

INSTRUCTION BOOK

OIL-INJECTED ROTARY SCREW COMPRESSORS

G 2, G 3, G 4, G 5



Atlas Copco

Oil-injected rotary screw compressors

G 2, G 3, G 4, G 5

From following serial No. onwards: WUX 200 511

Instruction book

Original instructions

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This instruction book is valid for CE as well as non-CE labelled machines. It meets the requirements for instructions specified by the applicable European directives as identified in the Declaration of Conformity.

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1 General description

1.1 Introduction

Introduction

G 2, G 3, G 4 and G 5 are air-cooled, single stage, oil-injected screw compressors, driven by an electric motor.

The compressors are belt driven.

The compressors are enclosed in sound insulating bodywork.

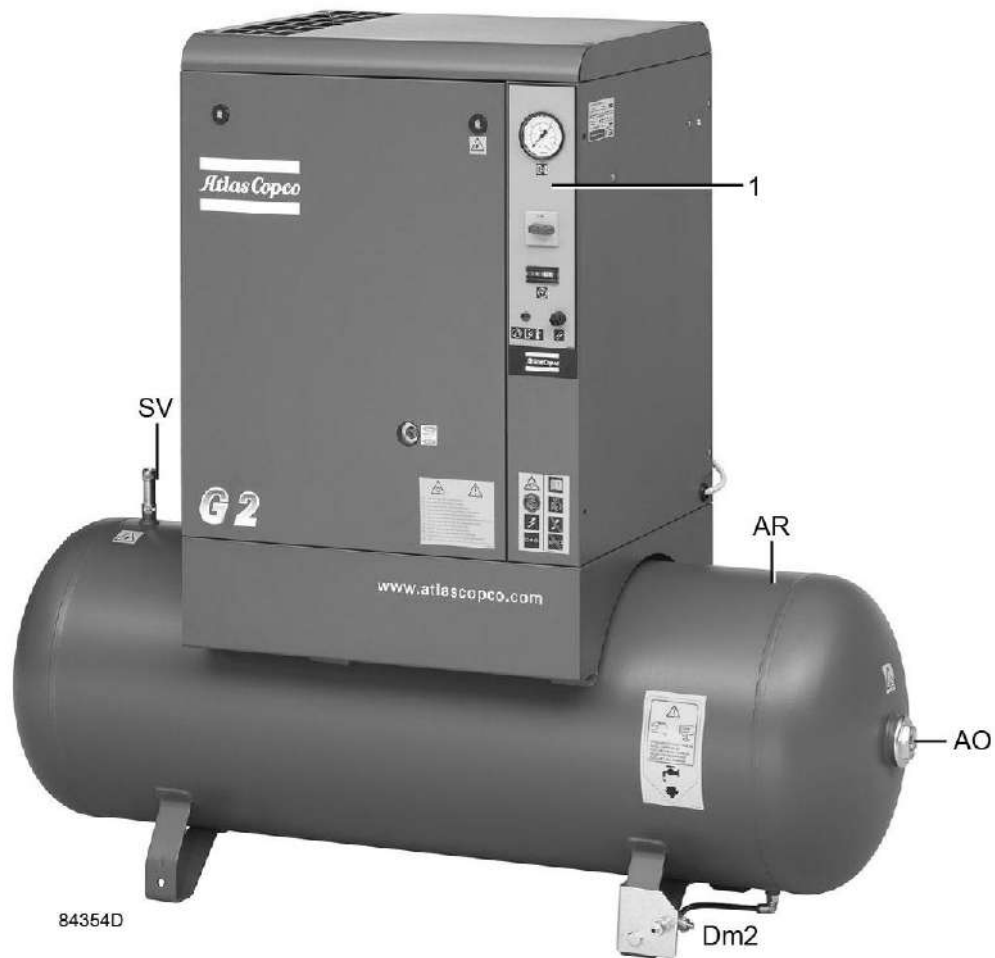
The control panel at the front includes a pressure gauge and a start/stop switch. See section [Control panel](#) for details.

Available versions:

Pack versions do not include an air dryer.

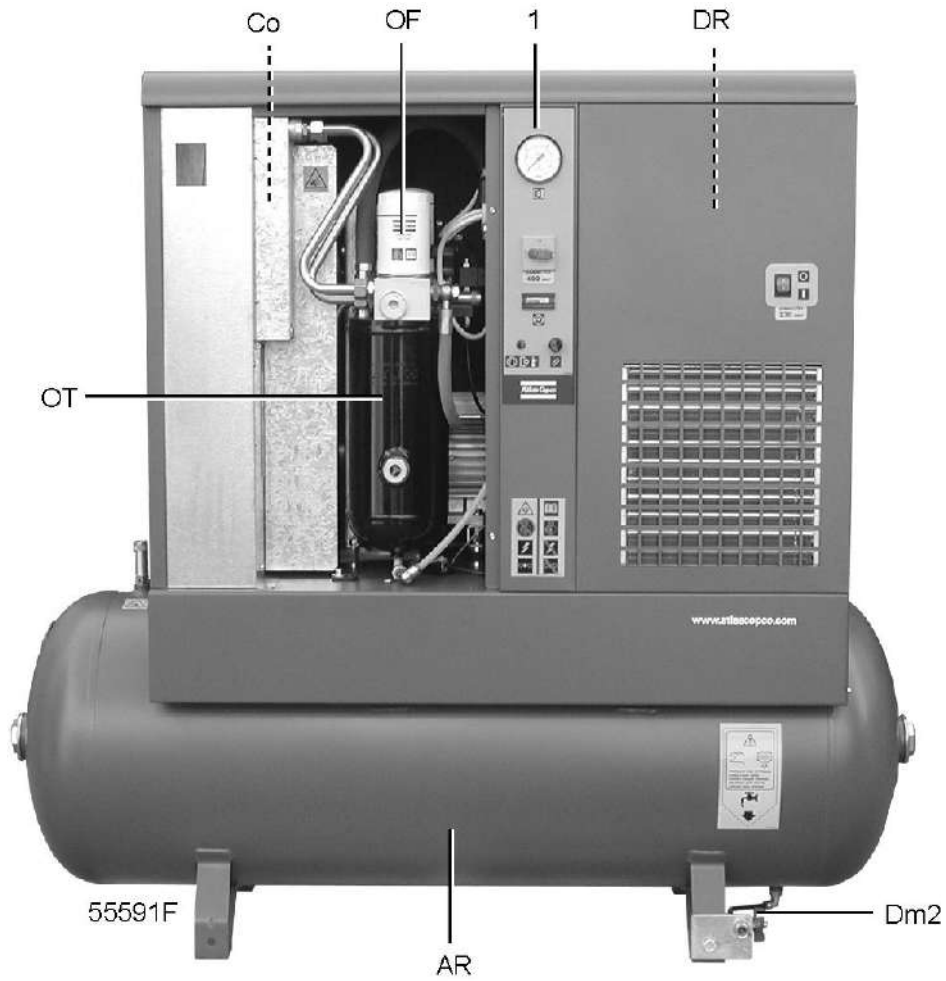
Full-Feature versions are fitted with an air dryer (DR). The dryer removes moisture from the compressed air by cooling the air to near the freezing point and automatically draining the condensate.

The compressor is mounted on top of an air receiver.



G 2 Pack, tank mounted

Reference	Description
1	Control panel
AO	Air outlet
AR	Air receiver
Dm2	Condensate drain on air receiver



G 2 Full-Feature, tank mounted (front view)

Reference	Description
1	Control panel
AR	Air receiver
DR	Dryer
Dm2	Manual condensate drain valve
OT	Oil separator tank
Co	Oil cooler
OF	Oil filter

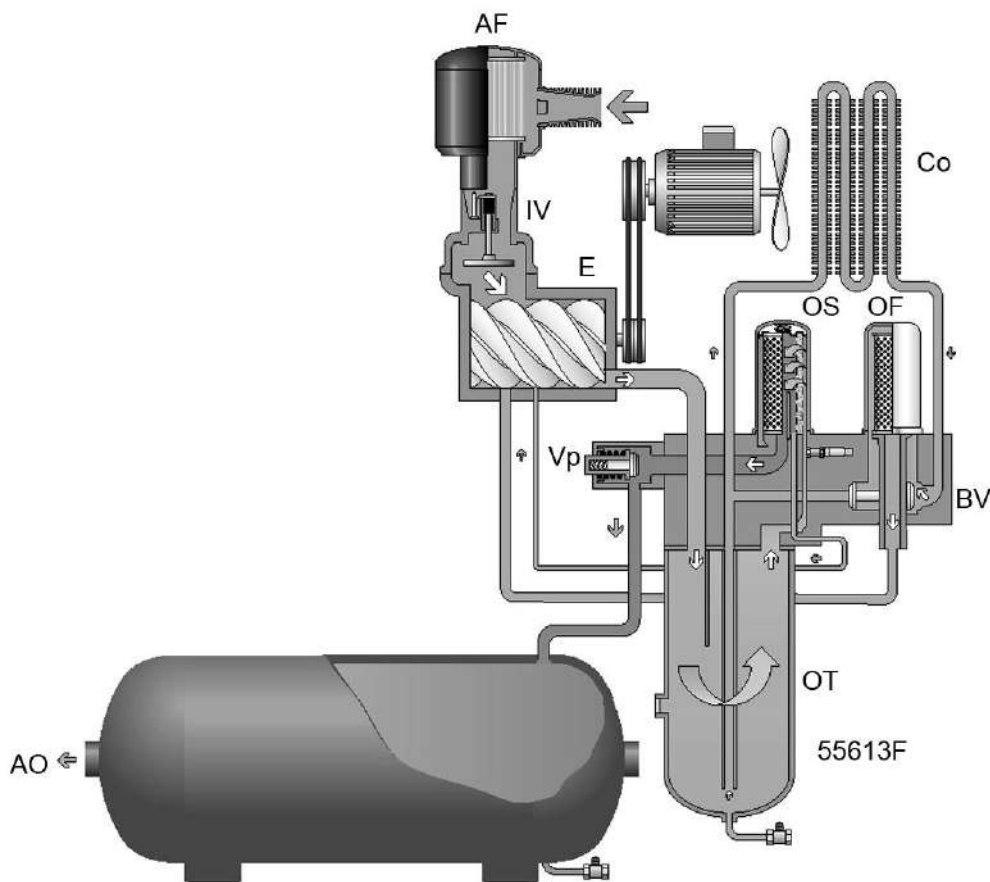
G 2 Full-Feature, tank mounted (rear view)



Reference	Description
AO	Air outlet connection
AR	Air receiver
DR	Dryer
E	Compressor element
OS	Oil separator
OF	Oil filter
AF	Air filter

1.2 Operating principle

Pack units



Flow diagram, tank mounted Pack units

Air flow

Air drawn in through air filter (AF) and open inlet valve (IV) is compressed in compressor element (E). Compressed air and oil flow into oil separator/tank (OT) where most of the oil is removed by centrifugal action. The remaining oil is removed by oil separator (OS). The air flows to the outlet (AO) via minimum pressure valve (Vp).

