



RELY ON MAKO

and experience lasting protection

We have been providing breathing air solutions for over 100 years. Continually improved technology ensures we are a trusted supplier to multiple industries, including fire & safety, recreational and professional diving, marine, offshore, and defense.

MARKET LEADING BREATHING AIR SYSTEMS FOR:

Fire Services | Diving | Industrial Safety

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01

A SIGN OF QUALITY

Over 100 years of compressor block manufacturing experience lies at the foundation of our MAKO products.

This allowed us to develop a unique, robust design that forms the heart of every product. **All of our 3- and 4-stage compressor blocks guarantee:**

- Durability** and long operating life
- Resilience** during continuous duty
- Reliability** with extended service intervals
- Simple** maintenance with easy access to all parts
- Minimal interference** thanks to low vibration and noise levels
- Highest standards** ensured by ISO 9001-certified Quality Management System
- Safety through** no compromise quality assurance on all our models
- Cost-effectiveness** that comes with proven, time-tested design features
- Flexibility** due to a wide and customizable range
- Convenience** of ergonomic design for operator comfort, reduced fatigue, and increased safety

Primary markets served:



Fire Services



Diving



Industrial Safety

02

BREATHING AIR COMPRESSORS



Essentials

4

Whether it's everyday use or more demanding applications, all MAKO products deliver the highest levels of **reliable performance, efficiency and safety** even with the constraints of space, noise, or budget. Exceeding industry standards, our range features the perfect model for any requirement.



Safety



Convenience



Cost efficiency



Flexibility

Standard features:

- NEMA design ODP 1.15 SF electric motor
- Easy accessibility to all maintenance items
- Small package footprint and overall dimensions
- Auto-drain with muffler/reservoir system for collection of condensate
- Anti-vibration mounts
- Fully automatic control system

Instrumentation & controls:

- PLC controller¹
- Illuminated on/off push buttons
- Hours run meter
- Emergency stop button
- Inter-stage & final-stage pressure gauges
- Individual shutdown indicators for High Air Temperature, High Air Pressure, and Low Oil Level/Pressure

Optional equipment:

- Integrated² or wall-mounted CO & Moisture (CMM) Monitor
- Audible shutdown alarm
- Dual pressure switch²

¹not available with Water-cooled Packages ²not available with EconoAir™

EconoAir™ [EA]

The economical choice

MAKO EconoAir™ is the cost-saving solution that does not compromise on safety.

Standard features:

- MAKO industrial duty 3 or 4-stage compressor block
- MAKO MK2C purification system
- Open design, rugged structural steel frame with heavy duty powder coat finish

Optional equipment:

- MK5C purification
- Wall-mount CO & Moisture (CMM) Mounting System



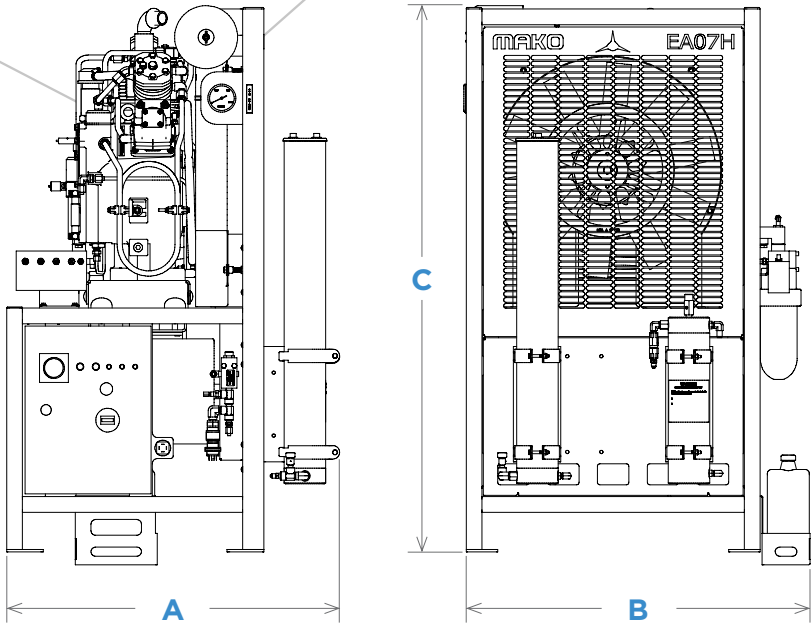
EconoAir™ [EA]

Technical Data

Model	Max Pressure		Stages	Charging Rate (0 - max pressure)			Compressor rpm	Drive		Weight		Sound Level dba
	bar	psi		m ³ /hr	l/min	cfm		kW	hp	kg	lb	
EA05	350	5000	3	14.6	243	8.6	1300	5.5	7.5	284	626	83
EA06X	414	6000	4	16.7	278	10.2	1100	5.5	7.5	255	560	84
EA06H	414	6000	4	23.8	397	14	1340	7.5	10	260	570	84
EA07H	414	6000	4	35.2	587	20.7	1800	11	15	266	585	85

Dimensions (A x B x C)

In	mm
32.6 x 31.7 x 52.0	829 x 806 x 1322



AirCharge [AC]

The compact variant

MAKO AirCharge is made with 5000 psi users in mind, ensuring flexibility and low noise levels.

