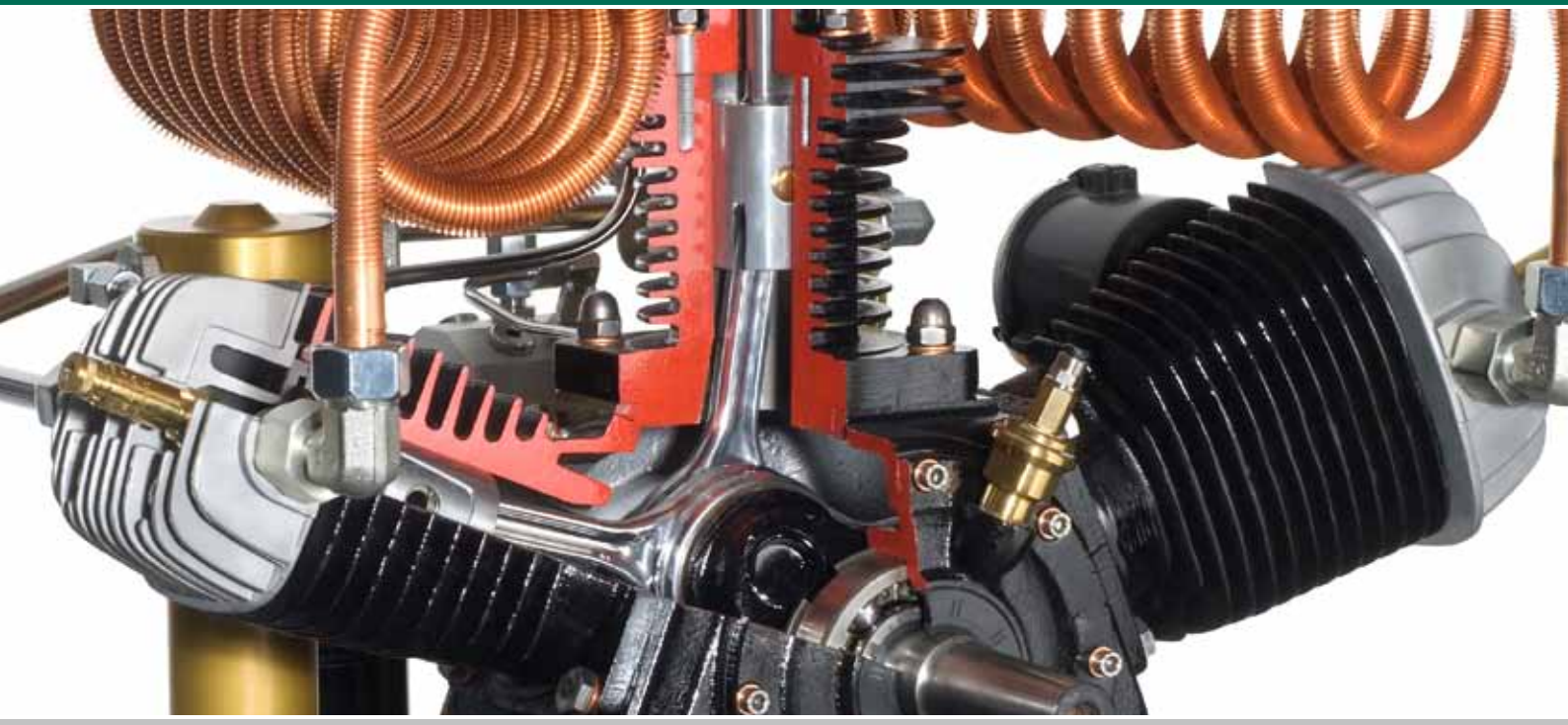
COMPRESSORS L&W

# Product Range



Compressors | Purification | Storage | Filling Panels | Nitrox/Trimix





## High Pressure Solutions from L&W!

## Solid Growth

Lenhardt & Wagner is one of the leading and renowed companies in the market of high-pressure applications. A worldwide network of L&W agencys and service centers ensures a steady growth of the company. The flat and manageable corporate structure allows us to identify any weaknesses directly and act immediately. Our personal approach and a direct line to the customers here are essential.

During the last three decades the range of L&W products could be advanced consistently and new markets are created. This is mainly due to our investment in the development and optimization of the product range and a partnership with our importers. In addition to Breathing Air Compressors and related peripheral equipment we offer also compressors, storage and filter for the necessary high-pressure which is required for natural gas filling stations. High-pressure inert gases such as argon, helium or nitrogen for industrial applications including welding and laser cutting, and for general laboratory use are also among our skills.

Our balanced growth is based on a long-term and strategic planning that allows us still sufficient freedom of action for rapid reaction in cases of need. Based on continues expansion of the Asian market, with new agencys in Singapore and China, we could already significantly increased our sales and improve our services.

## Trust the experts, trust to L&W.

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# High pressure solutions by L&W

### Compressors
High pressure piston compressor up to 420 bar with electric, gasoline or diesel drive.


### Purification
Purification with refrigeration dryers or with filter towers.

### Storage
High pressure storage.

### Storage management
Solutions for controlling storage for optimum efficiency.

### Filling Panels
Ergonomically designed filling panels.


### Nitrox/Trimix
Solutions for mixed gas production and filling for diving applications.

### Air Station
Filling stations for 24 hour / 7 days a week filling services.

## Compressor Overview

| Type | Mobility | Capacity | | | Prime mover | Drive power | | Page |
|---|---|---|---|---|---|---|---|---|
| | | [l/min] | [Nm³/h] | [cfm] | | [kW] | [PS] | |
| LW 100 E / E1 ECO | Mobile | 100 | 6,0 | 3,5 | 1- / 3-Phase power | 2,2 | 3,0 | 7 |
| LW 100 B ECO | Mobile | 100 | 6,0 | 3,5 | Gasoline | 4,5 | 6,0 | 7 |
| LW 100 E | Mobile | 100 | 6.0 | 3.5 | 3 Phase Power | 2.2 | 3.0 | 8 |
| LW 100 E1 | Mobile | 100 | 6.0 | 3.5 | Single Phase power | 2.2 | 3.0 | 8 |
| LW 100 B | Mobile | 100 | 6.0 | 3.5 | Gasoline | 4.5 | 6.0 | 9 |
| LW 160 E | Mobile | 160 | 9.6 | 5.6 | 3 Phase Power | 4.0 | 5.5 | 10 |
| LW 160 E1 | Mobile | 160 | 9.6 | 5.6 | Single Phase power | 4.0 | 5.5 | 10 |
| LW 170 E Nautic | Mobile | 170 | 10.2 | 6.0 | 3 Phase Power | 4.0 | 5.5 | 14 |
| LW 170 D Nautic | Mobile | 170 | 10.2 | 6.0 | Diesel | 4.8 | 6.5 | 15 |
| LW 190 B | Mobile | 190 | 11.4 | 6.7 | Gasoline | 6.0 | 9.0 | 11 |
| LW 200 E Nautic | Mobile | 200 | 12.0 | 7.0 | 3 Phase Power | 5.5 | 7.5 | 14 |
| LW 225 E | Mobile | 225 | 13.5 | 7.9 | 3 Phase Power | 5.0 | 7.5 | 12 |
| LW 245 B | Mobile | 245 | 14.7 | 8.7 | Gasoline | 6.0 | 9.0 | 13 |
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| LW 320 B Nautic | Mobile | 320 | 19.2 | 11.3 | Gasoline | 8.2 | 11.0 | 17 |
| LW 280 E Compact | Compact | 280 | 16.8 | 9.9 | 3 Phase Power | 7.5 | 10.0 | 18 - 19 |
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| LW 450 E Compact | Compact | 450 | 27.0 | 15.9 | 3 Phase Power | 11.0 | 15.0 | 18 - 19 |
| LW 230 E | Stationary | 230 | 13.8 | 8.1 | 3 Phase Power | 5.5 | 7.5 | 20 - 21 |
| LW 280 E | Stationary | 280 | 16.8 | 9.9 | 3 Phase Power | 7.5 | 10.0 | 20 - 21 |
| LW 300 E | Stationary | 300 | 18.0 | 10.6 | 3 Phase Power | 7.5 | 10.0 | 22 - 23 |
| LW 450 E | Stationary | 450 | 27.0 | 15.9 | 3 Phase Power | 11.0 | 15.0 | 22 - 23 |
| LW 450 D Basic | Stationary | 450 | 27.0 | 15.9 | Diesel | 10.5 | 14.3 | 24 - 25 |
| LW 450 D | Stationary | 450 | 27.0 | 15.9 | Diesel | 10.5 | 14.3 | 26 - 27 |
| LW 570 E | Stationary | 570 | 34.0 | 20.1 | 3 Phase Power | 15.0 | 20.0 | 28 - 29 |
| LW 570 D | Stationary | 570 | 34.0 | 20.1 | Diesel | 12.9 | 17.5 | 30 - 31 |
| LW 720 E | Stationary | 720 | 43.2 | 25.4 | 3 Phase Power | 18.5 | 25.0 | 32 - 33 |
| LW 1300 E | Stationary | 1300 | 78.0 | 45.9 | 3 Phase Power | 37.0 | 50.0 | 34 - 35 |
| LW 230 ES | Silent | 230 | 13.8 | 8.1 | 3 Phase Power | 5.5 | 7.5 | 36 - 37 |
| LW 280 ES | Silent | 280 | 16.8 | 9.9 | 3 Phase Power | 7.5 | 10.0 | 36 - 37 |
| LW 300 ES | Silent | 300 | 18.0 | 10.6 | 3 Phase Power | 7.5 | 10.0 | 38 - 39 |
| LW 450 ES | Silent | 450 | 27.0 | 15.9 | 3 Phase Power | 11.0 | 15.0 | 38 - 39 |
| LW 570 ES | Silent | 570 | 34.0 | 20.1 | 3 Phase Power | 15.0 | 20.0 | 40 - 41 |
| LW 720 ES / 1300 ES | Sound insulated Housing for LW 720 / 1300 – retrofit | | | | | | | 42 - 43 |

## Certified L&W Quality

L&W delivers high-pressure compressors and the complementary modules for purification, storage and filling of breathing air. Highest quality and continuous development and improvement of our products are our most significant target in the implementation of our daily tasks. Therefore, we meet all EU requirements as a standard and are certified to ISO 9001:2000. On requested, our products could also be certified by other authorities such as TÜV, Germanischer Lloyd, DNV, GOST, UDT or ABS.

In the field of air supply, we serve a broad range of users, such as firefighters in action, sports and professional divers. These customers must be able to trust unconditionally in the exercise of their activities on the quality and safety of our products.

Our employees are aware of their responsibilities and they have the task to reach with expertise and experience the enormous needs of the market. Through continuous in-house quality control we face new challenges every day.

**L & W Network**

In all parts of the world our customers appreciate reliability and our full support. Our products offer the maximum in durability and ease of maintenance. Low operating costs and excellent value for money are as a matter of course for L & W. Through our worldwide dealer network, our customers can always count on superb service and excellent support. A special offer from L & W are the personal training sessions that are conducted in specially equipped training facilities in our company. In this training, our customers learn the proper use and independent maintenance with our products.

# LW 100 E ECO / LW 100 E1 ECO / LW 100 B ECO

Lightweight high-pressure compressor for the full air supply on site. Ready for connection with cable and plug. Ideal for mobile use. The LW 100 ECO is made 100% of the prover elements of the successful LW 100 Series. The main components such as: motor, compressor block, filter system and filling device are fully integrated.

LW 100 ECO

## Specifications

- Fully wired, ready to start with cable and plug, start/stop switch
- Aluminium frame
- All pistons with steel piston rings
- 2 oil/water separators
- Inter-stage and final stage air coolers
- Savety valves for each stage
- Pressure maintaining and non return valve for extended filter duration
- Filling hose with filling valve and pressure gauge
- 200/232 bar version with DIN/Yoke connection, 300 bar version with DIN connection
- Breathing air purification in accordance with EN 12021

## Options

- Auto start
- Carrying handles
- Additional filling hose
- Thermal overload switch
- Automatic condensation drain
- 200/300 bar switch over device
- Automatic stop and hours counter
- Special voltages / frequencies on request
- Conversion set petrol/electric drive


LW 100 ECO - Rear view

## *Technical Data*

| | LW 100 E ECO | LW 100 E1 ECO | LW 100 B ECO |
|---|---|---|---|
| Type: | Air cooled, reciprocating piston comp. | Air cooled, reciprocating piston comp. | Air cooled, reciprocating piston comp. |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 100 / 6 / 3.5 | 100 / 6 / 3.5 | 100 / 6 / 3.5 |
| Max. Pressure [bar]: | 330* | 330* | 330* |
| RPM [1/min]: | 2300 | 2300 | 2300 |
| No of cylinders / No of stages: | 3 / 3 | 3 / 3 | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz [1] | Single phase E-Motor 230V 50Hz [1] | 4 stroke gasoline engine, hand start |
| Drive power [kW] / [HP]: | 2.2 / 3.0 | 2.2 / 3.0 | 4.5 / 6.0 |
| Cooling air requirement [Nm³/h]: | 660 | 660 | 660 |
| Lubrication type: | Splash oil | Splash oil | Splash oil |
| Oil capacity [litre]: | 0.5 | 0.5 | 0.5 |
| Air outlet temperature [°C]: | 6 °C above ambient | 6 °C above ambient | 6 °C über above ambient |
| Filter capacity [m³ at +20°C] [2]: | 108 | 108 | 108 |
| Dimensions L x W x H [cm]: | 65 x 39 x 40 | 65 x 39 x 40 | 65 x 39 x 40 |
| Weight [kg]: | 39 | 42 | 39 |
| Noise level [dB]: | 82 measured at 1 m | 82 measured at 1 m | 93 measured at 1 m |

*set at the final stage safety valve [1] Special voltages/frequencies available on request [2] In accordance with EN 12021

## LW 100 E / LW 100 E1

The compressors are ready to plug in and come with a cable, plug and start/stop switch.
Ideal for small applications or occasional filling operations.

### Specifications

- Fully wired, ready to start with cable and plug, start/stop switch
- 1 Filling hose with filling valve and pressure gauge
- 200/232 bar version with DIN/Yoke connection, 300 bar version with DIN connection
- Stainless steel frame with carrying handles
- Fan belt guard and block cowling for improved cooling air flow
- 2 oil/water separators, safety valve for each stage
- Inter-stage and final stage air coolers
- Pressure maintaining and non return valve for extended filter duration
- Breathing air purification in accordance with EN 12021

LW 100 E1

### Options

- Auto start
- Additional filling hose
- 200/300 bar switch over device
- Automatic stop and hours counter
- Special voltages / frequencies on request
- Conversion set petrol/electric drive

LW 100 E

## *Technical Data*

| | LW 100 E | LW 100 E1 |
|---|---|---|
| Type: | Air cooled, reciprocating piston compressor | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 100 / 6 / 3.5 | 100 / 6 / 3.5 |
| Max. Pressure [bar]: | 330 (set at the final stage safety valve) | 330 (set at the final stage safety valve) |
| RPM [1/min]: | 2300 | 2300 |
| No of cylinders / No of stages: | 3 / 3 | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz [1] | Single phase E-Motor 230V 50Hz [1] |
| Drive power [kW] / [HP]: | 2.2 / 3.0 | 2.2 / 3.0 |
| Cooling air requirement [Nm³/h]: | 660 | 660 |
| Lubrication type: | Splash oil | Splash oil |
| Oil capacity [litre]: | 0.5 | 0.5 |
| Air outlet temperature [°C]: | 6°C above ambient | 6°C above ambient |
| Filter capacity [m³ at +20°C] [2]: | 108 | 108 |
| Dimensions L x W x H [cm]: | 65 x 39 x 40 | 65 x 39 x 40 |
| Weight [kg]: | 43 | 46 |
| Noise level [dB]: | 82 dB(A) measured at 1m | 82 dB(A) measured at 1m |

[1] Special voltages/frequencies available on request [2] In accordance with EN 12021

# LW 100 B

For light and mobile filling applications, independent of power supply. Ideal for expeditions, dive holidays in remote locations or in mobile repair/construction applications. The self contained unit is equipped with a reliable Vanguard 4 stroke motor and extremely easy to operate.

## Specifications

- Ready to start unit with 4 stroke motor with pull start
- Drive motor with auto cut off for low oil level
- Collapsible snorkel for air inlet
- 1 Filling hose with filling valve and pressure gauge
- 200/232 bar version with DIN/Yoke connection, 300 bar version with DIN connection
- Stainless steel frame with carrying handles
- Fan belt guard and block cowling for improved cooling air flow
- 2 oil/water separators, safety valve for each stage
- Inter-stage and final stage air coolers
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non return valve for extended filter duration

## Options

- Additional filling hose
- Automatic stop at final pressure
- 200/300 bar switch over device
- Conversion set petrol/electric drive


**LW 100 B**

# *Technical Data*

| | LW 100 B |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 100 / 6 / 3.5 |
| Max. Pressure [bar]: | 330 (set at the final stage safety valve) |
| RPM [1/min]: | 2300 |
| No of cylinders / No of stages: | 3 / 3 |
| Prime mover type: | 4 stroke gasoline engine, hand start |
| Drive power [kW] / [HP]: | 4.5 / 6.0 |
| Cooling air requirement [Nm³/h]: | 660 |
| Lubrication type: | Splash oil |
| Oil capacity [litre]: | 0.5 |
| Air outlet temperature [°C]: | 6°C above ambient |
| Filter capacity [m³ at +20°C] [2]: | 108 |
| Dimensions L x W x H [cm]: | 70 x 38 x 45 |
| Weight [kg]: | 43 |
| Noise level [dB]: | 93 dB[A] measured at 1 m |

[2] In accordance with EN 12021

## LW 160 E / E1

Portable compressors without compromising power and capacity. The L&W 160 compressors are compact and extremely easy to operate, the units have established themselves over the years as reliable compressors. The compressors are ready to run and come with a cable, plug and phase selector switch for easy direction of rotation control. Ideal for small applications or sporadic filling operations.

