

CustomDesign Oil-free Air

Project: 998935

Customer: AIR SEP, USA

ZT 55

Instruction book

Atlas Copco

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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 Safety precautions

1.1 Safety icons

Explanation


	Danger for life
	Warning
	Important note

1.2 Safety precautions, general

General precautions

1. The operator must employ safe working practices and observe all related work safety requirements and regulations.
2. If any of the following statements does not comply with the applicable legislation, the stricter of the two shall apply.
3. Installation, operation, maintenance and repair work must only be performed by authorized, trained, specialized personnel.
4. The compressor is not considered capable of producing air of breathing quality. For air of breathing quality, the compressed air must be adequately purified according to the applicable legislation and standards.
5. Before any maintenance, repair work, adjustment or any other non-routine checks, stop the compressor, press the emergency stop button, switch off the voltage and depressurize the compressor. In addition, the power isolating switch must be opened and locked.
6. Never play with compressed air. Do not apply the air to your skin or direct an air stream at people. Never use the air to clean dirt from your clothes. When using the air to clean equipment, do so with extreme caution and wear eye protection.
7. The owner is responsible for maintaining the unit in safe operating condition. Parts and accessories shall be replaced if unsuitable for safe operation.
8. It is not allowed to walk or stand on the roof of the compressor canopy.

1.3 Safety precautions during installation

	All responsibility for any damage or injury resulting from neglecting these precautions, or non-observance of the normal caution and care required for installation, operation, maintenance and repair, even if not expressly stated, will be disclaimed by the manufacturer.
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Precautions during installation

1. The machine must only be lifted using suitable equipment in accordance with the applicable safety regulations. Loose or pivoting parts must be securely fastened before lifting. It is strictly forbidden to dwell or stay in the risk zone under a lifted load. Lifting acceleration and deceleration must be kept within safe limits. Wear a safety helmet when working in the area of overhead or lifting equipment.
2. Place the machine where the ambient air is as cool and clean as possible. If necessary, install a suction duct. Never obstruct the air inlet. Care must be taken to minimize the entry of moisture at the inlet air.
3. Any blanking flanges, plugs, caps and desiccant bags must be removed before connecting the pipes.
4. Air hoses must be of correct size and suitable for the working pressure. Never use frayed, damaged or worn hoses. Distribution pipes and connections must be of the correct size and suitable for the working pressure.
5. The aspirated air must be free of flammable fumes, vapours and particles, e.g. paint solvents, that can lead to internal fire or explosion.
6. Arrange the air intake so that loose clothing worn by people cannot be sucked in.
7. Ensure that the discharge pipe from the compressor to the aftercooler or air net is free to expand under heat and that it is not in contact with or close to flammable materials.
8. No external force may be exerted on the air outlet valve; the connected pipe must be free of strain.
9. If remote control is installed, the machine must bear a clear sign stating: DANGER: This machine is remotely controlled and may start without warning.
The operator has to make sure that the machine is stopped and that the isolating switch is open and locked before any maintenance or repair. As a further safeguard, persons switching on remotely controlled machines shall take adequate precautions to ensure that there is no one checking or working on the machine. To this end, a suitable notice shall be affixed to the start equipment.
10. Air-cooled machines must be installed in such a way that an adequate flow of cooling air is available and that the exhausted air does not recirculate to the compressor air inlet or cooling air inlet.
11. The electrical connections must correspond to the applicable codes. The machines must be earthed and protected against short circuits by fuses in all phases. A lockable power isolating switch must be installed near the compressor.
12. On machines with automatic start/stop system or if the automatic restart function after voltage failure is activated, a sign stating "This machine may start without warning" must be affixed near the instrument panel.
13. In multiple compressor systems, manual valves must be installed to isolate each compressor. Non-return valves (check valves) must not be relied upon for isolating pressure systems.
14. Never remove or tamper with the safety devices, guards or insulation fitted on the machine. Every pressure vessel or auxiliary installed outside the machine to contain air above atmospheric pressure must be protected by a pressure-relieving device or devices as required.
15. Piping or other parts with a temperature in excess of 80°C (176°F) and which may be accidentally touched by personnel in normal operation must be guarded or insulated. Other high-temperature piping must be clearly marked.
16. For water-cooled machines, the cooling water system installed outside the machine has to be protected by a safety device with set pressure according to the maximum cooling water inlet pressure.
17. If the ground is not level or can be subject to variable inclination, consult the manufacturer.



Also consult following safety precautions: [Safety precautions during operation](#) and [Safety precautions during maintenance](#).

These precautions apply to machinery processing or consuming air or inert gas.

Processing of any other gas requires additional safety precautions typical to the application which are not included herein.

Some precautions are general and cover several machine types and equipment; hence some statements may not apply to your machine.

1.4 Safety precautions during operation



All responsibility for any damage or injury resulting from neglecting these precautions, or non-observance of the normal caution and care required for installation, operation, maintenance and repair, even if not expressly stated, will be disclaimed by the manufacturer.

Precautions during operation

1. Never touch any piping or components of the compressor during operation.
2. Use only the correct type and size of hose end fittings and connections. When blowing through a hose or air line, ensure that the open end is held securely. A free end will whip and may cause injury. Make sure that a hose is fully depressurized before disconnecting it.
3. Persons switching on remotely controlled machines shall take adequate precautions to ensure that there is no one checking or working on the machine. To this end, a suitable notice shall be affixed to the remote start equipment.
4. Never operate the machine when there is a possibility of taking in flammable or toxic fumes, vapors or particles.
5. Never operate the machine below or in excess of its limit ratings.
6. Keep all bodywork doors shut during operation. The doors may be opened for short periods only, e.g. to carry out routine checks. Wear ear protectors when opening a door.
On compressors without bodywork, wear ear protection in the vicinity of the machine.
7. People staying in environments or rooms where the sound pressure level reaches or exceeds 80 dB(A) shall wear ear protectors.
8. Periodically check that:
 - All guards are in place and securely fastened
 - All hoses and/or pipes inside the machine are in good condition, secure and not rubbing
 - There are no leaks
 - All fasteners are tight
 - All electrical leads are secure and in good order
 - Safety valves and other pressure-relief devices are not obstructed by dirt or paint
 - Air outlet valve and air net, i.e. pipes, couplings, manifolds, valves, hoses, etc. are in good repair, free of wear or abuse
9. If warm cooling air from compressors is used in air heating systems, e.g. to warm up a workroom, take precautions against air pollution and possible contamination of the breathing air.
10. Do not remove any of, or tamper with, the sound-damping material.
11. Never remove or tamper with the safety devices, guards or insulations fitted on the machine. Every pressure vessel or auxiliary installed outside the machine to contain air above atmospheric pressure shall be protected by a pressure-relieving device or devices as required.



Also consult following safety precautions: [Safety precautions during installation](#) and [Safety precautions during maintenance](#).

These precautions apply to machinery processing or consuming air or inert gas. Processing of any other gas requires additional safety precautions typical to the application which are not included herein.