Oil flow

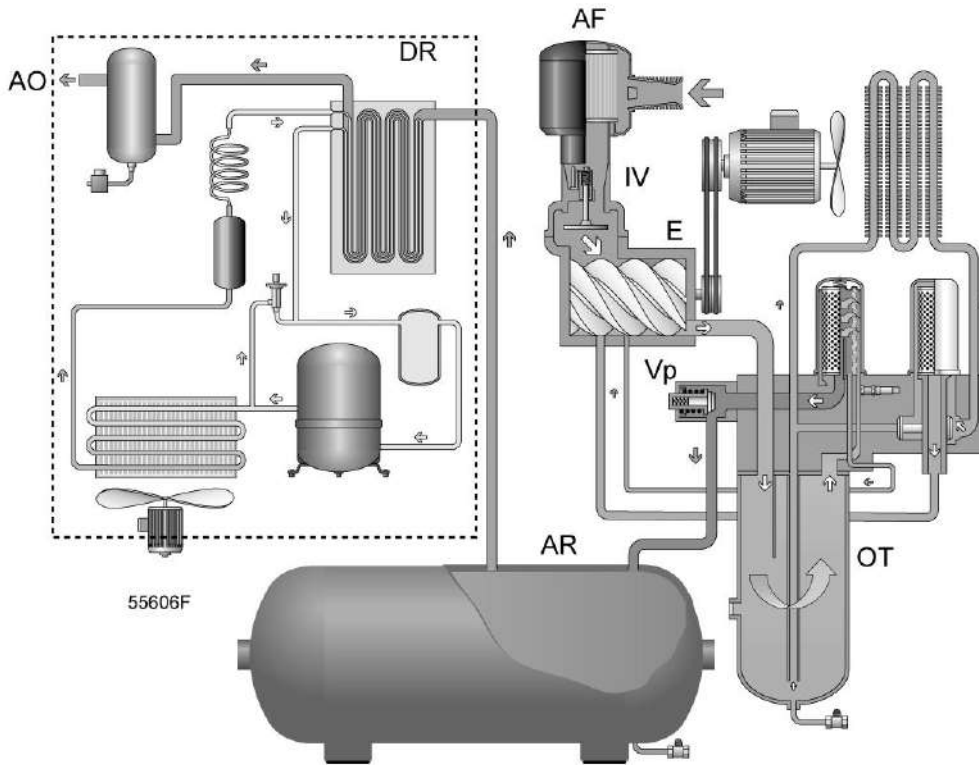
Air pressure in the oil separator tank (OT) forces the oil from the tank to compressor element (E) via oil cooler (Co) and oil filter (OF). Compressed air and oil flow into oil separator/tank (OT) where most of the oil is separated from the air by centrifugal action. The remaining oil is removed by oil separator (OS) and returns to the oil circuit via a separate line. The minimum pressure valve (Vp) ensures a minimal pressure in the tank, required for oil circulation under all circumstances.

The oil circuit has a thermostatic bypass valve (BV). The oil cooler is bypassed until the oil is warm.

Cooling

A fan on the drive motor shaft provides air flow to cool the oil and the other components of the compressor. On tank mounted compressors, the air receiver is used as air cooler. The condensate is drained by means of a manual drain valve.

Full-Feature



Flow diagram, tank mounted Full-Feature units

Air flow

The compressed air flows from the receiver and the dryer to the outlet (AO).

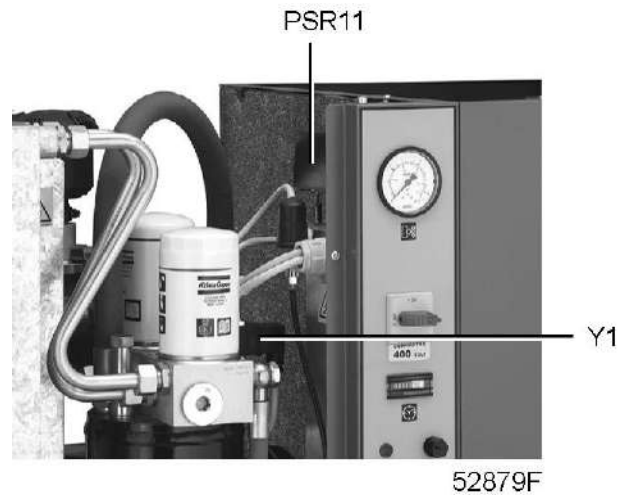
Oil flow

See above

Cooling

The dryer (DR) of Full-Feature versions has a separate cooling fan and an automatic condensate drain.

Regulating system



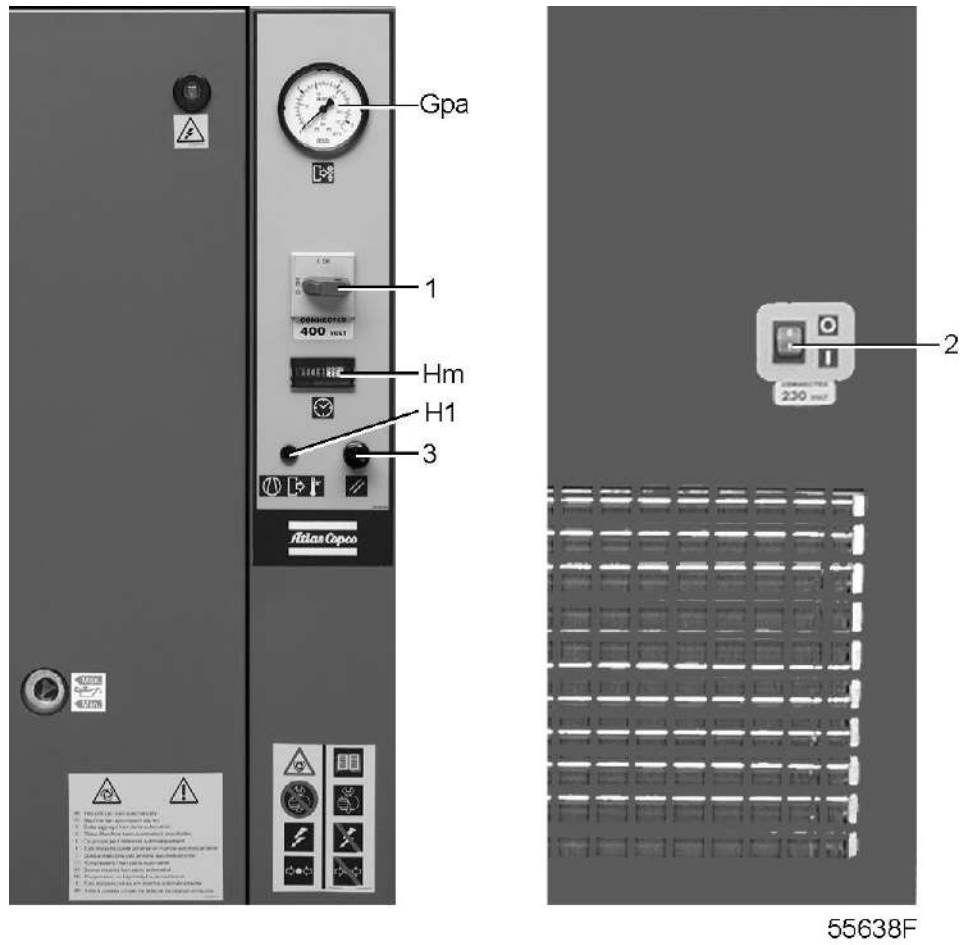
The main components of the regulating system are:

- Pressure switch (PSR11)
- Blow-off valve (Y1)

The contacts of pressure switch (PSR11) open and close at preset pressures. During loaded operation, the contacts are closed: the motor is running.

When the working pressure reaches the upper limit, the contacts of the pressure switch open: the motor stops. Blowoff valve (Y1) opens and the pressure in the air/oil separator is released. When the working pressure decreases to the preset minimum pressure, the contacts of the pressure switch close and the motor restarts. Blowoff valve Y1 closes and compressed air supply is resumed.

