J.P. SAUER & SOHN
MASCHINENBAU GMBH

# Sauer Compressors

## for Shipping

- reliable
- low maintenance
- compact

Ein Mitglied der
SAUER-Gruppe

# *Sauer* Compressors

International shipping with its most stringent requirements for quality and reliability is Sauer's traditional field of activities. Our starting-air and working-air compressors have proven to be reliable in this demanding market. They count among the most modern and most economic compressors available today. In particular the 3-stage air-cooled starting-air compressors – in comparison to the traditionally used 2-stage water-cooled compressors – contribute significantly to modern ship operation concepts. With these products Sauer became one of the leading manufacturers of compressors for shipping and off-shore technology world-wide.

# *for shipping*


## Our product range

# 2-stage *air-cooled*

Today, the principle of air-cooling belongs to international shipbuilding standards when starting-air compressors of smaller performance are concerned. Already in the 50ies, Sauer started with the development of air-cooled compressors in this performance range as an alternative to the water-cooled ones which are maintenance-intensive and more susceptible to failures.

Today, after having been completely redesigned, the 2-stage air-cooled starting-air compressors of Sauer & Sohn count among the most modern and maintenance-friendly compressors available world-wide.

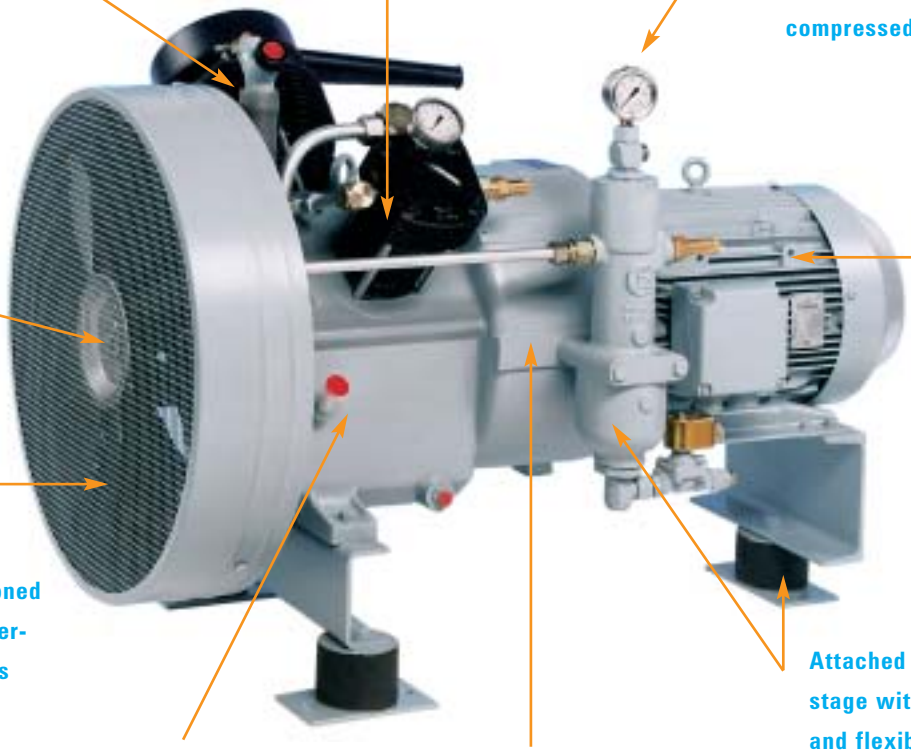
If you require references, please do not hesitate to contact us!