### Specifications

- Fully wired, ready to start with cable, plug and phase selector (E)
- 1 Filling hose with filling valve and pressure gauge
- Steel frame with carrying handles
- GRP fan belt guard
- 2 oil/water separators, safety valve for each stage
- Stainless steel cooling pipes and inter-coolers
- Breathing air purification in accordance with EN 12021
- Pressure maintaining valve for extended filter duration

### Options

- Auto start
- Additional filling hose
- Automatic stop at final pressure
- Automatic condensation drain
- 200/300 bar switch over device
- Hours counter
- Special voltages / frequencies on request
- Conversion set petrol/electric drive


**LW 160 E**

## *Technical Data*

| | LW 160 E | LW 160 E1 |
|---|---|---|
| Type: | Air cooled, reciprocating piston compressor | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 160 / 9.6 / 5.6 | 160 / 9.6 / 5.6 |
| Max. Pressure [bar]: | 330 (set at the final stage safety valve) | 330 (set at the final stage safety valve) |
| RPM [1/min]: | 1450 | 1450 |
| No of cylinders / No of stages: | 3 / 3 | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz [1] | Single phase E-Motor 230V 50Hz [1] |
| Drive power [kW] / [HP]: | 4.0 / 5.5 | 3.7 / 5.0 |
| Cooling air requirement [Nm³/h]: | 1200 | 1200 |
| Lubrication type: | Plunger/Splash oil | Plunger/Splash oil |
| Oil capacity [litre]: | 0.8 | 0.8 |
| Air outlet temperature [°C]: | 8 - 10°C above ambient | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [2]: | 180 | 180 |
| Dimensions L x W x H [cm]: | 78 x 42 x 56 | 78 x 42 x 56 |
| Weight [kg]: | 90 | 94 |
| Noise level [dB]: | 84 dB[A] measured at 1 m | 84 dB[A] measured at 1 m |

[1] Special voltages/frequencies available on request [2] In accordance with EN 12021

# LW 190 B

Portable compressor with a reliable Honda 4 stroke motor for optimum mobility and reliability independent of power supplies. The easy to operate units have established themselves as ideal compressors for remote expeditions and safaris. Despite the compact form and mobility, the filling times are kept to a minimum with high delivery rates.

## Specifications

- Ready to start unit with 4 stroke 6.6 kW Honda motor with pull start
- Drive motor with auto cut off for low oil level
- 1 Filling hose with filling valve and pressure gauge
- GRP fan belt guard
- Steel frame with carrying handles
- 2 oil/water separators, safety valve for each stage
- Stainless steel cooling pipes and inter-coolers
- Breathing air purification in accordance with EN 12021
- Pressure maintaining valve for extended filter duration
- 2.5 m air inlet hose

## Options

- Additional filling hose
- Automatic stop at final pressure
- 200/300 bar switch over device
- Conversion set petrol/electric drive

**LW 190 B with optional 200/300 bar module**

# *Technical Data*

| | LW 190 B |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 190 / 11.4 / 6.7 |
| Max. Pressure [bar]: | 330 (set at the final stage safety valve) |
| RPM [1/min]: | 1900 |
| No of cylinders / No of stages: | 3 / 3 |
| Prime mover type: | 4 stroke gasoline engine, hand start |
| Drive power [kW] / [HP]: | 6.6 / 9.0 |
| Cooling air requirement [Nm³/h]: | 1800 |
| Lubrication type: | Plunger/Splash oil |
| Oil capacity [litre]: | 0.8 |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [2]: | 180 |
| Dimensions L x W x H [cm]: | 92 x 43 x 57 |
| Weight [kg]: | 99 |
| Noise level [dB]: | 93 dB[A] measured at 1 m |

[2] In accordance with EN 12021

## LW 225 E

A portable compressor without compromising power and capacity. The 225 E is small and light enough for mobility, yet powerful enough for stationary applications. The compressors are ready to run and come with a cable, plug and phase selector switch for easy direction of rotation control.

### Specifications

- Fully wired, ready to start with cable, plug and phase selector
- 1 Filling hose with filling valve and pressure gauge
- Steel frame with carrying handles
- GRP fan belt guard
- 2 oil/water separators, safety valve for each stage
- Stainless steel cooling pipes and inter-coolers
- Breathing air purification in accordance with EN 12021
- Pressure maintaining valve for extended filter duration

### Options

- Auto start
- Additional filling hose
- 200/300 bar switch over device
- Automatic stop at final pressure
- Automatic condensation drain
- Hours counter
- Special voltages / frequencies on request
- Conversion set petrol/electric drive

LW 225 E

## *Technical Data*

| | LW 225 E |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 225 / 13.5 / 7.9 |
| Max. Pressure [bar]: | 330 (set at the final stage safety valve) |
| RPM [1/min]: | 1850 |
| No of cylinders / No of stages: | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 5.5 / 7.5 |
| Cooling air requirement [Nm³/h]: | 1650 |
| Lubrication type: | Plunger/Splash oil |
| Oil capacity [litre]: | 0.8 |
| Air outlet temperature [°C]: | 8 - 10 C° above ambient |
| Filter capacity [m³ at +20°C] [2]: | 200 |
| Dimensions L x W x H [cm]: | 78 x 45 x 56 |
| Weight [kg]: | 92 |
| Noise level [dB]: | 87 dB[A] measured at 1 m |

[2] In accordance with EN 12021

## LW 245 B

Portable compressor with a reliable Honda 4 stroke motor for optimum mobility and reliability independent of power supplies. The easy to operate units have established themselves as ideal compressors for remote expeditions and safaris. Despite the compact form and low weight, the filling times are kept to a minimum with a powerful delivery rate.

### Specifications

- Ready to start unit with 4 stroke 6.6 kW Honda motor with pull start
- Drive motor with auto cut off for low oil level
- 1 Filling hose with filling valve and pressure gauge
- GRP fan belt guard
- Steel frame with carrying handles
- 2 oil/water separators, safety valve for each stage
- Stainless steel cooling pipes and inter-coolers
- Breathing air purification in accordance with EN 12021
- Pressure maintaining valve for extended filter duration
- 2.5 m air inlet hose

### Options

- Additional filling hose
- Automatic stop at final pressure
- 200/300 bar switch over device
- Conversion set petrol/electric drive

**LW 245 B**

## *Technical Data*

| | LW 245 B |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 245 / 14.7 / 8.7 |
| Max. Pressure [bar]: | 330 (set at the final stage safety valve) |
| RPM [1/min]: | 2000 |
| No of cylinders / No of stages: | 3 / 3 |
| Prime mover type: | 4 stroke gasoline engine, hand start |
| Drive power [kW] / [HP]: | 6.6 / 9.0 |
| Cooling air requirement [Nm³/h]: | 1800 |
| Lubrication type: | Plunger/Splash oil |
| Oil capacity [litre]: | 0.8 |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [2]: | 200 |
| Dimensions L x W x H [cm]: | 92 x 45 x 57 |
| Weight [kg]: | 94 |
| Noise level [dB]: | 93 dB[A] measured at 1 m |

[2] In accordance with EN 12021

## LW 170 E / LW 200 E

The electrically driven Nautic compressors are ideal for medium sized stationary applications where mobility is also desirable. The compressors are 3 stage blocks mounted in a sturdy powder coated crash frame with foldable carrying handles and sling eyes for crane/helicopter transport. The frames provide excellent protection and are designed to allow easy transportation.

### Specifications

- Fully wired, ready to start with cable, plug and phase selector
- Operating panel with Start/Stop switch and running lamp
- Filling pressure gauge and hours counter
- Crash frame with 4 carrying handles and sling eyes, powder coated in RAL 6026
- GRP fan belt guard
- 2 oil/water separators, safety valve for each stage
- Stainless steel cooling pipes and inter-coolers
- Breathing air purification in accordance with EN 12021
- Pressure maintaining valve for extended filter duration
- 2 self-venting, lever operated filling valves with hoses and connections

### Options

- Auto start
- 2 extra filling hoses
- Automatic stop at final pressure
- Automatic condensation drain
- 200/300 bar parallel filling pressures
- Motor protection switches
- Special voltages / frequencies on request

LW 200 E Nautic

## *Technical Data*

| | LW 170 E | LW 200 E |
|---|---|---|
| Type: | Air cooled, reciprocating piston compressor | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 170 / 10.2 / 6.0 | 200 / 12.0 / 7.0 |
| Max. Pressure [bar]: | 330 (set at the final stage safety valve) | 330 (set at the final stage safety valve) |
| RPM [1/min]: | 1530 | 1650 |
| No of cylinders / No of stages: | 3 / 3 | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 4.0 / 5.5 | 5.5 / 7.5 |
| Cooling air requirement [Nm³/h]: | 1200 | 1650 |
| Lubrication type: | Plunger/Splash oil | Plunger/Splash oil |
| Oil capacity [litre]: | 0.8 | 0.8 |
| Air outlet temperature [°C]: | 8 - 10°C above ambient | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [2]: | 180 | 200 |
| Dimensions L x W x H [cm]: | 103 x 50 x 73 | 103 x 50 x 73 |
| Weight [kg]: | 135 / 115 (Al) | 137 / 117 (Al) |
| Noise level [dB]: | 85 dB[A] measured at 1 m | 86 dB[A] measured at 1 m |

[2] In accordance with EN 12021

# LW 170 D / LW 170 D AL Nautic

Self-contained diesel driven compressors ideal for small or medium sized applications independent of power. The diesel provides the ideal drive for these workhorses that can be located or transported where HP air is needed.

## Specifications

- Ready to use unit with Yanmar L70 4.8 kW motor
- 12V Electric start and pull start with decompression
- Instrument panel with key start and generator warning lamp
- Integrated pressure gauge and hours counter
- Crash frame with 4 carrying handles and sling eyes, powder coated in RAL 6026
- GRP fan belt guard
- Stainless steel diesel tank, capacity approx. 7 hours running time
- 2 oil/water separators, safety valve for each stage
- Stainless steel cooling pipes and inter-coolers
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non return valve for extended filter duration
- 2.5 m air inlet hose
- 2 self-venting, lever operated filling valves with hoses and connections

### LW 170 D AL

Sea water resistant aluminium crash frame (reduces weight by 25 kg) powder coated in RAL 9006

## Options

- 2 extra filling hoses
- Automatic stop at final pressure
- Automatic condensation drain
- 200/300 bar parallel filling pressures


**LW 170 D AL Nautic**

# *Technical Data*

| | LW 170 D / LW 170 D AL |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 170 / 10.2 / 6.0 |
| Max. Pressure [bar]: | 330 (set at the final stage safety valve) |
| RPM [1/min]: | 1530 |
| No of cylinders / No of stages: | 3 / 3 |
| Prime mover type: | Air cooled diesel, electric start |
| Drive power [kW] / [HP]: | 4.8 / 6.5 |
| Cooling air requirement [Nm³/h]: | 1500 |
| Lubrication type: | Plunger/Splash oil |
| Oil capacity [litre]: | 0.8 |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 180 |
| Dimensions L x W x H [cm]: | 103 x 50 x 73 |
| Weight [kg]: | 150 / 125 (AL) |
| Noise level [dB]: | 92 dB[A] measured at 1 m |

[1] In accordance with EN 12021

## LW 320 E AL Nautic

This Compressor combined mobile breathing air applications and stationary preformance. The simplicity and the optional extras allow a fully automatic operation and offer the same comfort as our stationary models. The light seawater-resistant aluminum frame is standard for this top model of the Nautic Series.

### Specifications

- Fully wired, ready to start
- Final pressure gauge
- Sturdy sea water resistant aluminium frame with 4 carrying handles and 4 sling points powder coated in RAL 7004 (silver grey)
- 3 cylinder, 3 stage compressor block
- All pistons with steel piston rings
- Low pressure oil pump and filter
- Oil/water separators after each stage, safety valve for each stage
- Pressure maintaining and non-return valve
- 4 filling hoses with filling valves and connections
- Breathing air purification in accordance with EN 12021

LW 320 E Nautic

### Options

- Auto start
- 200/300 bar parallel filling pressures
- Automatic stop and automatic condensation drain
- Wheel set
- Oil pressure gauge
- HP outlet

LW 320 E Nautic - Rear view

## Technical Data

| | LW 320 E Nautic / AL |
|---|---|
| Type: | Air cooled, reciprocating piston comp. |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 320 / 19.2 / 11.3 |
| Max. Pressure [bar]: | 350 (set at the final stage safety valve) |
| RPM [1/min]: | 1580 |
| No of cylinders / No of stages: | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 7.5 / 10.2 |
| Cooling air requirement [Nm³/h]: | 2460 |
| Lubrication type: | Oil pump + Splash oil |
| Oil capacity [litre]: | 1.8 |
| Oil pressure [bar]: | 1.8 (+/- 0,3) |
| Air outlet temperature [°C]: | 8 - 10 °C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 900 |
| Dimensions L x W x H [cm]: | 129 x 74 x 60 |
| Weight [kg]: | 175 |
| Noise level [dB]: | 95 (measured at 1 m) |

[1] In accordance with EN 12021

# LW 320 B AL Nautic

This Compressor combined mobile breathing air applications and stationary preformance. The simplicity and the optional extras allow a fully automatic operation and offer the same comfort as our stationary models. The light seawater-resistant aluminum frame is standard for this top model of the Nautic Series.

## Specifications

- Ready to start self contained unit with Vanguard 8.2 kW (11 HP) 4-stroke gasoline engine with electric start
- Final pressure gauge
- Sturdy sea water resistant aluminium frame with 4 carrying handles and 4 sling points powder coated in RAL 7004 (silver grey)
- 3 cylinder, 3 stage compressor block
- All pistons with steel piston rings
- Low pressure oil pump and filter
- Oil/water separators after each stage, safety valve for each stage
- Pressure maintaining and non-return valve
- 4 filling hoses with filling valves and connections
- Breathing air purification in accordance with EN 12021

## Options

- 200/300 bar parallel filling pressures
- Automatic stop and automatic condensation drain
- Wheel set
- Oil pressure gauge
- HP outlet

**LW 320 B Nautic** Options: Automatic stop and automatic condensation drain, wheel set

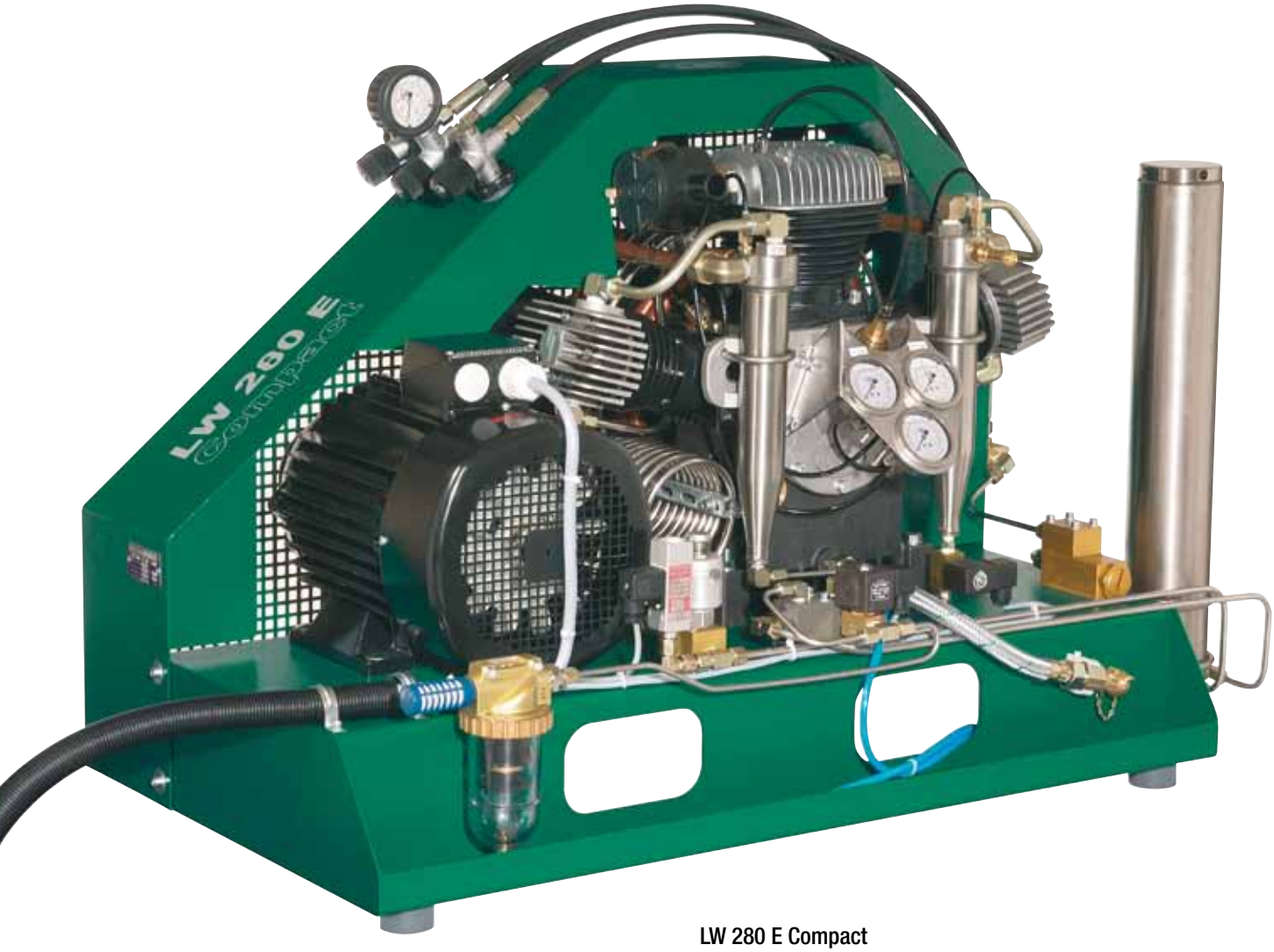
## *Technical Data*

| | LW 320 B Nautic |
|---|---|
| Type: | Air cooled, reciprocating piston comp. |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 320 / 19.2 / 11.3 |
| Max. Pressure [bar]: | 350 (set at the final stage safety valve) |
| RPM [1/min]: | 1580 |
| No of cylinders / No of stages: | 3 / 3 |
| Prime mover type: | 4 stroke gasoline engine, hand start |
| Drive power [kW] / [HP]: | 8.2 / 11.0 |
| Cooling air requirement [Nm³/h]: | 2460 |
| Lubrication type: | Oil pump + Splash oil |
| Oil capacity [litre]: | 1.8 |
| Oil pressure [bar]: | 1.8 (+/- 0,3) |
| Air outlet temperature [°C]: | 8 - 10 °C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 900 |
| Dimensions L x W x H [cm]: | 129 x 74 x 60 |
| Weight [kg]: | 167 |
| Noise level [dB]: | 95 (measured at 1 m) |

[1] In accordance with EN 12021

## LW 280 E Compact / LW 280 E1 Compact / LW 450 E Compact

These compressors are designed for dive centers and boats with limited space. Based on our successful 280 and 450 blocks can be operated these compressors in the basic configuration as pre-wired system or equipped to meet your individual needs with various options.