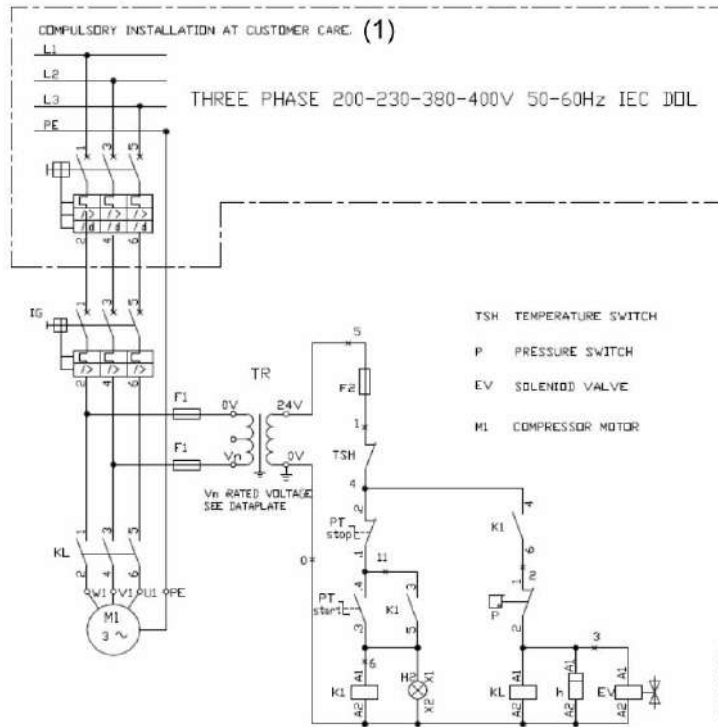
1.3 Control panel



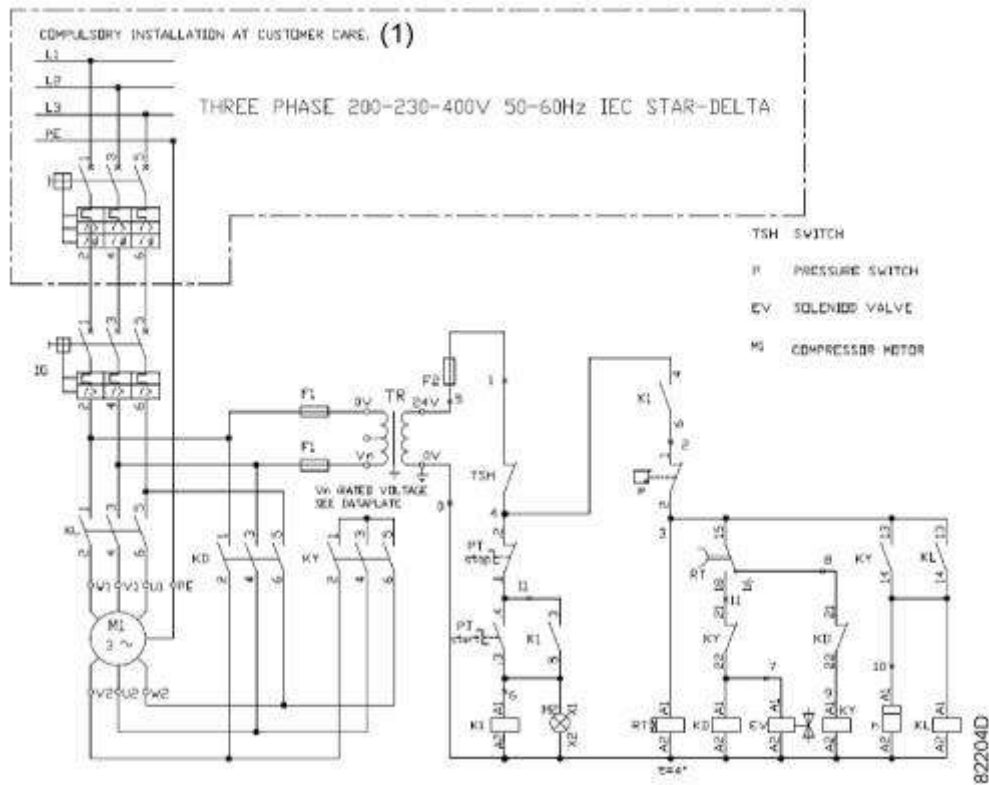
Control panel

Reference	Designation	Function
1	Main switch	To power the unit. Also used to stop the compressor in the event of an emergency and to reset the thermal overload of the electric motor by switching it to 0 and back to I. Also overload protection (only for IEC).
2	Dryer ON/OFF button	To start and stop the dryer (Full-Feature units only)
3	ON/OFF switch	To start and stop the compressor.
Hm	Hour meter	Indicates the total running time.
Gpa	Working pressure	The white pointer indicates the actual working pressure.
H1	Lamp	Lights up when the machine is operating.

1.4 Electrical diagrams



Service diagram - IEC - 3 ph DOL



Service diagram - IEC - 3 ph Y-D

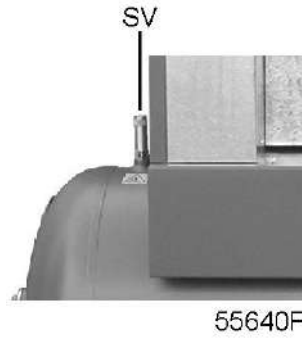
Text on image

(1)	Main switch and fuses to be installed by customer.
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1.5 Protection of the compressor



Safety valve on the compressor



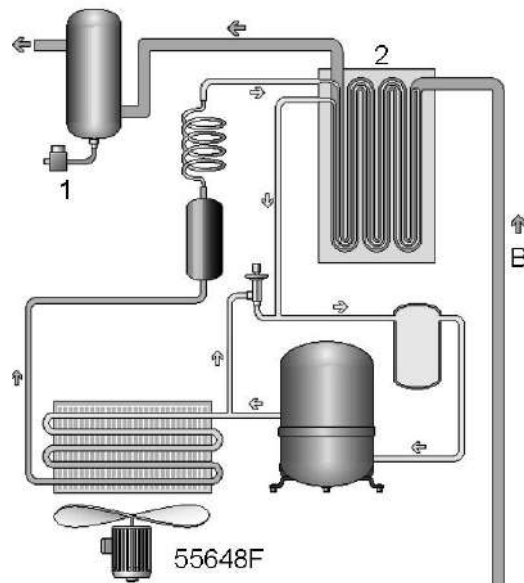
Safety valve on the air receiver (tank-mounted units)

Reference	Designation	Function
IG See also section Electrical diagrams	Motor overload relay	To shut down the compressor in case the motor current is too high.
TSH See also section Electrical diagrams	Temperature shut-down switch	To shut down the compressor if the temperature at the outlet of the compressor element is too high.
SV	Safety valve	To protect the air outlet system if the outlet pressure exceeds the opening pressure of the valve.

After tripping of the temperature protection: switch off the voltage and depressurise. Check and remedy. See section [Problem solving](#). Wait a few minutes to let the machine cool down.

To reset and restart, switch on the voltage and press the red reset button after unscrewing its cover: the machine will restart.

1.6 Air dryer



Air dryer (Full-Feature compressors)

Wet compressed air (B) enters the dryer and flows through a heat exchanger (2) where refrigerant evaporates, withdrawing heat from the air. The cold air then flows through a condensate trap (1) which separates condensate from the air. The condensate is automatically drained and this is regulated by a timer. The dried air is then discharged from the dryer.

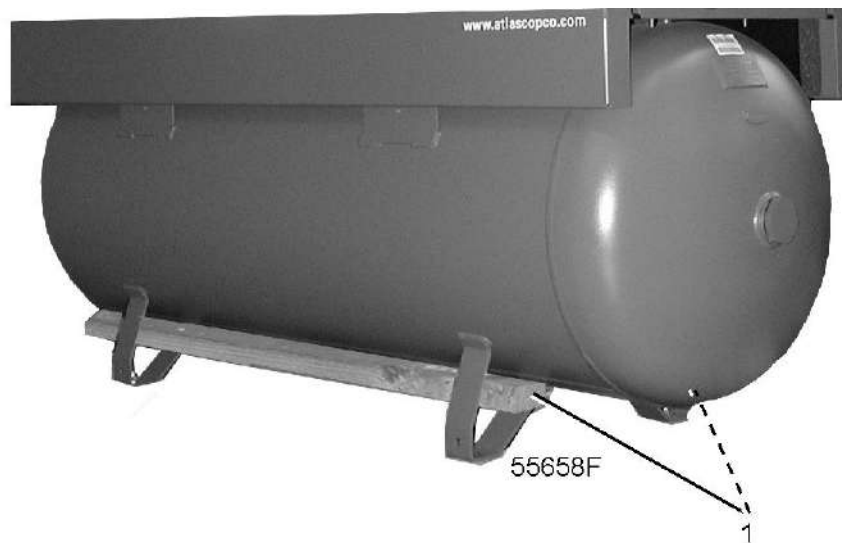
2 Installation

2.1 Installation proposal

Outdoor/altitude operation

If the compressor is installed outdoors or if the ambient temperature can be below 0°C (32°F), precautions must be taken. In this case, and also if operating at high altitude, consult Atlas Copco.

Moving/lifting

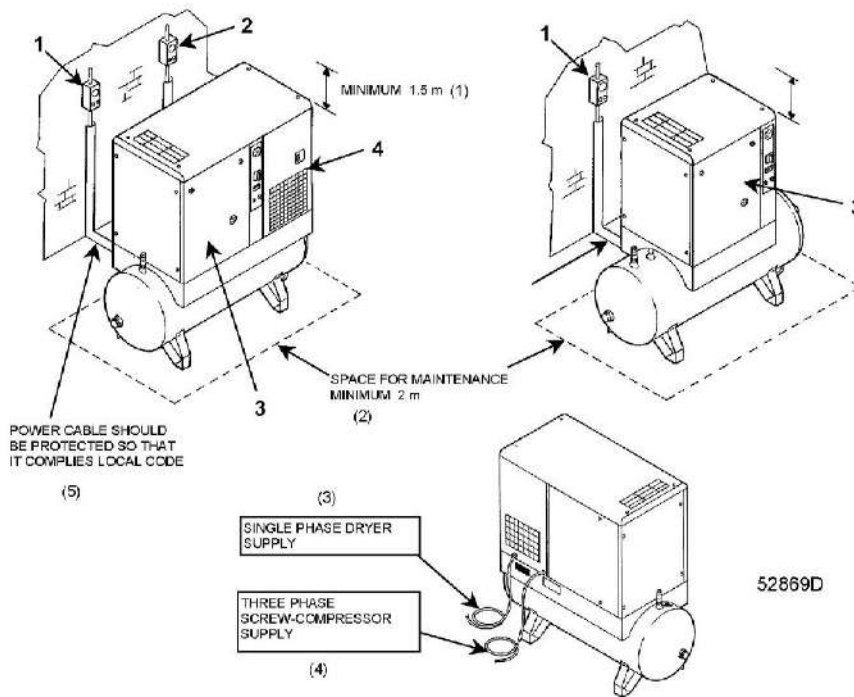


Transport by a pallet truck



To prevent a tank-mounted model from falling over during transport by a pallet truck: push the forks underneath the air receiver and place a wooden beam (1) (cross-section approx. 4 x 6 cm / 1.6 x 2.4 in) through the supports on both sides of the receiver. While holding the compressor, slowly lift the forks until the receiver is secured between the beams.

