

# ***WATER LUBRICATED OIL FREE COMPRESSORS***

GA-W range · 5.5 – 160 kW · 7, 8 and 10 bar g

**GREEN AIR  
COMPRESSOR**





## WATER DOES WHAT OIL DOES

A dry oil free machine keeps the rotors apart with timing gears, which means they never touch and never seal perfectly either. A water lubricated machine injects treated water instead, which seals the gap, carries the heat away and lubricates all at once — exactly the three jobs oil does in an ordinary screw compressor, without the oil.

The result is genuinely oil free air from a single compression stage. Because the water absorbs the heat as it is generated, the compression is close to isothermal, the discharge temperature stays near 50 °C, and the machine needs neither an intercooler nor a second stage to reach 10 bar.



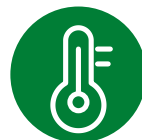
### No oil anywhere in the machine

There is no lubricant to filter out of the air, so there is nothing to fail and nothing to manage.



### Single stage to 10 bar

Near isothermal compression means one stage does what a dry machine needs two stages and an intercooler to do.



### Discharge around 50 °C

Cool air out means smaller aftercooling and far less thermal stress on the airend.



### Nothing to buy or dispose of

No fluid changes, no separator elements, and no oily condensate to treat before it reaches a drain.



# THE WATER CIRCUIT

Water is injected into the compression chamber, where it forms the seal between the rotors and between the rotors and the housing. That seal is what makes single stage compression to 10 bar possible at all — without it the leakage back past the rotors would be unmanageable.

The same water takes the heat out as the air is compressed rather than afterwards, so the temperature barely rises through the machine. That is the difference between this and a dry oil free machine, where the air leaves the first stage at well over 180 °C and has to be cooled before the second stage can do anything with it.

The water is then separated, cooled and returned. It runs in a closed circuit through a deioniser and a filter, so consumption is small, and the parts it touches are stainless steel and engineering polymer rather than cast iron.

- Water seals, cools and lubricates
- Near isothermal compression
- Single stage to 10 bar g
- Discharge temperature around 50 °C
- Closed water circuit with deioniser
- Stainless and polymer wetted parts
- No separator element to replace
- No oily condensate to treat



# WHAT IT NEEDS FROM YOU

Water quality matters. The circuit is closed and treated, but the make up water has to be reasonable and the deioniser cartridge is a consumable with a real interval. A site that ignores it will eventually see scale where it does not want scale.

In return, the service is simpler than that of an oil lubricated machine. There is no fluid change, no separator, and the air filter is the main routine item. Over the life of the machine that is usually fewer service hours, not more.

Freezing is the other consideration. In an unheated building that drops below zero the machine needs draining or heating, which is rarely an issue in the countries we trade in but is worth saying out loud.

# 50 °C

typical discharge temperature — an oil lubricated screw leaves at roughly twice that



## Where the air touches the product

Food and beverage · Pharmaceutical · Electronics ·  
Textiles · Laboratories

# INSIDE THE MACHINE

Twelve parts, and not one of them is an oil filter, an oil cooler or a separator element. There is no oil in this machine to look after.

## 1 Inlet filter

Takes the dust out before it reaches the element. The first thing to check when delivery falls off.

## 2 Inlet valve

Opens as the machine loads and closes when it stops, so the element never starts against pressure.

## 3 Screw element

Stainless and polymer where the water touches it. No timing gears, because the water does the sealing.

## 4 Drive motor

Coupled directly to the element. No belts, so no tension to set and no drive losses to pay for.

## 5 Water tank

Holds the charge of the circuit and lets the air and water separate after compression.

## 6 Circulation pump

Returns treated water to the element at the rate the compression needs.

## 12 Controller

Pressure, temperature, hours and service intervals, with the fault history kept so a breakdown can be diagnosed rather than guessed.

## 10 Aftercooler

Cools the air on the way out, which drops most of the remaining moisture before your pipework sees it.

## 11 Cooling fan

Draws air across both coolers.

