Sauer Compressors

Every ship should have one!

COMMERCIAL SHIPPING

Dependable up to 500 bar – anywhere, anytime.

Sauer Compressors for Shipping.

International shipping with its stringent requirements for quality and reliability is Sauer's traditional area of activity. Our starting and working air compressors have proven their reliability in this demanding market. They are among the most modern and most economic compressors available today.

In particular the low maintenance 3-stage air-cooled starting air compressors have established themselves as benchmark for modern and cost effective starting-air compressors due to

- less temperature
- less maintenance cost
- less installation cost

Our Product Range

Mistral

2-stage air-cooled starting-air compressors
up to 80 m³/h

page 4

Passat

3-stage air-cooled starting-air compressors
up to 360 m³/h

page 6

Typhoon

2-stage water-cooled starting-air compressors
up to 440 m³/h

page 8

SC

Control- and working-air compressors
up to 520 m³/h

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2-stage air-cooled starting-air compressors

Today, the principle of air cooling is an international shipbuilding standard when starting air compressors of less than 80 m³/h or 15 kW are concerned. Back in the 50s, Sauer had already started the development of air-cooled compressors in this capacity range as an alternative to water-cooled units which are in general high maintenance and more prone to failure.

Today, Sauer's 2-stage air-cooled starting air compressors are among the most modern and low maintenance compressors available worldwide. More than a thousand of these dependable compressors are delivered to our customers every year.

If you require references, please do not hesitate to contact us at **sales@sauercompressors.de**

General advantages

- Low installation cost due to absence of cooling water circuit
- Light-weight and less space required for installation
- Reliable and safe to operate, even at ambient temperatures up to 60 °C
- Suitable for even the most difficult ambient conditions

Technical Data

2-stage air-cooled starting-air compressors | Technical data for a final pressure of 30 bar

Type	Final pressure max. bar	Stages	Cylinder	Speed rpm	Charging Capacity m³/h	Power Consumption kW	Heat Dissipation kJ/sec	Weight kg	Length mm	Width mm	Height mm
WP 15 L	40	2	2	1,180 1,480 1,780	12.0 15.0 18.0	2.7 3.4 4.1	3 4 5	135	855	600	630
WP 22 L	40	2	2	1,180 1,480 1,780	17.0 21.0 25.0	3.5 4.4 5.4	4 5 6	135	855	600	630
WP 33 L	35	2	2	1,180 1,480 1,780	23.0 30.0 35.0	5.1 6.5 7.8	6 7 9	145	890	600	630
WP 45 L	40	2	2	1,180 1,480 1,780	40.0 50.0 60.0	7.6 9.6 11.5	9 11 13	318	1,214	742	820
WP 65 L	40	2	2	1,180 1,480 1,780	53.0 67.0 80.0	10.2 12.8 15.4	12 15 18	328	1,254	742	820
H 25	30	2	2	50 double-strokes/min	1.8	Hand air compressor		28	312	230	200

Performance data with 5% tolerance, referred to 20 °C and an air pressure of 1,013 mbar.
Charging Capacity according to ship building regulations.
Performance data on final pressure deviating from 30 bar will be provided upon request.
Weights and dimensions for standard units with three-phase A. C. motor, IP 54, and flexible mounting.
H 25 is also available with 30 and 63 l vessel.

