

 J.P. SAUER & SOHN  
MASCHINENBAU GMBH 

**ALUP**  
Kompressoren

GIRODIN  SAUER



## Sauer Compressors for Shipping

 J.P. SAUER & SOHN  
MASCHINENBAU GMBH 



- reliable
- low maintenance
- compact

# Sauer Compressors for Shipping

Shipping with its high requirement on quality and reliability is a traditional domain of activity of the **Sauer & Sohn Maschinenbau GmbH & Co.**, formerly **Wilhelm Poppe GmbH**.

The development and production of an own range of HP-compressors up to 350 bar started as early as 1930. The quality and reliability of the compressors, the fast spare part supply and the worldwide service quickly made **“Poppe”** and later-on **“Sauer”** a reliable partner for shipping. Together with the screw compressors of **“ALUP”** we are able to offer a complete solution for your needs.

Our programm:

- 2-stage air-cooled starting air compressors.
- 3-stage air-cooled starting air compressors
- 2-stage watercooled starting air compressors.
- Compressed-air driers, bottles and accessories  
(screw-and piston type)

# Compressor Technology for Shipping

Sauer starting air and control air compressors are approved by all Classification Societies. They are based on the long experience which we have gained together with the users in the shipping industry. Reliability and easy maintenance are therefore the essential features of Sauer compressors.

In particular, the 3 stage air-cooled compressors, as compared to the 2-stage water-cooled compressors – make a considerable contribution to a modern and up-to-date ship design:

Ask for special brochures:  
– Sauer Compressors for **Industry**  
– Sauer Compressors for the **Navy**  
– **Low pressure** compressors “ALUP”

Lower installation costs.  
Less weight and space requirements.  
Less maintenance costs.  
Longer maintenance intervals.  
Application of standard engine oils.

# 2-Stage Air-cooled Starting Air Compressors

Low installation costs through cost-effective design and by missing cooling water circuit.

Low-maintenance through the application of lamellar valves.

Low weight and less installation space.

Low recooling temperatures due to sufficiently dimensioned coolers and largescale cylinder cooling.

Low vibrations by arranging the cylinders in a V-shape.

Reliable and fail-safe, even with very high ambient temperatures and unfavorable operating conditions.

## Technical Data

Model	Final Pressure max. bar	Stages	Cylinders	Speed rpm	Technical Data for Final Pressure of <b>30 bar</b>			Weight kg	Dimension		
					Capacity FAD m³/h	Required Power kW	Heat Dissipation kJ/sec		Length mm	Width mm	Height mm
WP15L	40	2	2	1150	12,0	2,7	3,0	120	812	600	630
				1450	15,0	3,4	3,7				
				1750	18,1	4,1	4,5				
WP22L	40	2	2	1150	16,6	3,5	3,9	135	852	600	630
				1450	21,0	4,4	4,8				
				1750	25,3	5,4	5,9				
WP33L	35	2	2	1150	25,0	5,1	5,6	145	860	600	630
				1450	31,5	6,5	7,1				
				1750	38,0	7,8	8,6				
WP45L	40	2	2	1170	40,0	7,6	8,4	310	1210	745	820
				1470	50,0	9,6	10,6				
				1770	60,0	11,5	12,6				
WP65L	40	2	2	1170	52,0	10,2	11,2	320	1250	745	820
				1470	66,0	12,8	14,0				
				1770	80,0	15,4	17,0				
H 25	40	2	2	50 Double strokes/min	1,8	Hand operated compressor		28	315	230	340

Performance data with 5 % tolerance, referring to 20 °C and 1013 mbar air pressure. Charging capacity acc. to shipbuilding regulations.

Performance data for final pressures deviating from 30 bar upon request.

Weights and dimensions for standard units with three-phase motors IP 54 and elastic mounting.

H 25 deliverable with air bottle 30 and 63 liters.

## Technical Description

### Compression

WP 15–65 L: Two cylinders in V-arrangement with trunk pistons.