## 7 Deioniser cartridge

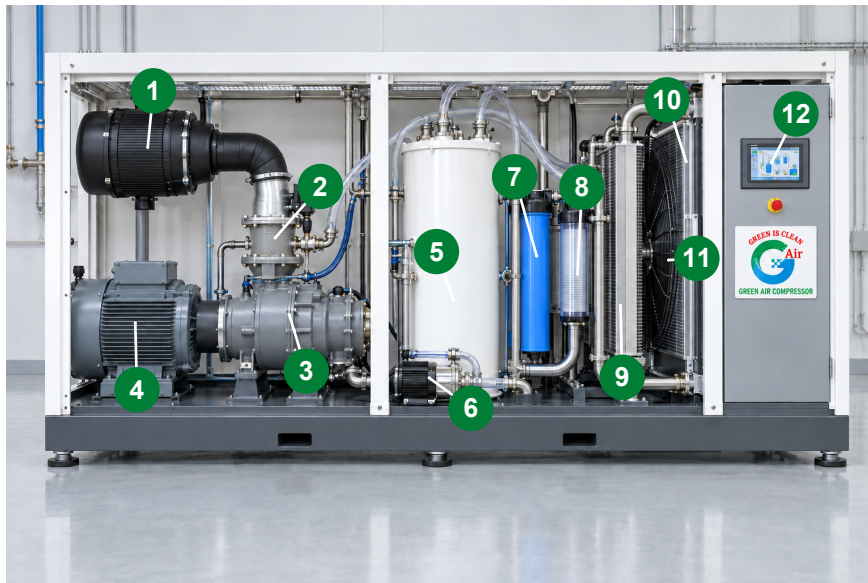
Keeps the conductivity of the water down. This is the consumable that decides whether the circuit stays clean.

## 8 Water filter

Takes out anything the deioniser does not.

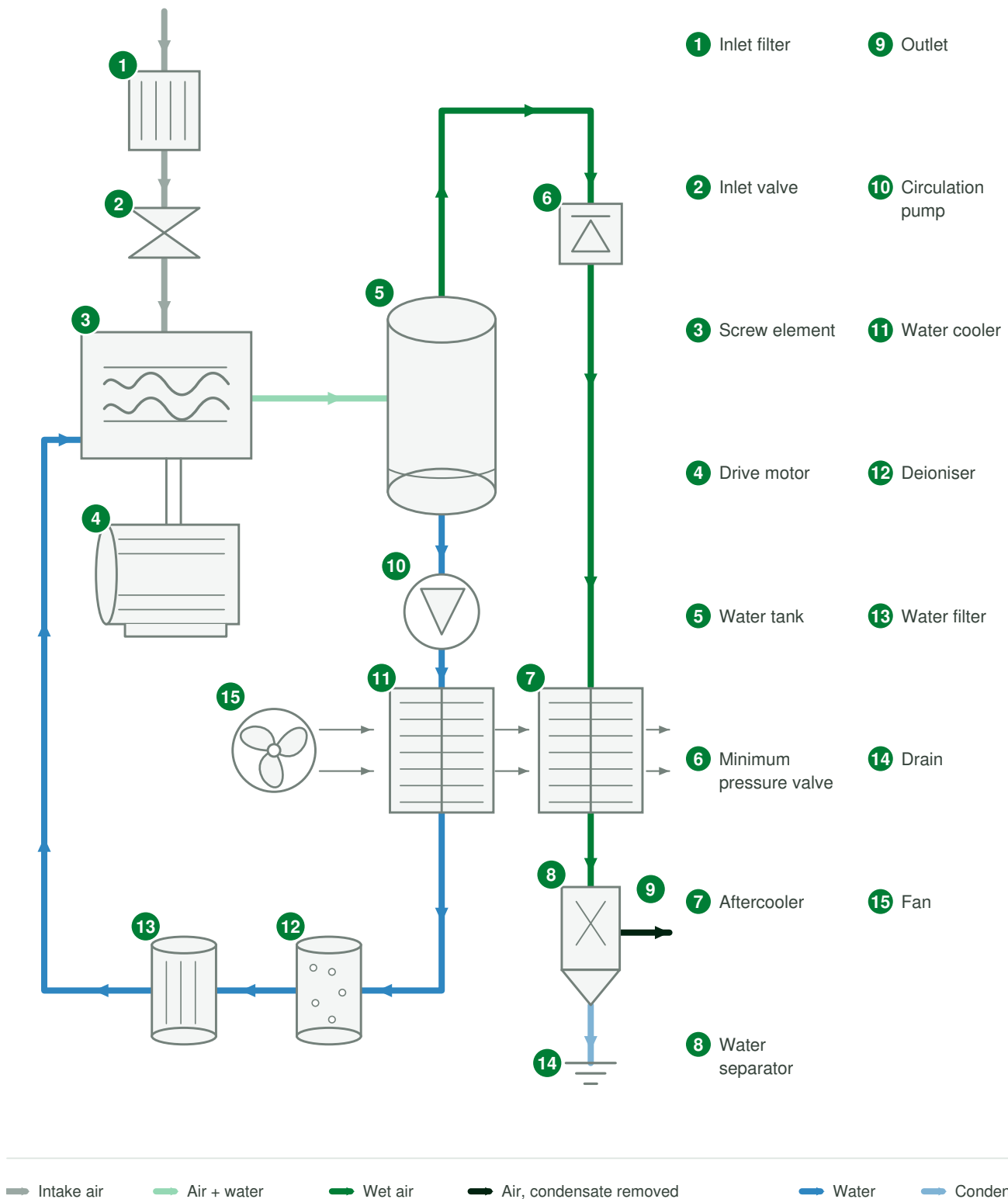
## 9 Water cooler

Removes the heat the water carried out of the compression chamber.