Standard features:

- MAKO MK2C purification system
- MAKO industrial-duty 3-stage compressor block
- Fully enclosed, sound attenuating enclosure
- Heavy-duty powder coat finish
- UL-listed, NEMA 12 electrical enclosure

Optional equipment:

- MK5C purification



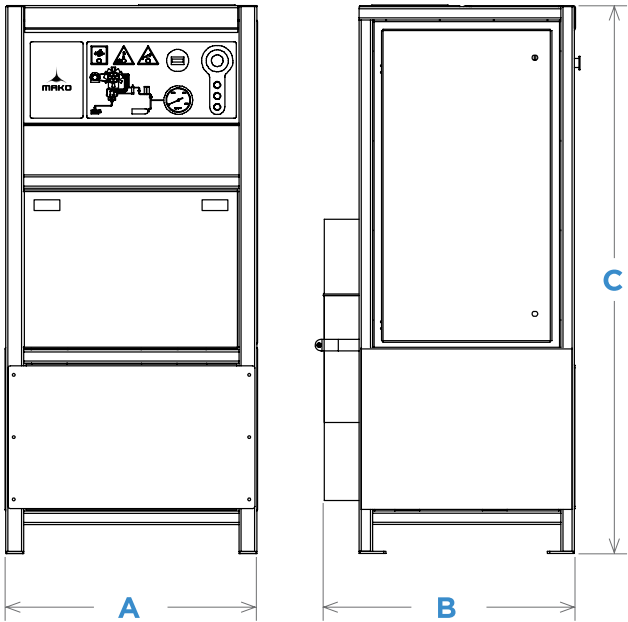
AirCharge [AC]

Technical Data

Model	Max Pressure		Stages	Charging Rate (0 - max pressure)			Compressor rpm	Drive		Weight		Sound Level dba
	bar	psi		m ³ /hr	l/min	cfm		kW	hp	kg	lb	
AC04	350	5000	3	9.9	165	5.8	1300	4	5	268	591	69
AC05	350	5000	3	14.6	243	8.6	1300	5.5	7.5	284	626	70

Dimensions (A x B x C)

In	mm
28 x 29 x 61½	711 x 737 x 1550



Horizontal Breathing Air [HBA]

The low-profile model

The open-frame **Horizontal Breathing Air** compressor provides all the features of MAKO designs, adapted for smaller spaces and tighter budgets.

Standard features:

- MAKO MK2C purification system [models HBA04-HBA06(H)]
- MAKO MK5C purification system [models HBA07(H)-HBA09(H)]
- MAKO industrial-duty 3- or 4-stage compressor block
- Open design, rugged structural steel frame with heavy duty powder coat finish
- UL-listed, NEMA 12 electrical enclosure

Optional equipment:

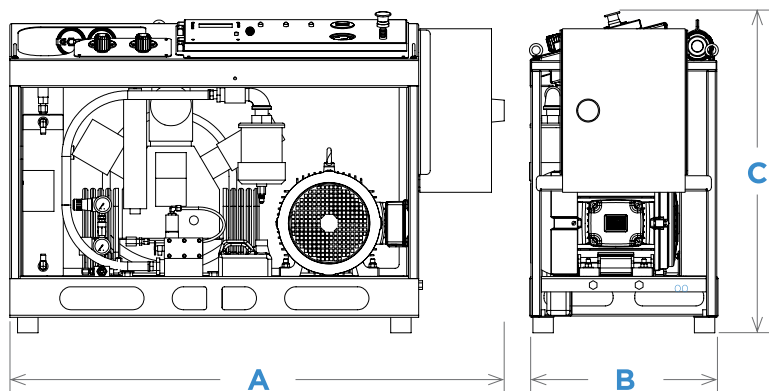
- MK5C or MK10C purification [models HBA04-HBA06(H)]
- MK10C purification [models HBA07(H)-HBA09(H)]
- Diesel or gas engine drive



Horizontal Breathing Air [HBA]