### Running Gear

Complete balancing of the rotating and oscillating masses of 1st order. Crankshaft beared in roller bearings, connecting rods with efficient 3-layer bearings. Short-stroke design for speeds up to 2000 rpm.

### Lubrication

WP 15–65 L: Reliable splash lubrication, automatic oil level monitoring is available upon request.

### Valves

WP 15–65 L: Frictionless lamellar valves thus increasing maintenance intervals for the valves of up to 2000 hours.

### Cooling

Air cooling. Intermediate coolers and recoolers lying directly in the air flow with large-surface radiator fins. Fan and/or ventilator flywheel directly mounted to the crankshaft.

### Separation

A final separator belonging to the standard scope of supply separates the air from oil and water.

### Drive

Low-maintenance direct drive via flexible coupling.

Drive via a diesel engine and a centrifugal/friction clutch is possible.

### Monitoring

Safety valves for all stages, pressure gauges for the final stage, safety fuse in the separator.

Upon request monitoring of the lube oil circuit as well as the compressed-air temperature.

Operation for unmanned machinery room is possible via fully automatic control.

# 3-Stage Air-cooled Starting Air Compressors

Low compression temperatures by dividing up the total compression ratio on 3 stages.

Low installation costs due to missing cooling water circuit.

2000 hours maintenance interval for the compressor valves, even if standard engine oils are used.

2 years warranty.

Low vibrations by arranging the cylinders in a W-shape.

Simplified maintenance through easy accessibility of the valves.

High reliability by low compression temperatures, missing cooling water circuit and design for engine room temperatures up to 55 °C.

## Technical Data

Model	Final Pressure max. bar	Stages	Cylinders	Speed rpm	Technical Data for Final Pressure of <b>30 bar</b>			Weight kg	Dimension		
					Capacity FAD m³/h	Required Power kW	Heat Dissipation kJ/sec		Length mm	Width mm	Height mm
WP81L	40	3	3	1170	63,0	13	14,3	415	1345	945	900
				1470	79,0	16	17,6				
				1770	95,0	19	20,9				
WP101L	40	3	3	1170	80,0	16	17,6	430	1385	945	900
				1470	100,0	20	22,0				
				1770	120,0	24	26,4				
WP121L	40	3	3	1170	102,0	19	20,9	655	1565	925	955
				1470	122,0	24	26,4				
				1770	145,0	30	33,0				
WP151L	40	3	3	1170	120,0	23	25,3	700	1575	925	955
				1470	150,0	30	33,0				
				1770	180,0	37	41,7				
WP270L	40	3	4	1170	180,0	33	36,0	900	1830	1040	950
				1470	225,0	41	45,0				
				1770	275,0	49	54,0				
WP310L	40	3	4	1170	240,0	38	42,0	960	1920	1040	950
				1470	300,0	50	55,0				
				1770	360,0	61	67,0				

Performance data with 5 % tolerance, referring to 20 °C and 1013 mbar air pressure. Charging capacity acc. to shipbuilding regulations.

Performance data for final pressures deviating from 30 bar upon request.

Weights and dimensions for standard units with three-phase motors IP 54 and elastic mounting.

## Technical Description

### Compression

WP 81–151 L: 3 cylinders in W-arrangement with trunk pistons.

WP 270–300 L: 4 cylinders with trunk pistons in w-arrangement. 2 first stages.

### Running Gear

Complete balancing of the rotating and oscillating masses of 1st order. Crankshaft beared in roller bearings, connecting rods with efficient 3-layer bearings. Shortstroke design for speeds up to 1800 rpm.

### Lubrication

Pressure oil lubrication by a gear pump accessible from the outside.

### Valves

Concentric plate valves or low maintenance lamellar valve with largescale flow cross sections.

### Cooling

Air cooling by their own fan wheel directly mounted to the crankshaft. Large-scale coolers lying directly in the air flow.

WP 81–101 L: Honeycomb cooler for the 1st stage, gilled pipe coolers for the 2nd and final stage.