WP 45 – 65 L

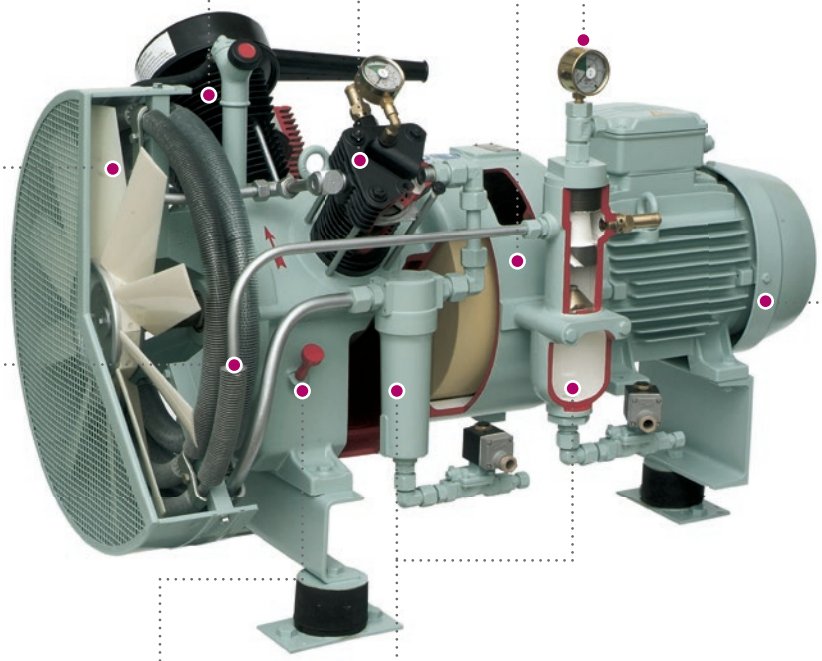
High performance valves, friction-free operation for long maintenance intervals

Integrated flexible coupling, low-maintenance and safe

Monitoring: Safety valves and pressure gauges for all stages. Optional: Monitoring of the lubrication oil circuit as well as of the outlet temperature of the compressed air

Compression in 2 cylinders, arranged in V-shape, with plunger piston

Fan wheel directly installed on the crankshaft



Low recooling temperatures due to sufficiently dimensioned intermediate and aftercoolers and generous cylinder cooling

Reliable and failsafe splash lubrication

High-performance three-phase A. C. motors; optional: Diesel motor drive

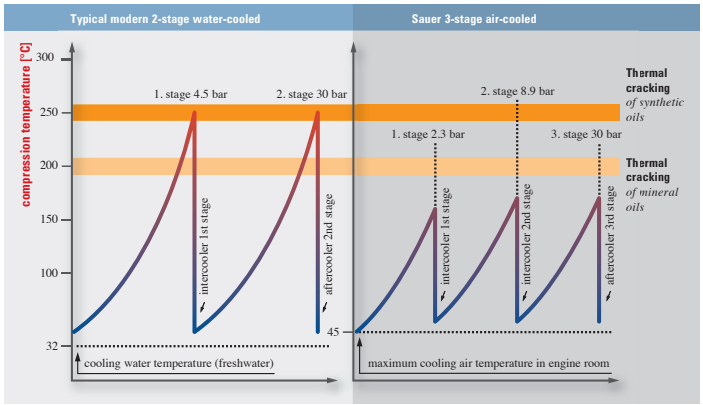
Attached separator after the 1st and the 2nd stage with automatic drainage and flexible mounting is included in the standard scope of delivery

MISTRAL MarineDiesel:

- Diesel driven variant for Black-Start and Emergency
- Available for Mistral WP 15 L, WP 22 L, WP 45 L and WP 65 L
- Hand- or Battery Start

Low maintenance 3-stage air-cooled starting-air compressors

Temperature rise of air during compression



The reliable workhorse: 3-stage air-cooled compressors have been preferred for a long time by shipyards and ship-owners due to

- less temperature
- less maintenance cost
- less installation cost

Today the 3-stage air-cooled compressors have established themselves as benchmark for modern and cost effective starting-air compressors.

By the partition of the total compression into 3 stages and 3 cylinders the general advantages of air-cooled compressors could also be used for compressor capacities above 80 m³/h.
The reasons:

- The total heat to be dissipated was divided up into 3 and not only 2 stages
- The heat dissipating surface was increased at constant heat generating volume
- The temperature rise during compression was reduced due to lower stage pressure ratio