Installation proposal



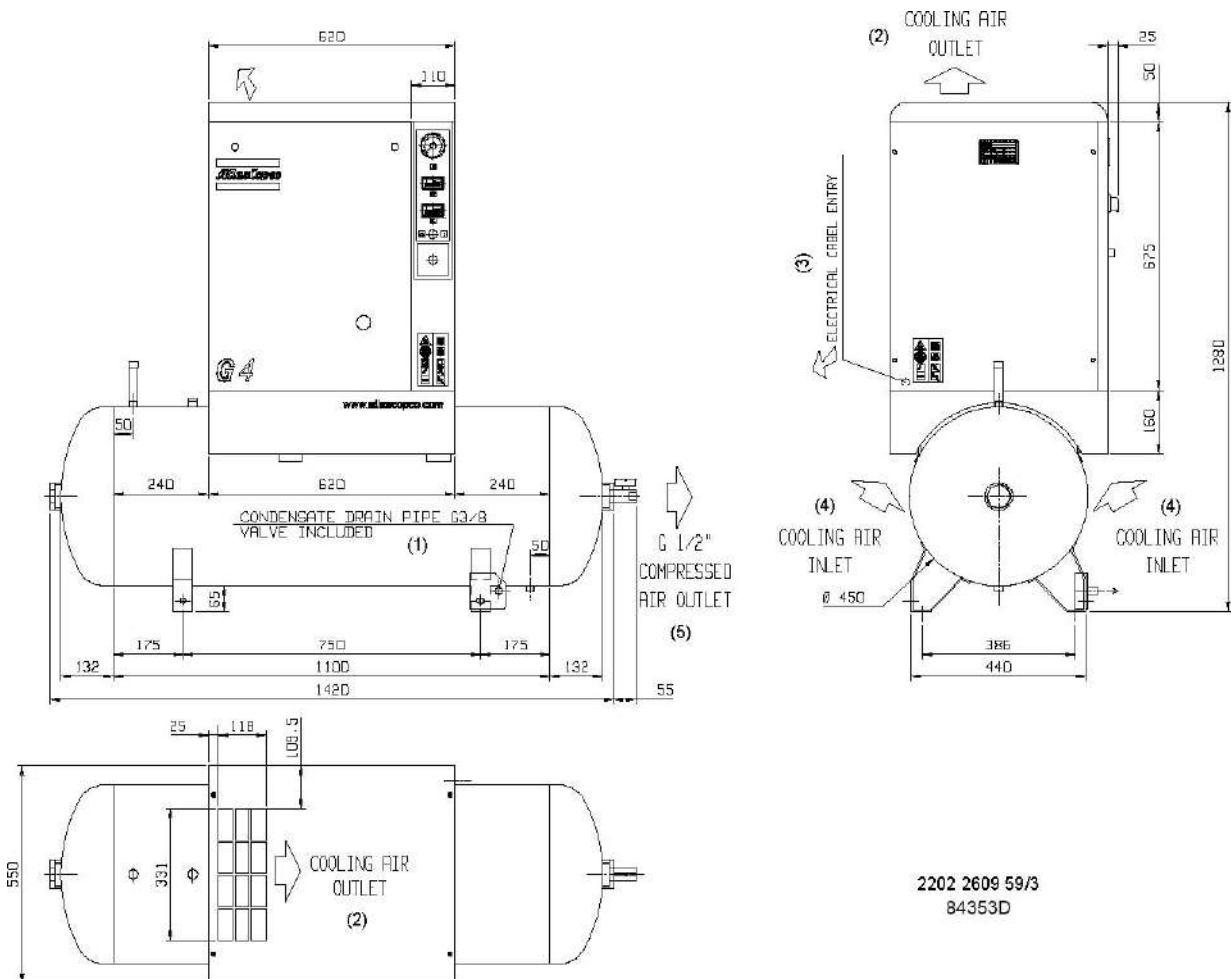
Installation proposal, tank mounted units

Ref.	Description/recommendation
1	Isolating switch, compressor
2	Isolating switch, dryer
3	Front panel, compressor
4	Dryer
(1)	Minimum 1.5 m
(2)	Space for maintenance, minimum 2 m
(3)	Single-phase dryer supply
(4)	Three-phase screw compressor supply
(5)	The power cable should be protected so that it complies with local codes

Step	Action
1	Install the compressor on a solid, level floor suitable for taking the weight. The recommended minimum distance between the top of the unit and the ceiling is 1.5 m (58.5 in). The minimum distance between the wall and the back of the compressor must be 200 mm (7.8 in).
	The pipes between a floor-mounted compressor and air receiver are hot.
2	Position of the compressed air outlet valve. Close the valve. Connect the air net to the valve.

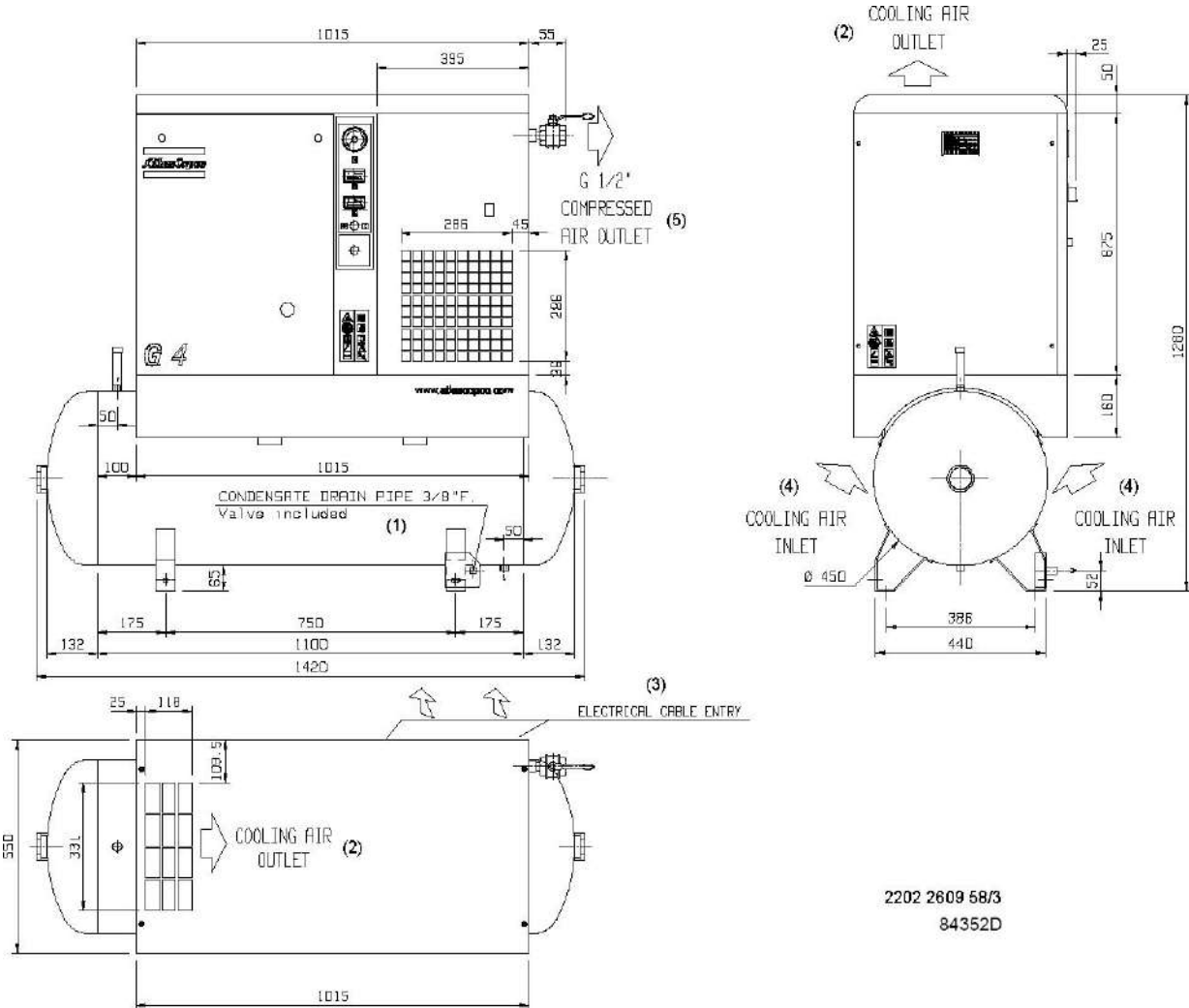
Step	Action
3	The pressure drop over the air delivery pipe can be calculated as follows: $\Delta p = (L \times 450 \times Q_c^{1.85}) / (d^5 \times P)$, with d = Inner diameter of the pipe in mm Δp = Pressure drop in bar (recommended maximum: 0.1 bar (1.5 psi)) L = Length of the pipe in m P = Absolute pressure at the compressor outlet in bar Q _c = Free air delivery of the compressor in l/s
4	Ventilation: the inlet grids and ventilation fan should be installed in such a way that any recirculation of cooling air to the compressor or dryer is avoided.
5	Lay out the condensate drain flexible from timer drain (T) as well as the flexible from condensate drain valve (4) towards a drain collector. The drain pipes to the drain collector must not dip into the water of the drain collector.