## Technical Data

**2-stage air-cooled starting-air compressors**

| Type | Final pressure max. bar | Stages | Cylinder | Speed rpm | Technical Data for a final pressure of **30 bar** Charging Capacity $m^3/h$ | Power consumption kW | Heat Dissipation kJ/sec | Weight kg | Dimensions Length mm | Width mm | Height mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **WP 15 L** | 40 | 2 | 2 | 1150<br>1450<br>1750 | 12,0<br>15,0<br>18,1 | 2,7<br>3,4<br>4,1 | 3,0<br>3,7<br>4,5 | 120 | 812 | 600 | 630 |
| **WP 22 L** | 40 | 2 | 2 | 1150<br>1450<br>1750 | 16,6<br>21,0<br>25,3 | 3,5<br>4,4<br>5,4 | 3,9<br>4,8<br>5,9 | 135 | 852 | 600 | 630 |
| **WP 33 L** | 35 | 2 | 2 | 1150<br>1450<br>1750 | 25,0<br>31,5<br>38,0 | 5,1<br>6,5<br>7,8 | 5,6<br>7,1<br>8,6 | 145 | 860 | 600 | 630 |
| **WP 45 L** | 40 | 2 | 2 | 1170<br>1470<br>1770 | 40,0<br>50,0<br>60,0 | 7,6<br>9,6<br>11,5 | 8,4<br>10,6<br>12,6 | 310 | 1210 | 745 | 820 |
| **WP 65 L** | 40 | 2 | 2 | 1170<br>1470<br>1770 | 52,0<br>66,0<br>80,0 | 10,2<br>12,8<br>15,4 | 11,2<br>14,0<br>17,0 | 320 | 1250 | 745 | 820 |
| **H 25** | 40 | 2 | 2 | 50 double-strokes/min | 1,8 | Hand air compressor | | 28 | 315 | 230 | 340 |

*Performance data with 5% tolerance, referred to 20° C and an air pressure of 1013 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.*




## General advantages

- Low installation costs due to missing cooling water circuit
- Lightest weight and small installation space
- Reliable and safe to operate also at ambient temperatures up to 60°C

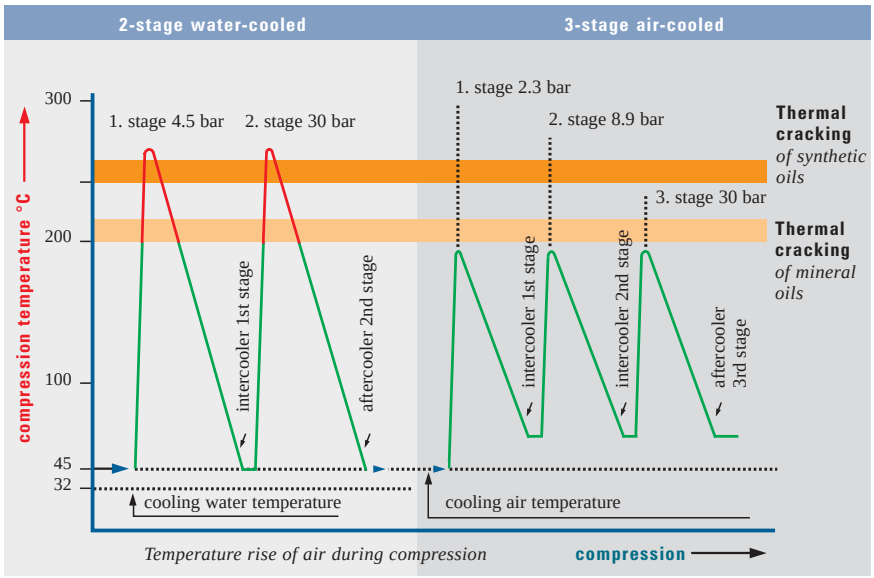
# 3-stage *air-cooled*

At the beginning of the 70ies, Sauer & Sohn developed the 3-stage air-cooled compressor in collaboration with wellknown German shipping companies in order to cover the increasing demand for low-maintenance auxiliary machines used in international shipping – a branch which suffered considerable pressure of costs. Due to the 3-stage air-principle, general advantages of the air-cooled system could also be used for bigger compressor capacities.

In addition, the division of the pressure ratio into 3 stages – instead of 2 stages as in traditionally used water-cooled compressors – considerably decreases compression temperatures.

The consequence: Even when standard mineral oil is used, as e.g. circulating oil in main engines, any carbonization of compressor valves belongs to the past.

If you require references, please do not hesitate to contact us!