*Component arrangement varies across the range. The photograph shows a representative machine.*

# HOW IT WORKS



The water goes round a closed circuit and never meets the outside. What leaves the machine is air, and the moisture that was in that air to begin with.

# TECHNICAL SPECIFICATIONS

| Model          | Motor power |     | Working pressure |      | Free air delivery |     | Weight |       |
|----------------|-------------|-----|------------------|------|-------------------|-----|--------|-------|
|                | kW          | hp  | bar g            | psig | m³/min            | cfm | kg     | lb    |
| GA-W-5A-7      | 5.5         | 7.5 | 7                | 102  | 0.7               | 25  | 540    | 1,190 |
| GA-W-5A-8      | 5.5         | 7.5 | 8                | 116  | 0.5               | 18  | 540    | 1,190 |
| GA-W-5A-10     | 5.5         | 7.5 | 10               | 145  | 0.3               | 11  | 540    | 1,190 |
| GA-W-7A-7      | 7.5         | 10  | 7                | 102  | 1.2               | 42  | 560    | 1,235 |
| GA-W-7A-8      | 7.5         | 10  | 8                | 116  | 1.1               | 39  | 560    | 1,235 |
| GA-W-7A-10     | 7.5         | 10  | 10               | 145  | 0.9               | 32  | 560    | 1,235 |
| GA-W-11A-7     | 11          | 15  | 7                | 102  | 1.6               | 57  | 580    | 1,279 |
| GA-W-11A-8     | 11          | 15  | 8                | 116  | 1.5               | 53  | 580    | 1,279 |
| GA-W-11A-10    | 11          | 15  | 10               | 145  | 1.4               | 49  | 580    | 1,279 |
| GA-W-15A-7     | 15          | 20  | 7                | 102  | 2.4               | 85  | 620    | 1,367 |
| GA-W-15A-8     | 15          | 20  | 8                | 116  | 2.2               | 78  | 620    | 1,367 |
| GA-W-15A-10    | 15          | 20  | 10               | 145  | 2.0               | 71  | 620    | 1,367 |
| GA-W-18A-7     | 18.5        | 25  | 7                | 102  | 3.1               | 109 | 800    | 1,764 |
| GA-W-18A-8     | 18.5        | 25  | 8                | 116  | 2.8               | 99  | 800    | 1,764 |
| GA-W-18A-10    | 18.5        | 25  | 10               | 145  | 2.5               | 88  | 800    | 1,764 |
| GA-W-22A(W)-7  | 22          | 30  | 7                | 102  | 3.7               | 131 | 860    | 1,896 |
| GA-W-22A(W)-8  | 22          | 30  | 8                | 116  | 3.4               | 120 | 860    | 1,896 |
| GA-W-22A(W)-10 | 22          | 30  | 10               | 145  | 3.0               | 106 | 860    | 1,896 |
| GA-W-30A(W)-7  | 30          | 40  | 7                | 102  | 5.2               | 184 | 920    | 2,028 |
| GA-W-30A(W)-8  | 30          | 40  | 8                | 116  | 4.7               | 166 | 920    | 2,028 |
| GA-W-30A(W)-10 | 30          | 40  | 10               | 145  | 4.3               | 152 | 920    | 2,028 |
| GA-W-37A(W)-7  | 37          | 50  | 7                | 102  | 6.1               | 215 | 1,200  | 2,646 |
| GA-W-37A(W)-8  | 37          | 50  | 8                | 116  | 5.6               | 198 | 1,200  | 2,646 |
| GA-W-37A(W)-10 | 37          | 50  | 10               | 145  | 5.0               | 177 | 1,200  | 2,646 |
| GA-W-45A(W)-7  | 45          | 60  | 7                | 102  | 7.5               | 265 | 1,360  | 2,998 |
| GA-W-45A(W)-8  | 45          | 60  | 8                | 116  | 6.8               | 240 | 1,360  | 2,998 |
| GA-W-45A(W)-10 | 45          | 60  | 10               | 145  | 6.0               | 212 | 1,360  | 2,998 |
| GA-W-55W-7     | 55          | 75  | 7                | 102  | 10.0              | 353 | 1,600  | 3,527 |
| GA-W-55W-8     | 55          | 75  | 8                | 116  | 9.0               | 318 | 1,600  | 3,527 |
| GA-W-55W-10    | 55          | 75  | 10               | 145  | 7.8               | 275 | 1,600  | 3,527 |
| GA-W-75W-7     | 75          | 100 | 7                | 102  | 13.0              | 459 | 1,860  | 4,101 |
| GA-W-75W-8     | 75          | 100 | 8                | 116  | 12.0              | 424 | 1,860  | 4,101 |
| GA-W-75W-10    | 75          | 100 | 10               | 145  | 10.0              | 353 | 1,860  | 4,101 |
| GA-W-90W-7     | 90          | 125 | 7                | 102  | 15.5              | 547 | 2,300  | 5,071 |
| GA-W-90W-8     | 90          | 125 | 8                | 116  | 14.0              | 494 | 2,300  | 5,071 |
| GA-W-90W-10    | 90          | 125 | 10               | 145  | 12.5              | 441 | 2,300  | 5,071 |
| GA-W-110W-7    | 110         | 150 | 7                | 102  | 20.0              | 706 | 2,800  | 6,173 |
| GA-W-110W-8    | 110         | 150 | 8                | 116  | 18.0              | 636 | 2,800  | 6,173 |
| GA-W-110W-10   | 110         | 150 | 10               | 145  | 16.0              | 565 | 2,800  | 6,173 |
| GA-W-132W-7    | 132         | 175 | 7                | 102  | 25.0              | 883 | 3,100  | 6,834 |
| GA-W-132W-8    | 132         | 175 | 8                | 116  | 23.0              | 812 | 3,100  | 6,834 |
| GA-W-132W-10   | 132         | 175 | 10               | 145  | 20.0              | 706 | 3,100  | 6,834 |
| GA-W-160W-7    | 160         | 215 | 7                | 102  | 27.0              | 953 | 3,300  | 7,275 |
| GA-W-160W-8    | 160         | 215 | 8                | 116  | 25.5              | 901 | 3,300  | 7,275 |