Some precautions are general and cover several machine types and equipment; hence some statements may not apply to your machine.

1.5 Safety precautions during maintenance or repair



All responsibility for any damage or injury resulting from neglecting these precautions, or non-observance of the normal caution and care required for installation, operation, maintenance and repair, even if not expressly stated, will be disclaimed by the manufacturer.

Precautions during maintenance or repair

1. Always use the correct safety equipment (such as safety glasses, gloves, safety shoes, etc.).
2. Use only the correct tools for maintenance and repair work.
3. Use only genuine spare parts.
4. All maintenance work shall only be undertaken when the machine has cooled down.
5. A warning sign bearing a legend such as "work in progress; do not start" shall be attached to the starting equipment.
6. Persons switching on remotely controlled machines shall take adequate precautions to ensure that there is no one checking or working on the machine. To this end, a suitable notice shall be affixed to the remote start equipment.
7. Close the compressor air outlet valve before connecting or disconnecting a pipe.
8. Before removing any pressurized component, effectively isolate the machine from all sources of pressure and relieve the entire system of pressure.
9. Never use flammable solvents or carbon tetrachloride for cleaning parts. Take safety precautions against toxic vapours of cleaning liquids.
10. Scrupulously observe cleanliness during maintenance and repair. Keep dirt away by covering the parts and exposed openings with a clean cloth, paper or tape.
11. Never weld or perform any operation involving heat near the oil system. Oil tanks must be completely purged, e.g. by steam-cleaning, before carrying out such operations. Never weld on, or in any way modify, pressure vessels.
12. Whenever there is an indication or any suspicion that an internal part of a machine is overheated, the machine shall be stopped but no inspection covers shall be opened before sufficient cooling time has elapsed; this to avoid the risk of spontaneous ignition of the oil vapour when air is admitted.
13. Never use a light source with open flame for inspecting the interior of a machine, pressure vessel, etc.
14. Make sure that no tools, loose parts or rags are left in or on the machine.
15. All regulating and safety devices shall be maintained with due care to ensure that they function properly. They may not be put out of action.
16. Before clearing the machine for use after maintenance or overhaul, check that operating pressures, temperatures and time settings are correct. Check that all control and shut-down devices are fitted and that they function correctly. If removed, check that the coupling guard of the compressor drive shaft has been reinstalled.
17. Every time the separator element is renewed, examine the discharge pipe and the inside of the oil separator vessel for carbon deposits; if excessive, the deposits should be removed.
18. Protect the motor, air filter, electrical and regulating components, etc. to prevent moisture from entering them, e.g. when steam-cleaning.
19. Make sure that all sound-damping material and vibration dampers, e.g. damping material on the bodywork and in the air inlet and outlet systems of the compressor, is in good condition. If damaged, replace it by genuine material from the manufacturer to prevent the sound pressure level from increasing.
20. Never use caustic solvents which can damage materials of the air net, e.g. polycarbonate bowls.
21. **The following safety precautions are stressed when handling refrigerant:**
 - Never inhale refrigerant vapours. Check that the working area is adequately ventilated; if required, use breathing protection.

- Always wear special gloves. In case of refrigerant contact with the skin, rinse the skin with water. If liquid refrigerant contacts the skin through clothing, never tear off or remove the latter; flush abundantly with fresh water over the clothing until all refrigerant is flushed away; then seek medical first aid.



Also consult following safety precautions: [Safety precautions during installation](#) and [Safety precautions during operation](#).

These precautions apply to machinery processing or consuming air or inert gas.

Processing of any other gas requires additional safety precautions typical to the application which are not included herein.

Some precautions are general and cover several machine types and equipment; hence some statements may not apply to your machine.

2 General description

2.1 Introduction

Description

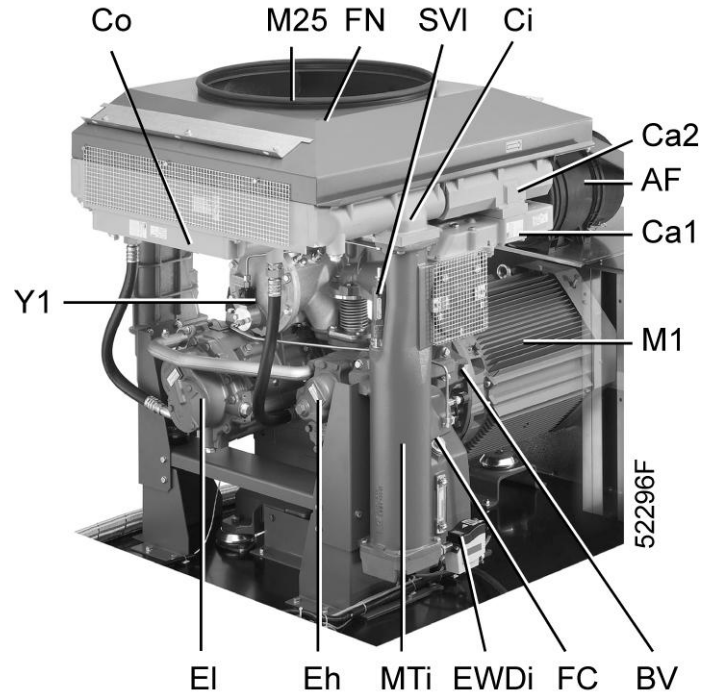
This unit is a two-stage screw compressor driven by an electric motor. The compressor delivers oil-free, pulsation-free air.

ZT compressors are air-cooled.