**LW 280 E Compact**

With options auto drain, auto stop, oil pressure and inter-stage pressure gauges and 2 extra filling hoses.

# LW 280 E Compact / LW 280 E1 Compact / LW 450 E Compact

## Specifications

- Fully wired compressor ready to connect with star/delta start cycle, hours counter
- Steel base and fan belt guard, powder coated in RAL 6026
- All pistons with steel piston rings
- 3 concentric suction/pressure valves
- Low pressure oil pump and filter
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- 1 Filling hose and filling valve (max. 3 filling hoses and/or HP outlet)
- Motor protection switches

## Options

- Auto start
- Additional filling hose(s)
- Automatic stop at final pressure
- Automatic condensation drain
- 200/300 bar switch over device
- Motor protection switches
- Special voltages / frequencies on request
- Oil pressure monitoring with auto shut down
- Oil pressure gauge and inter stage pressure gauges
- Puracon filter monitoring see page 47
- Cylinder temperature with auto shut down

**LW 450 E Compact** with automatic condensation drain

## *Technical Data*

| | LW 280 E Compact | LW 280 E1 Compact | LW 450 E Compact |
|---|---|---|---|
| Type: | Air cooled, reciprocating piston comp. | Air cooled, reciprocating piston comp. | Air cooled, reciprocating piston comp. |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 280 / 16.8 / 9.9 | 280 / 16.8 / 9.9 | 450 / 27.0 / 15.9 |
| Max. Pressure [bar]: | 350 (set at the final stage safety valve) | 350 (set at the final stage safety valve) | 350 (set at the final stage safety valve) |
| RPM [1/min]: | 1300 | 1300 | 1100 |
| No of cylinders / No of stages: | 3 / 3 | 3 / 3 | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz | Single Phase E-motor 230V / 50Hz | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 7.5 / 10.0 | 7.5 / 10.0 | 11.0 / 15.0 |
| Cooling air requirement [Nm³/h]: | 2250 | 2250 | 3300 |
| Lubrication type: | Oil pump + Splash oil | Oil pump + Splash oil | Oil pump + Splash oil |
| Oil capacity [litre]: | 1.8 | 1.8 | 2.2 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) | 1.8 (+/- 0.3) | 1.8 (+/- 0.3) |
| Air outlet temperature [°C]: | 8 - 10 °C above ambient | 8 - 10 °C above ambient | 8 - 10 °C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 900 | 900 | 900 |
| Dimensions L x W x H [cm]: | 110 x 60 x 98 | 110 x 60 x 98 | 110 x 60 x 98 |
| Weight [kg]: | 195 | 205 | 233 |
| Noise level [dB]: | 83 dB[A] measured at 1 m | 83 dB[A] measured at 1 m | 83 dB[A] measured at 1 m |

[1] In accordance with EN 12021

## LW 230 E / LW 280 E

LW 280 E


**LW 280 E**

incl. Inter stage pressure gauges and Oil temperature monitoring

# LW 230 E / LW 280 E

A slow running compressor for medium sized applications. Pneumatic/electric compressor control with final pressure cut off and automatic condensation drain ensure simple and trouble free operation. The 3 stage, 3 cylinder block ensures low maintenance with mimimal wear and tear. The components are industrial quality, over dimensioned for ultimate reliablity.
The compressor is fitted as standard with 4 filling hoses and filling valves to make a complete, compact unit.

## Specifications

- Ready to connect compressor, fully wired with pneumatic/electric compressor control with star/delta start cycle
- Operating panel with start/stop and condensation test controls, stop button, pressure gauge and hours counter
- Automatic condensation drain, pressure free start/stop, leak check function and safety valve check test modes
- Automatic shut down when final pressure is reached
- Safety cut off if the cover is opened, emergency stop switch
- Motor protection switches (LW 230 Optional)
- Sturdy steel frame, powder coated in RAL 6026
- All pistons with steel piston rings
- 3 concentric suction/pressure valves
- Low pressure oil pump and filter
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- 2 Filling hoses and filling valves and/or HP outlet

## Options

- 200/300 bar parallel filling pressures
- Special voltages / frequencies on request
- Oil pressure monitoring with auto shut down
- Auto start
- Oil pressure gauge
- Cylinder temperature with auto shut down
- Oil temperature with auto shut down
- Inter stage pressure gauges
- Puracon filter monitoring see page 47

## *Technical Data*

| | LW 230 E | LW 280 E |
|---|---|---|
| Type: | Air cooled, reciprocating piston compressor | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 230 / 13.8 / 8.1 | 280 / 16.8 / 9.9 |
| Max. Pressure [bar]: | 350 (set at the final stage safety valve) | 350 (set at the final stage safety valve) |
| RPM [1/min]: | 1080 | 1300 |
| No of cylinders / No of stages: | 3 / 3 | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 5.5 / 7.5 | 7.5 / 10.0 |
| Cooling air requirement [Nm³/h]: | 1650 | 2250 |
| Lubrication type: | Oil pump + Splash oil | Oil pump + Splash oil |
| Oil capacity [litre]: | 1.8 | 1.8 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) | 1.8 (+/- 0.3 |
| Air outlet temperature [°C]: | 8 - 10°C above ambient | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 900 | 900 |
| Dimensions L x W x H [cm]: | 110 x 60 x 98 | 110 x 60 x 98 |
| Weight [kg]: | 240 | 240 |
| Noise level [dB]: | 82 dB[A] measured at 1 m | 83 dB[A] measured at 1 m |

[1] In accordance with EN 12021

## LW 300 E / LW 450 E


LW 450 E

LW 450 E Rear view

# LW 300 E / LW 450 E

Robust, low RPM units with low maintenance and running costs for the user. Pneumatic/electric compressor control with final pressure cut off and automatic condensation drain ensures easy and trouble free operation. The compressors are ideal for continuous operation and a favourite choice for overseas diving centers with very long service intervals [e.g. replacement of concentric suction/pressure valves (3) every 6000 hours!].

## Specifications

- Ready to connect compressor, fully wired with pneumatic/electric compressor control with star/delta start cycle
- Operating panel with start/stop and condensation test controls, pressure gauge and hours counter
- Automatic condensation drain, pressure free start/stop, leak check and safety valve check test modes
- Automatic shut down when final pressure is reached
- Safety cut off if the cover is opened, emergency stop switch
- Motor protection switches
- Sturdy steel frame, powder coated in RAL 6026
- All pistons with steel piston rings
- 3 concentric suction/pressure valves
- Low pressure oil pump and filter
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- 4 Filling hoses and filling valves and/or HP outlet

## Options

- 200/300 bar parallel filling pressures
- Special voltages / frequencies on request
- ECC controls see page 45
- Oil pressure monitoring with auto shut down
- Auto start
- Oil pressure gauge
- Cylinder temperature with auto shut down
- Oil temperature with auto shut down
- Inter stage pressure gauges
- Puracon filter monitoring see page 47

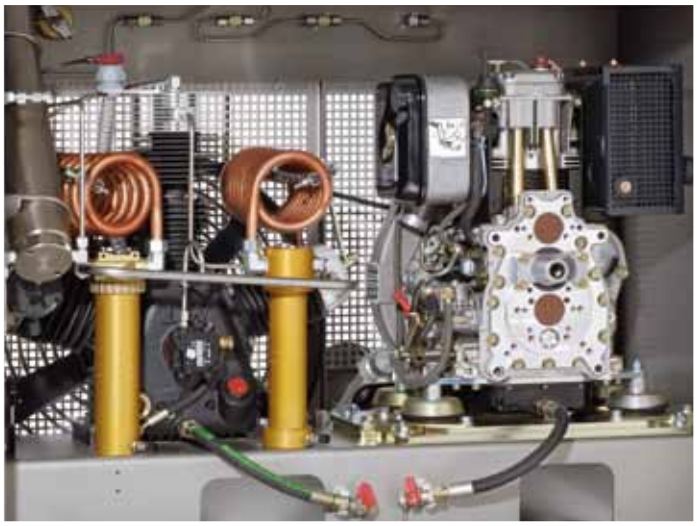
## *Technical Data*

| | LW 300 E | LW 450 E |
|---|---|---|
| Type: | Air cooled, reciprocating piston compressor | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 300 / 18.0 / 10.6 | 450 / 27.0 / 15.9 |
| Max. Pressure [bar]: | 350 (set at the final stage safety valve) | 350 (set at the final stage safety valve) |
| RPM [1/min]: | 800 | 1100 |
| No of cylinders / No of stages: | 3 / 3 | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 7.5 / 10.0 | 11.0 / 15.0 |
| Cooling air requirement [Nm³/h]: | 2250 | 3300 |
| Lubrication type: | Oil pump + Splash oil | Oil pump + Splash oil |
| Oil capacity [litre]: | 2.2 | 2.2 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) | 1.8 (+/- 0.3 |
| Air outlet temperature [°C]: | 8 - 10°C above ambient | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 900 | 900 |
| Dimensions L x W x H [cm]: | 115 x 60 x 98 | 115 x 60 x 98 |
| Weight [kg]: | 280 | 280 |
| Noise level [dB]: | 82 dB[A] measured at 1 m | 83 dB[A] measured at 1 m |

[1] In accordance with EN 12021

## LW 450 D Basic


LW 450 D Basic



LW 450 D Basic Rear view

## LW 450 D Basic

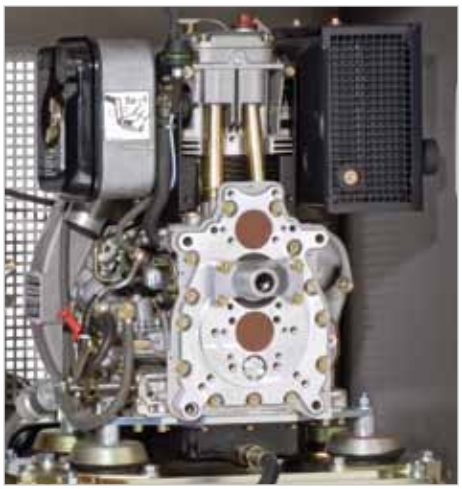
Initially developed for the open dive boats in the Indian Ocean. Large capacity, slow running, stationary compressor which can be used independent of power supply with diesel drive. The compressor has a stainless steel frame and no electrics and is ideal for extreme applications such as open boats or harsh marine environments.

### Specifications

- Self contained unit c/w Hatz, 10.0 kW Motor for hand starting
- Original Hatz diesel tank
- Manual speed lever, manual stop
- Manual condensation drain (3 valves)
- Sturdy stainless steel frame
- All pistons with steel piston rings
- Low pressure oil pump
- Emergency stop switch
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- 4 filling hoses with filling valves and connections and/or HP outlet

### Options

- 200/300 bar parallel filling pressures
- Oil pressure gauge
- Inter stage pressure gauges



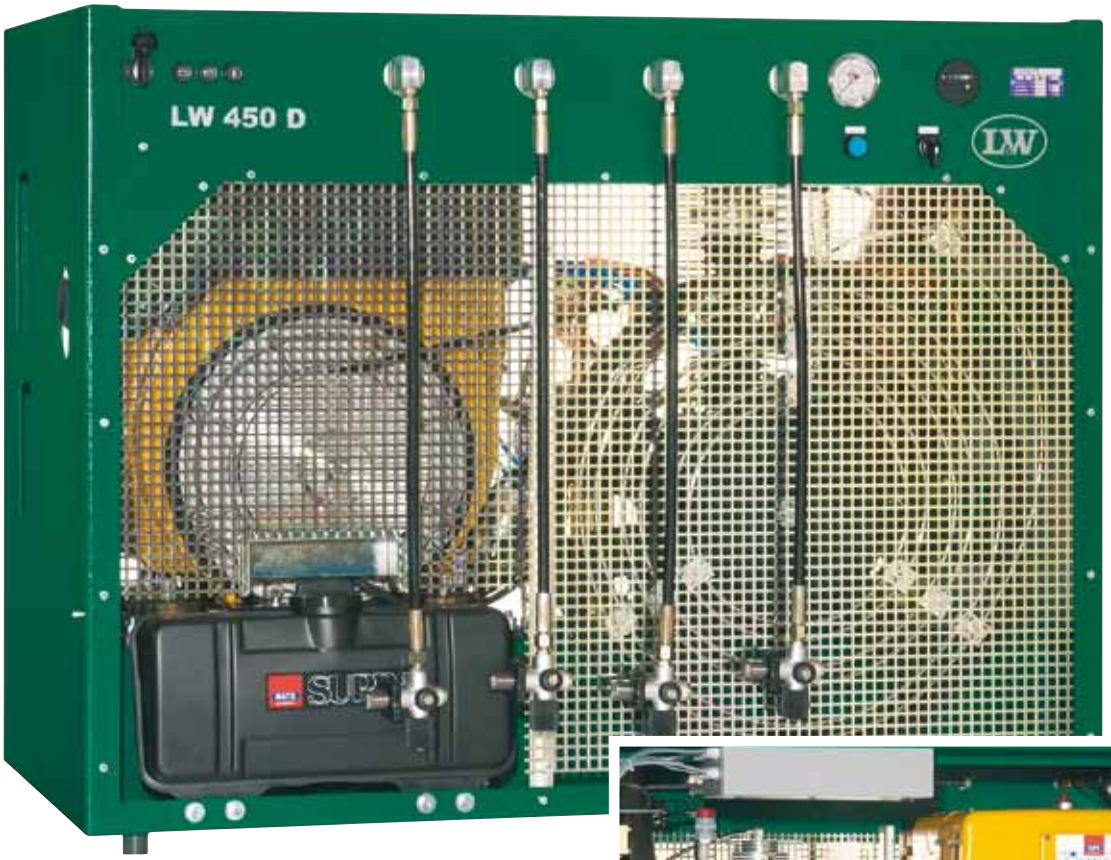
LW 450 D Basic prime mover

## *Technical Data*

| | LW 450 D Basic |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 450 / 27.0 / 15.9 |
| Max. Pressure [bar]: | 350 (set at the final stage safety valve) |
| RPM [1/min]: | 1100 |
| No of cylinders / No of stages: | 3 / 3 |
| Prime mover type: | Air cooled diesel, hand start |
| Drive power [kW] / [HP]: | 10.0 / 14.3 |
| Cooling air requirement [Nm³/h]: | 3300 |
| Lubrication type: | Oil pump + Splash oil |
| Oil capacity [litre]: | 2.2 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 900 |
| Dimensions L x W x H [cm]: | 127 x 74 x 100 |
| Weight [kg]: | 400 |
| Noise level [dB]: | 95 dB[A] measured at 1 m |

[1] In accordance with EN 12021

## LW 450 D




LW 450 D

LW 450 D Rear view

# LW 450 D

For applications where large quantities of air are required without sufficient electrical power supply. Whether on a remote island, a large safari boat or a truck mounted filling station, the LW 450 D is ready for the next challenge. The compressor has a self contained 12V DC power supply providing electric start, idle and full speed selector, automatic idle and condensation drain when final pressure is reached and a condensation test function. The integrated filling unit with 4 filling hoses and filling valves completes the unit.