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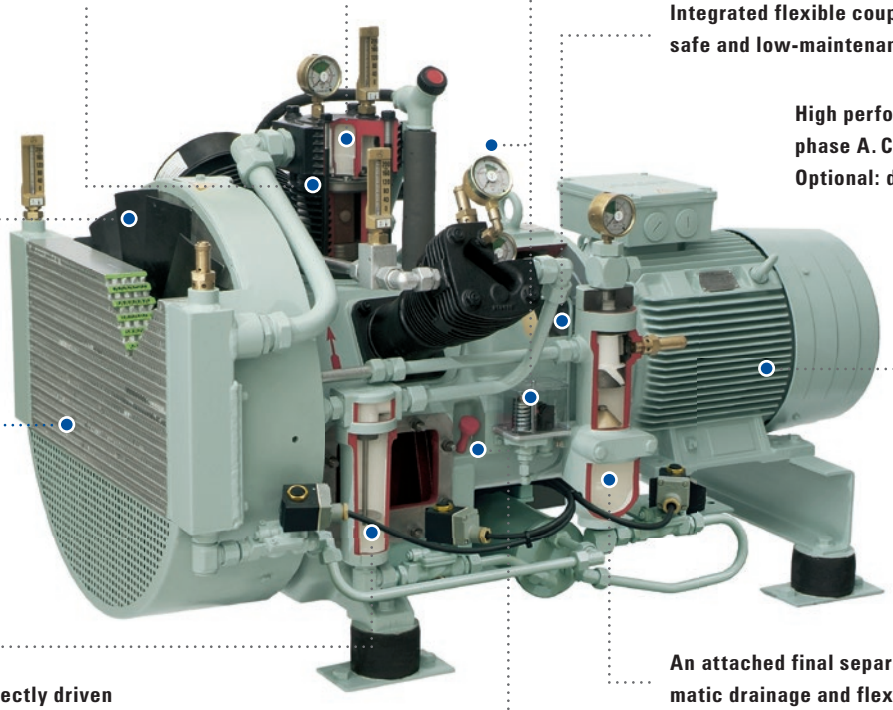
Technical Data

3-stage air-cooled starting-air compressors | Technical data for a final pressure of 30 bar

Type	Final pressure max. bar	Stages	Cylinder	Speed rpm	Charging Capacity m³/h	Power Consumption kW	Heat Dissipation kJ/sec	Weight kg	Length mm	Width mm	Height mm
WP 81 L	40	3	3	1,180 1,480 1,780	63 80 95	13.0 15.6 19.6	20 21 24	440	1,345	965	900
WP 101 L	40	3	3	1,180 1,480 1,780	80 100 120	16.0 20.0 24.4	18 23 28	440	1,383	965	900
WP 121 L	40	3	3	1,180 1,480 1,780	100 125 150	19.0 25.3 31.1	22 29 36	655	1,565	945	955
WP 151 L	40	3	3	1,180 1,480 1,780	116 146 175	23.0 30.0 38.0	27 35 44	700	1,575	945	955
WP 271 L	40	3	4	1,180 1,480 1,780	180 224 270	34.5 43.0 52.0	39 48 58	940	1,765	1,068	1,097
WP 311 L	40	3	4	1,180 1,480 1,780	240 300 360	41.3 56.3 70.6	48 65 84	1,075	1,835	1,068	1,097

Performance data with 5 % tolerance, referred to 20 °C and an air pressure of 1,013 mbar.
Charging Capacity according to ship building regulations.
Performance data on final pressure deviating from 30 bar upon request.
Weights and dimensions for standard units with three-phase A. C. motor, IP 54, and flexible mounting.

WP 81 – 101 L



High performance valves for long maintenance intervals

Monitoring: Safety valves, traditional thermometer, and pressure gauges for all stages. Monitoring of lubrication oil pressure and outlet temperature of the compressed air are standard features

Compression in 3 cylinders arranged in W-shape ensure only the slightest vibration; open design for easy check of operation

Integrated flexible coupling, safe and low-maintenance

Fan wheel directly installed on the crankshaft; intrinsic protection of rotating parts

High performance three-phase A. C. motors; Optional: diesel motor drive

Low recooling temperatures due to sufficiently dimensioned intermediate and aftercoolers and generous cylinder cooling by axial fan

Integrated condensate filter after the 2nd stage

Reliable pressure oil lubrication by a directly driven gearwheel pump, which can be accessed from the outside

An attached final separator with automatic drainage and flexible mounting is included in the standard scope of delivery