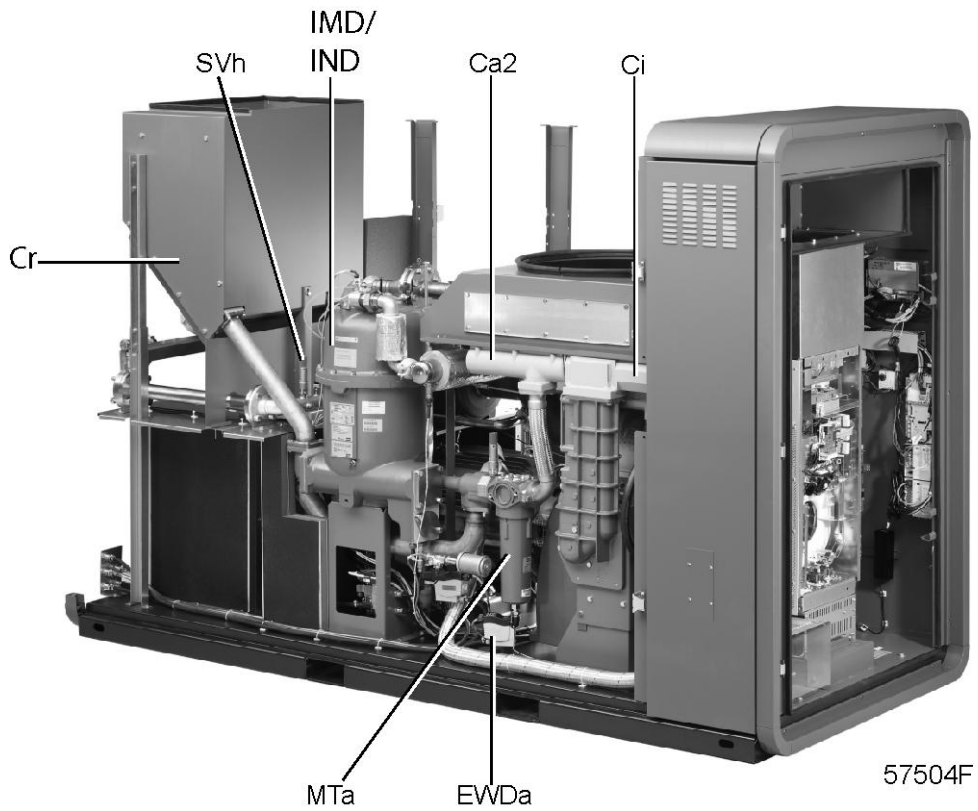
Views of ZT



General view of ZT 55 up to ZT 90 Pack



General view



Rear view

Main components

Ref	Name
AF	Air filter
BV	By-pass valve, oil cooler
Ca1	Pre-aftercooler
Ca2	Aftercooler
Ci	Intercooler
Co	Oil cooler
Eh	High-pressure compressor element
Ei	Low-pressure compressor element
EWDa	Electronic water drain, aftercooler
EWDi	Electronic water drain, intercooler
FC	Oil filler cap
FN	Cooling fan
M1	Drive motor
M25	Fan motor
MTi	Moisture trap, intercooler
SVh	High-pressure safety valve
SVi	Low-pressure safety valve
TV	Load/no-load valve
Y1	Loading solenoid valve

Connections

ANSI flanges

Motor temperature protection

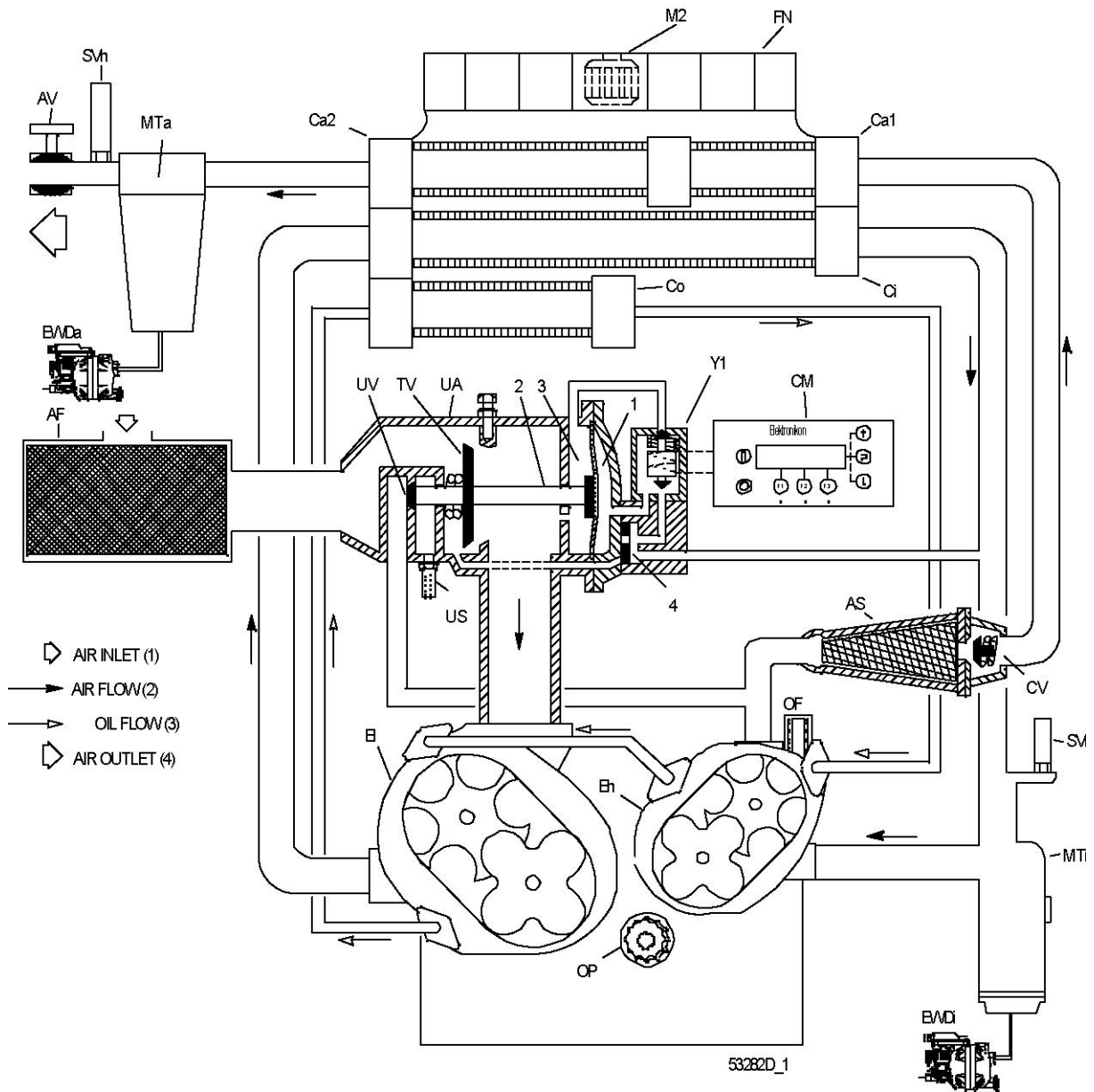
Thermistors are embedded in the windings of the drive motor to warn the operator if the temperature becomes too high and to shut down the compressor, thereby protecting the motor from overheating.

Anti-condensation heaters

Electric heaters are installed in the motor windings and connected to the compressor cubicle. When the compressor is stopped, the heaters are automatically switched on. The heaters in the motor will prevent condensation during stand-still.