Technical Data

Model	Max Pressure		Stages	Charging Rate (0 - max pressure)			Compressor rpm	Max. integrated fill hoses
	bar	psi		m ³ /hr	l/min	cfm		
HBA04	350	5000	3	9.9	165	5.8	1300	2
HBA05	350	5000	3	14.6	243	8.6	1300	2
HBA06	350	5000	4	22.3	372	13.1	1340	4
HBA07	350	5000	4	31.8	530	18.7	1800	4
HBA08	350	5000	4	43	717	25.3	1530	4
HBA09	350	5000	4	52	867	30.6	1800	4
HBA06H	414	6000	4	23.8	397	14	1340	4
HBA07H	414	6000	4	35.2	587	20.7	1800	4
HBA08H	414	6000	4	45.9	765	27	1530	4
HBA09H	414	6000	4	56.4	940	33.2	1800	4



Model		Electric				Diesel				Petrol/Gasoline			
		Power		Weight		Power		Weight		Power		Weight	
		kW	hp	kg	lbs	kW(b)	hp	kg	lbs	kW(b)	hp	kg	lbs
BA04		4	5	200	435	7.5	10	320	710	6	8	310	680
HBA05		5.5	7.5	210	460	7.5	10	330	725	8.2	11	330	725
Dimensions A x B x C mm / in		1228 x 470 x 800 / 48 x 18.5 x 31.5				1473 x 738 x 1130 / 58 x 29 x 44.5				1473 x 738 x 1130 / 58 x 29 x 44.5			
HBA0 6(H)*	**	7.5	10	315	690	11	15	560	1240	15	20	320	710
HBA0 7(H)*	**	11	15	335	735	15	20	625	1380	15	20	335	740
Dimensions A x B x C mm / in		1473 x 738 x 1130 / 58 x 29 x 44.5				1575 x 1054 x 1181 / 62 x 41.5 x 46.5				1473 x 738 x 1130 / 58 x 29 x 44.5			
HBA0 8(H)*	**	15	20	380	835	22	30	655	1440				
HBA0 9(H)*	**	18.5	25	400	880	22	30	685	1510				
Dimensions A x B x C mm / in		1473 x 738 x 1130 / 58 x 29 x 44.5				1575 x 1054 x 1181 / 62 x 41.5 x 46.5							

* Control box is mounted within the frame.

** Due to changing emission standards, the engine size, package weight & dimensions may change.

Breathing Air Module [BAM]

For heavy-duty assignments

MAKO Breathing Air Module ensures **high capacity filling while maintaining low noise level**. Modular design ensures complete flexibility.

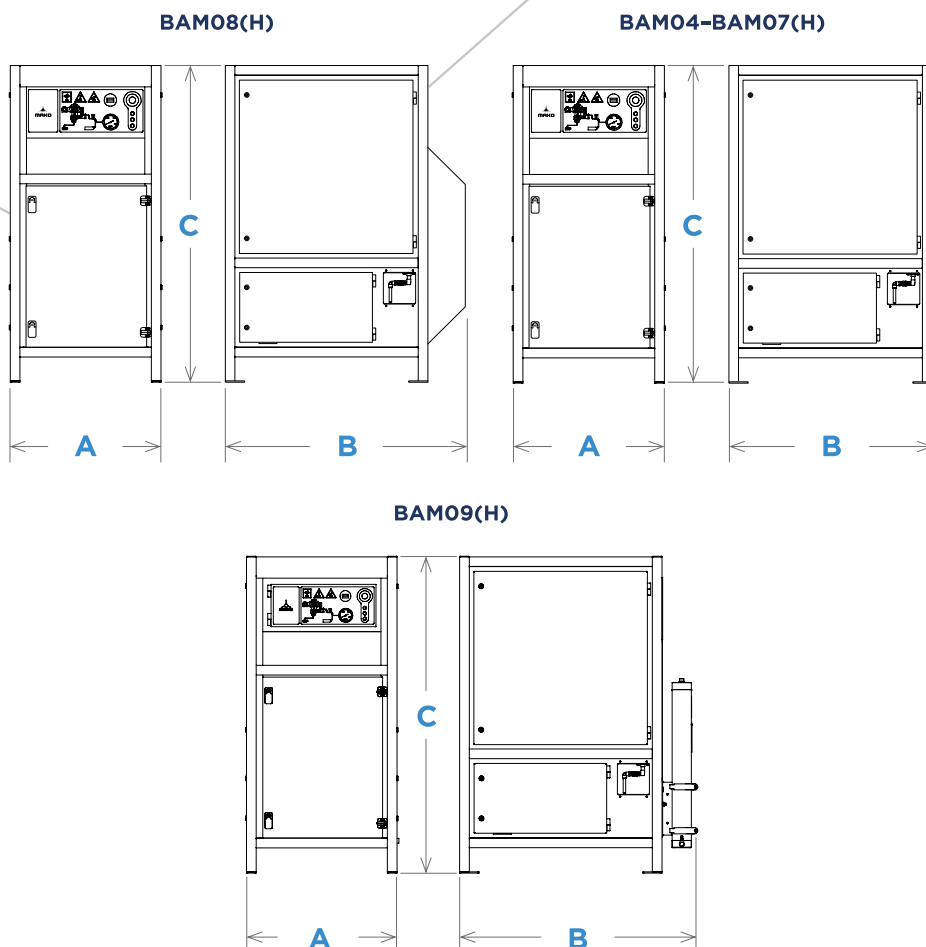
Standard features:

- MAKO MK2C purification system [models BAM04–BAM06(H)]
- MAKO MK5C purification system [models BAM07(H)–BAM09(H)]
- MAKO industrial-duty 3- or 4-stage compressor block
- Fully enclosed, sound attenuating enclosure with heavy-duty powder coat finish
- UL-listed, NEMA 12 electrical enclosure

Optional equipment:

- MK5C or MK10C purification [models BAM04–BAM06(H)]
- MK10C purification [models BAM07(H)–BAM09(H)]





Breathing Air Module [BAM]

Technical Data

Model	Max Pressure		Stages	Charging Rate (0 - max pressure)			Compressor rpm	Drive		Weight		Sound Level dba
	bar	psi		m ³ /hr	l/min	cfm		kW	hp	kg	lb	
BAM04	350	5000	3	9.9	243	5.8	1300	4	5	461	1017	69
BAM05	350	5000	3	14.6	278	8.6	1300	5.5	7.5	471	1039	70
BAM06	350	5000	4	22.3	397	13.1	1340	7.5	10	526	1160	72
BAM07	350	5000	4	31.8	587	18.7	1800	11	15	541	1193	74
BAM08	350	5000	4	43	397	25.3	1530	15	20	576	1270	76
BAM09	350	5000	4	52	587	30.6	1800	18.5	25	592	1305	78
BAM06X	414	6000	4	16.7	278	10.2	1100	5.5	7.5	485	1070	72
BAM06H	414	6000	4	23.8	397	14	1340	7.5	10	526	1160	72
BAM07H	414	6000	4	35.2	587	20.7	1800	11	15	541	1193	74
BAM08H	414	6000	4	45.9	765	27	1530	15	20	576	1270	76
BAM09H	414	6000	4	56.4	940	33.2	1800	18.5	25	592	1305	78

Dimensions (A x B x C)

Model	In	mm
BAM04 BAM05 BAM06(H)(X) BAM07(H)	31¼ x 42 x 65¾	794 x 1067 x 1673
BAM08(H) BAM09(H)	31¼ x 50 x 65¾	794 x 1255 x 1673



Modular Breathing Air Center (M-BAC)

The customizable choice

The Modular Breathing Air Center [complete air system solution](#) can be created and modified according to your requirements. The package includes an air compressor, a containment fill station, and a storage rack.

Standard features:

- Your choice of Breathing Air Module (BAM) compressor (refer to the BAM Standard Features and Optional Equipment sections for details)
- Your choice of stationary SCBA or SCUBA Containment Fill Station (CFS) (refer to the Stationary CFS Standard Features and Optional Equipment sections for details)

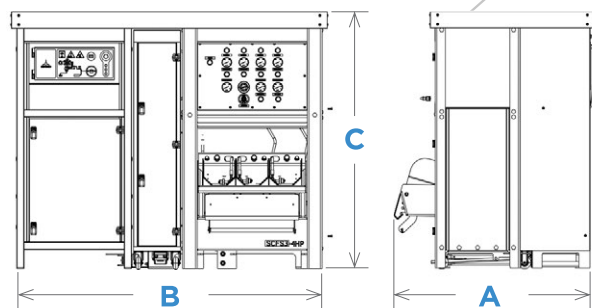
Package:

- Vertical, in-line 4-bottle rack with up to (4) UN or ASME storage cylinders
- Center storage module
- Modular integration kit

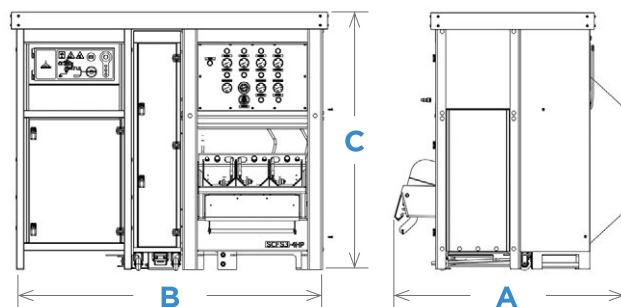
Optional equipment:

- 50', 75' or 100' spring rewind hose reel

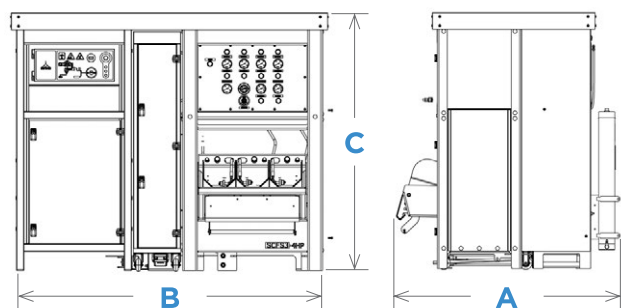
BAM04-BAM07(H)



BAM08(H)



BAM09(H)



Modular Breathing Air Center (M-BAC)

Technical Data

Model	Max Pressure		Stages	Charging Rate (0 - max pressure)			Compressor rpm	Drive		Weight		Sound Level dba
	bar	psi		m ³ /hr	l/min	cfm		kW	hp	kg	lb	
BAM04	350	5000	3	9.9	165	5.8	1300	4	5	461	1017	69
BAM05	350	5000	3	14.6	243	8.6	1300	5.5	7.5	471	1039	70
BAM06	350	5000	4	22.3	372	13.1	1340	7.5	10	526	1160	72
BAM07	350	5000	4	31.8	530	18.7	1800	11	15	541	1193	74
BAM08	350	5000	4	43	717	25.3	1530	15	20	576	1270	76
BAM09	350	5000	4	52	867	30.6	1800	18.5	25	592	1305	78
BAM06X	414	6000	4	16.7	278	10.2	1100	5.5	7.5	485	1070	72
BAM06H	414	6000	4	23.8	397	14	1340	7.5	10	526	1160	72
BAM07H	414	6000	4	35.2	587	20.7	1800	11	15	541	1193	74
BAM08H	414	6000	4	45.9	765	27	1530	15	20	576	1270	76
BAM09H	414	6000	4	56.4	940	33.2	1800	18.5	25	592	1305	78

Dimensions (A x B x C)

BAM with SCFS2 or SCFS3

Model	In	mm
BAM04-07H	45½ x 86 x 70	1156 x 2185 x 1778
BAM08-09H	52½ x 86 x 70	1334 x 2185 x 1778

BAM with SSCFS2 or SSCFS3

Model	In	mm
BAM04-07H	45½ x 90 x 70	1156 x 2286 x 1778
BAM08-09H	52½ x 90 x 70	1334 x 2286 x 1778



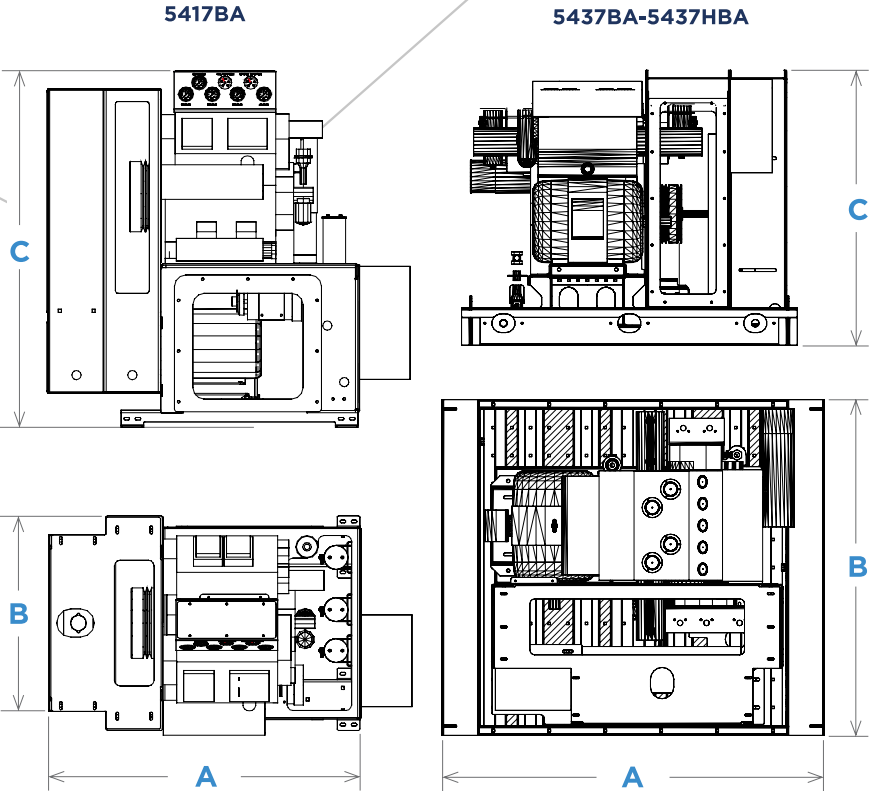
Water-cooled packages

The 24/7 option

Water-cooled packages are **resilient and durable** but also keep **low noise levels**, for higher comfort of use over time. These models are designed for the most demanding applications where continuous high-capacity operation is required.