WP 121–310 L: Gilled pipe coolers for the final stage, intermediate cooling in honeycomb coolers. Cylinders and cylinder heads with fine, large-surface radiator fins.

### Separation

Intermediate and final separators belonging to the standard scope of supply for oil and water separation. Optional condensate collection tank for the sound insulation and for collecting the condensate from all 3 stages.

### Drive

Low-maintenance drive directly via flexible coupling.

### Monitoring

Safety valves, pressure gauges and compressed-air thermometers for all stages. Pressure switches for monitoring lubrication, safety fuses in the separator. Monitoring of the compressed-air temperature upon request. Operation for unmanned machinery room is possible via fully automatic control.

# 2-Stage Water-Cooled Starting and Working Air Compressors

Up to date V-arrangement of cylinders for low vibration and easy maintenance.

Sturdy design: Crankshaft beared an both ends, slide bearings for the connecting rods.

Reliable pressure oil lubrication.

Replaceable cylinder liners for low maintenance costs.

Reliable and failsafe. Suitable for fresh- and seawatercooling.

Straight cooler tubes for easy cleaning.

## Technical Data Starting Air

Model	Final Pressure max. bar	Stages	Cylinders	Speed rpm	Technical Data for Final Pressure of <b>30 bar</b>			Weight kg	Dimension		
					Capacity FAD m³/h	Required Power kW	Cooling Water Req. l/min		Length mm	Width mm	Height mm
WP200	30	2	2	970	110	21	28	770	1500	1000	890
				1170	130	25	33	800	1500	1000	890
				1470	165	31	40				
				1770	200	38	50				
WP240	30	2	2	970	130	25	33	850	1540	1000	890
				1170	160	31	40				
				1470	200	38	50				
				1770	240	46	60				
WP400	30	2	3	970	235	43	60	1350	1725	1165	1090
				1170	280	52	70				
				1470	355	65	85				
				1770	430	79	110				

## Technical Data Working Air

Model	Final Pressure max. bar	Stages	Cylinders	Speed rpm	Technical Data for Final Pressure of <b>8 bar</b>			Weight kg	Dimension		
					Capacity FAD m³/h	Required Power kW	Cooling Water Req. l/min		Length mm	Width mm	Height mm
WP200	8	2	2	970	115	19,0	26	770	1500	1000	890
				1170	139	22,5	30	800	1500	1000	890
				1470	175	28,0	37				
				1770	214	34,0	45				
WP240	8	2	2	970	139	22,5	30	850	1540	1000	890
				1170	170	28,0	37				
				1470	214	34,5	46				
				1770	255	41,5	55				
WP400	8	2	3	970	250	39,0	52	1350	1725	1165	1090
				1170	300	47,0	62				
				1470	380	58,5	77				
				1770	460	71,0	94				

Performance data with 5 % tolerance, referring to 20 °C and 1013 mbar air pressure. Charging capacity acc. to shipbuilding regulations. Performance data for final pressures deviating from 30 or 8 bar upon request. Weights and dimensions for standard units with three-phase motors IP 54 and elastic mounting. Cooling water requirement for  $\Delta t = 10 \text{ K}$



## Technical Description

### Compressor

WP 200 and WP 240: Two cylinders with trunk pistons, arranged in V-Shape.

WP 400: Three cylinders with trunk pistons, arranged in W-shape.

### Running Gear

Complete balancing of the rotating and oscillating masses of 1st order. Crankshaft beared in roller bearings, connecting rods with efficient 3-layer bearings. Short-stroke machines design for speeds up to 1800 rpm.

### Lubrication

Pressure oil lubrication by a gear pump accessible from the outside.

### Valves

WP 200 – WP 400: lamellar or large scale concentric valves in all stages.

### Cooling

Through integrated intermediate and aftercoolers. Suitable for fresh or seawater cooling.

### Separation

Integrated intermediate and final separators for the removal of oil and moisture.

### Drive

Low-maintenance direct drive via an elastic coupling.

### Monitoring

Safety valves and pressure gauge for all stages. Temperature switch for air-outlet and cooling water monitoring.