2.2 Air flow

Flow diagram, ZT



Ref	Name
(1)	Air inlet
(2)	Air flow
(3)	Oil flow
(4)	Air outlet

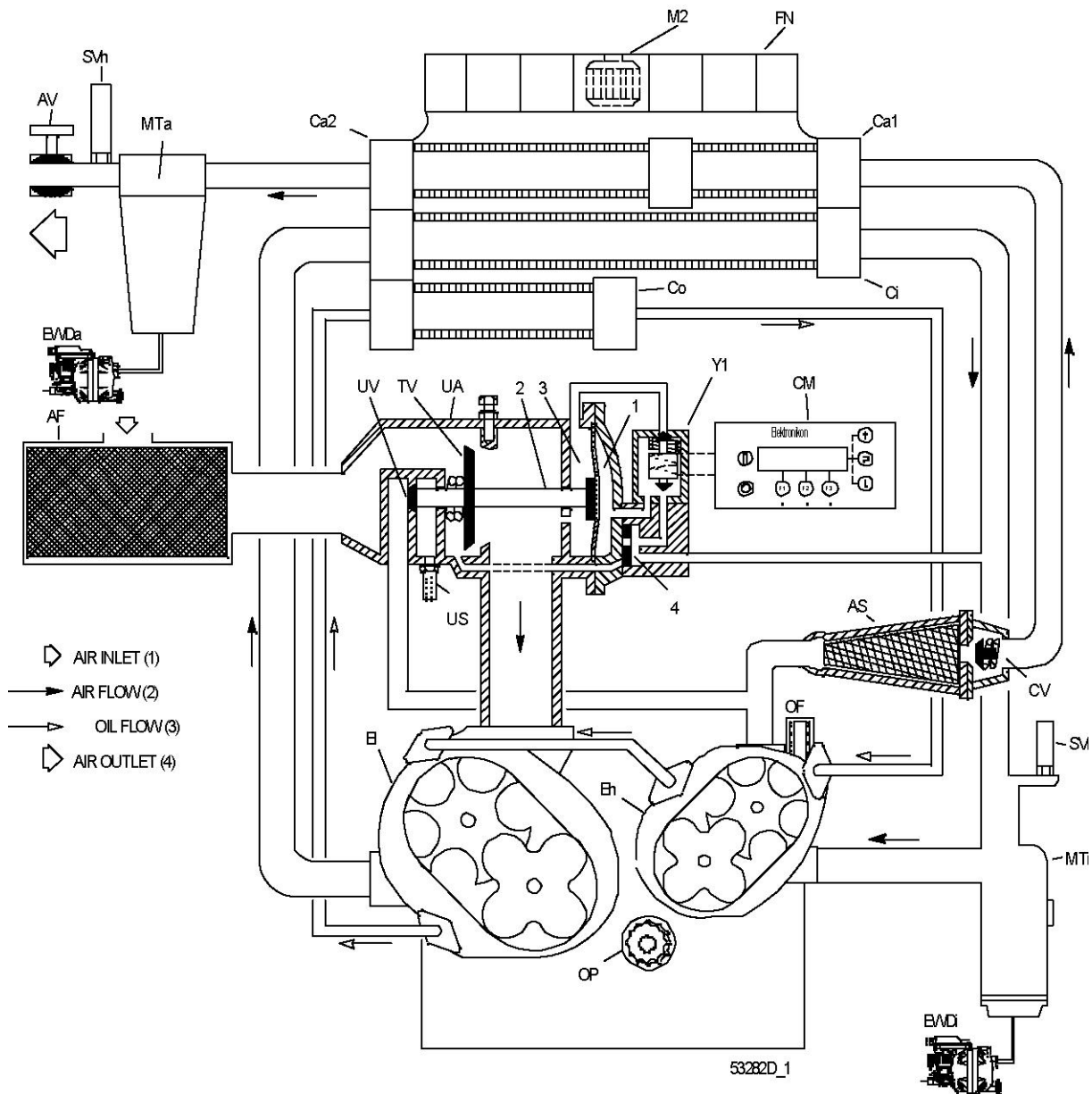
Air flow

Air drawn through filter (AF) is compressed in low-pressure compressor element (E1) and discharged to intercooler (Ci). The cooled air is further compressed in high-pressure compressor element (Eh) and discharged through silencer (AS) and aftercoolers. A check valve (CV) is provided downstream of the silencer.

The compressed air leaves the compressor via the air outlet.

2.3 Condensate drain system

Flow diagram, ZT

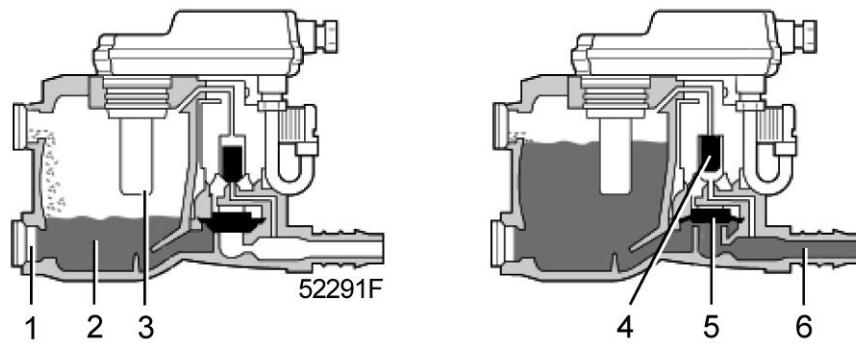


Explanation of arrows

Ref	Name
(1)	Air inlet
(2)	Air flow
(3)	Oil flow
(4)	Air outlet

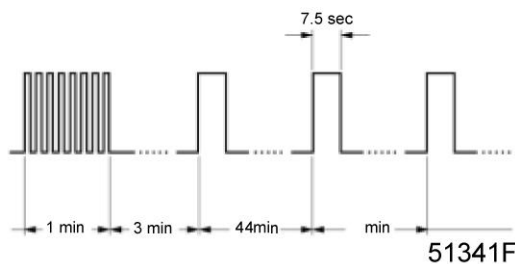
Description

Two condensate traps are installed: one downstream of the intercooler (MTi) to prevent condensate from entering compressor element (Eh) and one downstream of the aftercooler (MTa) to prevent condensate from entering the air outlet pipe. The condensate traps are connected to Electronic Water Drains (EWDi and EWDa respectively).



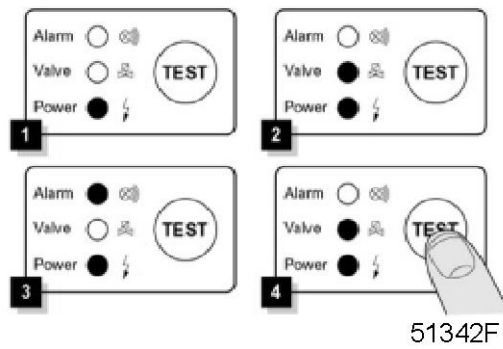
The condensate enters the electronic water drain via inlet (1) and accumulates in collector (2). A capacitive sensor (3) continuously measures the liquid level. As soon as the collector is filled up to a certain level, pilot valve (4) is activated and diaphragm (5) opens outlet (6), discharging the condensate. When the collector has been emptied, the outlet closes quickly without wasting compressed air.

When the controller registers a malfunction, the red alarm LED starts flashing and the electronic drain valve will automatically change to the alarm mode, opening and closing the valve according to a sequence as shown below.



This condition continues until the fault is remedied. If the fault is not remedied automatically, maintenance is required.