Standard features:

- MAKO MK10C purification system (model 5417)
- MAKO MK420C purification system (models 5437 and 5437H)
- MAKO industrial 4-stage compressor block
- Compressor cooling system built into block for improved efficiency
- Closed loop cooling system integrated to compressor skid



Water-cooled packages

Model	Max Pressure		Stages	Charging Rate (0 - max pressure)			Compressor rpm	Drive		Weight	
	bar	psi		m ³ /hr	l/min	cfm		kW	hp	kg	lb
5417BA	345	5000	4	74	1233	44	1800	30	40	1320	2900
5437BA	345	5000	4	143	2380	84	1500	55	75	2177	4800
5437HBA	414	6000	4	144	2400	85	1500	55	75	2177	4800

Dimensions (A x B x C)

Model	In	mm
5417BA	64.34 x 38 x 64	1635 x 966 x 1626
5437BA 5437HBA	82 x 72 x 36	2083 x 1829 x 915

03

CONTAINMENT FILL STATIONS

Safety built in

Our fill stations have been designed to provide **safety and efficiency**, regardless of the environment. Enclosed steel chambers can contain the full impact of a catastrophic cylinder, valve or hose failure (select models are NFPA 1901-2016 compliant).



Protection



Convenience



Ease of use

Stationary Containment Fill Station (SCFS)

All-round efficiency

This series is designed for secure refill of SCBA and SCUBA cylinders. The SSCFS2 & SSCFS3 are NFPA 1901-2016 compliant.

Standard features:

- 2 or 3 positions
- SCBA (SCFS) or SCUBA (SSCFS) compatibility
- 0-6000 psi “push action” regulator
- 3-Bank cascade control system allowing for simultaneous storage and cylinder filling
- Fill panel with easy to read silk screen overlay
- Inlet / outlet gauges
- Fill control valve and gauge
- Color-zoned gauges
- Auxiliary outlet
- Fill whips with fill adapters
- Air storage bypass

Optional equipment:

- 3-4-Bank automatic cascading control
- Pressure selector valve
- Fire to SCUBA adapters





Mobile Containment Fill Station (MCFS)

The portable option

The steel chamber of the mobile fill station **ensures complete safety** when refilling cylinders in the field.

Standard features:

- 1, 2, or 3 positions
- SCBA (MCFS) or SCUBA (MSCFS) compatibility
- Single or dual pressure
- Fill whips with fill adapters

Optional equipment:

- Fire to SCUBA adapters
- 6" stand

Oxygen Containment Fill Station (Oxygen CFS)

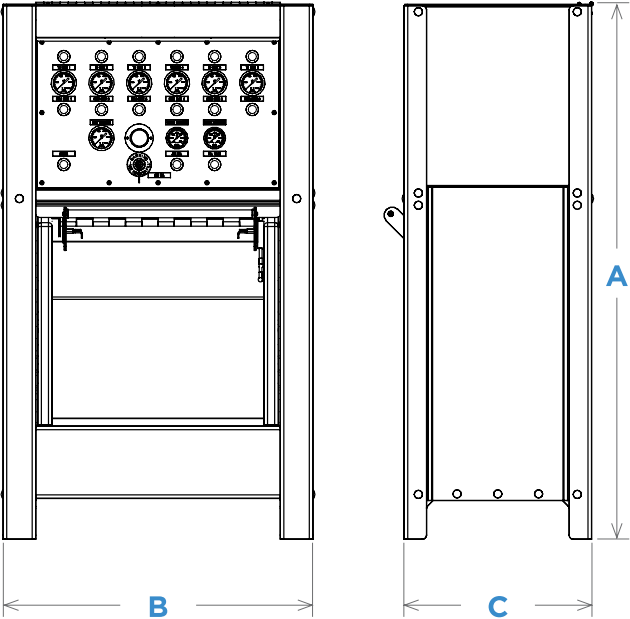
The proven standard

Dedicated for oxygen canisters, the Oxygen CFS combines **safety with simplicity of operation.**

Standard features:

- 1 or 2 positions
- Fill whips with fill adapters (approved for oxygen use)
- Fill whip line valve(s)





Stationary (SCFS)

Model	Dimensions (A x B x C)		Weight	
	In	mm	lbs	kg
SCFS2	66 x 29½ x 23½	1677 x 750 x 597	1010	458.13
SSCFS2¹	68 x 31 x 24	1726 x 787 x 610	1077	488.52
SCFS3	66 x 38½ x 23½	1677 x 978 x 597	1480	671.32
SSCFS3¹	67½ x 41 x 28	1715 x 1042 x 712	1690	766.57

Oxygen (CFS-OXY)

