



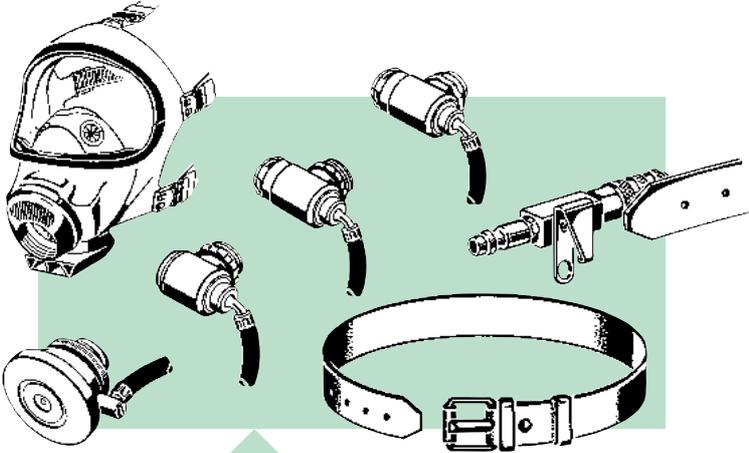
# Compressed Airline Breathing Apparatus

[The Independence in Breathing]

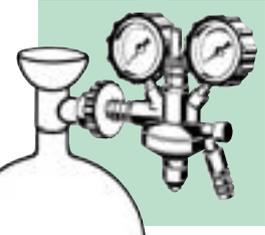
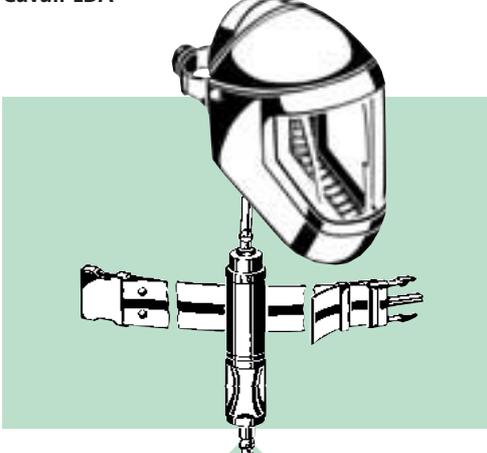
**MSA**

# The Complete Range at a Glance

Full face mask with lung governed demand valve



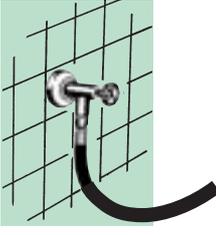
Light duty airline breathing apparatus  
Cavair LDA



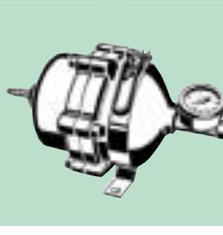
Pressure reducer with cascade cylinder



Diaphragm compressor



Compressed airline system



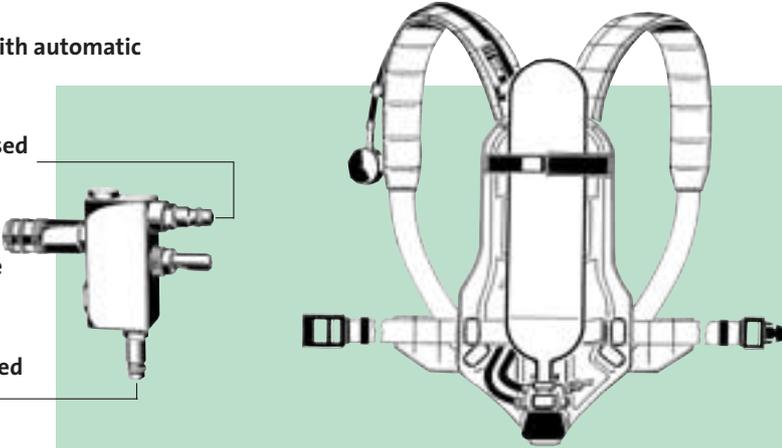
Compressed air filter



Compressed airline filter unit

Emergency air supply with automatic switch valve [ASV]

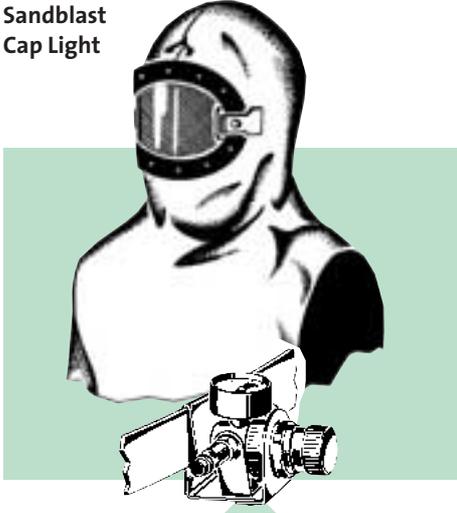
Connection to compressed air breathing apparatus  
 Connection to lung governed demand valve  
 Connection to compressed airline system