Testing the Electronic water drain



Functional test

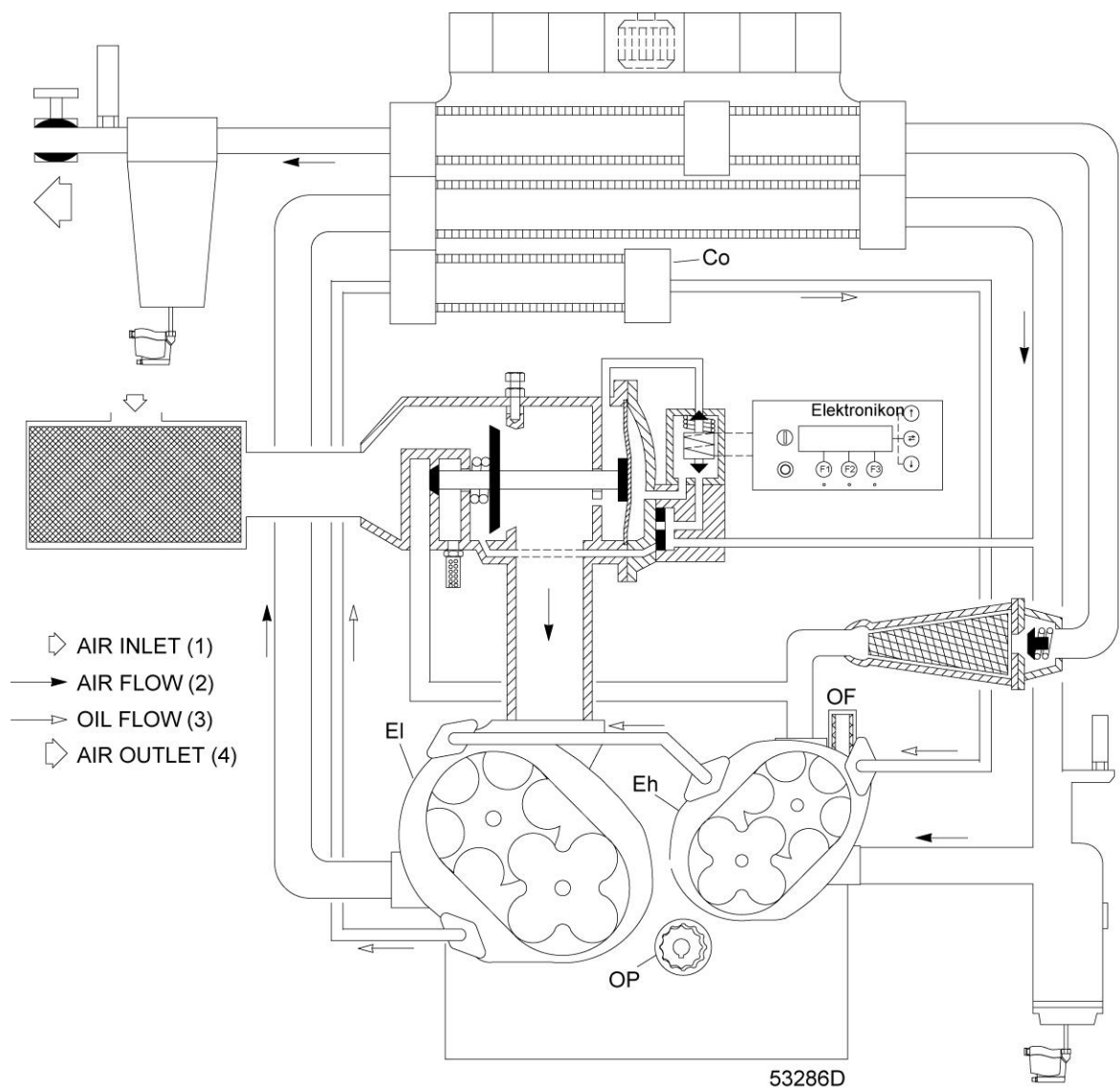
Briefly press the TEST button and check that the valve opens for condensate discharge.

Checking the alarm signal

- Press the test button for at least 1 minute.
- Check that the alarm LED flashes.
- Release the test button.

2.4 Oil system

Flow diagram, ZT



Explanation of arrows

Ref	Name
(1)	Air inlet
(2)	Air flow
(3)	Oil flow
(4)	Air outlet

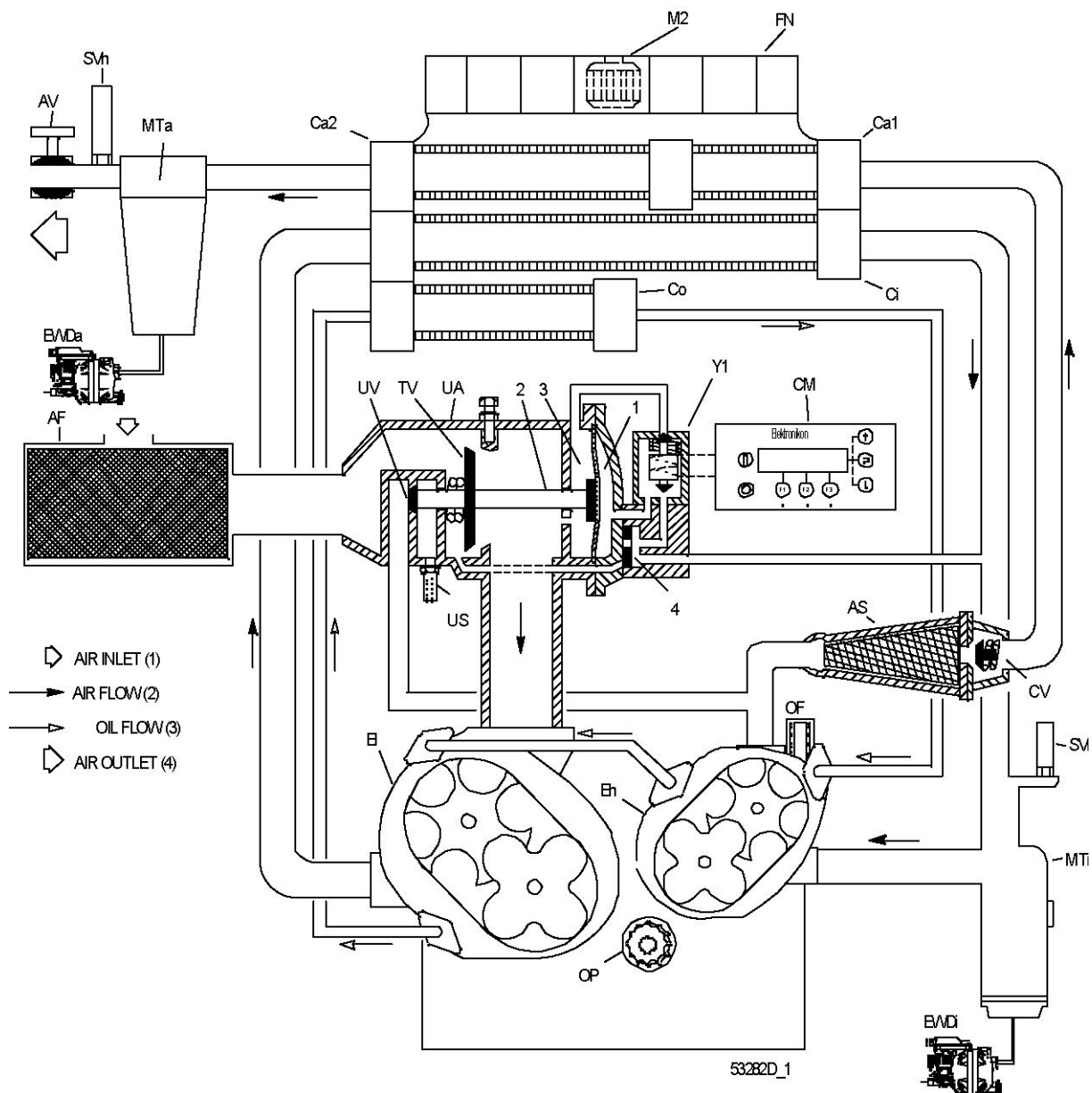
Oil system

On ZT compressors, oil is circulated by pump (OP) from the sump of the gear casing to cooler (Co). Then, the oil flows through the cooling jackets of compressor elements (E1 and E2). From there, the oil flows through filter (OF) towards the bearings and timing gears.