2.2 Dimension drawings



Tank mounted Pack units


Ref.	Designation
(1)	Condensate drain pipe, valve included
(2)	Cooling air outlet
(3)	Electrical cable entry
(4)	Cooling air inlet
(5)	Compressed air outlet



Tank mounted Full—Feature units

Ref.	Designation
(1)	Condensate drain pipe, valve included
(2)	Cooling air outlet
(3)	Electrical cable entry
(4)	Cooling air inlet
(5)	Compressed air outlet

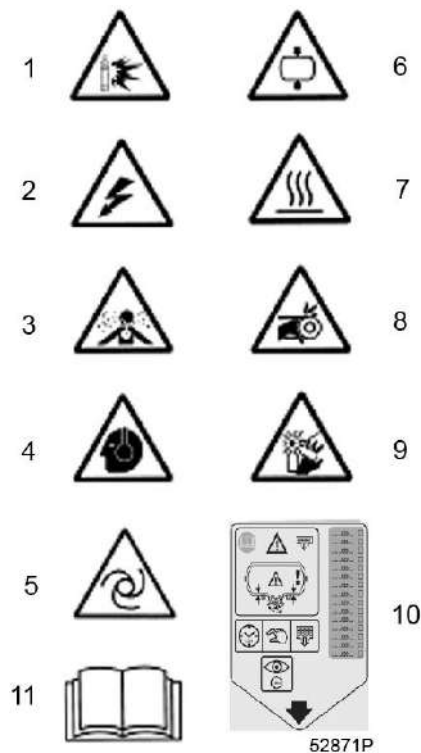
2.3 Electrical connections

	Always disconnect the power supply before working on the electrical circuit!
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General instructions

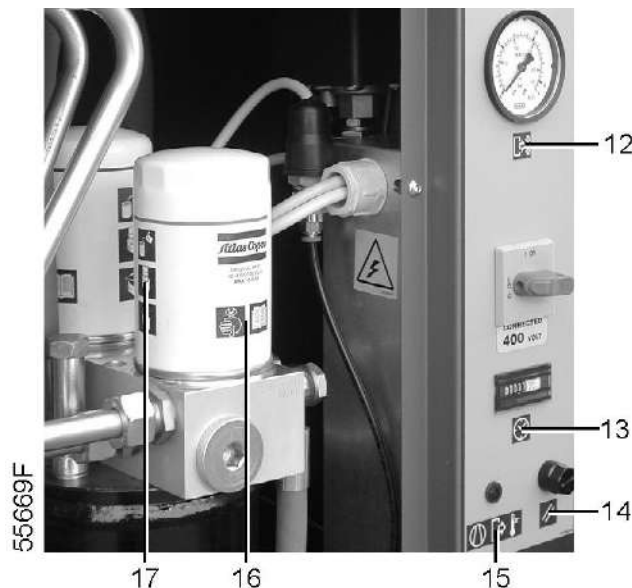
Step	Action
1	Ensure that the supply voltage matches the voltage on the data plate.
2	Install an isolating switch near the compressor. For Full-Feature compressors: fit an isolating switch near the dryer.
3	Fit fuses in the incoming wiring. Check the condition of all incoming wiring and make connections. See section Electrical diagrams .

2.4 Pictographs



Ref.	Description
1	Warning: possible air/fluid discharge
2	Warning: voltage
3	Warning: air must not be inhaled
4	Warning: wear ear protectors
5	Warning: machine may start automatically
6	Warning: pressure
7	Warning: hot parts

Ref.	Description
8	Warning: moving parts
9	Warning: rotating fan
10	Drain the condensate daily and inspect the vessel yearly. Note down the inspection dates.
11	Read the instruction manual



Ref.	Description
12	Working pressure
13	Hour meter
14	Reset of temperature protection
15	High temperature outlet of the compressor element
16	Read instruction manual before carrying out maintenance or repair work
17	Lightly oil gasket of oil filter, screw filter on and tighten by hand

3 Operating instructions

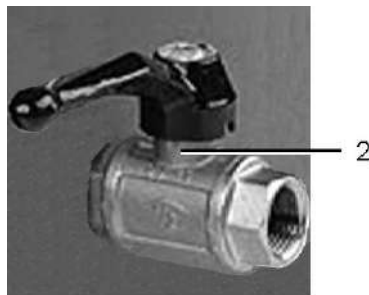
3.1 Initial start-up

Safety



The operator must apply all relevant [Safety precautions](#).

General preparation

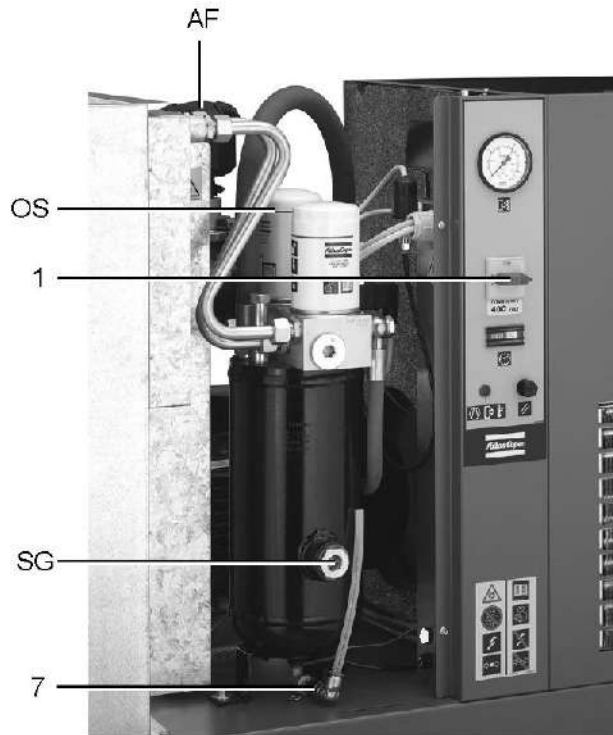


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Air outlet valve


Step	Action
1	Consult the installation instructions (see section Installation proposal).
2	Check that the electrical connections correspond to the local codes. The installation must be earthed and protected against short circuits by fuses in all phases. An isolating switch must be installed near the compressor.
3	Fit the outlet valve, close it and connect the air net to the valve. Close the drain valve on the receiver.

Lubrication

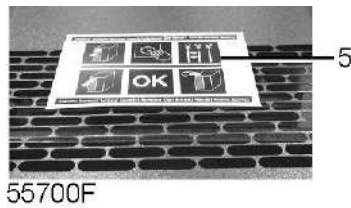


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Oil level sight glass (SG)

Step	Action
	<p>If more than 3 months have passed between assembly and installation, be sure to lubricate the compressor before starting up:</p> <ul style="list-style-type: none"> • Remove the front panel. • Unscrew the fixing bolts of the top panel and remove the panel. • Unscrew the cover of the air filter (AF) and remove the filter element. • Open valve (7) and drain approximately 0.2 l (0.05 US gal / 0.04 Imp gal) of oil into a clean receptacle. Carefully pour this oil through the filter housing into the compressor element. • Fit the air filter and screw on the filter cover. • Refit the top and front panel.
	<p>Check the oil level. The oil level sight-glass (SG) should be between 1/4 and 3/4 full. If the oil level is below the minimum level, top up to the middle. Do not overfill.</p>

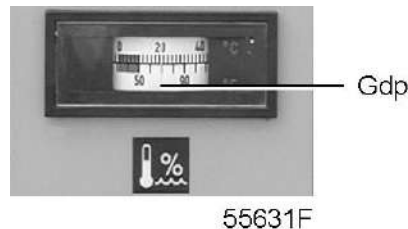
Start-up



Label on the top

Step	Action
1	<p>Check that all bodywork panels are fitted.</p> <p>Check that sheet (5) (explaining the procedure for checking the motor rotation direction) is affixed to the cooling air outlet of the compressor (grating on the compressor top). Consult section Dimension drawings.</p> <p>Switch on the voltage. Start the compressor and stop it immediately.</p> <p>Check the rotation direction of the motor. If the motor rotation direction is correct, the label on the top grating will be blown upwards. If the sheet remains in place, the rotation direction is incorrect.</p> <p>If the rotation direction is incorrect, switch off the voltage, open the isolating switch and reverse two incoming electric lines.</p> <p>All electrical work should be carried out by professionally qualified people.</p>
2	<p>Start and run the compressor for a few minutes. Check that the compressor operates normally.</p>

3.2 Starting



Dew point temperature gauge

Starting the air dryer



52885F

Dryer on/off switch

	Switch on the voltage to the dryer and start it by moving switch (3) to position I.
	<ul style="list-style-type: none"> • Switch on the dryer before starting the compressor. • The dryer must remain switched on when the compressor is operating to ensure that the air piping remains condensate-free. • If the dryer is switched off, wait at least 5 minutes before restarting the dryer; this allows for balancing of the internal pressure in the dryer.



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Timer drain (rear side of the dryer)

Starting the compressor

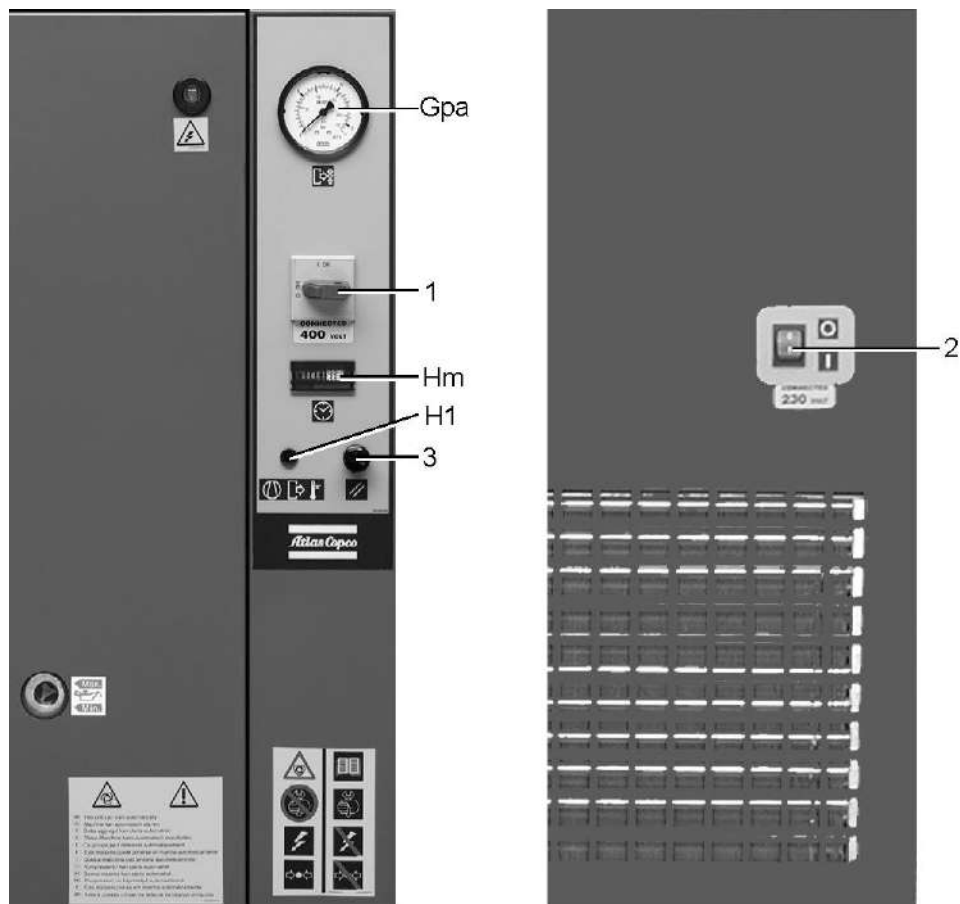


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I
F1

Step	Action
1	Check the oil level sight glass (SG). The oil level should be in the middle. If it is below the minimum level, top up to the middle. Do not overfill.
2	Switch on the voltage.
3	Open air outlet valve (2).
4	Move start/stop switch (1) to position I.
	If the compressor has been exposed to low temperatures (below 0°C/32°F), it may have difficulty starting due to high oil viscosity. In this case, depress yellow button (5) while starting using button (1). Button (5) should only be depressed for a few seconds while starting. Button (5) should only be used if experiencing difficulty due to low temperatures.
5	Regularly check the working pressure (Gpa).
6	On Full-Feature compressors, regularly check that condensate is drained during operation.