Emergency air armature



Sandblast  
Cap Light



### [ Various Applications ]

MSA compressed airline breathing apparatus function independent from the ambient atmosphere. They can be used in all places where the ambient air is not breathable because of contaminants or oxygen deficiency and where filtering devices do not provide sufficient protection.

With the lightweight design and the unlimited time of compressed air supply from a compressed air line system, resp. a compressor, or a limited time of compressed air supply from a cascade cylinder, they are used for a multitude of applications in industry and mining.

The following are some examples:

- Long duration work that is restricted to a location, e.g. on construction sites, handicraft work, agriculture and for repair and maintenance work of tanks and containers in industry
- In underground and surface mining
- In all situations where a compressed air breathing apparatus would encumber the user because of the tight work space or where small entry ports do not permit carrying an apparatus on the back
- For paint spray in handicraft work and industry
- For sandblast work in shipping, high rise and underground construction industry

### [ Design and Functioning ]

The MSA compressed airline breathing apparatus consists of a facepiece that is connected to a compressed air supply by a compressed airline. The facepiece can be a hood or a full face mask with a lung governed demand valve.

The lung governed demand valves supply only so much air as is required during inhalation. Thus, the air consumption is economical which makes it especially suitable for cascade cylinders. The connection between the lung governed demand valve and the air source is a connector or change-over valve [emergency air supply] that is fixed to the waist belt.

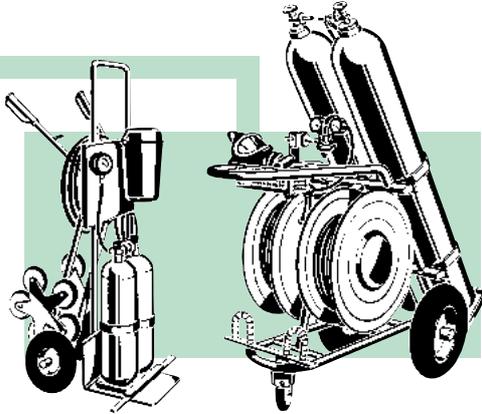
This prevents tensile force being transmitted to the facepiece.

With hoods the air flow is regulated with a pressure control. This permits individual adjustment of the constant air flow from the air source to the hood as required. By fixing the control to the waist belt, this prevents tensile force being transmitted to the facepiece.

### Lung Governed Demand Valve LA 83



The LA 83 is a normal pressure lung governed demand valve in a solid metal housing. The connection to the mask is a handwheel with thread according to EN 148-1 [standard thread].



Air cart 2 x 6l and 2 x 50l

**Lung Governed Demand Valve  
LA 88-N**



The LA 88-N is a normal pressure lung governed demand valve in a specially small and lightweight design. A servo-control controls the air flow. The pivotable medium pressure line adjusts very well to head movements, so that the user is not encumbered. The connection to the mask is a handwheel with thread according to EN 148-1 [standard thread].

**Lung Governed Demand Valve  
LA 88-AE**



The LA 88-AE is a small, light-weight positive pressure lung governed demand valve, which automatically switches to positive pressure with the initial breath. By pushing the large, red button on the side, it can be switched again to normal pressure to avoid loss of air when removing the apparatus. The pivotable medium pressure line adjusts very well to head movements, so that the user is not encumbered. The connection to the mask is a handwheel with thread according to EN 148-3 [M 45 x 3].

**Lung Governed Demand Valve  
LA 88-AS**



The LA 88-AS is identical to the LA 88-AE in design and functioning. The connection to the mask is a plug connector that permits coupling the lung governed demand valve to the mask within seconds.

**[ Full Face Masks ]**

The lung governed demand valve is connected to an full face mask according to EN 136.

Depending on the type of valve, the respective full face mask can be selected from the MSA range, e. g. the full face mask 3S and its variants or the full face mask Ultra Elite and its variants.

**Light Duty Airline Breathing Apparatus  
“Cavair LDA”**



The modern light duty airline breathing apparatus “Cavair LDA” is very comfortable to wear also for longer durations. It is especially suited as lasting protection against harmful vapors, gases, dust, chemicals and small particles that may fly around. Air is supplied through an air tube that is connected to the air source by a control valve fixed to the waist belt. Cover lenses protect the lens against dirt and scratches and are easily replaceable. A hood worn underneath the apparatus protects the top and back of the head against dirt.