## Specifications

- Self contained unit, ready to start with Hatz 10,0 kW Motor in Hatz Silent Pack with 12V electrical/pneumatic compressor control
- Original Hatz diesel tank
- Operating panel with key start/stop, condensation drain test, pressure gauge, speed selector, hours counter, diesel motor oil pressure and battery warning lamps
- Automatic idle speed selector and condensation drain when end pressure is reached (compressor switches to full speed and drain valves close when empty tanks are opened)
- Emergency stop switch
- Sturdy steel frame, powder coated in RAL 6026
- All pistons with steel piston rings
- 3 concentric suction/pressure valves
- Low pressure oil pump
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- 4 Filling hoses and filling valves and/or HP outlet

## Options

- 200/300 bar parallel filling pressures
- Oil pressure gauge
- Inter stage pressure gauges


**LW 450 D Silent Pack**

# *Technical Data*

| | LW 450 D |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 450 / 27.0 / 15.9 |
| Max. Pressure [bar]: | 350 (set at the final stage safety valve) |
| RPM [1/min]: | 1100 |
| No of cylinders / No of stages: | 3 / 3 |
| Prime mover type: | Air cooled diesel, silent pack, electric start |
| Drive power [kW] / [HP]: | 10.0 / 14.3 |
| Cooling air requirement [Nm³/h]: | 3300 |
| Lubrication type: | Oil pump + Splash oil |
| Oil capacity [litre]: | 2.2 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 900 |
| Dimensions L x W x H [cm]: | 127 x 74 x 100 |
| Weight [kg]: | 430 |
| Noise level [dB]: | 89 dB[A] measured at 1 m |

[1] In accordance with EN 12021

## LW 570 E


LW 570 E

LW 570 E Rear view

# LW 570 E

The 570 series compressors are 4 stage piston compressors for large, professional applications. The 15 kW drive delivers an impressive 570 litres/min (20.1 cfm) and the 4 stage construction allows working pressures of up to 420 bar if required. The slow running compressor guarantees long and reliable service. The unit has been designed for the arduous demands of large filling stations such as city fire departments, large diving schools or hyperbaric facilities.

## Specifications

- Ready to connect compressor, fully wired with pneumatic/electric compressor control with star/delta start cycle
- Operating panel with start/stop and condensation test controls, pressure gauge and hours counter
- Automatic condensation drain, pressure free start/stop, leak check and safety valve check test modes
- Automatic shut down when the final pressure is reached
- Motor protection switches
- Safety cut off if the cover is opened, emergency stop switch
- Sturdy steel frame, powder coated in RAL 6026
- All pistons with steel piston rings
- Low pressure oil pump
- 4 concentric suction/pressure valves
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- 4 Filling hoses and filling valves with cylinder connections and/or HP outlet

## Options

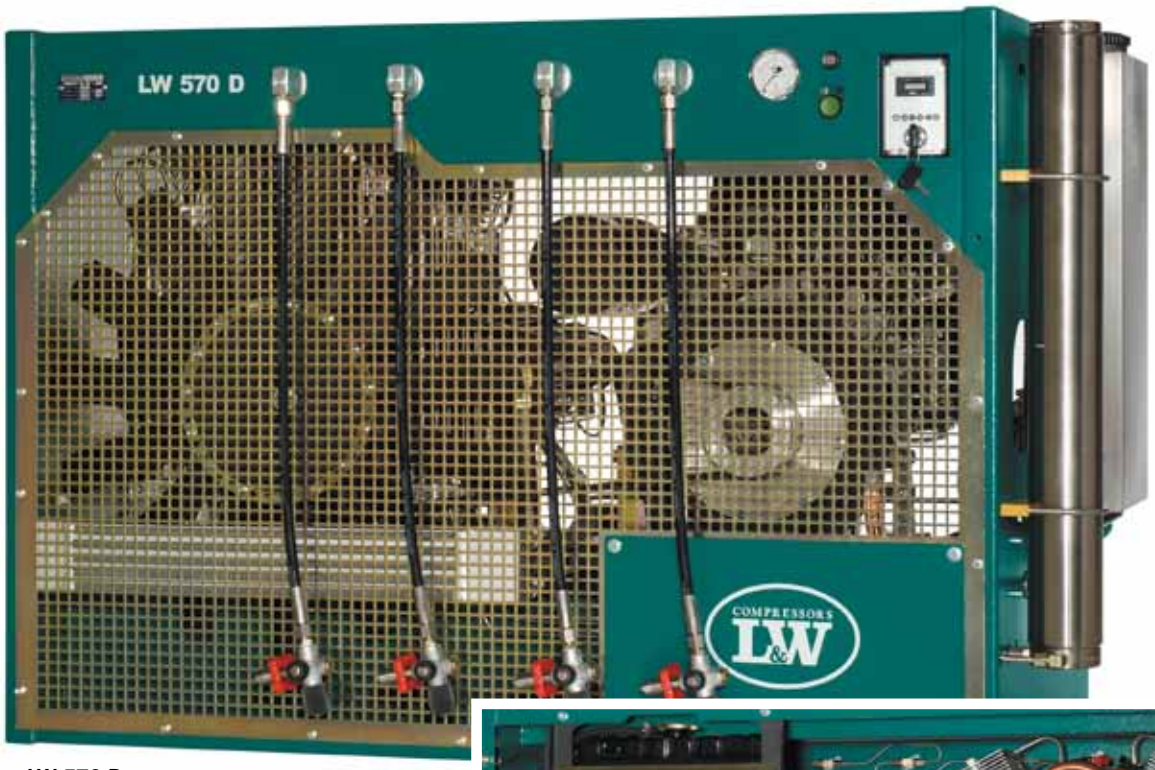
- 200/300 bar parallel filling pressures
- Motor protection switches
- Special voltages / frequencies on request
- ECC controls see page 45
- Oil pressure monitoring with auto shut down
- Oil pressure gauge
- Auto start
- Cylinder temperature with auto shut down
- Oil temperature with auto shut down
- Inter stage pressure gauges
- Puracon filter monitoring see page 47
- 420 bar Version
- Compressor block heating for operations < +5°C

## *Technical Data*

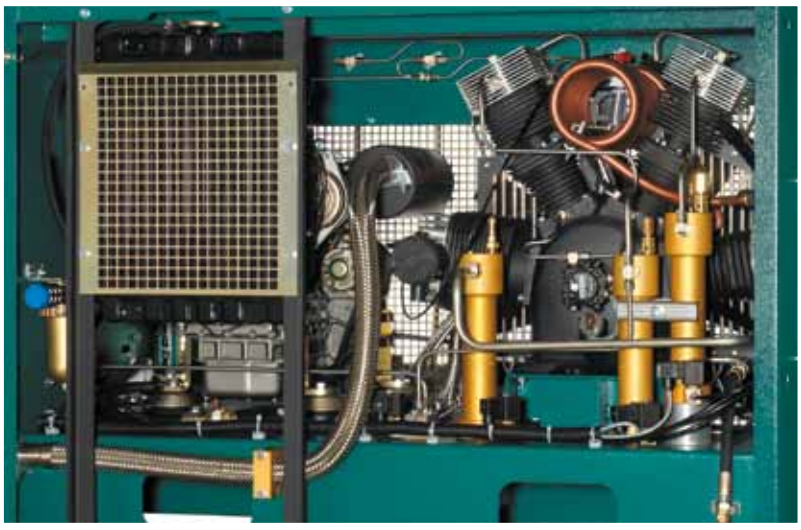
| | LW 570 E |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 570 / 34.0 / 20.1 |
| Max. Pressure [bar]: | 420 (set at the final stage safety valve) |
| RPM [1/min]: | 1100 |
| No of cylinders / No of stages: | 4 / 4 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 15.0 / 20.0 |
| Cooling air requirement [Nm³/h]: | 4500 |
| Lubrication type: | Oil pump + Splash oil |
| Oil capacity [litre]: | 2.5 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 1200 |
| Dimensions L x W x H [cm]: | 123 x 68 x 100 |
| Weight [kg]: | 365 |
| Noise level [dB]: | 83 dB[A] measured at 1 m |

[1] In accordance with EN 12021

## LW 570 D




LW 570 D



LW 570 D Rear view

# LW 570 D

The 570 series compressors are 4 stage piston compressors for large, professional applications. The diesel driven unit is no exception but can be operated completety independent of power supply, or where diesel applications are preferred for safety (petro-chemical plants, ground support equipment for aircraft servicing etc.). The heart of the unit is the LW 570 block driven by a water cooled Yanmar 3 cylinder diesel engine. The engine control monitors the condition of the drive and provides vital information for the operator.

## Specifications

- Ready to start with 12V compressor controls and an electric start Yanmar 3TNE68 3 cylinder, water cooled diesel engine
- Operating panel key start/stop, condensation button (serves as an off loader for starting/stoping, engine oil pressure monitoring, water temperature monitoring, glow plug protection, starter protection, pressure gauge and hours counter
- Stainless steel diesel tank, 15.7 litres capacity (approx. 4.5 hours running at full load)
- Automatic condensation drain every 15 minutes for 4 seconds
- Automatic shut down when the final pressure is reached
- Safety cut off if the cover is opened, emergency stop switch
- Sturdy steel frame, powder coated in RAL 6026, tie down/sling slots integrated in side panels
- All pistons with steel piston rings
- Low pressure oil pump
- 4 concentric  suction/pressure valves
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- 4 filling hoses with filling valves and connections, and/or HP outlet

## Options

- 200/300 bar parallel filling pressures
- Oil pressure gauge
- Inter stage pressure gauges
- 420 bar Version

## *Technical Data*

| | LW 570 D |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 570 / 34.0 / 20.1 |
| Max. Pressure [bar]: | 420 (set at the final stage safety valve) |
| RPM [1/min]: | 1100 |
| No of cylinders / No of stages: | 4 / 4 |
| Prime mover type: | Water cooled 3 cylinder diesel, electric start |
| Drive power [kW] / [HP]: | 12.9 / 17.5 |
| Cooling air requirement [Nm³/h]: | 3900 |
| Lubrication type: | Oil pump + Splash oil |
| Oil capacity [litre]: | 2.5 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 1200 |
| Dimensions L x W x H [cm]: | 145 x 77 x 100 |
| Weight [kg]: | 520 |
| Noise level [dB]: | 88 dB[A] measured at 1 m |

[1] In accordance with EN 12021

## LW 720 E

**LW 720 E** with optional EEC control

# LW 720 E

Originally designed for heavy duty industrial applications, the LW 720 E 4 stage compressor is built for extreme situations. The compressor block is mounted on sturdy steel frame with easy access to all components. The slow running compressor guarantees long and reliable service. The unit has been designed for the arduous demands of high volume filling stations with an integrated large capacity breathing air purification module included.

## Specifications

- Ready to connect compressor, fully wired with pneumatic/electric compressor control with star/delta start cycle
- Operating panel with start/stop and condensation test controls, pressure gauge and hours counter
- Automatic condensation drain, pressure free start/stop, leak check and safety valve check test modes
- Automatic shut down when the final pressure is reached
- Emergency stop switch
- Sturdy steel frame, powder coated in RAL 6026, steel fan guard in RAL 7004
- All pistons with steel piston rings
- Low pressure oil pump with large filter
- Pressure gauge for each stage
- Oil pressure monitoring and automatic shut down for low oil pressure
- 4 concentric suction/pressure valves
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- HP outlet

## Options

- Special voltages / frequencies on request
- ECC controls see page 45
- Cylinder temperature with auto shut down
- Compressor block heating for operations < +5°C
- Auto start
- Oil temperature with auto shut down
- Puracon filter monitoring see page 47
- 420 bar Version

## *Technical Data*

| | LW 720 E |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 720 / 43.2 / 25.4 |
| Max. Pressure [bar]: | 420 (Set at the final stage safety valve and pressure switch) |
| RPM [1/min]: | 1100 |
| No of cylinders / No of stages: | 4 / 4 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 18.5 / 25.0 |
| Cooling air requirement [Nm³/h]: | 5550 |
| Lubrication type: | Oil pump + Splash oil |
| Oil capacity [litre]: | 4.0 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 2400 |
| Dimensions L x W x H [cm]: | 165 x 76 x 125 |
| Weight [kg]: | 590 |
| Noise level [dB]: | 88 dB[A] measured at 1 m |

[1] In accordance with EN 12021

## LW 1300 E

LW 1300 E

# LW 1300 E

Originally designed for heavy duty industrial applications, the LW 1300 E 4 stage compressor is built for extreme situations. The compressor block is mounted on an extremely sturdy steel frame with easy access to all components. The slow running compressor guarantees long and reliable service. The unit has been designed for the arduous demands of large volume filling stations.

## Specifications

- Ready to connect compressor, fully wired with pneumatic/electric compressor control with star/delta start cycle, electrical box for wall mounting on site
- Operating panel with start/stop and condensation test controls, pressure gauge and hours counter
- Automatic condensation drain, pressure free start/stop, leak check and safety valve check test mode
- Automatic shut down when the final pressure is reached
- Emergency stop switch
- Sturdy steel frame, powder coated in RAL 7004, steel fan guards in RAL 7004
- All pistons with steel piston rings
- Low pressure oil pump with large filter
- Pressure gauge for each stage
- Oil pressure monitoring and automatic shut down for low oil pressure
- 4 concentric suction/pressure valves
- Oil/water separators after each stage, safety valve for each stage
- HP outlet
- Breathing air version with external filter panel

## Options

- Special voltages / frequencies on request
- ECC controls see page 45
- Cylinder temperature with auto shut down
- Compressor block heating for operations < +5°C
- Auto start
- Oil temperature with auto shut down
- Puracon filter monitoring see page 47
- 420 bar Version

## *Technical Data*

| | LW 1300 E |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 1300 / 78.0 / 45.9 |
| Max. Pressure [bar]: | 420 (Set at the final stage safety valve and pressure switch) |
| RPM [1/min]: | 985 |
| No of cylinders / No of stages: | 4 / 4 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz, direct drive |
| Drive power [kW] / [HP]: | 37.0 / 50.0 |
| Cooling air requirement [Nm³/h]: | 11100 |
| Lubrication type: | Oil pump + Splash oil |
| Oil capacity [litre]: | 4.8 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 3600 |
| Dimensions L x W x H [cm]: | 159 x 121 x 126 |
| Weight [kg]: | 980 |
| Noise level [dB]: | 89 dB[A] measured at 1 m |

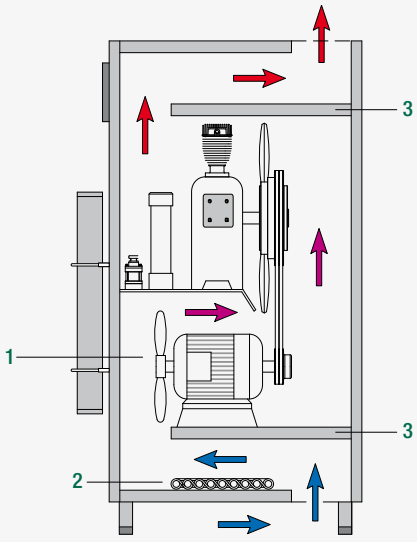
[1] In accordance with EN 12021

## LW 230 ES / LW 280 ES

LW 280 ES Inner view


**LW 280 ES**
with optional ECC control

## *The ES Silent Concept*




Sound insulation is also heat insulation, manufacturing quiet compressors **and** keeping them cool is the ultimate objective. With the ES concept, we have benchmark sound insulation **and** benchmark cooling. The cross sectional view of the ES housing illustrates the key features.

1. A secondary ventilator provides additional thrust for the cooling air flow through the housing.
2. Additional final stage heat exchangers are the first component in the flow of cooling air into the housing.
3. The intermediate panels with sound insulation padding prevent the direct egress of sound waves out of the housing absorbing the majority of the noise.

## LW 230 ES / LW 280 ES

Excellent compressors with benchmark sound insulation and cooling. The unit has been specially developed for modern day demands. A medium capacity compressor ideally suited for a wide range of applications. The sound insulated housing provides excellent noise supression so the unit can stand in working or sales rooms or in buildings where noise is not tolerated. The control panel provides a convenient location for up to 6 filling hoses and an overview of the essential compressor controls. The compressor can stand in a corner for space economy, at least two sides must be free.

### Specifications

- Ready to connect compressor, fully wired with pneumatic/electric compressor control with star/delta start cycle
- Operating panel with start/stop and condensation test controls, stop button, pressure gauge and hours counter
- Automatic condensation drain, pressure free start/stop, leak check function and safety valve check test modes
- Automatic shut down when final pressure is reached
- Motor protection switches (LW 230 ES Optional)
- Emergency stop switch, safety cut off if the front or rear panels are opened
- Sound insulated housing with sturdy steel frame, powder coated in RAL 6026
- All pistons with steel piston rings
- 3 concentric suction/pressure valves
- Low pressure oil pump and filter
- Secondary fan for extra cooling
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- 2 self venting filling valves with filling hoses and connections, and/or HP outlet

### Options

- Up to 6 filling hoses
- 200/300 bar parallel filling pressures
- Special voltages / frequencies on request
- ECC controls see page 45
- Oil pressure monitoring with auto shut down
- Cylinder temperature with auto shut down
- Auto start
- Oil temperature with auto shut down
- Inter stage pressure gauges
- Puracon filter monitoring see page 47

## *Technical Data*

| | LW 230 ES | LW 280 ES |
|---|---|---|
| Type: | Air cooled, reciprocating piston compressor | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 230 / 13.8 / 8.1 | 280 / 16.8 / 9.9 |
| Max. Pressure [bar]: | 350 (set at the final stage safety valve) | 350 (set at the final stage safety valve) |
| RPM [1/min]: | 1080 | 1300 |
| No of cylinders / No of stages: | 3 / 3 | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 5.5 / 7.5 | 7.5 / 10.0 |
| Cooling air requirement [Nm³/h]: | 1650 | 2250 |
| Lubrication type: | Oil pump + Splash oil | Oil pump + Splash oil |
| Oil capacity [litre]: | 1.8 | 1.8 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) | 1.8 (+/- 0.3 |
| Air outlet temperature [°C]: | 6°C above ambient | 6°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 900 | 900 |
| Dimensions L x W x H [cm]: | 76 x 103 x 163 | 76 x 103 x 163 |
| Weight [kg]: | 330 | 330 |
| Noise level [dB]: | 61 dB[A] measured at 1 m | 62 dB[A] measured at 1 m |

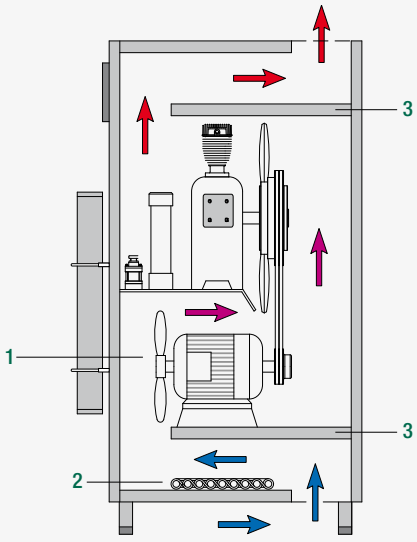
[1] In accordance with EN 12021

## LW 300 ES / LW 450 ES


**LW 450 ES**
with optional ECC control

**LW 450 ES Inner view**

## *The ES Silent Concept*




Sound insulation is also heat insulation, manufacturing quiet compressors **and** keeping them cool is the ultimate objective. With the ES concept, we have benchmark sound insulation **and** benchmark cooling. The cross sectional view of the ES housing illustrates the key features.

