasing the potential for eye injuries. HDV technology provides a sharp detailed view at any angle with minimal distortion.

Lift-to-talk head assembly improves communication by allowing operator access to face without removal of the head assembly.

Flame-retardant washable heavy-duty head seal with ultra-soft outer cuff enhances wear without causing skin irritation. Unique design can provide additional protection by covering the ears, or ease communication if placed in front of the ears. Provides an APF of 1,000.

Ordering Information

SYSTEMS AND HEAD EQUIPMENT	STOCK NO.	DESCRIPTION	QTY.	PRICE
SAR Complete System (see page 2 for system contents)	**292748** **292749** **400463**	With T94i-R™ helmet (with clear integrated grind shield) With T94i-R™ XL helmet (with clear integrated grind shield) With T94iH-R™ helmet and hard hat (with clear integrated grind shield)		
IMPORTANT: To be NIOSH compliant you must pair the helmet packages with one of the air hoses and fittings (see below) .				
Air Hoses and Fittings				
Straight Air Hose	**270405** **270407**	25 ft., 3/8 in. ID with 1/4 in. Industrial Interchange fittings 100 ft., 3/8 in. ID with 1/4 in. Industrial Interchange fittings		
Coiled Air Hose	**270408** **270410**	25 ft., 3/8 in. ID with 1/4 in. Industrial Interchange fittings 100 ft., 3/8 in. ID with 1/4 in. Industrial Interchange fittings		
Hose Plug	**270436** **270437**	Industrial Interchange, 1/4 in. FPT, 1/4 in. body, brass Schrader, 1/4 in. FPT, 1/4 in. body, steel		
Hose Socket	**270438** **270440**	Industrial Interchange, 1/4 in. FPT, 1/4 in. body, steel Schrader, 1/4 in. FPT, 1/4 in. body, brass/steel		
BreatheAir™ Filtration Systems				
BreatheAir Panel	**275961** **275970** **275963** **275981**	Two person, 10 ppm alarm (USA) Four person, 10 ppm alarm (USA) Two person, 5 ppm alarm (Canada) Four person, 5 ppm alarm (Canada)		
BreatheAir Portable Box	**275983** **275985** **275984** **275986**	Two person, 10 ppm alarm (USA) Four person, 10 ppm alarm (USA) Two person, 5 ppm alarm (Canada) Four person, 5 ppm alarm (Canada)		
Box/Panel Monitor Calibration Kit	**275988** **275989**	10 ppm, regulator, kit, zero air, 20 ppm gas, 12 stickers (USA) 5 ppm, regulator, kit, zero air, 10 ppm gas, 12 stickers (Canada)		
Box/Panel Filter Kit	**275996** **276000**	Two-person unit, 1st, 2nd and 3rd filters with o-rings Four-person unit, 1st, 2nd and 3rd filters with o-rings		
Box/Panel Plug	**276007**	Industrial Interchange, 1/2 in.		
Box/Panel Socket	**276158** **276162**	Industrial Interchange, 1/4 in. Schrader, 1/4 in.		
Box/Panel Air Hose	**276005** **276006**	50 ft., straight, 1/2 in. ID with 1/2 in. Industrial Interchange fittings 100 ft., straight, 1/2 in. ID with 1/2 in. Industrial Interchange fittings		

DATE: TOTAL QUOTED PRICE:

Ordering Information

REPLACEMENT PARTS, ACCESSORIES AND CONSUMABLES	STOCK NO.	DESCRIPTION	QTY.	PRICE
Breathing Tube				
Breathing Tube Assembly	**261704**	Without breathing tube cover		
Breathing Tube Cover	**265312**	Flame-resistant		
Air Regulator				
C50 SAR Parts Package	**291876**	Includes C50 air regulator with belt and muffler to add SAR to approved PAPR head assembly		
C50 Air Regulator	**270412**	Air control device (cooling), does not include belt, valve plug, or valve nut		
C50 Valve Plug	**272735** **272736**	Industrial Interchange, curved, 1/4 in. FPT, 1/4 in. body, steel Schrader, curved, 1/4 in. FPT, 1/4 in. body, steel		
C50 Valve Nut with Washer	**272740**			
Belt	**270416** **264872**	Flame-resistant cotton Leather		
Belt Pad	**270415**			
Belt and Pad Assembly	**271394**	Includes flame-resistant cotton belt and pad		
Belt Extension	**244151**	For flame-resistant cotton belt only. Adds 18 in. length to belt assembly		
Muffler	**270417**	Connects breathing tube and C50 air regulator		
Flowmeter	**277222**			
Tool Bag	**228028**			
Helmets				
Battery, CR2450	**217043**	For T94i-R and T94iH-R. Two required for T94i-R XL		
Cover Lens Assembly HDV, Front	**287016 / 287016B**	5 pack or 50 pack (bulk)		
Cover Lens, Inside	**216327 / 216327B** **287777 / 287777B** **216327 / 216327B**	For T94i-R. 5 pack or 50 pack (bulk) For T94i-R XL. 5 pack or 50 pack (bulk) For T94iH-R. 5 pack or 50 pack (bulk)		
Grinding Shield HDV, Snap Lock	**288765**			
Grinding Shield Tear-Off	**258853**	5 pack		
Helmet Assembly (without auto-darkening lens assembly)	**293047** **293048** **400320**	For T94i-R. Helmet, headgear, flame-retardant head seal For T94i-R XL. Helmet, headgear, flame-retardant head seal For T94iH-R. Helmet, headgear, heavy-duty flame-retardant head seal		
***Clear**Light*™ Auto-Darkening Lens	**296879** **287778**	For T94i-R and T94iH-R (***Clear**Light*™ 4x) For T94i-R XL (***Clear**Light*™ 2.0)		
Side Window Covers	**260197**			
Head Seal	**260926** **287188**	For T94i-R™ and T94i-R™ XL. Flame retardant, APF 25 For T94iH-R™. Flame retardant		
Helmet Lighting Accessory Kit	**281361**			
Magnifying Lens Adapter	**290209**	For T94i-R XL only		
Magnifying Lens	**212235** **212236** **212237** **212238** **212239** **212240** **212241** **212242**	0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.50		

DATE: TOTAL QUOTED PRICE:

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