Oil pressure switch for oil pressure monitoring.

Monitoring of final air temperature and cooling.

Operation for unmanned machinery room is possible via fully automatic control.

### Cooling Water Pump

Compressors can be delivered with attached cooling water pump directly driven by the crankshaft.

# Control and Service Air Compressors

Available as screw and piston compressors.

Application as control air compressor possible,  
as approved by all Classification Societies.

Low weight and less installation space.

Reliable and failsafe piston compressors through application of the technology  
from the starting air programm an compression in 2 stages.

Screw compressors with high air filter separation efficiency:  
long oil sevice life and good lubrication.  
Intergrated microprocessor controlled monitoring unit.

Reliable air cooling technology for compressors. Screw compressors  
available with both air- and water-cooling.

## Technical Data

### Piston compressors air-cooled

Model	Final Pressure max. bar	Stages	Cylinders	Speed rpm	Technical Data for Final Pressure of <b>8 bar</b>			Weight kg	Dimension		
					Capacity FAD m³/h	Required Power kW	Heat Dissipation kJ/sec		Length mm	Width mm	Height mm
WP225 L	12	2	3	1170	180	23	25	840	1517	960	1060
				1470	245	30	33	850			
				1770	280	38	42	850			
WP295 L	12	2	3	1170	240	29	32	870	1735	960	1030
				1470	300	37	41	880			
				1770	360	46	51	880			

### Screw compressors air-cooled

Model		Final Pressure max. bar	Frequency Hz	Technical Data for Final Pressure of <b>8 bar</b>			Weight kg	Dimension		
				Capacity FAD m³/h	Required Power kW	Heat Dissipation kJ/sec		Length mm	Width mm	Height mm
SCK 8	M 50	12	50	43	5,0	5,5	180	945	605	900
	M 60		60	51	5,8	6,4				
SCK 15	M 50	12	50	86	10,1	11,1	210	945	605	900
	M 60		60	100	11,6	12,7				
SCK 26	M 50	12	50	146	16,3	17,8	310	1270	795	1070
	M 60		60	172	19,6	21,3				
SCK 42	M 50	12	50	231	26,2	28,9	425	1270	795	1070
	M 60		60	276	31,5	34,5				
SCK 51	M 50	12	50	294	32,3	35,7	940	1520	850	1350
	M 60		60	354	38,8	42,7				
SCK 61	M 50	12	50	378	39,4	43,4	1100	1520	850	1350
	M 60		60	456	47,2	52,0				
SCK 76	M 50	12	50	462	48,0	52,8	1200	1520	850	1350
	M 60		60	552	57,7	63,4				

Performance data with 5 % tolerance, referring to 20 °C and 1035 mbar air pressure. Performance data for final pressures deviating from 8 bar upon request.  
Weights and dimensions for standard untis with AC motor IP 54 and elastic mounting.

Piston compressors with smaller capacity, screw compressors with higher capacity or with watercooling upon request.

## Technical Description

### 1. Piston Compressors

The design and equipment features correspond to the 2 and 3 stage star-ring air compressors.

Compression in 2 stages. Reliable trunk piston running gears. Pressure oil lubrication.

Large-scale valves and coolers.

Final separators included in the standard scope of supply. Easy-maintenance direct drive via flexible coupling.

### 2. Screw Compressors

#### Compression

Single-stage screw gear with asymmetrical profile and oil injection. Main and gate rotor beared in roller bearings.

#### Lubrication

Pressure oil lurication of the bearings and rotors by own system pressure. Mainstream oil filter.

#### Cooling

High-performance cooling of the compressed air via honeycomb coolers made from aluminum. Water-cooling available upon request.

#### Drive

V-belt drive with high efficient V-belts and automatic tensioning device.

#### Monitoring

System pressure monitoring by integrated pressure transducer. Temperature control for oil temperature.

Malfunction indication for motor current, overpressure and compression temperature by microprocessor controlled monitoring unit AIR CONTROL-LC.

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