## Dimensions

| Frame      | Motor ratings       | L × W × H (mm)     | L × W × H (in)     |
|------------|---------------------|--------------------|--------------------|
| 5.5–15 kW  | 5.5, 7.5, 11, 15 kW | 1060 × 800 × 1020  | 41.7 × 31.5 × 40.2 |
| 18.5–30 kW | 18.5, 22, 30 kW     | 1760 × 1060 × 1460 | 69.3 × 41.7 × 57.5 |
| 37–45 kW   | 37, 45 kW           | 1760 × 1160 × 1500 | 69.3 × 45.7 × 59.1 |
| 55–75 kW   | 55, 75 kW           | 1850 × 1350 × 1350 | 72.8 × 53.1 × 53.1 |
| 90 kW      | 90 kW               | 1980 × 1450 × 1500 | 78.0 × 57.1 × 59.1 |
| 110–132 kW | 110, 132 kW         | 2200 × 1850 × 1700 | 86.6 × 72.8 × 66.9 |
| 160 kW     | 160 kW              | 2300 × 1900 × 1850 | 90.6 × 74.8 × 72.8 |

Free air delivery measured to ISO 1217, annex C, at the stated working pressure. Reference conditions: inlet 1 bar absolute, 20 °C. Imperial figures are converted from the metric values and rounded. Weights and dimensions are for the standard build; dryer and tank options change both. Noise levels for this range are available on request.

## Options

|                                      |                            |
|--------------------------------------|----------------------------|
| Integrated refrigeration dryer       | Zero-loss condensate drain |
| High temperature refrigeration dryer | Heat recovery              |
| Desiccant dryer, heatless or blower  | Heavy duty inlet filter    |
| Cyclone water separator              | Water cooling              |
| Precision filters                    | High ambient package       |
| Air receiver, sized to the machine   | Remote monitoring          |



# GREEN AIR COMPRESSOR

## TALK TO AN ENGINEER, NOT A CALL CENTRE

Tell us what the machine has to do — the air you use, the pressure you run at and the hours you run — and you get a written recommendation back that names the machine, gives its figures at your working pressure, and states delivery, installation and what the warranty covers. It costs nothing and carries no obligation.

**Green Air Compressor**

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Specifications are subject to change without notice.

Figures are nominal and apply at the reference conditions stated.

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