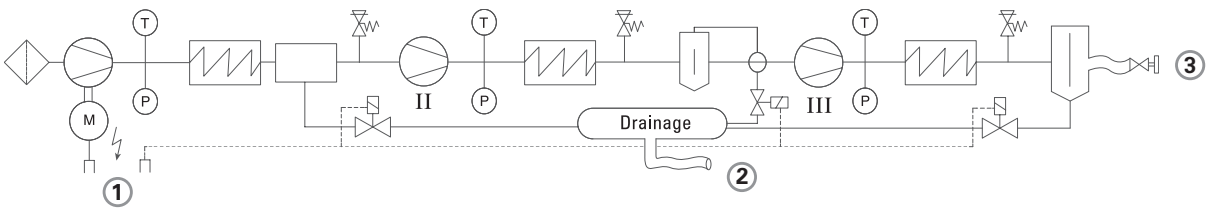
No interface for cooling water required!

Only 3 interfaces:

1 Electric
2 Drainage (1 flexible hose)
3 Compressed air outlet

Features

- Capacity from 63 up to 360 m³/h
- Reliable and safe operation up to 60 °C
- No changes in engine room design necessary
- Lowest compression temperatures due to 3 stages
- Extended life time of the valves (up to 4,000 hours) with less maintenance costs due to lowest compression temperatures
- Designed for use with standard mineral oil SAE 30
- Standard warranty of 24 month
- More than 20.000 units sold since 1977
- Operation of air cooled compressors independent from central CW system, as emergency compressor
- Less installation costs up to 7.500 USD per ship for the yard due to no cooling water (less interfaces)



2-stage water-cooled starting-air compressors

Towards the middle of the 90s, Sauer Compressors developed a new range of 2-stage water-cooled compressors for use in shipping. With the cylinders arranged in V-shape and advanced competitive design features, we are able to offer a range of low maintenance and reliable compressors of this traditional design.

The 2-stage water-cooled starting air compressors produced by Sauer Compressors are part of an international shipbuilding standard. More than a thousand of these dependable compressors are delivered to our customers every year.

If you require references, please do not hesitate to contact us at **sales@sauercompressors.de**

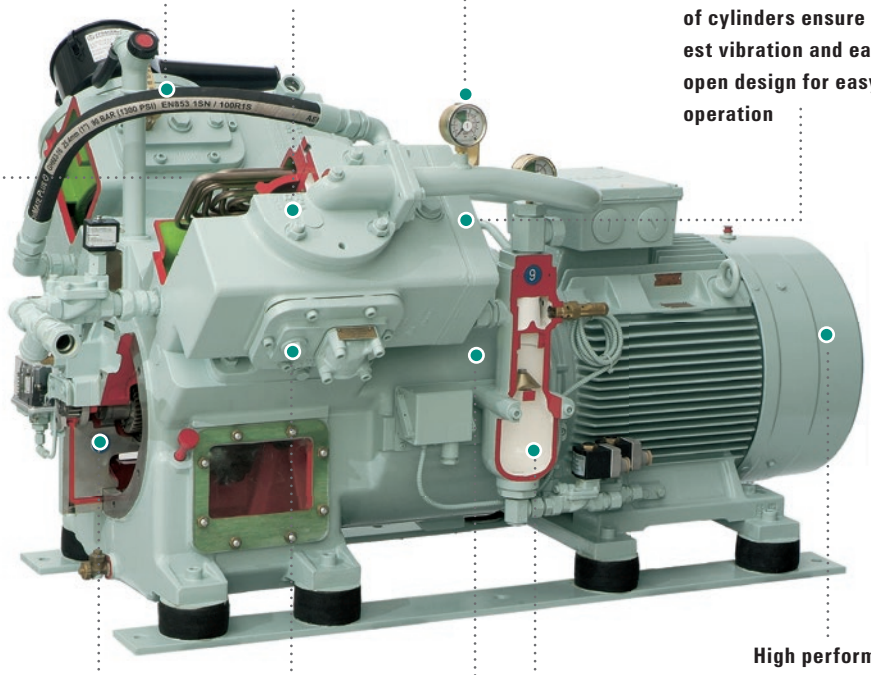
Technical Data

2-stage water-cooled starting air compressors | Technical data for a final pressure of 30 bar