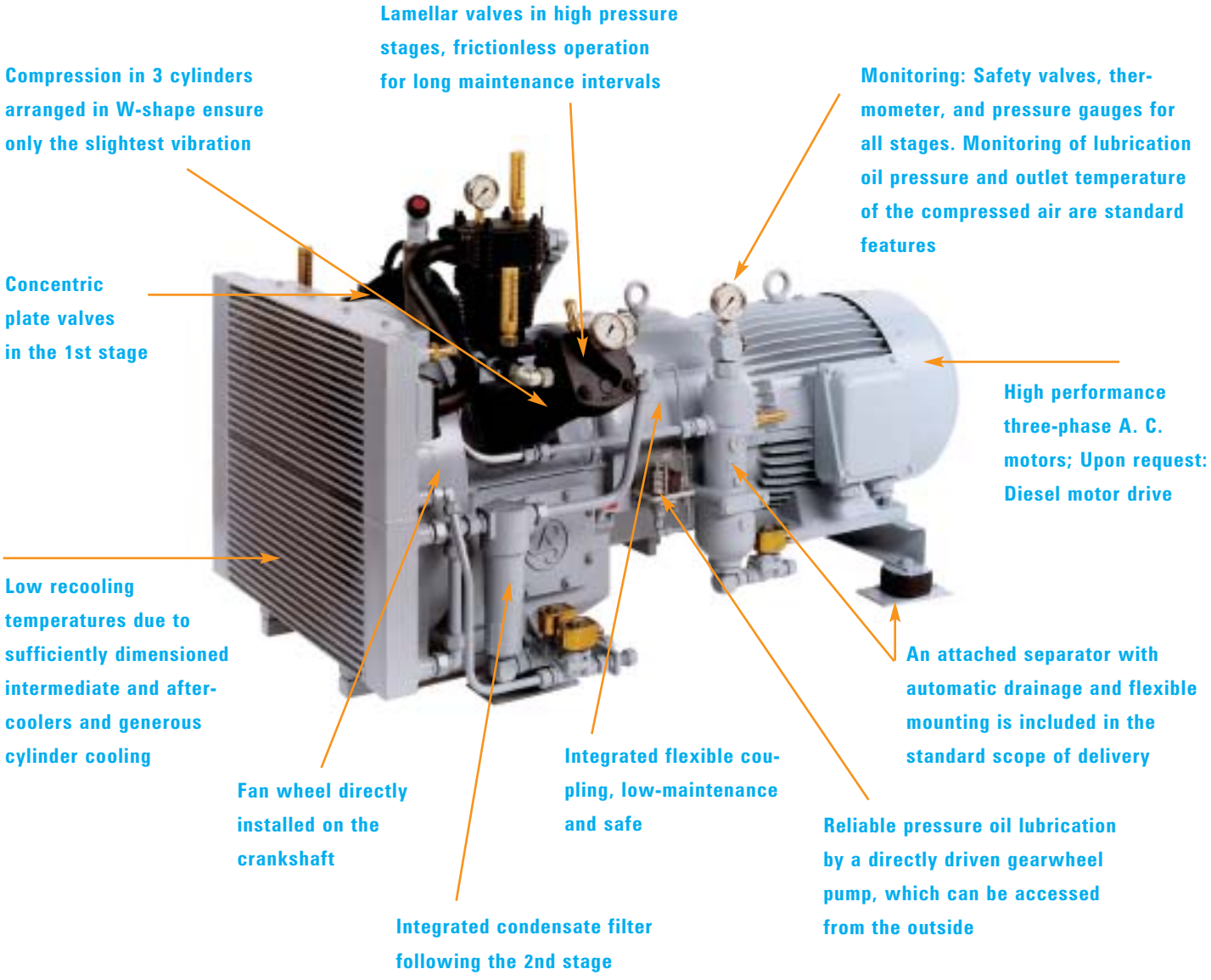



## Technical Data

**3-stage air-cooled starting-air compressors**

| Type | Final pressure max. bar | Stages | Cylinder | Speed rpm | Technical Data for a final pressure of **30 bar** Charging Capacity m³/h | Power consumption kW | Heat Dissipation kJ/sec | Weight kg | Dimensions Length mm | Width mm | Height mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **WP 81 L** | 45 | 3 | 3 | 1170<br>1470<br>1770 | 66,0<br>82,5<br>100,0 | 13<br>15<br>18 | 14,3<br>17,6<br>20,9 | 415 | 1345 | 945 | 900 |
| **WP 101 L** | 45 | 3 | 3 | 1170<br>1470<br>1770 | 83,0<br>101,0<br>121,0 | 16<br>20<br>24 | 17,6<br>22,0<br>26,4 | 430 | 1385 | 945 | 900 |
| **WP 121 L** | 45 | 3 | 3 | 1170<br>1470<br>1770 | 98,0<br>121,0<br>145,0 | 19<br>24<br>30 | 20,9<br>26,4<br>33,0 | 655 | 1565 | 925 | 955 |
| **WP 151 L** | 45 | 3 | 3 | 1170<br>1470<br>1770 | 119,0<br>150,0<br>180,0 | 23<br>30<br>38 | 25,3<br>33,0<br>41,7 | 700 | 1575 | 925 | 955 |
| **WP 271 L** | 45 | 3 | 4 | 1170<br>1470<br>1770 | 180,0<br>225,0<br>275,0 | 33<br>41<br>49 | 36,0<br>45,0<br>54,0 | 900 | 1765 | 1068 | 1077 |
| **WP 311 L** | 45 | 3 | 4 | 1170<br>1470<br>1770 | 240,0<br>300,0<br>360,0 | 38<br>50<br>63 | 42,0<br>55,0<br>67,0 | 960 | 1865 | 1068 | 1077 |

*Performance data with 5% tolerance, referred to 20° C and an air pressure of 1013 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.*




## General advantages

- Lowest compression temperatures due to division of the pressure ratio into 3 stages.
- Cost reduction of up to 5,000 USD due to missing cooling water circuit.
- Standard warranty period of 24 months.
- Maintenance intervals of at least 2000 operation hours for the compressor valves. Covered by warranty even when standard motor oil is used.
- Reliable and safe to operate also at an ambient temperature of up to 60°C.

# 2-stage *water-cooled starting-air*

Towards the middle of the 90ies Sauer & Sohn developed a new series of 2-stage water-cooled compressors for the traditional use in shipping and thus can offer today the most modern compressor of this design throughout the world. With the cylinders arranged in V-shape and advanced competetive design features, we are able to offer a series of maintenance-friendly and reliable water-cooled units. The 2-stage water-cooled starting-air and working-air compressors produced by Sauer & Sohn form part of international shipbuilding and shipping standard.

If you require references, please do not hesitate to contact us!