3.3 Stopping



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Step	Action
1	On Full-Feature units: move the dryer switch (2) to position 0. To stop the compressor, move start/stop switch (1) to position 0.
2	Close the air outlet valve and switch off the voltage to the compressor.
3	Open condensate drain valve (Dm) for a few seconds to drain any condensate and then close the valve.
	The air dryer and the air receiver remain under pressure. The integrated filter (if installed) remains pressurized. If maintenance or repair work is necessary, consult section Safety precautions during maintenance or repair for all relevant safety precautions.
4	Wait at least 30 seconds before restarting the machine.

3.4 Taking out of operation

This procedure should be carried out at the end of the compressor's service life.

Step	Action
1	Stop the compressor and close the air outlet valve (2).
2	Switch off the voltage and disconnect the compressor from the mains.
3	Depressurize the compressor by opening plug (3) one turn. Open condensate drain valve (Dm).
4	Shut off and depressurize the part of the air net which is connected to the outlet valve. Disconnect the compressor from the air net.
5	Drain the oil and condensate circuits.
6	Disconnect the compressor condensate outlet and valve from the condensate net.

4 Maintenance

4.1 Preventive maintenance schedule

Warning



Before carrying out any maintenance, repair work or adjustments, proceed as follows:

- Stop the compressor.
- Switch off the voltage and open the isolating switch.
- Close the air outlet valve and open the manual condensate drain valves.
- Depressurize the compressor.

For detailed instructions, see the next sections.

The operator must apply all relevant [Safety precautions during maintenance or repair](#).

Warranty-Product Liability

Use only authorised parts. Any damage or malfunction caused by the use of unauthorized parts is not covered by Warranty or Product Liability.

General

When servicing, replace all removed gaskets, O-rings and washers.

Intervals

Carry out maintenance at the interval which comes first. The local Atlas Copco Customer Centre may overrule the maintenance schedule, especially the service intervals, depending on the environmental and working conditions of the compressor.

The "longer interval" checks must also include the "shorter interval" checks.

Preventive maintenance schedule

Period (1)	Running hours (1)	Action
Daily	--	After stopping, drain the condensate from the air receiver . Check the oil level.
Monthly	50	For Full-Feature versions: check that condensate from the dryer is draining automatically.
"		For floor mounted versions: inspect the prefilter at the rear side of the compressor. Clean if necessary.
3-monthly	500 (2)	Inspect the air filter. Clean if necessary.
"	500	Check the belt tension.
"	"	For compressors with PDX filter: check the service indicator, replace the filter if necessary.
3-monthly	1000 (2)	Inspect the oil cooler; clean if necessary.
"	"	For Full-Feature versions: inspect the condenser of the dryer; clean if necessary.


Period (1)	Running hours (1)	Action
"	--	Check the oil return hole.
Yearly	2000 (2)	Replace the air filter.
"	2000 (3)	If Roto-Inject Fluid is used, change the oil and the oil filter.
"	2000	For compressors with PDX filter: replace the filter.
"	4000 (3)	If Roto-Xtend Duty Fluid is used, change the oil and the oil filter.
"	4000	Replace the oil separator.
"	--	Have the safety valve tested.
"	--	Inspect the air receiver. The air receiver must no longer be used and must be replaced if the wall thickness is less than the minimum value, specified in the technical documentation of the air receiver.

(1): whichever comes first.

(2): more frequently in a dusty environment

(3): The indicated oil exchange intervals are valid for standard operating conditions (see section [Reference conditions and limitations](#)) and nominal operating pressure (see section [Compressor data](#)). Exposure of the compressor to external pollutants or operation at high humidity combined with low duty cycles may require a shorter oil exchange interval. Contact Atlas Copco if in doubt.

Important

	<ul style="list-style-type: none"> • Always consult Atlas Copco if a service timer setting has to be changed. • For the change interval of oil and oil filter in extreme conditions, consult your Atlas Copco Customer Centre. • Any leakage should be attended to immediately. Damaged hoses or flexible joints must be replaced.
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4.2 Drive motor


General

Keep the outside of the electric motor clean for efficient cooling. If necessary, remove dust with a brush and/or compressed air jet.

Description

The motor bearings are greased for their expected service life.

4.3 Oil specifications

	Avoid mixing lubricants of different brands or types as they may not be compatible and the oil mix may have inferior properties. A label, indicating the type of oil filled ex factory, is stuck on the air receiver/oil tank.
---	--

It is strongly advised to use the recommended lubricants. See section Preventive maintenance schedule for recommended oil change intervals.

For part numbers, consult the Spare Parts List.

Relation between operating conditions and duty type

Ambient temperature	Humid	Dust	Duty type
Below 30 °C (86 °F)	No	No	Mild
Below 30 °C (86 °F)	Yes	No	Mild
Below 30 °C (86 °F)	No	Yes	Mild
Below 30 °C (86 °F)	Yes	Yes	Demanding
Between 30 °C (86 °F) and 40 °C (104 °F)	No	No	Demanding
Between 30 °C (86 °F) and 40 °C (104 °F)	Yes	No	Demanding
Between 30 °C (86 °F) and 40 °C (104 °F)	No	Yes	Demanding
Between 30 °C (86 °F) and 40 °C (104 °F)	Yes	Yes	Extreme
Above 40 °C (104 °F)	-	-	Extreme

Roto-Inject Fluid NDURANCE

Exchange interval for Roto-Inject Fluid Ndurance

Ambient temperature	Element outlet temperature	Exchange interval *	Maximum time interval *
up to 30°C (86°F)	up to 95°C (203°F)	4000	1 year
from 30°C (86°F) up to 35°C (95°F) (see note)	from 95°C (203°F) up to 100°C (212°F)	3000	1 year
from 35°C (95°F) up to 40°C (104°F) (see note)	from 100°C (212°F) up to 105°C (221°F)	2000	1 year
above 40°C (104°F)	above 105°C (221°F)	use Roto Synthetic Fluid XTEND DUTY	

Note: The presence of dust and/or high humidity may require a shorter exchange interval. Consult Atlas Copco.

Atlas Copco's Roto-Inject Fluid Ndurance is a premium mineral oil based 4000 hours lubricant, specially developed for use in single stage oil-injected screw compressors running in mild conditions. Its specific formulation keeps the compressor in excellent condition. Roto-Inject Fluid Ndurance can be used for compressors operating at ambient temperatures between 0 °C (32 °F) and 40 °C (104 °F). If the compressor is regularly operating in ambient temperatures between 40 °C and 46 °C (115 °F), it is recommended to use Roto Synthetic Fluid ULTRA or Roto Synthetic Fluid XTEND DUTY.

Roto Synthetic Fluid ULTRA

Exchange interval for Roto Synthetic Fluid Ultra

Ambient temperature	Element outlet temperature	Exchange interval *	Maximum time interval *
up to 35°C (95°F)	up to 100°C (212°F)	6000	2 years
from 35°C (95°F) up to 40°C (104°F) (see note)	from 100°C (212°F) up to 105°C (221°F)	4000	2 years
from 40°C (104°F) up to 45°C (113°F) (see note)	from 105°C (221°F) up to 110°C (230°F)	2000	2 years

Note: The presence of dust and/or high humidity may require a shorter exchange interval. Consult Atlas Copco.

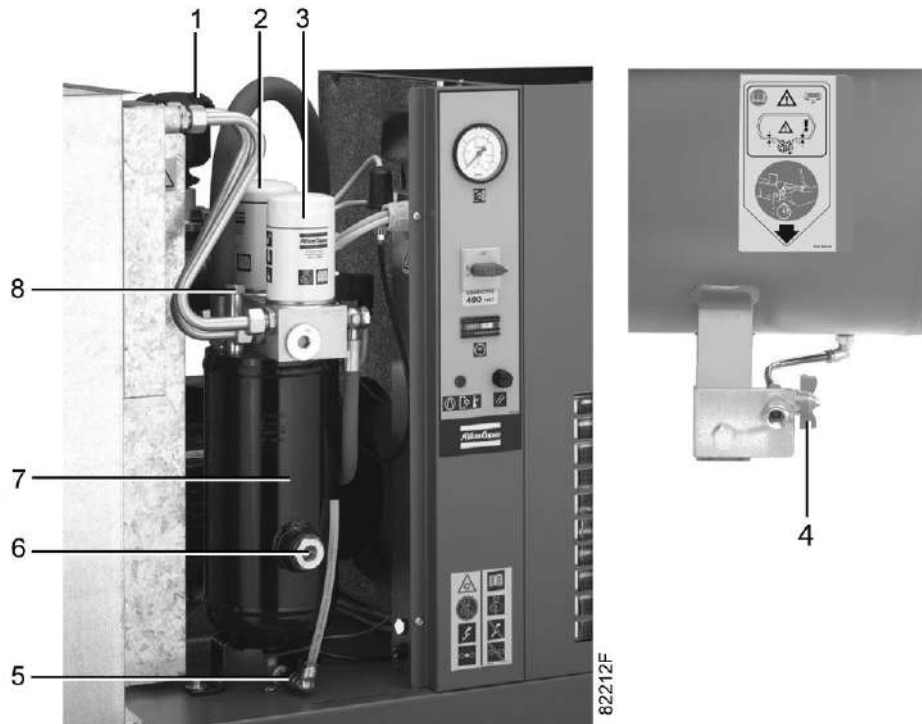
Roto Synthetic Fluid ULTRA is a synthetic oil based 4000 hours lubricant, specially developed for use in single stage oil-injected screw compressors running in demanding conditions. Roto Synthetic Fluid ULTRA can be used for compressors operating at ambient temperatures between 0 °C (32 °F) and 45 °C (113 °F). For more extreme conditions or when longer oil life is required, it is recommended to use Roto Synthetic Fluid XTEND DUTY.