1. A secondary ventilator provides additional thrust for the cooling air flow through the housing.
2. Additional final stage heat exchangers are the first component in the flow of cooling air into the housing.
3. The intermediate panels with sound insulation padding prevent the direct egress of sound waves out of the housing absorbing the majority of the noise.

## LW 300 ES / LW 450 ES

Our time tested 450 block in a vertical sound insulated housing, sound level only 64 dB[A] at 1 m. Ideal for applications in work areas or mixed industrial/ residential areas (Hotels etc.). A secondary ventilator ensures excellent cooling. The robust, slow running compressor with low maintenance and running costs is fully wired with a pneumatic/electrical compressor control with final pressure cut off and automatic condensation drain ensuring easy and trouble free operation. The compressor can stand in a corner for space economy (min. 2 sides free).

### Specifications

- Ready to connect compressor, fully wired with pneumatic/electric compressor control with star/delta start cycle
- Operating panel with start/stop and condensation test controls, pressure gauge and hours counter
- Automatic condensation drain, pressure free start/stop, leak check and safety valve check test modes
- Automatic shut down when final pressure is reached
- Emergency stop switch, safety cut off if the front or rear panels are opened
- Motor protection switches
- Sound insulated housing with sturdy steel frame, powder coated in RAL 6026
- All pistons with steel piston rings
- 3 concentric suction/pressure valves
- Low pressure oil pump
- Secondary fan for extra cooling
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- HP outlet

### Options

- Up to 6 filling hoses mounted on the front door panel
- Special voltages / frequencies on request
- Oil pressure monitoring with auto shut down
- Auto start
- Oil pressure gauge
- Cylinder temperature with auto shut down
- Oil temperature with auto shut down
- Inter stage pressure gauges
- ECC controls see page 45
- Puracon filter monitoring see page 47

## *Technical Data*

| | LW 300 ES | LW 450 ES |
|---|---|---|
| Type: | Air cooled, reciprocating piston compressor | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 300 / 18.0 / 10.6 | 450 / 27.0 / 15.9 |
| Max. Pressure [bar]: | 350 (set at the final stage safety valve) | 350 (set at the final stage safety valve) |
| RPM [1/min]: | 800 | 1100 |
| No of cylinders / No of stages: | 3 / 3 | 3 / 3 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 7.5 / 10.0 | 11.0 / 15.0 |
| Cooling air requirement [Nm³/h]: | 2250 | 3300 |
| Lubrication type: | Oil pump + Splash oil | Oil pump + Splash oil |
| Oil capacity [litre]: | 2.2 | 2.2 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) | 1.8 (+/- 0.3) |
| Air outlet temperature [°C]: | 8 - 10°C above ambient | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 1200 | 1200 |
| Dimensions L x W x H [cm]: | 81 x 110 x 168 | 81 x 110 x 168 |
| Weight [kg]: | 390 | 390 |
| Noise level [dB]: | 63 dB[A] measured at 1 m | 64 dB[A] measured at 1 m |

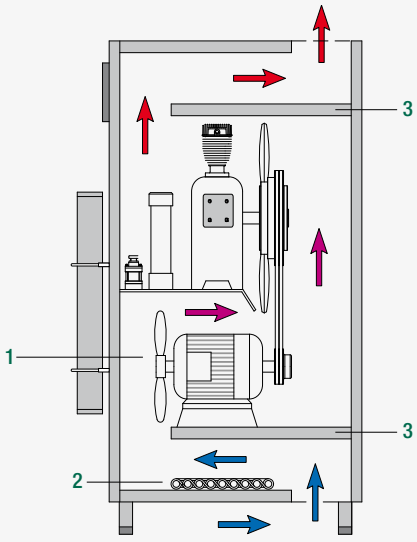
[1] In accordance with EN 12021

## LW 570 ES


**LW 570 ES** with optional ECC control

**LW 570 ES Inner view**

## *The ES Silent Concept*




Sound insulation is also heat insulation, manufacturing quiet compressors **and** keeping them cool is the ultimate objective. With the ES concept, we have benchmark sound insulation **and** benchmark cooling. The cross sectional view of the ES housing illustrates the key features.

1. A secondary ventilator provides additional thrust for the cooling air flow through the housing.
2. Additional final stage heat exchangers are the first component in the flow of cooling air into the housing.
3. The intermediate panels with sound insulation padding prevent the direct egress of sound waves out of the housing absorbing the majority of the noise.

## LW 570 ES

The 570 ES is a 4 stage piston compressor for large, professional applications. The unit is housed in a compact sound insulated housing with unprecedented noise emission levels. The 15 kW drive delivers an impressive 570 litres/min (20.1 cfm) and the 4 stage construction allows working pressures of up to 420 bar if required. The slow running compressor guarantees long and reliable service. The unit has been designed for the arduous demands of large volume filling stations in mixed residential/industrial areas, or where people are working and need high performance at low noise levels.

### Specifications

- Ready to connect compressor, fully wired with pneumatic/electric compressor control with star/delta start cycle
- Operating panel with start/stop and condensation test controls, pressure gauge and hours counter
- Automatic condensation drain, pressure free start/stop, leak check and safety valve check test modes
- Automatic shut down when the final pressure is reached
- Motor protection switches
- Switches cut the compressor off if a door is opened, emergency stop switch
- Sturdy steel frame and sound isolated housing, powder coated in RAL 6026
- All pistons with steel piston rings
- Low pressure oil pump
- Two inspection panels for service access
- 4 concentric suction/pressure valves
- Oil/water separators after each stage, safety valve for each stage
- Breathing air purification in accordance with EN 12021
- Pressure maintaining and non-return valve
- HP outlet

### Options

- Up to 6 filling hoses mounted on the front door panel
- Special voltages / frequencies on request
- ECC controls see page 45
- Oil pressure monitoring with auto shut down
- Auto start
- Oil pressure gauge
- Cylinder temperature with auto shut down
- Oil temperature with auto shut down
- Puracon filter monitoring see page 47
- Inter stage pressure gauges
- 420 bar Version
- Compressor block heating for operations < +5°C

## *Technical Data*

| | LW 570 ES |
|---|---|
| Type: | Air cooled, reciprocating piston compressor |
| Capacity [litre/min] / [Nm³/h] / [cfm]: | 570 / 34.0 / 20.1 |
| Max. Pressure [bar]: | 420 (set at the final stage safety valve) |
| RPM [1/min]: | 1100 |
| No of cylinders / No of stages: | 4 / 4 |
| Prime mover type: | 3 Phase E-motor 400V / 50Hz |
| Drive power [kW] / [HP]: | 15.0 / 20.0 |
| Cooling air requirement [Nm³/h]: | 4500 |
| Lubrication type: | Oil pump + Splash oil |
| Oil capacity [litre]: | 2.5 |
| Oil pressure [bar]: | 1.8 (+/- 0.3) |
| Air outlet temperature [°C]: | 8 - 10°C above ambient |
| Filter capacity [m³ at +20°C] [1]: | 1200 |
| Dimensions L x W x H [cm]: | 81 x 110 x 168 |
| Weight [kg]: | 505 |
| Noise level [dB]: | 64 dB[A] measured at 1 m |

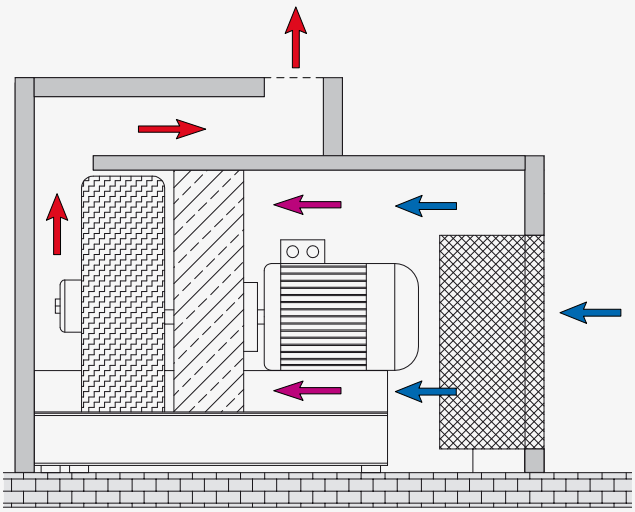
[1] In accordance with EN 12021

## Sound insulated Housing LW 720 ES / LW 1300 ES

The housing is made of solid steel sheet and powder coated in RAL 7001. Insulated with fireproof acoustic insulating mats in 80 mm thick - the ideal noise protection. The housing is easy to open, so that the compressor can be reached without difficulty. For maintenance work. All functions can be operated from the outside.

**Sound insulated Housing LW 1300 ES**

## *The ES Silent Concept*



Sound insulation is also heat insulation, manufacturing quiet compressors **and** keeping them cool is the ultimate objective. With the ES concept, we have benchmark sound insulation **and** benchmark cooling. The cross sectional view of the ES housing illustrates the key features.

# Sound insulated Housing LW 720 ES / LW 1300 ES

Designed for large applications, ideal for use in industrial facilities, workplaces, hotels and dive centers with a large breathing air requirements.

The Sound insulated Housing LW 720 ES / LW 1300 can be retrofitted to all LW LW 720 and 1300 models!

## Sound insulated Housing LW 720 ES

>> Complete incl. Gauge-Panel and Gauge-Hose (for 1 Pressure Gauge)

>> Including maintenance side door

>> 73 dB at 1 m

>> Color: RAL 7001

>> Dimensions: 2200 x 1630 x 1550 mm

## Sound insulated Housing LW 1300 ES

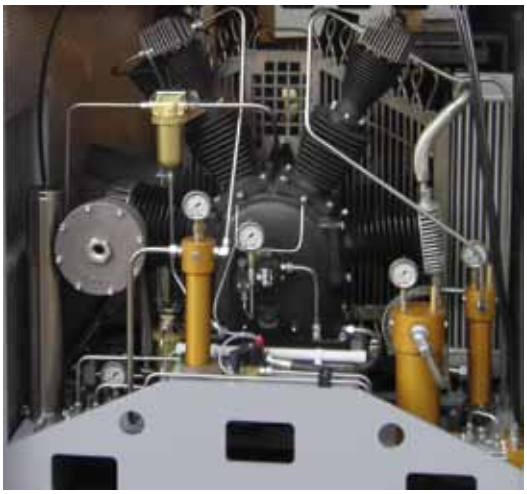
>> Complete incl. Gauge-Panel and Gauge-Hose (for 1 Pressure Gauge)

>> Including maintenance side door

>> 75 dB at 1 m

>> Color: RAL 7001

>> Dimensions: 2260 x 1720 x 1450 mm



Sound insulated Housing LW 1300 ES - Interior

Sound insulated Housing LW 720 ES – Operating Panel

## *Technical Data*

| Typ | L x W x H [mm] | Noise [dB] |
|---|---|---|
| Sound insulated Housing LW 720 ES | 2200 x 1630 x 1550 | 73 |
| Sound insulated Housing LW 1300 ES | 2260 x 1720 x 1450 | 75 |

## Options Overview

| Typ | Automatic condensation drain | Automatic stop and hours counter | Auto Start | 200/300 bar switch over device | 200/300 bar parallel filling pressures | Conversion set (petrol/electric drive) | 2 x filling hose | 4 x filling hose | 6 x filling hose | Puracon filter monitoring | Air Cooler Connection | Oil temperature monitoring | Oil pressure monitoring | Inter stage pressure gauges | Motor protection switches | Cylinder temperature monitoring | ECC controls | 420 bar Version |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LW 100 E / E1 ECO | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | | | | | | | |
| LW 100 E / E1 | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | | | | | | | |
| LW 100 B ECO / B | ○ | ○ | | ○ | | ○ | ○ | | | | | | | | | | | |
| LW 160 E / E1 | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | | | | | | | |
| LW 170 E Nautic | ○ | ● | ○ | | ○ | | ● | ○ | | ○ | | | | | | | | |
| LW 170 D Nautic | ○ | ● | | | ○ | | ● | ○ | | ○ | | | | | | | | |
| LW 190 B | ○ | ○ | | ○ | | ○ | ○ | | | | | | | | | | | |
| LW 200 E Nautic | ○ | ● | ○ | | ○ | | ● | ○ | | ○ | | | | | | | | |
| LW 225 E | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | | | | | | | |
| LW 230 E | ● | ● | ○ | | ○ | | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 230 ES | ● | ● | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 245 B | ○ | ○ | | ○ | | ○ | ○ | | | | | | | | | | | |
| LW 280 E | ● | ● | ○ | | ○ | | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 280 E / E1 Compact | ○ | ○ | ○ | ○ | ○ | | ○ | | | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 280 ES | ● | ● | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 300 E | ● | ● | ○ | | ○ | | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 300 ES | ● | ● | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 320 E AL Nautic | ○ | ● | ○ | | ○ | | ● | ○ | | ○ | | | | | | | | |
| LW 320 B AL Nautic | ○ | ● | | | ○ | | ● | ○ | | ○ | | | | | | | | |
| LW 450 E | ● | ● | ○ | | ○ | | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 450 E Compact | ○ | ○ | ○ | ○ | ○ | | ○ | | | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 450 ES | ● | ● | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 450 D Basic | ● | ○ | | | ○ | | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 450 D | ● | ● | | | ○ | | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | |
| LW 570 E | ● | ● | ○ | | ○ | | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ |
| LW 570 ES | ● | ● | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ |
| LW 570 D | ● | ● | | | ○ | | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ |
| LW 720 E | ● | ● | ○ | | ○ | | | | | ○ | ○ | ○ | ● | ● | ● | ○ | ○ | ○ |
| LW 1300 E | ● | ● | ○ | | ○ | | | | | ○ | ○ | ○ | ● | ● | ● | ○ | ○ | ○ |

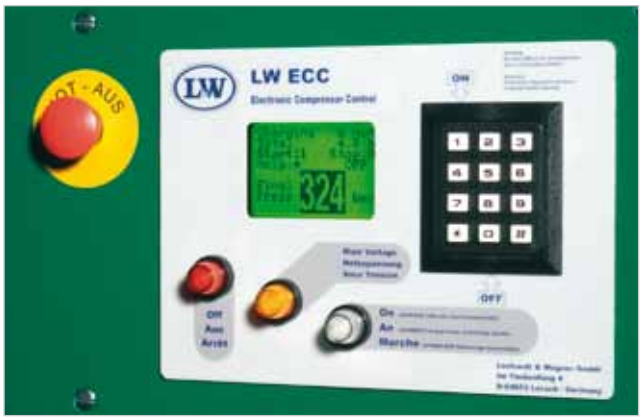
● Standard ○ Optional

# Electronic Compressor Control - ECC

The L&W ECC (electronic compressor control) is available for all electric motor driven compressors from LW 230 and larger. The ECC replaces the standard electric/pneumatic control and offers the user a range of functions and interfaces only available with digital controls. The unit has an illuminated LCD display which can show various functions and values as selected on the numeric key board. An easy to follow menu accompanies the user through the menu points. The ECC software can be updated using a standard windows computer via the RS232 serial cable.
The ECC is available in metric or imperial versions and in German, English, French, Spanish, Dutch and Swedish languages.