**Facepiece for Sandblast Work  
Sandblast Cap Light**



The Sandblast Cap Light consists of a silicone full face mask with large lens, a replaceable plastic cover lens and a sieve lens as protection against rebounding grit. The full face mask is firmly connected with the protective hood which covers the shoulders and chest area. Air is supplied to the mask from a pressure control with pressure gauge which is fixed to the waist belt. The silicone mask is comfortable to wear also for longer durations.

**Compressed Air Supply Line**

The compressed air supply line is available in standard lengths of 5, 10 and 20 m. The lines are fitted with one-hand operation safety couplings and can be connected with each other to extend the length. The total length is limited to 50 m for technical and control reasons. The couplings can be connected also under



pressure and they differ in design from the couplings on the lung governed demand valves. Thus, a direct connection to the lung governed demand valve is impossible and the tension relief is assured.

The compressed air supply lines are flexible, antistatic, tread-fast and kink-resistant. The quality corresponds to the level required for the applications.

## [ Compressed Air Supply ]

For the supply of compressed air there are several different possibilities:

### Compressed Air System

The compressed air can be taken from a permanently installed factory air line system. Depending on the facepiece, the operating pressure should be between 3 and 10 bar. In order to prevent the apparatus system from freezing up, an effective water separator must be installed. To assure a quality of breathable air, it is necessary to install a compressed air filter between the tapping point and the apparatus connection.

### Compressed Air Filters



The filter consists of a housing with wall, resp. floor mounts and the respective connections with pressure gauge. The housing serves as receptacle for one of the following compressed air filter cartridges:

#### Filter Cartridge AB/St

against organic and inorganic gases and vapors [e. g. solvents, chlorine, hydrogen cyanide] and solid and liquid particles of less toxic substances.

#### Filter Cartridge A

against organic gases and vapors [oil odor filter].

#### Filter Cartridge CO

against carbon monoxide.

### Compressed Airline



#### Filter Unit

The compressed airline filter unit permits supplying breathable air to up to four persons. It has a portable case and it purifies compressed air in two separate stages. The compact case is of robust weather-resistant material. The air is purified in two stages:

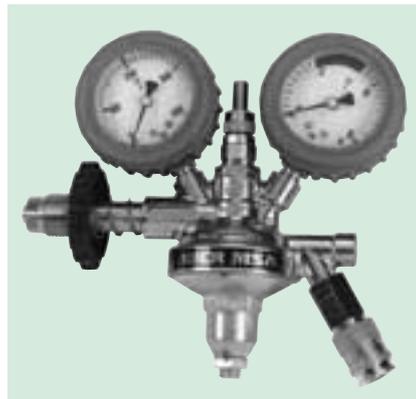
**Stage 1:** a high efficiency filter designed to remove dirt, oil and water aerosols down to 0.01 micron.

**Stage 2:** an activated charcoal filter to remove oil vapor and odors.

#### Air Cylinder

In order to supply air from a cascade cylinder, a pressure reducer must be fitted to the cylinder.

#### Pressure Reducer for Cascade Cylinders



The pressure reducer consists of a high pressure and medium pressure gauge, a warning device and a safety coupling to connect the compressed air supply line. The high pressure gauge indicates the current cylinder pressure. The medium pressure gauge shows the observer the regular breathing of the apparatus user when he, e.g. when working inside a tank, cannot be seen by the observer.

The medium pressure is set that the pressure reducer reduces the cylinder pressure to approx. 7 bar. The warning signal indicates the approaching end of the air supply.

### Diaphragm Compressor



The Diaphragm Compressor V-Meko 400 is a small, portable compressor with an intake performance of 360 l/min and a medium pressure of approx. 5 bar. The compressor supplies oil-free air, eliminating the need for additional filters.



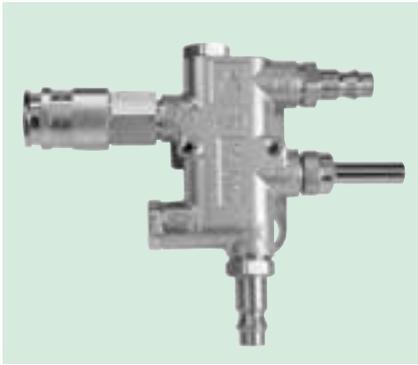
The Diaphragm Compressor R-Meko 720 has a 400 V motor and an intake performance of 720 l/min. The compressor is fixed onto a solid frame with wheels so that it is not restricted to a specific location.