## Technical Data

**2-stage water-cooled starting-air and working-air compressors**

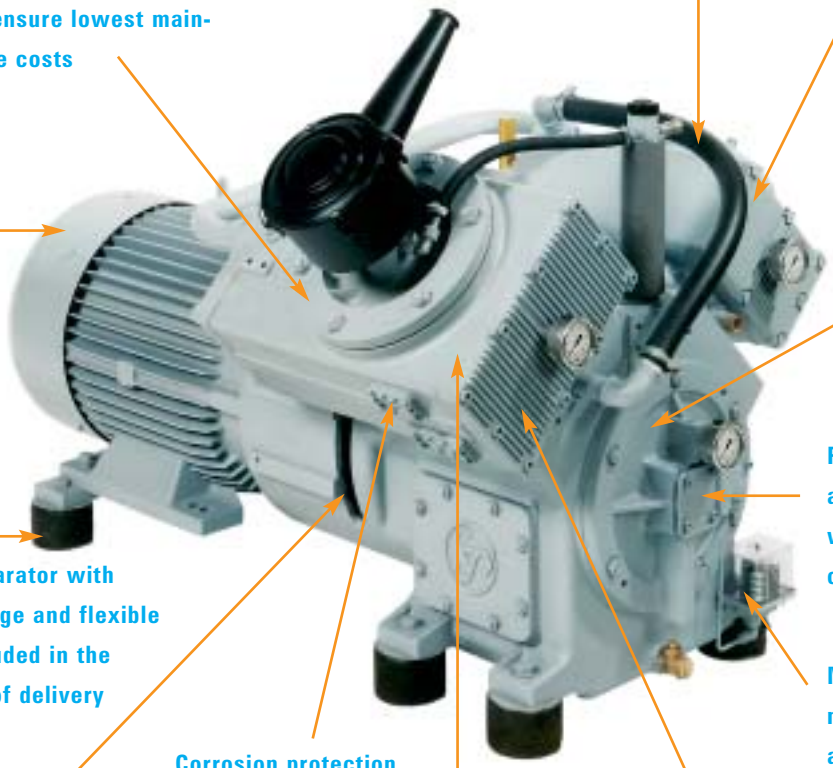
**Starting-air**

| Type | Final pressure max. bar | Stages | Cylinder | Speed rpm | Technical Data for a final pressure of **30 bar** Charging Capacity m³/h | Power consumption kW | CW-Requirement l/min | Weight kg | Dimensions Length mm | Width mm | Height mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **WP 100** | 30 | 2 | 2 | 1170<br>1470<br>1770 | 80<br>100<br>120 | 17<br>20<br>25 | 23<br>28<br>34 | 500 | 1350 | 700 | 830 |
| **WP 200** | 30 | 2 | 2 | 1170<br>1470<br>1770 | 135<br>165<br>200 | 25<br>31<br>38 | 33<br>40<br>50 | 770<br>800 | 1500 | 1000 | 890 |
| **WP 240** | 30 | 2 | 2 | 1170<br>1470<br>1770 | 160<br>200<br>240 | 31<br>38<br>46 | 40<br>50<br>60 | 850 | 1540 | 1000 | 890 |
| **WP 400** | 30 | 2 | 3 | 1170<br>1470<br>1770 | 280<br>355<br>430 | 52<br>70<br>84 | 70<br>85<br>110 | 1350 | 1725 | 1165 | 1090 |

**Working-/control-air**

| Type | Final pressure max. bar | Stages | Cylinder | Speed rpm | Technical Data for a final pressure of **8 bar** Charging Capacity m³/h | Power consumption kW | CW-Requirement l/min | Weight kg | Dimensions Length mm | Width mm | Height mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **WP 100** | 12 | 2 | 2 | 1170<br>1470<br>1770 | 83<br>104<br>125 | 15,3<br>18,5<br>22,5 | 21<br>25<br>30 | 500 | 1350 | 700 | 830 |
| **WP 200** | 12 | 2 | 2 | 1170<br>1470<br>1770 | 144<br>177<br>214 | 22,5<br>28,0<br>34,0 | 30<br>37<br>45 | 770<br>800 | 1500 | 1000 | 890 |
| **WP 240** | 12 | 2 | 2 | 1170<br>1470<br>1770 | 171<br>214<br>257 | 28,0<br>34,5<br>41,5 | 37<br>46<br>55 | 850 | 1540 | 1000 | 890 |
| **WP 400** | 12 | 2 | 3 | 1170<br>1470<br>1770 | 300<br>380<br>460 | 47,0<br>63,0<br>75,0 | 62<br>77<br>94 | 1350 | 1725 | 1165 | 1090 |

*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*



Suitable for fresh water and sea water. Upon request 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

High performance three-phase A. C. motors; upon request diesel motor drive

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

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

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

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

Integrated flexible coupling, low-maintenance and safe

Corrosion protection by easily exchangeable zinc protection

Straight cooling pipes made of CuNiFe, easy to clean

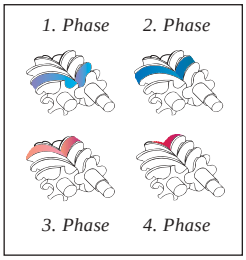
Integrated intermediate and final separation for the cleaning of compressed air to remove oil and water

## General advantages

- Low vibration.
- Reliable pressure oil lubrication.
- Exchangeable cylinder liner.
- Short stroke machine for compact dimensions.

# Control- and

Screw-Type compressors – unlike oscillating reciprocating compressors – compress air in rotating screws, operating without valves. Consequently considerably less maintenance is necessary. In addition to the rotating screws the machines are more compact, noise is low, and there is only slight vibration.




The Sauer Screw-Type compressor are far 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 Screw-Type compressors enables a trouble-free operation on the seven seas.

If you require references, please do not hesitate to contact us!