## Specifications

- Automatic condensation drain
- Full automatic mode (auto start and auto stop)
- Semi automatic mode (auto stop)
- Log book function with hours run, number of starts and max pressure
- Elapsed filling time (minutes)
- Final pressure
- 3 control LEDs for power on, compressor on, compressor off.
- Dual filling pressure display (for 200/232 and 300 bar compressors)
- Error warnings (e.g. „door is open“)
- Maintenance programme with hours countdown and required part numbers in display
- Test mode for leak check, safety valve test and solenoid test
- Interface for final pressure signal to external siren/light
- Interface for error signal to external sire/light

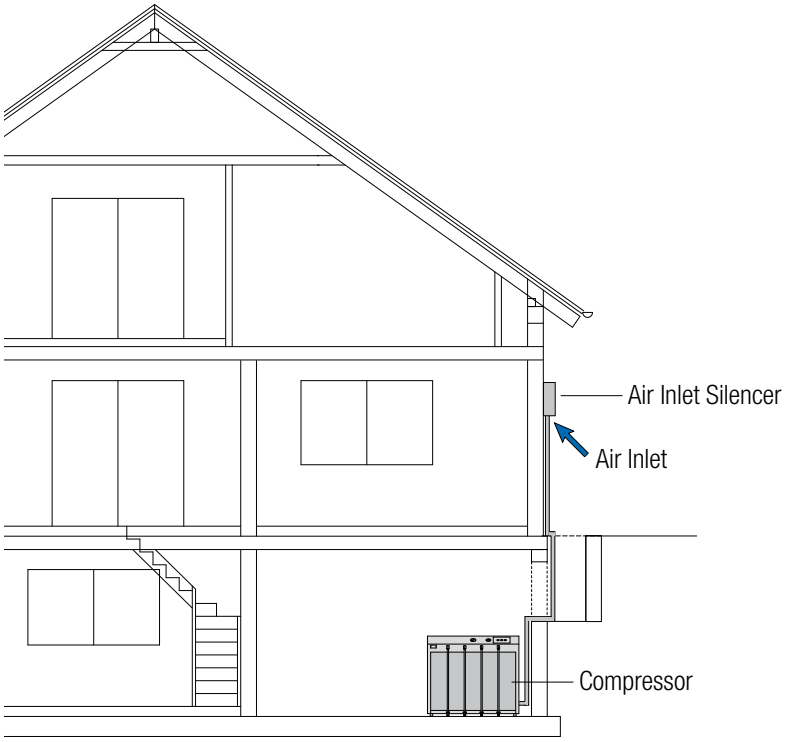



## Options

- PIN number lock (prevents unauthorised compressor use)
- Oil temperature display and auto cut off
- Oil pressure monitoring and auto cut off
- Oil pressure display
- Cylinder head temperature display and auto cut off
- Ambient temperature monitoring < +5°C and/or > +50°C with auto cut off/start inhibitor
- Inter stage pressure monitoring (availabe for 3 and 4 stage compressors)
- Puracon interface with „change filter“ alarm in LCD display
- Motor overload protection switch with message in LCD display
- Inlet pressure monitoring with auto cut off

## Air Inlet Silencer

If the compressor inlet hose is led outside for clean fresh air to enter the compressor, the noise generated by the inlet valve that resonates within the hose can be reduced to an almost inaudible level by mounting the inlet silencer at the end of the hose.
The silencer comes with a special mount for wall mounting.
40 x 26 x 60 cm, 24 kg





## Condensation Collecting Tank

The 60-liter tank is equipped with an active carbon filter collect odorless and quiet the condensate to of the separate compressor stages.

The perfect solution to collect condensate without odor and to depollute it environmentally friendy.

The flexible connection hoses are fitted with quick-couplings, to allow easy separation from the compressor.

Ø 40 x 80 cm, 20 kg

# Puracon Moisture Controller

Monitors high pressure air after filtration and indicates the water content in mg/m³. The Puracon can be used to monitor filter cartridge condition and informs the user when the filter needs changing. Serves as quality assurance for product liability for air filling stations avoids filter cartridge life calculations according to hours run and temperature redundant and provides assurance for clean air in oxygen mixing applications (Nitrox/Trimix).

The Puracon can be mounted anywhere in the pipeline after the filter and a non return valve (to prevent pressure surges). Because the Purcacon is mounted after the filter housing, no modifications are necessary to an existing filter and standard cartridges are utilised.

## Specifications

- Display Unit, 120 x 120 x 60 mm for wall mounting with power supply cable and plug (1.2 m length) and sensor cable (2 m length)
- Stainless steel sensor housing (Ø 45 x 95 mm) with 2 x G¼“ inlet/outlet and cable socket
- Non-wasting sensor
- Digital LCD display language can be selected in English, German, Spanish & French, showing water content in mg/m³
- 3 programmable quick reference LEDs for Filter status (green, yellow and red) default settings: Green: < 20 mg/m³, Yellow: 20-25 mg/m³, Red: > 25 mg/m³ (switch for compressor cut off)
- Max Working pressure 350 bars
- Blank screw for inserting into housing during sensor service
- Interface for automatic cut off of the compressor if desired
- Instruction manual
- Approved up to 420 bar

## Versions available

- 230 V AC
- 12 V DC
- 24 V DC
- Eex with ATEX certification

## LW Air Cooler +3°C

Filter capacity and filter life, an important theme with financial implications for professional filling stations where cost control is vital. The life of a filter is strongly influenced by the running temperature of the compressor and ambient temperature.

Example: LW 450 E at +20°C outlet temperature has a filter life of approx.33 hrs, at +35°C this time is reduced to just 10 hours! If the air is cooled down to +3°C after the final compression stage before it enters the final separator, the life of the filter cartridge can be extended up to 6 times, in extreme tropical conditions 10 times! The L&W refrigeration dryers, named Air Coolers, can pay for themselves within 1 season in saved filter cartridge costs. To monitor the exact state of the filter and register when the cartridge needs changing, we recommend the L&W Puracon moisture controller.

For some industrial applications, the air cooler can provide suitable drying without the need for filters.
The coolers are available as independent units with water separators, automatic condensation drain with timer and silencer, or as the economical.

LW Air Cooler BASIC for connection to a compressor with final stage oil/water separator and drain.

### Specifications

- Ready to connect with oil/water separator automatic condensation drain and silencer (Basic version without separator, drain and silencer)
- Digital temperature display in °C
- Steel housing, powder coated in RAL 6026
- Power supply cable for 230V 50Hz connection and CE plug (60Hz versions available)

LW Air Coolers are available in 2 pressure ratings, max 250 bars and max. 350 bars. The basic units have a max. working pressure of 450 bar. The units up to and including 2850 litres/min capacity are for wall mounting, the larger units are free standing. The units are maintenance free with environment friendly CFC-free refrigeration fluids.


**LW AC 450-900**

## *Technical Data*

| Model | Max. flow [m³/h] / [l/min] | Working pressure [bar] | Power consumption [kw] | Cooling air requirement [m³/h] | Mount case | Refigeration fluid | W x D x H [mm] | Weight [kg] |
|---|---|---|---|---|---|---|---|---|
| LW AC 450 Basic | 27 / 450 | 420 | 0.5 | 390 | wall mount | R 134a | 330 x 250 x 700 | 38 |
| LW AC 450 | 27 / 450 | 350 | 0.5 | 390 | wall mount | R 134a | 330 x 250 x 700 | 38 |
| LW AC 900 Basic | 54 / 900 | 420 | 0.6 | 570 | wall mount | R 404 a | 330 x 250 x 700 | 48 |
| LW AC 900 | 54 / 900 | 350 | 0.6 | 570 | wall mount | R 404 a | 330 x 250 x 700 | 48 |
| LW AC 1350 Basic | 81 / 1350 | 420 | 0.9 | 900 | wall mount | R 404 a | 500 x 430 x 840 | 72 |
| LW AC 1350 | 81 / 1350 | 350 | 0.9 | 900 | wall mount | R 404 a | 500 x 430 x 840 | 72 |
| LW AC 1950 | 117 / 1950 | 350 | 1.1 | 1140 | wall mount | R 404 a | 500 x 430 x 840 | 84 |
| LW AC 2850 | 171 / 2850 | 350 | 1.4 | 1800 | wall mount | R 404 a | 500 x 430 x 840 | 98 |
| LW AC 3650 | 219 / 3650 | 350 | 2.2 | 2200 | free standing | R 404 a | 800 x 670 x 1350 | 164 |
| LW AC 5400 | 324 / 5400 | 350 | 3.6 | 3400 | free standing | R 404 a | 800 x 670 x 1350 | 196 |
| LW AC 7000 | 420 / 7000 | 350 | 4.3 | 4200 | free standing | R 404 a | 800 x 670 x 1350 | 224 |

# Filter Panels

These panels, although primarily for breathing air purification, can be used for various gas filtration requirements. The high pressure filter housings are certified and documented in accordance with current pressure vessel regulations to a maximum working pressure of 350 bar (5250 psi) and 420 bar (6200 psi).

The assembly is mounted on a sturdy wall panel and piped ready for connection with a pressure maintaining and non-return valve. If required, the inlet can be secured with a pressure relief valve. These panels are the preferred choice for filtration remote from the compressor and are ideal for multiple compressor installations especially when using a central refrigeration dryer, or for upgrading an outdated filter system.

The filter housings are available in three sizes, 1.7, 2.3, 10 litre volume and in single, double or triple combinations. Cartridges are available for breathing air, breathing air with additional $CO/CO_2$ removal, drying, active charcoal, natural gas drying, and more.

**Filter Panel 1 x 10 ltr.**
without Pressure maintaining valve

## Specifications

- Nickel plated steel filter housing(s) with 1 drain tap on each panel
- Steel frame and housing, powder coated in RAL 6026
- Pressure maintaining and non-return valve, Connection G 1/4”
- Inlet G 1/4”

## Options

- Safety valve
- Puracon filter monitoring see page 47
- Filter cartridges


**Filter Panel 2 x 2.3 ltr.**
incl. Pressure maintaining valve

# Technical Data

| Filter panel | Capacity breathing air at +20°C [m³] | W x H x D [mm] | Weight [kg] | Max WP [bar] |
|---|---|---|---|---|
| 1 x 1.7 litre | 900 | 270 x 570 x 180 | 27 | 350 |
| 2 x 1.7 litre | 1800 | 430 x 570 x 180 | 44 | 350 |
| 3 x 1.7 litre | 2700 | 560 x 570 x 180 | 61 | 350 |
| 1 x 2.3 litre | 1200 | 270 x 815 x 180 | 32 | 350 |
| 2 x 2.3 litre | 2400 | 430 x 815 x 180 | 54 | 350 |
| 3 x 2.3 litre | 3600 | 560 x 815 x 180 | 76 | 350 |
| 1 x 2.3 litre | 1200 | 270 x 815 x 180 | 38 | 420 |
| 2 x 2.3 litre | 2400 | 430 x 815 x 180 | 67 | 420 |
| 3 x 2.3 litre | 3600 | 560 x 815 x 180 | 95 | 420 |
| 1 x 10 litre | 8400 | 1116 x 320 x 460 | 165 | 350 |
| 1 x 10 litre + 1 x 2.3 litre | 9600 | 1116 x 320 x 720 | 180 | 350 |
| 2 x 10 litre | 16800 | 1116 x 320 x 700 | 265 | 350 |
| 2 x 10 litre + 1 x 2.3 litre | 18000 | 1116 x 320 x 1000 | 315 | 350 |

## Storage Cylinders

Storage tanks are frequently used to provide extra filling capacity during peak periods. The storage cylinders can either be opened „all at once“ in a single stage, or „cascaded“ into the cylinders to be filled, usually in 3 stages. Ideally the storage pressure should be higher than the filling pressure, 300 bar storage systems are the most common. The storage systems can be used with most compressors and are best suited for automatic operation (e.g. ECC or auto start option). L&W has a full range of storage modules each of which can be combined with other modules for individual configuration.

### Specifications

- Steel tanks 10 year hydro test, powder coated in accordance with EN 1089/3
- Working pressure: 200, 300, 350 or 420 bar
- Sturdy steel frame, powder coated in RAL 6026
- Standard volume 50 litre
- Connected according to customer’s specifications
- Modular construction to accomodate future expansions

## *Technical Data*

| Cylinders | Capacity [m³] | W x H x D [cm] | Weight [kg] |
|---|---|---|---|
| **300 bar storage PW 300 bar / PH 450 bar** | | | |
| 1 x 50 litre | 15 | 25 x 178 x 30 | 125 |
| 2 x 50 litre | 30 | 50 x 178 x 30 | 210 |
| 3 x 50 litre | 45 | 75 x 178 x 30 | 310 |
| 4 x 50 litre | 60 | 100 x 178 x 30 | 405 |
| 6 x 50 litre | 90 | Ø 80 x 195 | 570 |

| Cylinders | Capacity [m³] | W x H x D [cm] | Weight [kg] |
|---|---|---|---|
| **350 bar storage PW 350 bar / PH 450 bar** | | | |
| 1 x 50 litre | 17,5 | 25 x 178 x 30 | 140 |
| 2 x 50 litre | 35 | 50 x 178 x 30 | 240 |
| 3 x 50 litre | 52,5 | 75 x 178 x 30 | 355 |
| 4 x 50 litre | 70 | 100 x 178 x 30 | 465 |
| 6 x 50 litre | 105 | Ø 80 x 195 | 660 |

# Auto Filling Selector

Auto filling selectors provide the ideal solution for simple and effective storage management. Theses units co-ordinate the flow of air in the filling station automatically between the compressor, the storage and the filling panel. The user simply connects the empty cylinders to the filling panel and opens the cylinder valves.

The compressor, storage and auto filling selector can be located remotely from the filling panel with only one HP line between the auto filling selector and the filling panel.

In addition to simplified filling operations, the auto filling selectors also save energy and time making the filling operation more economical. Once the compressor is switched on, it will not switch off until all the cylinders that are connected on the filling panel are filled and the storage bank is refilled to maximum working pressure. The compressor runs continuously during the entire filling operation and therefore more efficiently.

## The auto filling selectors are available in 3 versions


### Pneumatic

For applications where the storage pressure is at least 30 bar above the max filling pressure on the filling panel and a pressure reducing station is already available between the storage and the filling panel.
30 x 27 x 10 cm, 3 kg


### Pneumatic with integrated pressure reducing station

For applications where the storage pressure is at least 30 bar above the max filling pressure on the filling panel and a pressure reducing station is also required to safely reduce and secure the pressure from storage to filling pressure.
55 x 35 x 15 cm, 9 kg


### Pneumatic-electronic

For applications where the storage pressure is the less than 30 bar higher than the max. filling pressure on the filling panel.
43 x 26 x 10 cm, 16 kg

### Options

>> Auto start signal for the compressor

# Manual Storage Management

Cascade filling panel, connected upstream of the filling panel, a manual Control unit for 2, 3 or 4 stage filling.


### Single stage storage management

High pressure valve and pressure gauge can be installed as a storage controll in every L&W filling panel.

### Cascade panels

Cascade filling panels are efficient for filling operations without using the compressor (i.e. during silent periods). The separate panels can easiely be without any difficulty added to an existing filling station.

### Specifications

- Steel frame and housing, powder coated in RAL 6026
- Available in 1, 2, 3 or 4 stage versions
- Ø 63 mm 0-400 bar glycerine filled pressure gauge for each stage
- Hand wheel isolation valve for each stage
- 8 mm bulkhead fittings (left), 1 for each stage and 1 for the compressor
- 8 mm bulkhead fitting (right) outlet to the filling panel
- Ready to connect, fully piped with stainless steel piping


**3 stage cascade management panel**

### Operation

The cylinders to be filled are connected to the filling panel and the filling/cylinder valves are opened. The storage is manually opened starting with the storage stage with the lowest pressure (must be above the remaining pressure in the cylinders) until the pressure has equalised or the filling pressure in the filling panel is reached. This is repeated working up the storage stages until the final stage (the highest pressure) is opened. The storage valve is then turned off and the cylinders can be topped up using the compressor. When all the cylinders on the filling panel are full, the storage can be opened manually, either all together or stage by stage starting with the highest pressure, and are refilled using the compressor. The storage stages need to be closed before the next filling cycle starts.

## *Technical Data*

| Order no | No of stages | W x D x H [cm] | Weight [kg] |
|---|---|---|---|
| 002957 | 1 | 21 x 23 x 33 | 6.5 |
| 002935 | 2 | 39 x 23 x 33 | 10 |
| 002329 | 3 | 58 x 23 x 33 | 13 |
| 002816 | 4 | 78 x 23 x 33 | 16 |

## Pressure Reducing Stations

Ideal for safely reducing storage pressure down to the required filling pressure. The pressure reducing stations are available with various inlet and outlet pressures and high flows for large capacity applications.

**Pressure reducing station with non type tested safety valve**

**Pressure reducing station with TÜV/ CE safety valve**



## Pressure Reducers

Various pressure reducers are available for different applications with adjustable outlet pressures and various flow rates to suit most applications.

| | Inlet | Outlet | Gas |
|---|---|---|---|
|  | 100-420 bar<br>2 x ¼“ NPT female | 27 - 300 bar<br>2 x ¼“ NPT female | Air / inert gas |
|  | 100-420 bar<br>1 x ¼“ NPT female | 27 - 300 bar<br>1 x ¼“ NPT female | Air / inert gas |
|  | 100 - 300 bar<br>G5/8“ DIN 477 male | 0-50 bar<br>G1/4“ female | Air / inert gas |

# Filling Panels

The wide range of L&W filling panels has established itself as an industry benchmark for optimum design with an extensive list of features. The modular design guarantees that filling stations can be extended to adapt to your future requirements. The panels are available with either 200, 232 or 300 bar filling pressure (3000/4500 psi) or as dual pressure filling panels for simultaneous filling without the need to select the pressure. The self venting lever operated filling valves are available with either filling hoses and connections or direct filling connections for BA cylinders. We have a wide range of filling connections available.
A unique feature of the L&W panels is the facility to swing open the housing for maintenance work, without any disconnections, a leak check can be carried out while the panel is open.