Valve (BV) opens if the oil pressure should rise above a given value.

2.5 Cooling system

Flow diagram, ZT



Explanation of arrows

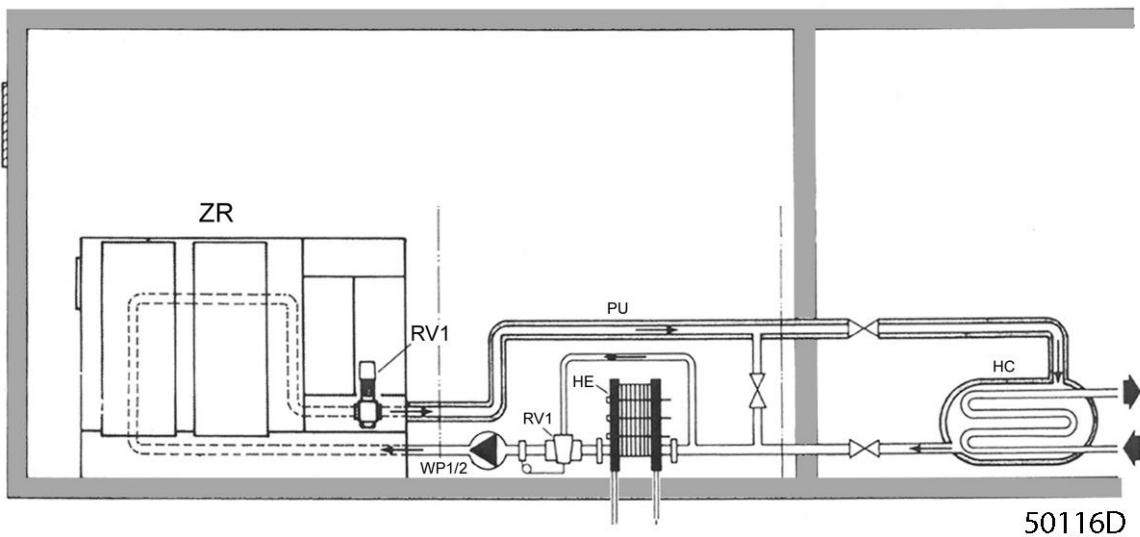
Ref	Name
(1)	Air inlet
(2)	Air flow
(3)	Oil flow
(4)	Air outlet

Cooling system, ZT compressors

The compressors are provided with an air-cooled oil cooler (Co), intercooler (Ci), pre-aftercooler (Ca1) and aftercooler (Ca2). An electric motor-driven fan (FN) generates the cooling air.

2.6 Energy recovery

General



The system recovers the major part of the compression heat. The percentage of shaft input power available for recovery is between 80 and 95, depending on the operating conditions.

If an MD dryer is installed downstream of the compressor, this percentage is reduced to approx. 70 of the shaft input instead of approx. 90, as part of the heat in the compressed air is used for regeneration in the drying process.

A complete energy recovery system includes:

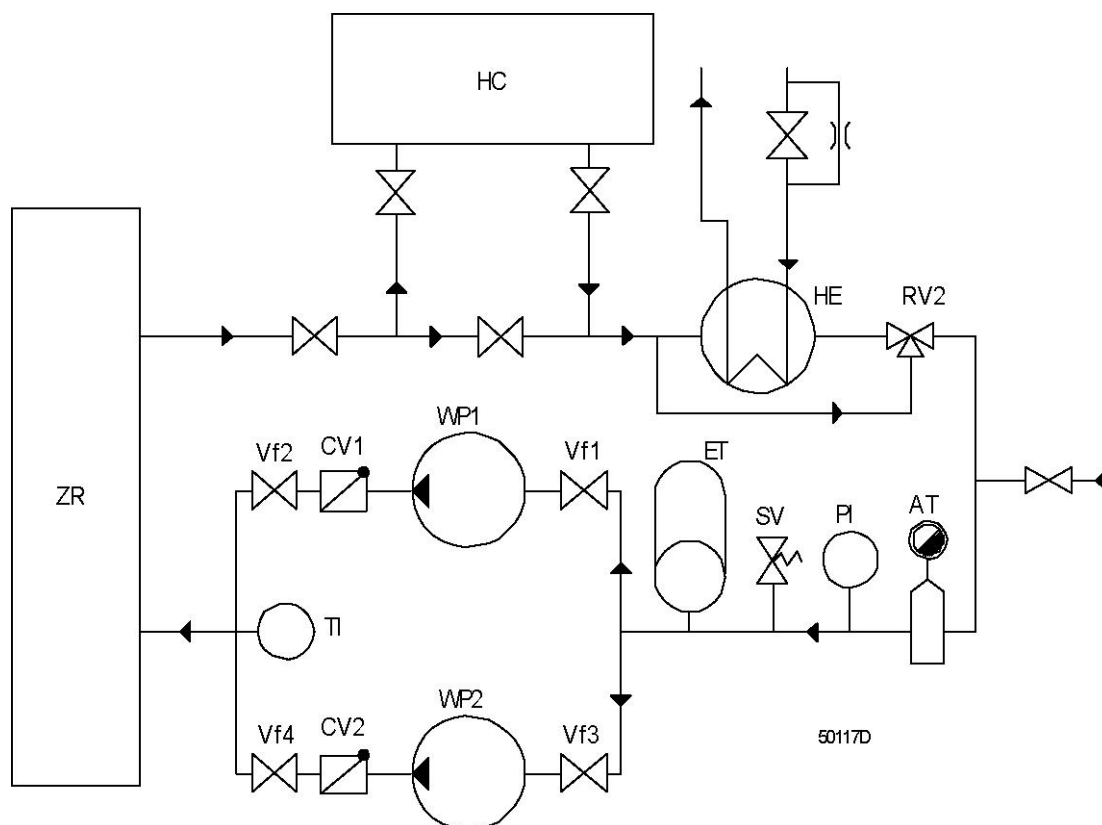
- Compressor with modified cooling system (ZR)
- A pump unit (PU) to transfer the recovered energy from the compressor cooling system to the heat consumer (HC)
- The heat consumer (HC), i.e. the equipment to transfer the energy to the industrial process

Modified cooling water system

The compressor cooling system has been modified to achieve both high cooling water temperatures and sufficient cooling for the compressor.