## Technical Data

**Srew-type compressor, air-cooled**

| Type | Version | Final pressure max. bar | Motor U/min | Technical Data for a final pressure of **8 bar** Capacity* m³/h | Power consumption kW | Heat Dissipation kJ/sec | Weight kg | Dimensions Length mm | Width mm | Height mm |
|---|---|---|---|---|---|---|---|---|---|---|
| **SCK 15** | MA 50<br>MA 60 | 12 | 2920<br>3520 | 90<br>108 | 10,5<br>12,7 | 11,6<br>14,0 | 220 | 945 | 605 | 900 |
| **SCK 22** | MA 50<br>MA 60 | 12 | 2920<br>3520 | 113<br>136 | 13,2<br>15,9 | 14,5<br>17,5 | 220 | 945 | 605 | 900 |
| **SCK 26** | MA 50<br>MA 60 | 12 | 2930<br>3530 | 148<br>177 | 16,0<br>19,2 | 17,6<br>21,1 | 450 | 1270 | 795 | 1070 |
| **SCK 31** | MA 50<br>MA 60 | 12 | 2940<br>3540 | 170<br>204 | 18,7<br>22,5 | 20,0<br>24,8 | 450 | 1270 | 795 | 1070 |
| **SCK 42** | MA 50<br>MA 60 | 12 | 2960<br>3550 | 234<br>280 | 28,6<br>34,3 | 31,5<br>37,8 | 580 | 1270 | 795 | 1170 |
| **SCK 52** | MA 50<br>MA 60 | 12 | 2980<br>3555 | 278<br>334 | 33,4<br>40,0 | 36,7<br>44,0 | 595 | 1270 | 795 | 1170 |
| **SCK 61** | MA 50<br>MA 60 | 12 | 2965<br>3565 | 387<br>465 | 41,4<br>50,0 | 44,4<br>55,0 | 900 | 1520 | 850 | 1355 |
| **SCK 76** | MA 50<br>MA 60 | 12 | 2960<br>3565 | 462<br>555 | 49,5<br>59,5 | 54,5<br>65,5 | 1000 | 1610 | 850 | 1355 |

**Piston compressor, air-cooled**

| Type | Final pressure max. bar | Stages | Cylinder | Speed rpm | Technical Data for a final pressure of **8 bar** Charging Capacity m³/h | Power consumption kW | Heat Dissipation kJ/sec | Weight kg | Dimensions Length mm | Width mm | Height mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **WP 146 L** | 10 | 2 | 2 | 1170<br>1470<br>1770 | 116<br>150<br>175 | 17<br>21<br>25 | 19<br>23<br>28 | 850<br>850<br>850 | 1420 | 870 | 880 |
| **WP 226 L** | 10 | 2 | 2 | 1170<br>1470<br>1770 | 220<br>280<br>330 | 30<br>36<br>42 | 33<br>40<br>46 | 880<br>880<br>880 | 1735 | 1030 | 1020 |

**Piston compressors, water-cooled** *see page 8/9*

*Performance data with 5% tolerance, referred to 20° C and an air pressure of 1013 mbar.*
*Capacity of screw-type compressors according to DIN-ISO 1945.*
*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 m³/h or capacity for other final pressures upon request.*

All units are easy to access – even from the rear of the machine. Maintenance-friendly

Oil temperature controller: Ensures optimal oil temperature in each operation phase; operation temperature is quickly reached

High-performance air and oil cooler: Fresh water or sea water cooling upon request

V-belt drive: Simple adjustment of the V-belt tension without a special tool. The V-belts are designed for a long life time

Sturdy asynchronous motor: In ISO-class "F" only used according to "B"

Integrated control cabinet according to ship building regulations, ready for connection and equipped microprocessor control

Separator box: Low residuary oil content of 2 to 4 mg/m$^3$ is ensured. The oil separator cartridge can be very quickly exchanged –, flanges and pipes need not be loosended –, no loss of oil

Oil drainage including ball cock: Excellent oil pre-separation of up to 98%. Low residuary oil content, long life time of oil separator cartridge, clean oil change without special equipment

## General advantages

- Super noise insulation: Standard for all machine types.
- Ergonomically arranged operating panel with illuminated plain text indication.
- Easy to handle, simple monitoring of all functions.
- Approved by all classification societies.
- Access to the intake filter is easy, thus it is easy to exchange.

# J.P. SAUER & SOHN MASCHINENBAU GMBH

Ein Mitglied der SAUER-Gruppe

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Quality Assurance
DIN ISO 9001
certified

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