**4 point panel - 2 x 200 bar, 2 x 300 bar with hoses and DIN anti-whip connections**



## Specifications

- Sturdy steel frame, removable for easy mounting, powder coated in RAL 6026
- Steel plate housing powder coated in RAL 6026
- 8 mm bulkhead fitting for air inlet (inter-changeable left/right)
- Ready for connection, piped with 8 mm stainless steel piping
- Start/Stop remote control with running control lamp (available for various compressor controls)
- Large Ø 100 mm pressure gauge for each filling pressure
- Self-venting lever filling valves (venting within the housing for noise reduction).
  Valves can be equipped with extra silencers for further noise reduction.
- Filling hoses or direct BA connections according to your specifications
- Large Ø 100 mm pressure gauge(s)
- Self-venting lever filling valves
- Panels for dual pressure equipped

## Filling panels with filling hoses

- 1000 mm HP hoses with stainless steel fittings (longer hoses available)
- Filling connections anti-whip option recommended for DIN or NF connections

## Filling panels with direct BA connections

- Direct BA connections for flanging the cylinders on to the panel
- Filling connections anti-whip option recommended for DIN or NF connections
- Dust caps and holders for DIN connections

# Filling Panels

## Options available

- L&W anti-whip safety connections for DIN/NF connections
- Silencers for further reducing venting noise
- Storage inlet/outlet with hand wheel valve and pressure gauge
- Pressure reducer and safety valve in the inlet for 300 bar storage and only 200 bar filling
- 8 mm bulkhead outlet for additional filling panels (modular system)


**6 point panel - 2x200, 4x300 bar direct BA connections**

## Stainless Steel Filling Panels

Ideal for installations in marine environments (beach locations, live aboard boats, etc.) where corrosion is a large problem. The stainless steel panels have the same features as the standard filling panels except they are fully equipped with stainless steel housing and fittings.


# *Technical Data*

| 1 Filling pressure | L x W x H [cm] | Weight [kg] |
|---|---|---|
| 1-point | 21 x 23 x 33 | 6.5 |
| 2-point | 39 x 23 x 33 | 9.0 |
| 3-point | 58 x 23 x 33 | 12 |
| 4-point | 80 x 23 x 33 | 15 |
| 6-point | 115 x 23 x 33 | 20 |
| 8-point | 153 x 23 x 33 | 25 |
| 9-point | 172 x 23 x 33 | 28 |

| 2 Filling pressures | L x W x H [cm] | Weight [kg] | Configurations |
|---|---|---|---|
| 4-point | 82 x 23 x 33 | 18 | 1+3, 2+2, 3+1 |
| 6-point | 118 x 23 x 33 | 23 | 1+5, 2+4, 3+3, 4+2, 5+1 |
| 8-point | 156 x 23 x 33 | 28 | 1+7, 2+6, 3+5, 4+4, 5+3, 6+2, 7+1 |
| 9-point | 175 x 23 x 33 | 31 | 1+8, 2+7, 3+6, 4+5, 5+4, 6+3, 7+2, 8+1 |

## Armoured Safety Filling Cabinets


3 Tank - SAFETY FILLING Cabinet for Dual Pressure


2 Tank - SAFETY FILLING Cabinet for Single Pressure

3 Tank - SAFETY FILLING Cabinet for Dual Pressure - Back View

# Armoured Safety Filling Cabinets

**Protect yourself, your employees and customers against the risk of exploding bottles.**

With the new L&W safety filling cabinet, the filling process is completely safe and without danger.

The fear of decrepit or defective bottles has already implemented in many countries a provision for the explosion as a result.

The L&W safety filling cabinet is the affordable alternative to an explosion-proof hopper. In the case of an exploding bottle our solid steel armor protects you against the lethal shrapnel.

Our Safety Filling Cabinet are tested and approved by the American Organization UL

## Specifications

- Max. Inlet pressure 350 bar
- Adjustable flow restrictor
- Inlet pressure gauge, 0-400 bar, Ø 63 mm,
- Filling pressure gauge(s), 0-400 bar, Ø 63 mm
- Self-venting lever filling valves for each outlet
- Emergency cut-off switch
- High pressure solenoid / 230 V
- Safetydoor and locking bar are controlled by position switch
- Start / Stop buttons


**3 Tank - SAFETY FILLING Cabinet for Dual Pressure - Inside view**

## *Technical Data*

| Order-Nr. | Size | Numbers of filling connection & Pressure range | L x W x H [mm] |
|---|---|---|---|
| **Single Pressure Cabinets - 200 / 300 bar w/o. SV and Pressure Reducer** (max. inlet pressure = max. filling pressure) | | | |
| 004565 | 2 Tanks | 2 x 200 bar or 2 x 300 bar | 780 x 535 x 1640 |
| 004566 | 3 Tanks | 3 x 200 bar or 3 x 300 bar | 1050 x 535 x 1640 |
| **Dual Pressure Cabinets - 200 and 300 bar with SV and Pressure Reducer** | | | |
| 004567 | 2 Tanks | 2 x 200 bar or 2 x 300 bar | 780 x 535 x 1640 |
| 004568 | 3 Tanks | 3 x 200 bar or 3 x 300 bar | 1050 x 535 x 1640 |

420 bar Version und weitere Größen auf Anfrage möglich.

# Air Station

A breathing air filling station specifically designed for outdoor applications allowing air cylinders to be filled outside of shop hours and/or without involving staff. The filling station is housed in a weather proof stainless steel housing for wall mounting, this cabinet has a standard cylinder lock in the door.

Payment is processed using programmable magnetic keys which are issued to customers and a credit “loaded” on to the key. The digital display indicates the remaining credit on the key as the filling process takes place.

The filling station is equipped with an easy to use, self venting lever filling valve which can control up to 4 filling hoses. The filling hoses are equipped with the L&W patented anti-whip DIN safety ends or yoke connections. The venting is inside the housing and suppressed with a silencer reducing noise to a minimum, especially important for “out of hours” use.

The air station is easy to use, the key is placed in the holder and a start/stop switch controls the fill. The unit has an automatic final pressure shut-off and a safety valve for the final pressure. The storage pressure that supplies the air station and the filling pressure are shown on 2 pressure gauges. An emergency switch provides an additional safety feature.

The units comes complete with an interface for crediting and/or analysing the magnetic keys, including a cable to a serial 9-pole PC port. The software (included) will run on a windows PC. The data port is a serial 9 pole RS 232 port.



## Specifications

- Lockable, all weather stainless steel housing
- Type tested final pressure safety valve (225 bar)
- Two pressure gauges (0-400 bar, Ø 63 mm, class 1.6)
- Choke for controlling the air flow to 800 litre/min
- LCD Display, 2 LED control lights
- Automatic final pressure shut off
- Stainless steel filling hose holder
- High pressure piping, stainless steel
- 8 mm bulkhead fitting for air inlet
- Central lever filling valve, self venting
- Silenced venting inside the housing
- 1, 2, 3 or 4 Filling hoses with certificate, length: 1000 mm (other lengths available on request)
- DIN 200 bar non-whip safety DIN, or yoke connections
- Start, Stop & Reset buttons, emergency off switch
- Filling instructions and complete documentation templates


### Option: Removable memory module

- Separate lockable cabinet housed inside the stainless steel cabinet contains “plug-in” memory unit that stores the data from the air station.
- Data can then be downloaded via RS232 port for storage and analysis.
- Ideal for remote air stations where the owner/operator makes regular control visits.

## Technical Data

| Filling pressure [bar] | Inlet pressure [bar] | Filling rate [litre/min.] | Power supply | W x H x D [mm] | Weight [kg] |
|---|---|---|---|---|---|
| 200, 232 or 300 | max. 350 | 800 (+/- 5%) | 230V AC, 50 Hz, approx. 15 Watt | 600 x 760 x 210 | 42 |

# Gas Blending Panels

Using the partial pressure method, Nitrox and/or Trimix can be mixed and filled safely, easily and accurately using our Pro or Classic filling panels. The panels are tested and certified for 100% oxygen and/or helium mixing for all your breathing gas requirements. Practical valve and gauge layout makes operation easy to learn and use.

For pure oxygen compatible air (OCA), we recommend using the Puracon air controller and/or an extra filter mounted on the panel.

Wall mounted panels for safe and easy partial pressure gas blending. All gas inlets are fitted with isolation valves, non return valves and flow restrictors. The oxygen/helium gas pressure can be read on individual pressure gauges without the need to open the valves which makes efficient gas cascading quick and simple. The design of the panels has been approved by the stringent German TÜV authorities as suitable for use in Nitrox, Trimix and Heliox applications.

The Panels have a removable rear cover which makes wall mounting very simple and are powder coated in RAL 6026. All the pipework and the connections are stainless steel providing years of trouble free service and safe gas flow. The valves are industrial quality.

## Nitrox Classic Panel specifications


- 2 inlets for oxygen/helium with pressure gauges, 6 mm pipe connections
- 1 inlet for OCA, 8 mm pipe connection
- 1 outlet for vented gas, 6 mm pipe connection
- Main pressure gauge Ø 160 mm class 1.0, 0-250 bar in 2 bar increments
- Housing for oxygen analyser/sensor, gas is reduced in pressure and flow
- 1 filling hose with cylinder connection of your choice
- Up to 3 extra filling hoses can be fitted

## Nitrox Pro Panel specifications


- 3 inlets for oxygen/helium with pressure gauges, 6 mm pipe connection
- 1 inlet for OCA with pressure gauge, 8 mm pipe connection
- 1 outlet for vented gas, 6 mm pipe connection
- Main pressure gauge Ø 160 mm class 1.0, 0-250 bar in 2 bar increments
- Alpha 1 oxygen analyser (see text opposite) can be used off the panel if required
- 1 filling hose with cylinder connection of your choice
- Up to 2 extra filling hoses can be fitted

## Options

- Inlet purification filter
- Alpha 1 analyser (classic)
- Additional filling hose(s)
- Helium/Oxygen analyser

## *Technical Data*

| | W x H x D [mm] | Weight [kg] | Max. inlet pressure OCA [bar] | Max. inlet pressure Oxygen/Helium [bar] |
|---|---|---|---|---|
| **Nitrox Classic** | 710 x 480 x 220 | 29 | 200 | 200 |
| **Nitrox Pro** | 810 x 580 x 220 | 38 | 200 | 200 |

# Nitrox / Trimix

Nitrox or EAN (enriched air nitrox) is a widely accepted alternative to diving with air and offers various advantages. Trimix is a term referring to gas mixtures containing helium for deep diving.

L&W offers two alternatives for Nitrox filling stations.

Partial pressure blending panels require a supply of medical grade oxygen and safely control the flow of oxygen together with oxygen compatible air (OCA) into an oxygen clean diving cylinder. The panels have the advantage of low investment and zero energy consumption and are the ideal investment for Nitrox filling stations who have a reliable supply of oxygen with small or moderate filling requirements. The blending panels can also be used for mixing Trimix mixtures in diving cylinders.

Despite the higher investment and higher energy consumption, membrane nitrox generators are the indispensable choice for filling stations where there is no reliable supply of oxygen. This method of nitrox generation and filling is ideal for large volume diving centres where the membrane operation in conjunction with a suitable high pressure compressor is simple and quick.

L&W cannot endorse the use of continuous blending systems due to the potential risk of mixtures greater than 40% oxygen entering the high pressure compressor.



## Alpha 1 Oxygen Analyser

Hand held oxygen analyser ideal for analysing oxygen content in any location.
The robust metal housing which includes the oxygen sensor and the water-proof (IP65) construction make this analyser a first choice for diving schools, instructors and divers alike. The Alpha 1 is standard with the pro panel and Mixmaster panels and available as an option with the classic panel.


### Features

- Cast metal housing sealed with rubber gaskets, IP65 protection
- Large stainless steel eye for lanyard/hook
- Fine calibration with hand wheel, secondary calibration inside
- User replaceable 9V battery (display goes faint to indicate battery change due)
- Sensor inlet sealed with screw cap and O Ring for water protection and conserving sensor life
- User replaceable sensor, expected life approx. 3 years
- Measuring range 1-100% oxygen
- 0.1% accuracy

# Nitrox Membrane Systems

Nitrox membrane systems are based around a special semi-permeable „filter“ called a membrane. The membrane is fed with very clean, low pressure air. The air is separated between oxygen and nitrogen within the membrane leaving a higher percentage of oxygen (> 28 - 40%) in the gas that exits the sides of the membrane, and a higher percentage of nitrogen (> 90 - 99%) exiting the top of the membrane.

The capacity of the membrane is the amount of nitrox produced. This is then compressed in a suitable HP compressor, the quantity of nitrox must be higher than the delivery rate of the HP compressor due to some loss within the HP compressor.

The membrane therefore has a degree of waste (the nitrogen) so that the amount of air entering the membrane is considerably higher than the nitrox exiting the membrane. This air requirement is the most important factor when sizing either the high pressure storage or the low pressure compressor that feeds the membrane and increases drastically with an increase in oxygen percentage of the nitrox.

L&W membranes are available in two sizes S & L. The L membranes can also be mounted in parallel to produce even higher quantities of nitrox if required (> 800 litre/min).

## Technical Data S membrane

| Inlet pressure | Oxygen % | | | | | | |
|---|---|---|---|---|---|---|---|
| | 28% | 30% | 32% | 34% | 36% | 38% | 40% |
| **Technical Data S membrane outlet capacity (litre/min) at +20°C** | | | | | | | |
| 4 bar | 128 | 131 | 134 | 137 | 140 | 143 | - |
| 5 bar | 163 | 167 | 170 | 174 | 178 | 181 | 185 |
| 6 bar | 199 | 203 | 207 | 212 | 216 | 221 | 225 |
| 7 bar | 235 | 240 | 246 | 251 | 256 | 261 | 267 |
| 8 bar | 273 | 279 | 285 | 291 | 297 | 303 | 309 |
| 9 bar | 311 | 318 | 325 | 332 | 339 | 346 | 353 |
| 10 bar | 351 | 358 | 366 | 374 | 382 | 390 | 397 |
| 11 bar | 391 | 400 | 408 | 417 | 426 | 435 | 443 |
| **Technical Data S membrane air inlet requirement (litre/min) at +20°C** | | | | | | | |
| 4 bar | 177 | 206 | 242 | 299 | 392 | 557 | - |
| 5 bar | 225 | 256 | 296 | 357 | 444 | 580 | 998 |
| 6 bar | 274 | 311 | 361 | 417 | 526 | 662 | 991 |
| 7 bar | 324 | 368 | 427 | 494 | 597 | 745 | 1066 |
| 8 bar | 376 | 426 | 495 | 573 | 692 | 864 | 1190 |
| 9 bar | 429 | 487 | 565 | 654 | 793 | 985 | 1340 |
| 10 bar | 484 | 550 | 627 | 741 | 897 | 1130 | 1569 |
| 11 bar | 543 | 615 | 715 | 830 | 1022 | 1304 | 1869 |

This data is based on a membrane air inlet temperature of +20°C. Temperatures below +20°C increase the selectivity of the membrane and the capacity and the air requirement is reduced, temperatures above +20°C increase the permeability of the membrane and the capacity and the air inlet requirement increases.

## Technical Data L membrane

| Inlet pressure | Oxygen % | | | | | | |
|---|---|---|---|---|---|---|---|
| | 28% | 30% | 32% | 34% | 36% | 38% | 40% |
| **Technical Data L membrane outlet capacity (litre/min) at +20°C** | | | | | | | |
| 4 bar | 250 | 256 | 262 | 268 | 274 | 280 | - |
| 5 bar | 318 | 325 | 333 | 341 | 348 | 356 | 364 |
| 6 bar | 387 | 396 | 406 | 415 | 425 | 434 | 443 |
| 7 bar | 458 | 470 | 481 | 492 | 503 | 514 | 515 |
| 8 bar | 532 | 545 | 558 | 571 | 584 | 596 | 609 |
| 9 bar | 607 | 622 | 637 | 652 | 666 | 681 | 696 |
| 10 bar | 685 | 701 | 718 | 735 | 751 | 768 | 784 |
| 11 bar | 764 | 783 | 801 | 820 | 838 | 857 | 875 |
| **Technical Data L membrane air inlet requirement (litre/min) at +20°C** | | | | | | | |
| 4 bar | 345 | 401 | 472 | 585 | 768 | 1093 | - |
| 5 bar | 438 | 500 | 579 | 698 | 871 | 1139 | 1964 |
| 6 bar | 534 | 608 | 706 | 818 | 1027 | 1302 | 1950 |
| 7 bar | 633 | 718 | 836 | 969 | 1172 | 1465 | 2101 |
| 8 bar | 734 | 833 | 970 | 1124 | 1360 | 1700 | 2346 |
| 9 bar | 838 | 952 | 1108 | 1284 | 1559 | 1941 | 2644 |
| 10 bar | 945 | 1076 | 1249 | 1455 | 1765 | 2227 | 3097 |
| 11 bar | 1062 | 1204 | 1402 | 1632 | 2012 | 2571 | 3691 |

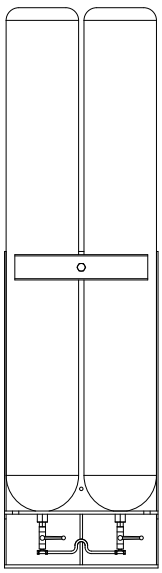
# Nitrox Membrane Systems

The Nitrox membrane must be supplied with a clean low pressure air supply, this can either come from a high pressure breathing air storage (in combination with a Mixmaster HP) or from a low pressure air compressor with excellent purification before the membrane (in combination with a Mixmaster LP).
The Mixmaster systems differ slightly in their scope of delivery.

## Mixmaster HP

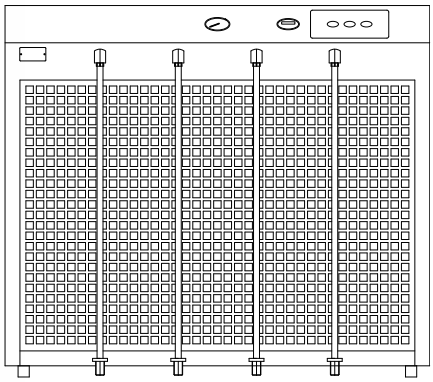
Available in 2 versions, large and small. The Mixmaster HP panels have an HP breathing air inlet with isolation valve and pressure reducer that safely reduces the HP supply down to the desired LP inlet pressure. The HP version has a large filter for air conditioning to ensure that the membrane is supplied with oil-free air, this reduces the risk of membrane contamination.