The cooling water enters the oil cooler and then flows through the high-pressure compressor element, the low-pressure compressor element and finally the intercooler and the aftercooler. This sequence ensures optimal temperature differences with relation to the heat transfer in the individual components.

Pump unit



Atlas Copco supplies pump units to transfer the energy recovered from the compressor to the heat consumer (HC). The pump unit constitutes a closed water circuit with the compressor cooling system.

Two water pumps (WP1/2) are fitted. One pump circulates the hot cooling water from the compressor through the heat consumer and back to the compressor. The other is a stand-by pump. Check valves (CV1/2) at the delivery side of the pumps prevent backflow of water in the stand-by pump. The pump unit is fitted with a make-up water connection, an air trap with automatic de-aeration device (AT), a pressure and temperature gauge (PI and TI), a safety valve (SV) and an expansion tank (ET).

Cooling water requirements

Closed recirculating water systems minimise make-up water requirements. Therefore, it is economically feasible to use softened water to eliminate the problem of scaling deposits.

Corrosion control is important. The best results are obtained by adding corrosion inhibitors as used in engine cooling systems.

Using anti-freeze products is an alternative solution to avoid problems, e.g. adding 20 % to 30 % ethylene-glycol based anti-freeze to the tap water.

For open cooling water systems (e.g. boiler feed water preparation), consult the Atlas Copco Customer Centre to avoid problems related to deposit control, corrosion control and microbiological growth control.

Water flow regulation through heat exchangers

Depending on the amount of energy transferred in the heat consumer (HC), the heat exchanger (HE) of the pump unit is completely or partly by-passed by means of a thermostatic valve (RV2). The valve is normally adjusted to achieve a cooling water temperature of 40 °C (corresponding to the maximum allowable temperature at the compressor inlet). It is advisable to adjust the setting of the valve as close as possible to the temperature of the cooling water returning from the heat consumer (HC).

Depending on the amount of energy transferred in the heat consumer (HC), the heat exchanger (HE) of the pump unit is completely or partly by-passed by means of a thermostatic valve (RV2). The valve is normally adjusted to achieve a cooling water temperature of 104 °F (corresponding to the maximum allowable temperature at the compressor inlet). It is advisable to adjust the setting of the valve as close as possible to the temperature of the cooling water returning from the heat consumer (HC).

Sufficient low-temperature cooling water must be available for the heat exchanger to achieve a water temperature that does not exceed 40 °C/104 °F.

Electrical system

The pumps (WP1 and WP2) are driven by an electric motor. Each motor is equipped with manual starting equipment including a circuit breaker.

The first time it is started, check that the rotation direction matches the direction indicated by the arrows on the motor flanges. If necessary, stop the unit, switch off the voltage and reverse two incoming electric lines.

Important remarks

Compressed air quality and reliability of any compressor, dryer or other equipment should never be made subordinate to the energy recovery system. In some cases, especially installations where air dryers are installed, an additional aftercooler is required to reduce the compressor air outlet temperature to a level at which the dryers operate at maximum efficiency. This aftercooler and the dryer (if water-cooled) need to be cooled separately by low-temperature water. Consult the Atlas Copco Customer Centre.

The general temperature level of compressors with a modified cooling system for energy recovery is approx. 20 to 25 °C (68 to 77 °F) higher than the level of compressors with a standard cooling system, resulting in a slight decrease in free air delivery and a slight increase in shaft power.

In case the compressors operate in high ambient temperatures and with high water inlet temperatures, the maximum working pressure is 0.5 bar (7.25 psi) lower than for standard compressors. Consult the Atlas Copco Customer Centre.

Settings - limitations

Item	Setting
Maximum cooling water temperature at compressor outlet	90 °C (85 °C if MD dryer is fitted) 194 °F (185 °F if MD dryer is fitted)
Maximum cooling water temperature at compressor inlet	40 °C 104 °F
Safety valve opening pressure	2.5 bar(e) 36.3 psig

2.7 Electrical system

Main components

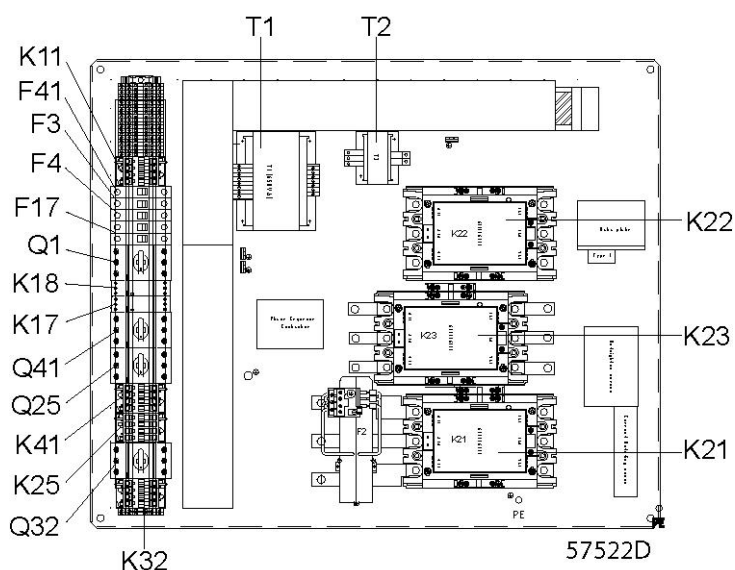
The electrical system mainly includes:

- Elektronikon® regulator
- Emergency stop button (S2)
- Electric cabinet
- Drive motor (M1)
- Pressure and temperature sensors

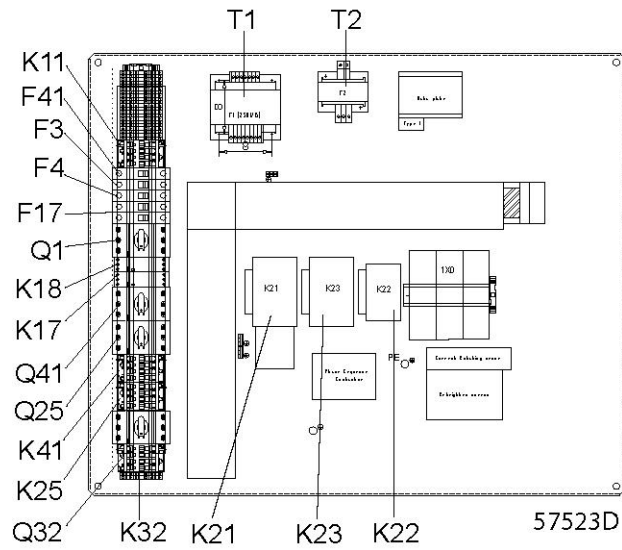
Elektronikon regulator (1) and emergency stop button (S2)