#### Water Separator for Diaphragm Compressor

In order to remove condenser water from the compressed air, a water separator can be connected to the coupling connector of the diaphragm compressor. At the exit part there is a Y-piece to connect the air supply lines.

### Emergency Air Supply with Compressed Air Breathing Apparatus and Automatic Switch Valve [ASV]

In order to assure a continuous supply of air to the apparatus user in case the primary air supply [e. g. compressed air line system] fails, a compressed air breathing apparatus can be used as emergency air supply. This apparatus combination enables the user to breathe from the compressed air breathing apparatus while getting to the workplace. Once there he can remove the compressed air breathing apparatus for work.



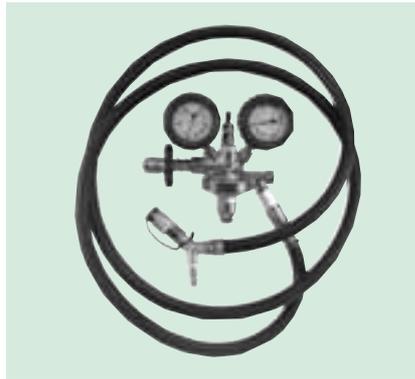
### Automatic Switch Valve

The automatic switch valve is attached to the waist belt and connects the primary air supply and the compressed air breathing apparatus with the lung governed demand valve.

When the pressure from the primary air supply falls below, the switch valve automatically switches over to air from the compressed air breathing apparatus.

For details please see leaflet 01-222.2.

### Emergency Air Supply



The emergency air supply is connected to a 200/300 bar cylinder and the Y-piece couplings are connected to the connecting piece on the waist belt and the air supply system. In case the operating pressure drops drastically, the worker automatically gets air from the supply cylinder. If the pressure in the air cylinder drops, the warning signal that is integrated in the pressure reducer gives an audible alarm at 30 bar at the latest.

### Air Cart



The **Air Cart 2 x 6 l** is a breathable air supply system which is not restricted to a specific location. It is designed for two 6 l/300 bar, resp. 6.8 l/300 bar compressed air cylinders.

The Air Cart is equipped with a pressure reducer with medium and high pressure gauge which permits monitoring the air supply and the regular breathing of the worker. The audible signal of the warning device alerts the user that the air supply will be exhausted shortly.

A face mask container for protected storage of a face mask is provided.

Further options are a Y-piece and an alarm horn that can be connected to the pressure reducer. Air supply hoses are not included in delivery. You can choose from standard product range [max. 30 m].



The **Air Cart 2 x 50 l** is especially designed for long-duration work. It is equipped with a pressure reducer with high and medium pressure gauges, safety valve, warning signal, medium pressure coupling and a Y-piece.

It is prepared to take two 50 l/300 bar cylinders.

Optional are two airline reels with every 30 or 50 m hose length and/or an alarm horn.

### [The Advantages at a Glance]

- Suitable for long-duration work through continual air supply [e.g. compressed airline system]
- Large selection of facepieces such as hoods and full face masks with lung governed demand valves
- Many combinations possible through modular design of range
- Great freedom of movement through sufficiently long air supply lines
- Range is suitable for special applications, e.g. sandblast work
- Comprehensive accessories available, e.g. compressed air filters

### [Ordering Information]

D3043918	Waist belt
D4066803	Belt connecting piece
D4074808	Lung governed demand valve LA 83
D4075906	Lung governed demand valve LA 88-AS
D4075909	Lung governed demand valve LA 88-AE
D4075960	Lung governed demand valve LA 88-N
D2055000	3S full face mask [normal pressure, Standard thread (EN 148-1)]
D2056700	Ultra Elite full face mask [normal pressure, Standard thread (EN 148-1)]
D2055741	3S-PF full face mask [positive pressure, thread M 45 x 3 (EN 148-3)]
D2055751	3S-PS full face mask [positive pressure, plug connector]
D2056741	Ultra Elite-PF full face mask [positive pressure, thread M 45 x 3 (EN 148-3)]
D2056751	Ultra Elite-PS full face mask [positive pressure, plug connector]
D3050750	Light duty airline breathing apparatus "Cavair LDA", consisting of: hood with lens and head harness, cover lenses and hood, air line, waist belt with control valve and coupling to air supply
D4066700	Automatic switch valve
D4066845	Emergency air supply
D3050720	Sandblast Cap Light, consisting of: silicone full face mask, protective hood, pressure reducer with pressure gauge, air line and leather waist belt