Type	Final pressure max. bar	Stages	Cylinder	Speed rpm	Charging Capacity m³/h	Power Consumption kW	Heat Dissipation kJ/sec	Weight kg	Length mm	Width mm	Height mm
WP 100	30	2	2	1,180 1,480 1,780	80 100 120	15.9 19.5 23.6	22 29 35	500	1,340	700	850
WP 200	30	2	2	1,180 1,480 1,780	133 166 200	26.0 33.7 39.6	28 37 43	770 800 800	1,459 1,695 1,695	1,025	886
WP 240	30	2	2	1,180 1,480 1,780	166 208 250	32.1 40.9 48.8	35 45 54	850	1,535	1,025	886
WP 400	30	2	3	1,180 1,480 1,780	292 366 440	52.2 72.5 81.5	57 80 89	1,350	1,810	1,165	1,095

Performance data with 5% tolerance, referred to 20 °C and an air pressure of 1013 mbar.
Charging Capacity according to shipbuilding regulations.
Performance data on final pressure deviating from 30 bar upon request.
Weights and dimensions for standard units with three-phase A. C. motor, IP 54, and flexible mounting.
Cooling water requirement referred to a $\Delta t = 10$ K

WP 200 – 240



Monitoring: reliable traditional thermometer, and pressure gauges for all stages. Monitoring of outlet temperature of the compressed air and cooling are standard features

Suitable for fresh water and sea water. Optionally available with attached cooling water pump

Exchangeable cylinder liners ensure lowest maintenance costs

Modern V- or W-shape arrangement of cylinders ensure only the slightest vibration and easy maintenance; open design for easy check of operation

Replaceable cooling inserts made of CuNiFe, easy to inspect

High performance 3-phase standard A. C. motors; Opitional: Diesel motor drive

Robust design: Crankshaft is supported by roller bearings on either side

Corrosion protection by easily exchangeable zinc protection

An attached final separator with automatic drainage and flexible mounting is included in the standard scope of delivery

Integrated flexible coupling, low-maintenance and safe

General advantages

- Low vibration
- Exchangeable cylinder liner
- Exchangeable cooler inserts
- Short stroke machine for compact dimensions and low vibrations
- Pressure oil lubrication for WP 200, WP 240 and WP 400
- Easy access to all maintenance and operation points

Control- and working-air compressors

Technical Data

SC series | Screw-type compressor, air-cooled | Technical data for a final pressure of 8 bar

Type	Version	Final pressure max. bar	Motor rpm	Capacity m³/h	Power Consumption kW	Heat Dissipation kJ/sec	Weight kg	Length mm	Width mm	Height mm
SC 15	MA 50 MA 60	10	3,000 3,600	80 95	11.0 12.5	10.6 11.5	320	1,140	660	1,040
SC 22	MA 50 MA 60	10	3,000 3,600	106 117	14.9 15.5	14.4 15.9	340	1,140	660	1,040
SC 26	MA 50 MA 60	10	3,000 3,600	150 170	18.0 19.0	17.8 21.1	450	1,275	810	1,175
SC 31	MA 50 MA 60	10	3,000 3,600	170 200	21.0 25.0	21.1 25.4	485	1,275	810	1,175
SC 42	MA 50 MA 60	10	3,000 3,600	235 270	27.5 30.5	27.6 30.6	580	1,275	810	1,175
SC 52	MA 50 MA 60	10	3,000 3,600	280 310	35.0 37.5	35.4 38.9	585	1,275	810	1,175
SC 61	MA 50 MA 60	10	3,000 3,600	390 420	44.0 51.0	43.2 49.7	995	1,520	850	1,400
SC 76	MA 50 MA 60	10	3,000 3,600	460 520	53.8 63.4	52.8 60.9	1,095	1,610	850	1,400

MISTRAL series | Piston compressor, air-cooled | Technical data for a final pressure of 10 bar