The HP solution has the advantage of using pure breathing air to feed the membrane, this reduces the risk of membrane contamination. The investment cost are lower than a LP solution, but the running costs are higher. 2 HP compressors offer the ideal solution with redundancy for professional diving centres. If only 1 HP compressor is available then a higher capacity storage will be necessary.



High pressure storage


Pressure reducer, membrane, analyser & reservoir



HP compressor (gas tight inlet) and filling hoses

# Technical Data

| Mixmaster HP Technical Data | |
|---|---|
| Inlet Pressure [bar] | 50 > 350 bar (G¼" female) |
| Membrane inlet pressure LP [bar]: | 4 > 11 (11.5 bar safety valve) |
| Outlet to compressor (air/nitrox): | G1" female |
| Air inlet (for air filling operations): | G1" female |
| Dimensions W x H x D [cm]: | 65 x 115 x 30 |
| Weight [kg]: | 75 |

# Nitrox Membrane Systems

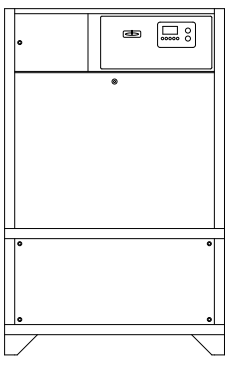
## Mixmaster LP

Available in 2 versions, large and small. The Mixmaster LP panels have a LP inlet with coarse and fine coalescent filters and a large capacity active charcoal filter for oil removal.

The LP solution is a higher investment but has the advantage of lower running costs compared to the HP version. The LP compressor must be matched to the highest oxygen mixture required.

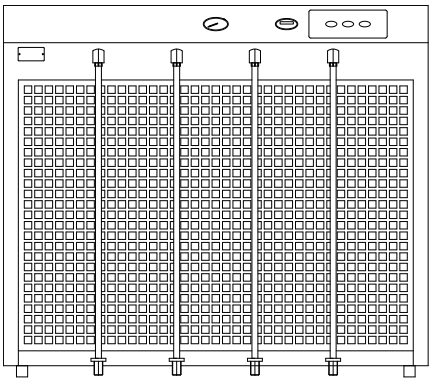
## Complete Mixmaster LP installations

The Mixmaster LP can also be supplied complete with a matched LP compressor for a turn key installation either complete with a matching HP compressor or just the LP compressor and Mixmaster LP to suit an existing high pressure air compressor that is suitable for nitrox compression.



Low pressure compressor and air dryer


Pressure reducer, membrane, analyser & Inlett buffer



HP compressor (gas tight inlet) and filling hoses



# *Technical Data*

| Mixmaster LP Technical Data | |
|---|---|
| Inlet Pressure [bar] | 4-11 bar (G1" female) |
| Outlet to compressor (air/nitrox): | G1" female |
| Air inlet (for air filling operations): | G1" female |
| Dimensions W x H x D [cm]: | 65 x 115 x 30 |
| Weight [kg]: | 75 |

## Filling Connections

Filling connections for SCBA and diving cylinders in accordance with national/international standards.

| | Gas | Description | Max WP | M16x1.5 mm for HP hose/lever filling valve | G1/4" for Oxygen hose | G1/4" for lever filling valves (-2005) | M16 x 1.5mm for cross filling valves | 8 x 2.5 mm for piping connection |
|---|---|---|---|---|---|---|---|---|
|  | Air | DIN 477 200 bar | 232 bar / 3400 psi | ● | ● | ● | ● | ● |
|  | Air | DIN 477 200 bar anti whip | 232 bar / 3400 psi | ● | ● | | | |
|  | Air | DIN 477 300 bar | 300 bar / 4500 psi | ● | | ● | ● | ● |
|  | Air | DIN 477 300 bar anti whip | 300 bar / 4500 psi | ● | | | | |
|  | Air | DIN 477 300 bar 360° swivel connection | 300 bar / 4500 psi | ● | | | | |
|  | Air | INT/Yoke for scuba | 232 bar / 3400 psi | ● | ● | | ● | |
|  | Air | CGA 346 | 200 bar / 3000 psi | ● | | ● | ● | |
|  | Air | CGA 347 | 300 bar / 4000 psi | ● | | ● | ● | |
|  | Air | NF E 29-662 | 232 bar / 3400 psi | ● | | ● | ● | |
|  | Air | NF E 29-662 anti whip | 232 bar / 3400 psi | ● | | | | |
|  | Air | NF E 29-663 | 300 bar / 4500 psi | ● | | ● | ● | ● |
|  | Air | NF E 29-663 anti whip | 300 bar / 4500 psi | ● | | | | |
|  | Air | Spasciani | 200 bar / 3000 psi | ● | | | | |
|  | Nitrox | Draeger M24 x 2.0 prEN144 | 200 bar / 3000 psi | | ● | | | |
|  | Nitrox | M26 x 2.0 - 250 bar | 250 bar / 3675 psi | | ● | | | |
|  | Nitrox | M26 x 2.0 - 350 bar | 350 bar / 5000 psi | | ● | | | |
|  | $O_2$ | G3/4" DIN 477 | 200 bar / 3000 psi | | ● | | | |

If you need any other connections, please do not hesitate to ask.

# Filling Valves

| | Order number | P max<br>Application | Mount | Repair kit/<br>special tools/silencer |
|---|---|---|---|---|
|  | **Cross design filling valve without pressure gauge** | | | |
| | Yoke: 002022<br>DIN 200: 002023<br>DIN 300: 002024 | 350 bar<br>Filling valve with separate vent screw | Filling valve without pressure gauge for mounting on a filling hose via a ¼" female connection (supplied as standard with connection M16 x 1,5 mm 10 L). Available with various filling connections. | Repair kit: 002294 |
|  | **Cross design filling valve with pressure gauge** | | | |
| | Yoke: 002291<br>DIN 200: 002292<br>DIN 300: 002293 | 350 bar<br>Filling valve with separate vent screw | Filling valve with 0-400 bar pressure gauge for mounting on a filling hose via a ¼" female connection (supplied as standard with connection M16 x 1,5mm 10L). Available with various filling connections. | Repair kit: 002294 |
|  | **Hand wheel valve without venting** | | | |
| | 001477 | 350 bar.<br>Standard 2/1 way valve, G¼" inlet and outlet for opening closing lines such as storage cylinders | Panel mounting with Ø 33 mm hole | Lower seat: 000571<br>Upper valve stem and bearing: 000573 |
|  | **Hand wheel valve self venting** | | | |
| | 001476 | 350 bar<br>Standard 2/1 way valve, G¼" inlet and outlet self venting on the outlet line for filling panels | Panel mounting with Ø 33 mm hole | Lower seat: 000572<br>Upper valve stem and bearing: 000574<br>Silencer kit: 002896 |
|  | **Lever filling valve, self venting** | | | |
| | 200 bar: 002449<br>300 bar: 002450 | 350 bar<br>Standard 2/1 way valve, G¼" inlet and M16 x 1.5 mm outlet self venting on the outlet line for filling panels | Panel mounting inside a 90° profile secured by 4 screws, vents inside the panel | Repair kit small: 002451<br>Repair kit large: 002452<br>Tool kit: 002453<br>Silencer: 000580 |
|  | **Lever filling valve, self venting (by 2005)** | | | |
| | 200 bar: 001382<br>300 bar: 001383 | 350 bar<br>Standard 2/1 way valve, G¼" inlet and outlet self venting on the outlet line for filling panels | Panel mounting inside a 90° profile secured by 4 screws, vents inside the panel.<br>(limited availability) | Repair kit: 000576<br>Special tool: 000575<br>Silencer: 000580 |
|  | **Lever filling valve, self venting** | | | |
| | 200 bar: 000707<br>300 bar: 000708 | 350 bar. Standard 2/1 way valve, G¼" inlet and M16 x 1,5mm male outlet, self venting on the outlet line for filling panels with hoses | Panel mounting with Ø 23 mm hole silencer integrated in the vent | Repair kit: 000576<br>Special tool: 000575 |
|  | **Lever filling valve, self venting** | | | |
| | 001827 | 350 bar<br>Standard 2/1 way valve, G¼" inlet and M16 x 1.5 mm outlet self venting on the outlet line for filling | Vertical panel mounting with U Clamp | U Clamp: 001826<br>Repair kit small: 001834<br>Repair kit large: 001836 |

## Adapters

| | Order number | From | To | Material |
|---|---|---|---|---|
|  | 000683 | DIN 200 bar G5/8“ female | G1/4“ female | Stainless steel |
|  | 001496 | DIN 200 bar G5/8“ female | G1/4“ female with M22 x 1.5mm male | Stainless steel |
|  | 000684 | DIN 300 bar G5/8“ female | G1/4“ female | Stainless steel |
|  | 001497 | DIN 300 bar G5/8“ female | G1/4“ female with M22 x 1.5mm male | Stainless steel |
|  | 000685 | DIN 200 bar G5/8“ male | G1/4“ female | Brass |
|  | 000686 | DIN 300 bar G5/8“ male | G1/4“ female | Brass |
|  | 000214 | DIN 200 bar G5/8“ female | INT/Yoke A clamp connection | Chromed brass |
|  | 001478 | DIN 200 bar G5/8“ female (for anti whip connections) | INT/Yoke A clamp connection | Chromed brass |
|  | 001479 | DIN 200 bar G5/8“ female (for anti whip connections, old version with Pin) | INT/Yoke A clamp connection | Chromed brass |
|  | 002903 | 2 x DIN 300 bar G5/8“ female | G1/4“ female | Stainless steel |
|  | 003096 | W28.8 x 1/142 tapered thread DIN 477 | G1/4“ female | Brass |

## Safety Valves

Safety valves are available for various pressures, either securing the final pressure on HP compressors and installations or preventing damage to inter stage or low/medium pressure components.

| | Pressure setting | Mount | Certification / Order number | |
|---|---|---|---|---|
|  | 100 - 350 bar<br>225 bar<br>330 bar<br>Base for SV | <br>Special mount<br>Special mount<br>2 x G 1/4“ | TÜV<br>000553<br>000556<br>000233 | CE<br>001814<br>001816<br>000233 |
|  | 100 - 350 bar<br>225 bar<br>330 bar<br>Base for SV | <br>G 3/8“<br>G 3/8“<br>1 x G 3/8“<br>2 x G 1/4“ | Non type tested<br>000558<br>000560<br>000231 | |
|  | 8 - 110 bar | G3/8“ | Non type tested | |

## Pressure switches and sensors

A wide range of analogue pressure switches and electronic pressure sensors is available suitable for pressures between 0 and 600 bar.

| | Pressure setting available | Order number | Mount | Operation |
|---|---|---|---|---|
|  | 0 - 10 bar<br>0 - 350 bar<br>0 - 600 bar | 000636<br>000203<br>001512 | G1/4“ female | Switch opens at set pressure |
|  | 0 - 1,6 bar<br>0 - 6 bar<br>0 - 10 bar<br>0 - 60 bar<br>0 - 100 bar<br>0 - 400 bar | 000635<br>004840<br>002141<br>002142<br>003888<br>002143 | G1/4“ male | Electronic sensor<br>14-30V DC input,<br>0-10 V DC output |

## Filter Cartridges

Filter cartridges are available for various applications and various gases. The tables below give an overview of the filter cartridges available.

| Order number new (order number old) | Diameter Ø [mm] | Length [mm] | Compressor/ Filter housing | Capacity [m³] at 20°C* | 35°C* |
|---|---|---|---|---|---|
| **Breathing air in accordance with EN 12021** | | | | | |
| 000644 | 45 | 200 | LW 100 E/E1 | 108 | 32 |
| 001375 (LW160/190154) | 48 | 165 | LW 160 E/E1,170 E | 180 | 54 |
| 001374 (LW225/245154) | 48 | 210 | LW 200 E, 225 E | 200 | 60 |
| 000002 (4508005) | 62 | 355 | LW 210 E/ES, LW 230 E/ES, LW 260 E/ES, LW 280 E/ES, LW 300 E, LW 450 E, 1.7 liter housing | 900 | 270 |
| 000003 (8022) | 62 | 575 | LW 300 ES, LW 450 ES, LW 570 E/ES, LW 720 E, 2.3 litre housing | 1200 | 360 |
| **Breathing air in accordance with EN 12021 and additional $CO/CO_2$ filtration** | | | | | |
| 002309 | 45 | 200 | LW 100 B | 86 | 26 |
| 001463 (LW160/190154K) | 48 | 165 | LW 170 D, LW 190 B | 150 | 45 |
| 001464 (LW225/154K) | 48 | 210 | LW 245 B | 166 | 50 |
| 001459 (4508005K) | 62 | 355 | LW 300 B, LW 450 D | 750 | 225 |
| 001461 (4508022K) | 62 | 575 | LW 570 D | 1000 | 300 |

* Temperature of the filter housing

## Filter Cartridges

| Order number new (order number old) | Diameter Ø [mm] | Length [mm] | Compressor/ Filter housing | Capacity |
|---|---|---|---|---|
| **Oil/odour removal < 0,1mg/m³ (nitrogen / helium /mixmaster applications)** | | | | |
| 002310 | 45 | 200 | LW 100 EN | Capacity depends on the inlet quality of the gas and the operating conditions, refer to instruction manual |
| 001466 (4508005B) | 62 | 355 | LW 300 EN, LW 450 EN, 1.7 litre housing | |
| 001467 (3790) | 62 | 575 | LW 450 ESN, LW 570 EN/ ESN, 2.3 litre housing | |
| 001469 | 90 | 500 | Mixmaster | |
| **Air/inertgas drying only < 15 mg/m³** | | | | |
| 002311 | 45 | 200 | LW 100 | |
| 001464 (4508005A) | 62 | 355 | 1.7 litre housing | |
| 001462 (8022A) | 62 | 575 | 2.3 litre housing | |
| **CNG Filter (drying and oil removal)** | | | | |
| 002476 | 45 | 200 | LW 100 EG | |
| 001468 (8070) | 62 | 575 | 2.3 litre housing | |

## Oil

We have gone to great lengths testing various oil compositions for our compressors. The low carbon build up and the excellent lubrication properties were paramount in the development of our compressor oil.


| Oil Type | Order number new (old) | Quantity |
|---|---|---|
| Full synthetic for HP breathing air compressors | 000001 (4509001) | 1 litre |
| Mineral motor oil for combustion engines | 000004 (4509003) | 500 ml |
| Compressor oil for CNG compressors and boosters | 002348 | 20 litre |

## Inlet filters

Various inlet filters are available for the different sizes of compressors, the inlet filter cartridge is a low cost component that plays a significant role in protecting the compressors, a clean cartridge also ensures the efficient operation of the compressor.

| Inlet Filter Order number new (old) | Compressor |
|---|---|
| 001708 | LW 100 |
| 000119 (LW160/190123) | LW 160/170/190/200/225/245 |
| 000170 (4507017) | LW 210/230/260/280/300/450/570/720 |
| 002662 (1820) | LW 1300 |

## Service Kits

The service kits contain all required parts for the maintenance interval according to the factory requirements. The use of the L&W servive kits ensure that all required parts are ordered and be replaced and gives you the assurance that all parts are includet in your order. The servive kits include, depending on the model and interval parts such as O-Rings, Sinter Filter, Intake Filter, V-Belts, Silencers, In-& Outlet Valve, Valve Seals and Compressor oil.

| Model | Typ | Order Number / Working Hours | | |
|---|---|---|---|---|
| | | every 1000 h | every 2000 h | every 4000 h |
| LW 100 ECO | E / E1 / B | 003604 | | |
| LW 100 | E / E1 / B | 003604 | | |
| LW 160 | E / E1 | 003963 | | |
| LW 225 | E | 003950 | | |
| LW 245 | B | 003950 | | |
| LW 230 | E | 004656 | 005168 | |
| LW 230 | ES | 005169 | 004980 | |
| LW 280 | E | 004329 | 003921 | |
| LW 280 | ES | 004970 | 003920 | |
| LW 300 | E / ES | 003842 | | 003838 |
| LW 450 | E / ES | 003841 | | 003834 |
| LW 450 | D | 003843 | | 003837 |
| LW 570 | E | 005166 | 002272 | 004029 |
| LW 570 | ES | 005166 | 004068 | 005167 |
| LW 570 | D | 004030 | 002357 | |
| LW 720 | E | 003954 | | 005171 |
| LW 1300 | E | 003876 | | 004271 |

## Seminars / Training courses at L&W

In our training courses we teach you the basics for the knowledgeable and reliable handling of our compressors and filling devices. You will receive practical skills that allow you to expand your skills in terms of compression technology and air conditioning essential.

All participants will receive a certificate of participation. Participation in the trainings enable you to hold regular training of personnel in accordance with the provisions of the BG.

For questions about our training, please contact:

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**Compressor Seminar**
max. 24 persons, duration: approx. 7h
In this seminar, the basics of the following topics are covered in theory:

- Compressor technology, maintenance, troubleshooting
- Legal Notices
- Air conditioning and air quality testing
- Production and use of Nitrox

The seminar also includes instruction for filling high pressure cylinders.

**Technology Seminar**
max. 8 people Duration: 2 days
This course is a practical organized and the „Compressor Seminar“ is required as a basis knowledge.
It includes the following topics:

- Refreshment of the basic skills
- Specific troubleshooting of compressors
- Disassambling and Assembling of a compressor block
- Implementing of a high pressure system
- Setting options on the compressor
- Repair of filling devices on Compressor and filling panels



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