Model	Dimensions (A x B x C)		Weight	
	In	mm	lbs	kg
CFS1-OXY	38½ x 20½ x 23½	978 x 521 x 597	362	164.2
CFS2-OXY	38½ x 29½ x 23½	978 x 750 x 597	723	327.95

Mobile (MCFS)

Model	Dimensions (A x B x C)		Weight	
	In	mm	lbs	kg
MCFS1	38½ x 20½ x 23½	978 x 521 x 597	362	164.2
MCFS2	38½ x 29½ x 23½	978 x 750 x 597	723	327.95
MSCFS2¹	40¾ x 41 x 24½	1035 x 1041 x 622	928	420.93
MCFS3	38½ x 38½ x 23½	978 x 978 x 597	1148	520.72
MSCFS3¹	40¾ x 31½ x 24½	1035 x 800 x 622	1405	637.3

¹ Certified for 5500 PSI, NFPA 1901-2016 compliant

04

ACCESSORIES

Prolonging the life of your equipment

MAKO accessories combined with maintenance ensure longevity and reliability of your equipment. **They are the best choice for making the most of your breathing air systems.**



Air Storage

The air storage is a **perfect solution for refilling SCBA/SCUBA cylinders** without the use of a compressor.

Available options:

- Horizontal or vertical storage tanks
- Configurations of 2, 3, 4, 5 or 6 cylinders
- UN or ASME storage cylinders

Cascade controls

For maximum efficiency, Cascade Controls can be **used to simultaneously refill a storage bank and a SCBA cylinder**. Integrated and remotely-mounted options are available.

Available options:

- Automated system
- Minimized risk of operator error
- Simplified filling operation
- Complete control of air storage consumption and replenishment

CO & Moisture Monitor (CMM)

MAKO monitors ensure that the breathing air is **safe to use**, alerting you to excess CO and moisture levels.

Standard features:

- Easy-to-use interface
- Straightforward CO sensor/cell replacement
- Automatic shutdown
- Automatic calibration - the CO sensor automatically adjusts to ensure accurate measurement of CO by checking itself against two preset levels

Optional monitors:

- CO only
- Moisture only
- Wall-mounted (remote)

Technical data:

CD Monitor Performance	
Detection range	0-100 ppm
Factory alarm setting	5 ppm
Display type	LCD
Alarms	Visual: LEDs and digital LCD Audible: Case-mounted horn



MAKO Blue Synthetic Lubricant

The product combines **highly stable oils with unique additive technologies** to provide excellent thermal and oxidative stability.

Standard features:

- Approved for breathing air application
- Complete anti-wear and anti-corrosion protection

Lubricant Chart

Features	Mineral Oil	PAO	MAKO
Wide Temperature Performance	na	✓	✓
High Lubricity	na	✓	✓
Low Evaporation	na	✓	✓
Increased Efficiency	na	✓	✓
Excellent Solvency	na	na	✓
Clean Lubrication (no deposits)	na	na	✓
Biodegradability	na	na	✓
Extreme High-Temperature Performance	na	na	✓

✓ = applicable; na = **not** applicable

Selected physical properties

Property	Test Method	Results
Viscosity, cSt. @ 40°C	ASTM D445	91.4
Viscosity, cSt. @ 100°C	ASTM D445	9.3
ISO Viscosity Grade		100
Pour Point °C/°F	ASTM D97	-29 / -30
Flash Point °C/°F	ASTM D92	-260 / 500
Demulsibility @ 130°F	ASTM D1401	Excellent

Convenient package sizes

Package Size	Part Number
Quart	003MBQ-S
Gallon	003MBG-S
55 Gallon Drum	003MBD-S



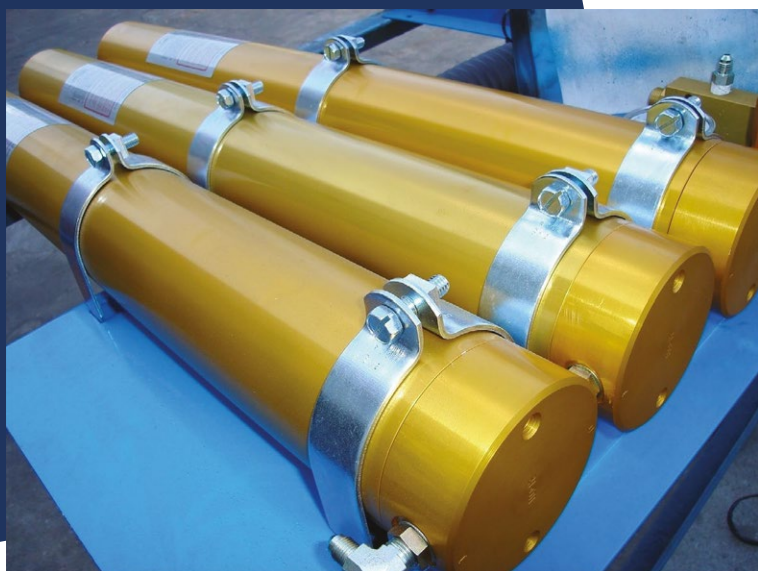
Oil-Water Separator

MAKO Oil-Water Separator is a proven solution for treating lubricant-contaminated compressor condensate. **Regular condensate removal is essential for safe equipment operation.**

Standard features:

- No threat to the environment
- Easy installation
- Reduced disposal costs





Filtration

MAKO designs and manufactures its purification systems and cartridges to **guarantee the highest air quality**. No adhesives are used in production, limiting odors and taste.