4.4 Oil, filter and oil separator change

Important

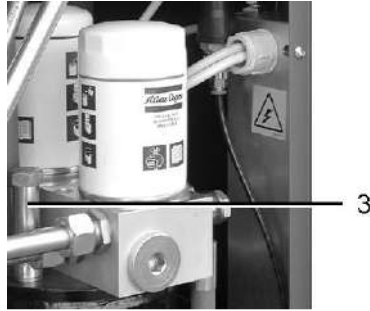


Never mix oils of different brands or types. A label, indicating the type of oil filled ex-factory, is stuck on the air receiver/oil tank.
 Always drain the compressor oil at all drain points. Used oil left in the compressor can shorten the lifetime of the new oil.
 If the compressor is exposed to external pollutants, is being used at high temperatures (oil temperature above 90°C / 194°F) or is being used under severe conditions, it is advisable to change the oil more frequently. Consult Atlas Copco.



Step	Action
1	Run the compressor until warm. Stop the compressor, close the air outlet valve and switch off the voltage.
2	Remove the front and top panels.
3	Depressurize the compressor by unscrewing filler plug (8) one turn to permit any pressure in the system to escape.
4	Depressurize the air receiver by opening drain valve (4).
5	Drain the oil by opening drain valve (5). Close the valve after draining. Deliver the spent oil to the local oil collection service.
6	Remove oil filter (3) and separator (2). Clean the seats on the manifold.
7	Oil the gaskets of the new filter and separator and screw them into place. Tighten firmly by hand.
8	Remove filler plug (8) and fill oil tank (7) with oil until the level reaches the middle of sight glass (6). Ensure no dirt gets into the system. Refit and tighten filler plug (8).
9	Unscrew the air filter cover (1), remove the filter element and carefully pour approx. 0.1 l (0.03 US gal / 0.02 Imp gal) of oil into the compressor element. Do not overfill.
10	Re-assemble the inlet filter
11	Fit the bodywork panels.
12	Close drain valve (4) of the air receiver.
13	Run the compressor for a few minutes. Check the oil level.

4.5 PDX/DDX filter change (option)



55605F

Oil filler plug



55699F

Drain valve, air receiver

Step	Action
1	Stop the compressor, close the air outlet valve, switch off the voltage and depressurise by unscrewing oil filler plug (3) one turn to permit any pressure in the system to escape. See section Stopping . On floor mounted units, depressurize the filter by opening its drain valve. If the compressor is fitted onto an air receiver, depressurize the air receiver by opening condensate drain valve (4).
2	Unscrew the filter bowl. A whistling noise will warn you if the bowl is not fully depressurized. If this occurs, the bowl should be screwed back and the venting should be repeated.
3	Remove and discard the filter element.
4	Clean the bowl and replace its O-ring.
5	Fit the new filter element.
6	Refit the filter bowl.
7	Tighten oil filler plug (3).
8	Close condensate drain valve (4) (tank mounted units).

4.6 Storage after installation

If the compressor is stored without running from time to time, consult Atlas Copco as protective measures may be necessary.

4.7 Service kits

Service kits

For overhauling and for preventive maintenance, a wide range of service kits is available. Service kits comprise all parts required for servicing the component and offer the benefits of genuine Atlas Copco parts while keeping the maintenance budget low.

Also a full range of extensively tested lubricants, suitable for your specific needs is available to keep the compressor in excellent condition.

Consult the Spare Parts List for part numbers.

4.8 Disposal of used material

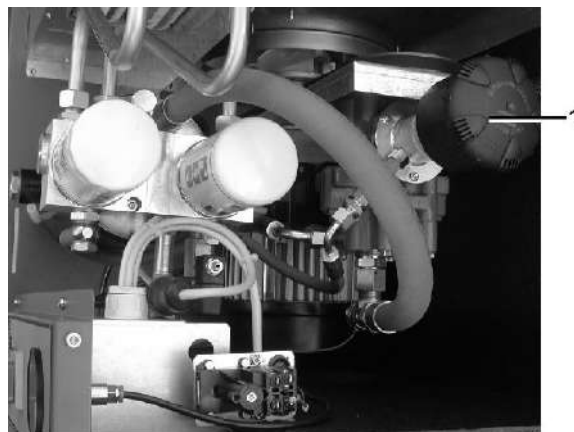
Used filters or any other used material (e.g. desiccant, lubricants, cleaning rags, machine parts, etc.) must be disposed of in an environmentally friendly and safe manner, and in line with the local recommendations and environmental legislation.

Electronic components are subject to the EU Directive 2012/19/EC for Waste Electrical and Electronic Equipment (WEEE). As such, these parts must not be disposed of at a municipal waste collection point. Refer to local regulations for directions on how to dispose of this product in an environmental friendly manner.

5 Adjustments and servicing procedures

5.1 Air filter

Changing the air filter



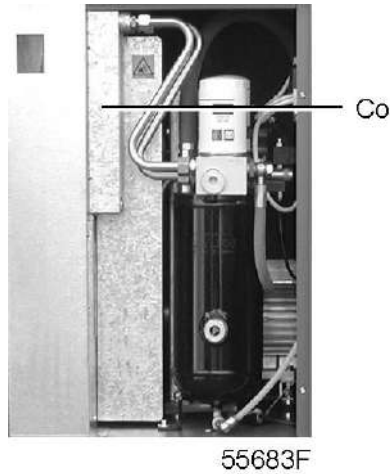
55665F

Air filter (1)

Procedure:

Step	Action
1	Stop the compressor, close the air outlet valve and switch off the voltage.
2	Remove the front panel and the top panel of the compressor housing.
3	Unscrew the filter cover (1) and remove the filter element. Discard the air filter element.
4	Fit the new element and screw on the filter cover.
5	Refit the top and front panels.

5.2 Coolers



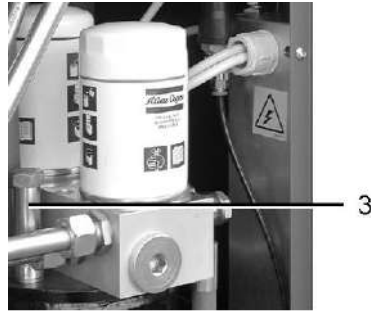
Oil cooler

Step	Action
1	Keep oil cooler (Co) clean to maintain the cooling efficiency.
2	Stop the compressor, close the air outlet valve and switch off the voltage. Remove any dirt from the cooler with a fibre brush. Never use a wire brush or metal objects. Then clean using an air jet.

5.3 Safety valve



Condensate drain valve on air receiver



55605F

Oil filler plug

Testing

The valve can be tested on a separate compressed air line.

Before removing the valve, stop the compressor (see section [Stopping](#)).

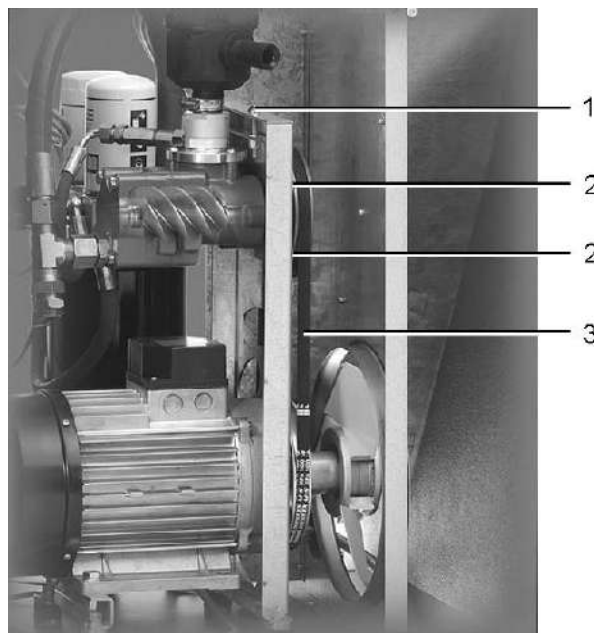
On a Full-Feature unit also stop the dryer.

Close the air outlet valve, switch off the voltage, open drain valves (4) (if applicable) and unscrew filler plug (3) one turn to permit any pressure in the system to escape.



If the valve does not open at the set pressure stamped on the valve, replace the valve. No adjustments are allowed. Never run the compressor without a safety valve.

5.4 Belts maintenance



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Read the warning in section [Preventive maintenance](#).

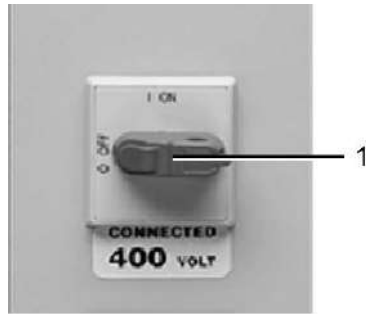
Belt tensioning procedure

Step	Action
1	Stop the compressor, close the air outlet valve and switch off the voltage. Full-Feature versions: also stop the dryer.
2	Remove the front panel of the compressor housing.
3	Remove the side, back and top panels of the compressor housing.
4	Loosen the 4 bolts (2) by one turn.
5	Adjust the belt tension by turning tensioning nut (1).
6	The tension is correct when a force of 50 N (11.25 lbf) applied at the midpoint of the belt causes a deflection of 6 mm (0.23 in).
7	Tighten bolts (2).
8	Refit the bodywork panels.

Belt replacement procedure

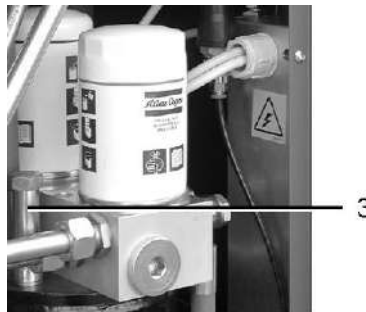
Step	Action
1	Stop the compressor, close the air outlet valve and switch off the voltage. Full-Feature versions: also stop the dryer.
2	Remove the front panel of the compressor housing.
3	Remove the side, back and top panels of the compressor housing.
4	Loosen the 4 bolts (2) by one turn.
5	Release the belt tension by loosening tensioning nut (1).
6	Remove the fan cowl.
7	Remove the belt via the fan cowl opening. Install the new belt via the same opening.
8	Tension belt (3) as described above.
9	Re-assemble the fan cowl.
10	Refit the bodywork panels.
11	Check the belt tension after 50 running hours.