Type	Final pressure max. bar	Stages	Cylinder	Speed rpm	Charging Capacity m³/h	Power Consumption kW	Heat Dissipation kJ/sec	Weight kg	Length mm	Width mm	Height mm
WP 33 L	10	2	2	1,180 1,480 1,780	25 32 37	4.6 5.9 7.0	6.0 9.0 10.0	145	890	600	630
WP 65 L	10	2	2	1,180 1,480 1,780	58 72 84	8.7 10.9 13.2	15.0 17.0 20.0	328	1,254	742	820
WP 146 L	10	2	2	1,180 1,480 1,780	118 150 180	17.5 22.0 26.0	19.0 24.0 29.0	500	1,415	869	877
WP 226 L	10	2	3	1,180 1,480 1,780	220 275 330	24.6 33.2 41.6	27.0 37.0 46.0	720	1,720	1,028	1,014

TYPHOON series | Piston compressor, water-cooled | Technical data for a final pressure of 10 bar

Type	Final pressure max. bar	Stages	Cylinder	Speed rpm	Charging Capacity m³/h	Power Consumption kW	Heat Dissipation kJ/sec	Weight kg	Length mm	Width mm	Height mm
WP100	12	2	2	1,180 1,480 1,780	85 107 125	14.3 17.6 21.3	17 21 26	500	1,340	700	850
WP 200	12	2	2	1,180 1,480 1,780	145 180 215	23.4 30.3 35.6	28 37 44	770	1,459	1,025	886
WP 240	12	2	2	1,180 1,480 1,780	178 223 268	28.9 36.8 43.9	35 45 54	850	1,535	1,025	886
WP 400	12	2	3	1,180 1,480 1,780	312 386 460	47.0 65.3 73.4	57 80 89	1,350	1,818	1,165	1,095

SC 22

Screw-type compressors, unlike oscillating reciprocating compressors, compress air in rotating screws, and operate without valves.

Sauer Screw-type compressors offer much more than industry compressors since they are the synthesis of thousands of industry compressors and of our fundamental knowledge of the requirements of international shipping. The particular design features of Sauer's screw-type compressors ensure trouble-free operation on the seven seas.

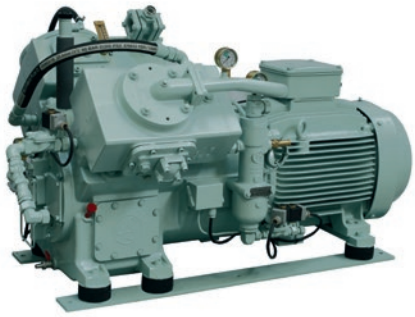
Mistral WP 226 L

As an alternative to the screw-type compressor, Sauer is able to deliver reciprocating **piston-type compressors** based on the well-known range of starting air compressors. Compared with screw-type compressors, these types are more suitable for shorter operation intervals due to their lower energy consumption as they are start-stop controlled.

The distinct advantages of piston compressors are the standardised parts and the similarity in terms of design with air-cooled starting air compressors. If you choose your ship compressors carefully, your starting, control and working air compressors will all have the same wearing parts.

Our Recommendation
Sauer delivers both types of compressors. For requirements under 100 m^3/h, we recommend that you use piston compressors and for performance requirements over 300 m^3/h, we recommend screw compressors. For the 100 m^3/h to 300 m^3/h range we also recommend screw compressors, provided that the annual operation time is greater than 4,000 hours.

For more information or references please do not hesitate to contact us at **sales@sauercompressors.de**



Typhoon WP200 & WP240

Performance data with 5 % tolerance, referred to 20 °C and an air pressure of 1,013 mbar.
Capacity of screw-type compressors according to DIN-ISO 1217 Annex C.
Weights and dimensions for standard units with three-phase A. C. motor, IP 54, and flexible mounting.
Water-cooled screw-type compressors upon request.
* Larger capacity up to 2000 m^3/h or capacity for other final pressures upon request.

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MANAGEMENT SYSTEM CERTIFICATION
DNV·GL
ISO 9001 = OHSAS 18001