- Filtration products exceed international standards: EN 12021/CGA, Grade D&E/NFPA 1989/CSA
- Stainless steel springs incorporated into the cartridge assures properly packed media
- Filters are mounted inside cabinet to safeguard against accidental damage

Standard features:

- Visual CO and moisture indicators do not require depressurization
- System inoperable without cartridge in chamber when cartridge CMM monitor option is used
- Non-corrosive replaceable cartridge
- Anodized aluminum alloy chambers rated for 6000 psig with a 4:1 safety factor

Technical data:

Model	Capability at 70° F Inlet Cubic Ft.
MK2C	34,200
MK5C	82,200
MK10C	171,425
MK420C	428,570

05

ENGINEERING SIZING DATA

Compressor Sizing Chart

Instructions: Circle the closest answer(s) to each question. The column in which the most answers are circled should be the smallest system to be considered. If the majority of your SCBAs are 4500 psi, choose a compressor from Column 4 or higher.

	Column	1	2	3	4	5	6	7
How many SCBA cylinders are, or are expected to be, in service, within 12 months?		6-12	13-20	21-30	31-40	41-60	61-100	101 & up
What working pressure are these SCBA cylinders rated for?	psi	2216	2216 3000	2216 3000	2216 3000 4500 5500	2216 3000 4500 5500	2216 3000 4500 5500	2216 3000 4500 5500
How many working calls has the department logged in the last 12 months?		20 - 60	61 - 80	81 - 100	101 - 120	121 - 170	171 - 225	226 & up
How many SCBAs are being refilled each month?		4 - 20	20 - 40	40 - 60	60 - 80	80 - 100	100 - 400	400 & up
What is the maximum number of refills made in one operation in recent months?		4 - 9	10 - 15	16 - 25	26 - 35	36 - 45	46 - 55	56 & up
If you have been purchasing breathing air in cascade cylinders, how many of these were purchased in the last 12 months?		6 - 12	13 - 30	31 - 40	41 - 50	51 - 60	61 - 100	101 & up
How many active firefighters are on the staff of this department (count all shifts)?		4 - 8	9 - 12	13 - 20	21 - 30	31 - 45	46 - 65	66 & up
How many stations does this department operate?		1	1	1 - 2	1 - 2	1 - 3	2 - 4	5 & up
What is the population in this department's district?		1000 - 4000	4000 - 8000	8000 - 16,000	16,000 - 25,000	25,000 - 50,000	50,000 - 200,000	200,000 & up
If a department has an existing compressor in service, what is its output range?	cfm	3.0 - 5.0	5.0-7.0	8.0 - 10.0	10.0 - 12.0	13.0 - 15.0	16.0 - 18.0	19.0 - 20.0
Compressor output recommended								
cfm		5.8	8.6	13.1	14	20.7 - 27.0	27.0 - 33.2	33.2 & up
psi		5000	5000	5000	6000	6000	6000	6000
Cascade system recommended								
cfm		5.8	8.6	13.1	14	20.7 - 27.0	27.0 - 33.2	33.2 & up
Cyl		3 - 4	4	4 - 6	4-6	4 - 6	6 - 8	6 - 8

MAKO Compressors

MAKO Compressors is Part of Ingersoll Rand Engineered Systems and Services (ESS) specializing in Breathing Air Systems since 1952. Over 100 years of combined experience allowed us to develop unique design features that allow Mako breathing air compressors to deliver high working capacities while staying compact, cost-efficient and user-friendly. Continually improved technology ensures we are a trusted partners to multiple industries, including Hydrogen Sulphide safety, Fire safety, Recreational and Professional diving, Marine, Onshore/Offshore, and Defence.

WHY MAKO?

- Suitable for harsh environments even at High ambient temperatures.
- Global design is now available locally. Designed & tested in the United Kingdom.
- Suitable for Onshore & offshore applications.
- Efficient filtration system to deliver high quality Grade D & E breathing air.
- Efficient water-cooled diesel engine which is superior to other market-available air-cooled engines which are on the verge of phase-out due to emission norms.
- Usability which is the best in class for compressor controls and pressure gauges
- Rugged frame designed for ease of handling & movements



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