6 Problem solving



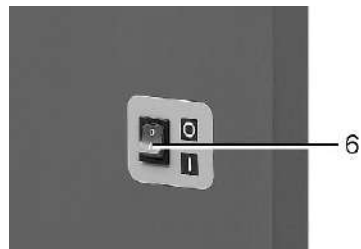
55600F

Main switch




55605F

Oil filler plug



55604F

Dryer on/off switch

	<p>Use only authorized parts. Any damage or malfunction caused by the use of unauthorized parts is not covered by Warranty or Product Liability. Apply all relevant Safety precautions during maintenance or repair.</p>
	<p>Stop the compressor before carrying out any maintenance or repair work on the compressor. See section Stopping for details. Move dryer on/off switch (6) to position 0. Wait until the compressor has stopped and switch off the voltage. Open the isolating switch to prevent an accidental start. Close air outlet valve (2) and depressurize the compressor by opening the oil filler plug (3) one turn. Open manual condensate drain valves (4 and/or 5).</p>
	<p>The air outlet valve (2) can be locked during maintenance or repair as follows:</p> <ul style="list-style-type: none"> • Close the valve. • Remove the screw fixing the handle with the wrench delivered with the compressor. • Lift the handle and turn it until the slot of the handle fits over the blocking edge on the valve body. • Fit the screw.

Faults and remedies

Compressor

	Condition	Fault	Remedy
1	The machine does not start	No power	Check power supply
		Fuse (F1) blown	Replace fuse
		The main motor thermal protection has tripped	Check and let motor cool down; to reset/restart, move compressor start/stop switch to 0, then to I
2	The machine does not start, high oil temperature lamp is on (temperature switch tripped)	Oil cooler is dirty	Clean cooler
		Ambient temperature too high	Improve ventilation in compressor room
		Oil level too low	Top up oil tank
3	The compressor does not reach working pressure	Blow-off solenoid valve (Y1) remains open	Check; replace valve if necessary
4	Excess oil consumption	Oil separator (OS) clogged	Replace oil separator
		Oil level too high	Drain to correct level

Air dryer

	Condition	Fault	Remedy
1	No compressed air passes through the dryer	Pipes are frozen inside	Hot-gas by-pass valve malfunctioning; consult Atlas Copco
2	Condensate in the piping	Insufficient condensate drain	Check the operation of timer (T)
		The dryer is working outside its rating	Check room temperature - air temperature at dryer. Clean the condenser and check operation of fan

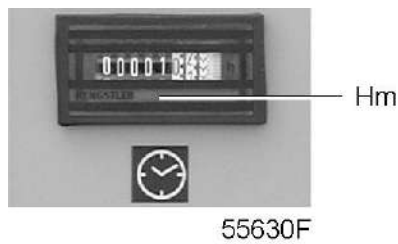
	Condition	Fault	Remedy
3	The compressor head is very hot (above 55°C / 131°F) - motor overload	The dryer is working outside its rating	Check room temperature - air temperature at dryer. Clean the condenser and check operation of fan
		Insufficient refrigerant in dryer	Have system checked for leaks or refilled
4	The motor is humming but does not start	Line voltage too low	Check power supply
		The machine was switched off and on again too rapidly (not enough time for the pressure equalization)	Wait a few minutes before starting the machine again

7 Technical data

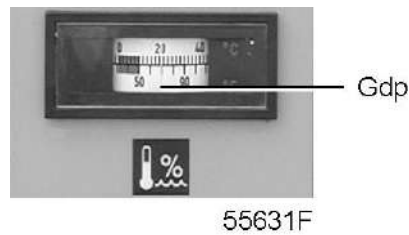
7.1 Readings on control panel



Pressure gauge



Hourmeter




Dewpoint indicator

Ref.	Name
Gpa	Air outlet pressure Reading: Modulates between preset unloading/stopping pressure and loading pressure
Gdp	Dew point temperature
Hm	Hour meter Reading: Total running time

7.2 Electric cable size

Attention

	Local regulations remain applicable if they are stricter than the values proposed below. The voltage drop must not exceed 5 % of the nominal voltage. It may be necessary to use cables of a larger size than those stated to comply with this requirement.
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		G 2	G 3	G 4	G 5
Frequency (Hz)	Voltage (V)	Cable size	Cable size	Cable size	Cable size
IEC					
50	400 - 3	1 mm ²	1 mm ²	1.5 mm ²	1.5 mm ²

7.3 Settings for overload relay and fuses

G 2 and G 3

Frequency (Hz)	Voltage (V)	Overload relay (IG), G 2 (A)	Circuit breaker, G 2 (A) (see note 1)		Overload relay (IG), G 3 (A)	Circuit breaker, G 3 (A) (see note 1)		Circuit breaker, dryer supply (A) (see note 1)	
			Max. capacity	Setting		Max capacity	Setting	Max capacity	Setting
IEC	DOL								
50	400	8	10	8	10	10	10	6.3	2

G 4 and G 5

Frequency (Hz)	Voltage (V)	Overload relay (IG), G 4 (A)	Circuit breaker, G 4 (A) (see note 1)		Overload relay (IG), G 5 (A)	Circuit breaker, G 5 (A) (see note 1)		Circuit breaker, dryer supply (A) (see note 1)	
			Max. capacity	Setting		Max capacity	Setting	Max capacity	Setting
IEC	DOL								
50	400	11	16	11	-	-	-	6.3	2
IEC	Y-D								
50	400	11	16	11	13.5	16	13.5	6.3	2

7.4 Reference conditions and limitations

Reference conditions

Air inlet pressure (absolute)	bar	1
Air inlet temperature	°C	20
Relative humidity	%	0
Working pressure	bar(e)	See Compressor data

Limitations

Maximum working pressure	bar(e)	See Compressor data
Minimum working pressure	bar(e)	4
Minimum ambient temperature	°C	0

7.5 Compressor data

50 Hz 10 bar (under reference conditions)

Compressor type		G 2	G 3	G 4	G 5
Frequency	Hz	50	50	50	50
Maximum (unloading) pressure, Pack	bar(e)	10	10	10	10
Maximum (unloading) pressure, Full-Feature	bar(e)	9.75	9.75	9.75	9.75
Nominal working pressure	bar(e)	9.5	9.5	9.5	9.5
Pressure drop over dryer	bar(e)	0.15	0.15	0.15	0.15
Motor shaft speed	rpm	3000	3000	3000	3000
Set-point, thermostatic valve	°C	71	71	71	71
Temperature of air leaving receiver (approx.), Pack	°C	33	33	33	33
Pressure dew-point, Full-Feature	°C	3	3	3	3
Power input, Pack at maximum working pressure	kW	3.8	4.1	4.9	6.6
Power input, Full-Feature at maximum working pressure	kW	4.1	4.4	5.2	6.9
Power consumption, dryer at full load	kW	0.3	0.3	0.3	0.3
Power consumption, dryer at no load	kW	0.2	0.2	0.2	0.2
Refrigerant type		R134a	R134a	R134a	R134a
Total amount, refrigerant	kg	0.4	0.4	0.4	0.4
Oil capacity	l	2.5	2.5	2.5	2.5

Compressor type		G 2	G 3	G 4	G 5
Sound pressure level (according to ISO 2151 (2004))	dB(A)	61	61	62	64

8 Instructions for use

Oil separator vessel

1	The vessel can contain pressurized air. This can be potentially dangerous if the equipment is misused.
2	This vessel must only be used as a compressed air/oil separator tank and must be operated within the limits specified on the data plate.
3	No alterations must be made to this vessel by welding, drilling or other mechanical methods without the written permission of the manufacturer.
4	The pressure and temperature of this vessel must be clearly indicated.
5	The safety valve must correspond with pressure surges of 1.1 times the maximum allowable operating pressure. It should guarantee that the pressure will not permanently exceed the maximum allowable operating pressure of the vessel.
6	Use only oil as specified by the manufacturer.
7	In case of misuse of the units (frequent operation with too low oil temperature or long interval of shut down), a certain amount of condensate can gather in the oil separator vessel which must be properly drained. To do so, disconnect the unit from the power line, wait till it is cooled down and depressurized and drain the water by the oil drain valve, positioned at the bottom side of the oil separator vessel. Local legislation may require an periodic inspection.

Air receiver (on tank-mounted units)

1	Corrosion must be prevented: depending on the conditions of use, condensate may accumulate inside the tank and must be drained every day. This may be done manually by opening the drain valve, or by means of the automatic drain, if fitted to the tank. Nevertheless, a weekly check of correct functioning of the automatic valve is needed. This has to be done by opening the manual drain valve and check for condensate. Verify that no rust obstructions affect the drain system.
2	Yearly service inspection of the air receiver is needed, as internal corrosion can reduce the steel wall thickness with the consequent risk of bursting. Local rules need to be respected, if applicable. The use of the air receiver is forbidden once the wall thickness reaches the minimum value as indicated in the service manual of the air receiver (part of the documentation delivered with the unit).
3	Lifetime of the air receiver mainly depends on the working environment. Installing the compressor in a dirty and corrosive environment is not allowed, as this can reduce the vessel lifetime dramatically.
4	Do not anchor the vessel or attached components directly to the ground or fixed structures. Fit the pressure vessel with vibration dampers to avoid possible fatigue failure caused by vibration of the vessel during use.
5	Use the vessel within the pressure and temperature limits stated on the nameplate and the testing report.
6	No alterations must be made to this vessel by welding, drilling or other mechanical methods.

9 Guidelines for inspection

Guidelines

On the Declaration of Conformity / Declaration by the Manufacturer, the harmonised and/or other standards that have been used for the design are shown and/or referred to.

The Declaration of Conformity / Declaration by the Manufacturer is part of the documentation that is supplied with this compressor.

Local legal requirements and/or use outside the limits and/or conditions as specified by the manufacturer may require other inspection periods as mentioned below.

10 Pressure equipment directives

Components subject to 97/23/EC Pressure Equipment Directive

Components subject to 97/23/EC Pressure Equipment Directive greater than or equal to category II:

Safety valves.

See the spare parts book for part numbers.

Overall rating

The compressors conform to PED smaller than category I.

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