- Additional safety for the worker through emergency air supply
- Different warning signals in case of insufficient air supply, resp. when air is taken from the emergency air supply
- Possibility to connect a compressed air tool to the automatic change-over valve when air is taken from the primary air source
- Possibility to connect two apparatus users to the air distribution piece

### [Accessories]

D4066847	Compressed air supply hose, antistatic, 5 m
D4066848	Compressed air supply hose, antistatic, 10 m
D4066849	Compressed air supply hose, antistatic, 20 m
D4066830	Pressure reducer, 200/300 bar
D4066843	Diaphragm compressor V-Meko 400
10014875	Diaphragm compressor R-Meko 720
D4066846	Water separator for diaphragm compressor
D3043986	Compressed air filter housing
D3043994	Connections for compressed air filter housing with pressure gauge
D3043987	Compressed air filter cartridge CO
D3043989	Compressed air filter cartridge AB/St
D3043993	Compressed air filter cartridge A
D4066851	Compressed airline filter unit
10041367	Kit of couplings AL for Airline Filter Unit
D4066804	Air distribution piece [Y-piece]
On request	Air Cart 2 x 6 l/300 bar
On request	Air Cart 2 x 50 l/300 bar

## [ Technical Data ]

### Lung Governed Demand Valve LA 83

Operating pressure: 4.0–8.5 bar

### Lung Governed Demand Valve LA 88-N

Operating pressure: 4.5–8.5 bar

### Lung Governed Demand Valve LA 88-AS

Operating pressure: 5.0–8.5 bar

### Lung Governed Demand Valve LA 88-AE

Operating pressure: 5.0–8.5 bar

### Light Duty Airline Breathing Apparatus "Cavair LDA"

Airline diameter: 6 mm

Minimum air flow: approx. 170 l/min

Maximum air flow: approx. 240 l/min

Operating time: 4–7 bar

### Compressed Air Supply Line

Type: tread-fast, resistant to kinking, antistatic

Line length: 5, 10 and 20 m

Inside diameter: 9 mm

Maximum operating pressure:

10 bar

Couplings: one-hand operation safety couplings, fixed with press clamps

### Compressed Air Filter

Compressed air filter housing: cast aluminium, hammer finished paint

Maximum operating pressure:

10 bar

Connections: one-hand operation safety coupling with pressure gauge [at air exit port] and air line connection [at air intake port]

### Compressed Air Filter Cartridge

Type A – oil odor filter

Type CO – against carbon monoxide

Type AB/St – against organic and inorganic gases and vapors, solid and liquid particles [particle filter class P2]

### Compressed Airline Filter Unit

Dimensions: 460 mm x 245 mm x 410 mm [length x depth x height]

Maximum operating pressure:

10 bar

Minimum operating pressure:

4 bar

Maximum transmission performance:

1400 l/min [at 7 bar]

### Sandblast Cap Light

Permissible pressure range of air supply: 3–6 bar

Work pressure: 1.3 bar

Air volume flow: 175 l/min.

Maximum length of air supply line:

50 m

Weight: approx. 1.9 kg

### Pressure Reducer

Operating pressure: 200 bar or 300 bar

Initiating pressure of warning signal:  $\geq 30$  bar

Opening pressure of safety valve:

approx. 12 bar

Medium pressure: approx. 7 bar

### Diaphragm Compressor V-Meko 400

Motor: 220 V, 1.1 kW

Dimensions: 380 mm x 350 mm x 370 mm [depth x width x height]

Weight: 24 kg

Maximum pressure: 6 bar

Intake performance: 360 l/min

Connection air supply line: one-hand operation, safety coupling

### Diaphragm Compressor R-Meko 720

Motor: 400 V, 2.2 kW, 50 Hz

Dimensions: 780 mm x 550 mm x 510 mm [depth x width x height]

Weight: 58 kg

Maximum pressure: 6 bar

Intake performance: 720 l/min

### Automatic Switch Valve

Belt connector: brass, nickel coated

Couplings: one-hand operation safety coupling

Change-over pressure: approx. 4.5 bar

Warning signal: when air is taken from the compressed air breathing apparatus

### Emergency Air Supply

Pressure reducer: high- and medium pressure gauge

Warning signal: approx. 30 bar

Operating pressure: adjustable

Connection hose: 2.5 m length, antistatic

Y-piece: onehand operation safety coupling

### Air Cart 2 x 6 l/300 bar

Cylinders: 2 x 6 l/300 bar or 2 x 6.8 l/300 bar

Dimensions: H 130; W 65; D 55 cm

### Air Cart 2 x 50 l/300 bar

Cylinders: 2 x 50 l/300 bar

Dimensions: H 160; W 65; D 150 cm

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