Electric cabinet

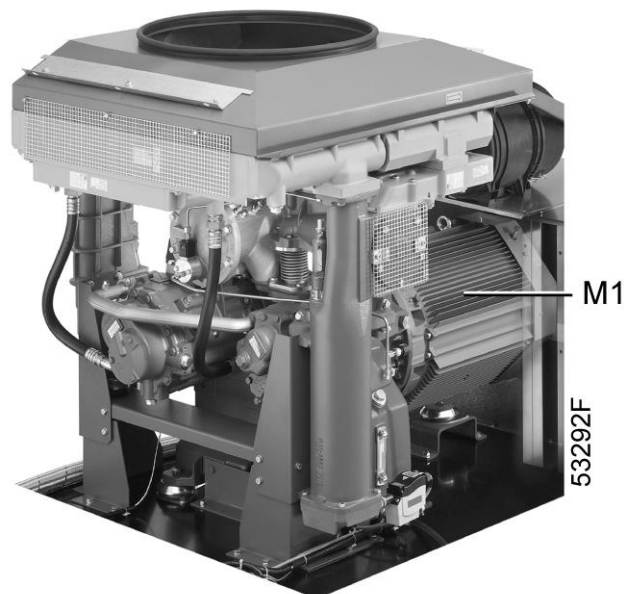


Typical example



Typical example

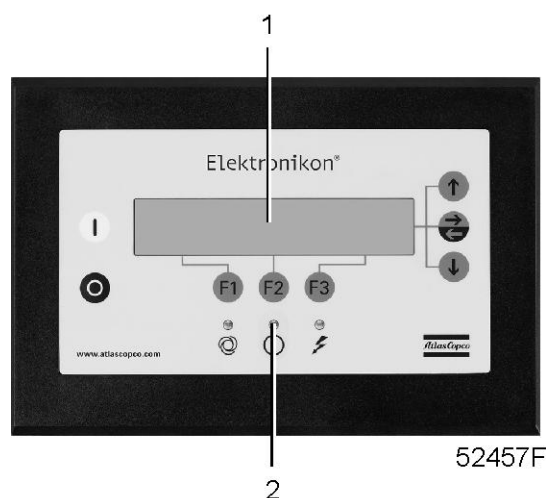
Drive motor (M1)



3 Elektronikon regulator

3.1 Elektronikon® regulator

Control panel



Introduction

In general, the Elektronikon regulator has following functions:

- Controlling the compressor
- Protecting the compressor
- Monitoring components subject to service
- Automatic restart after voltage failure (made inactive)

Automatic control of compressor operation

The regulator maintains the net pressure between programmable limits by automatically loading and unloading the compressor. A number of programmable settings, e.g. the unloading and loading pressures, the minimum stop time and the maximum number of motor starts are taken into account.

The regulator stops the compressor whenever possible to reduce the power consumption and restarts it automatically when the net pressure decreases. In case the expected unloading period is too short, the compressor is kept running to prevent too short standstill periods.



A number of time-based automatic start/stop commands may be programmed. Take into account that a start command will be executed (if programmed and activated), even after manually stopping the compressor.

Protecting the compressor

Shut-down

Several sensors are provided on the compressor. If one of these measurements exceeds the programmed shut-down level, the compressor will be stopped. This will be indicated on display (1) and general alarm LED (2) will blink.

Remedy the trouble and reset the message. See also the [Status data menu](#).



Before remedying, consult the [Safety precautions](#).

Shut-down warning

A shut-down warning level is a programmable level below the shut-down level.

If one of the measurements exceeds the programmed shut-down warning level, a message will appear on display (1) and general alarm LED (2) will light up, to warn the operator that the shut-down warning level is exceeded.

The message disappears as soon as the warning condition disappears.

Service warning

A number of service operations are grouped (called Level A, B, C, ...). Each level has a programmed time interval. If a time interval is exceeded, a message will appear on display (1) to warn the operator to carry out the service actions belonging to that level.

Automatic restart after voltage failure

The regulator has a built-in function to automatically restart the compressor if the voltage is restored after voltage failure. For compressors leaving the factory, this function is made inactive. If desired, the function can be activated. Consult the Atlas Copco Customer Centre.

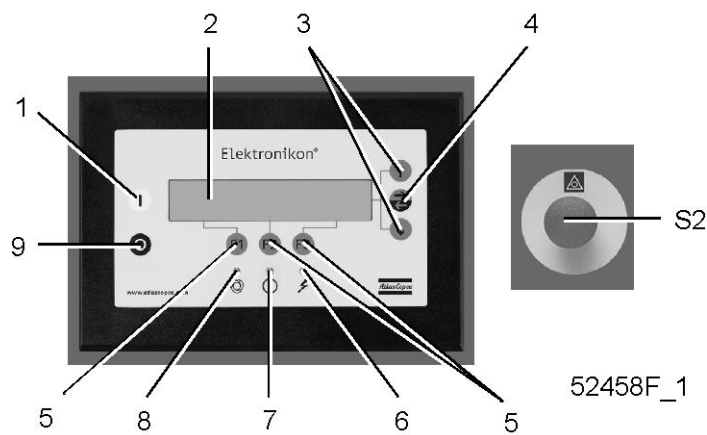


If activated and provided the regulator was in the automatic operation mode, the compressor will automatically restart if the supply voltage to the module is restored within a programmed time period.

The power recovery time (the period within which the voltage must be restored to have an automatic restart) can be set between 1 and 3600 seconds or to "Infinite". If the power recovery time is set to "Infinite", the compressor will always restart after a voltage failure, no matter how long it takes to restore the voltage. A restart delay can also be programmed, allowing e.g. two compressors to be restarted one after the other.

3.2 Control panel

Elektronikon regulator



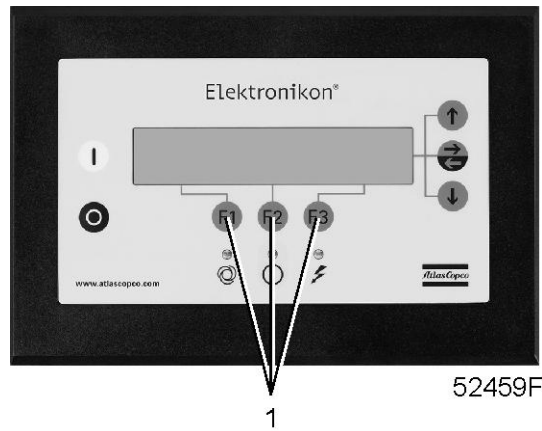
Control panel

Parts and functions

Reference	Designation	Function
1	Start button	Button to start the compressor. LED (8) lights up indicating that the Elektronikon regulator is operative.
2	Display	Shows messages about the compressor operating condition, a service need or a fault.
3	Scroll keys	Keys to scroll upwards or downwards through the display.
4	Tabulator key	Key to select the parameter indicated by the horizontal arrow. Only the parameters followed by an arrow pointing to the right can be modified.
5	Function keys	Keys to control and program the compressor.
6	Voltage on LED	Indicates that the voltage is switched on.
7	General alarm LED	Is lit if a shut-down warning condition exists or maintenance is required.
7	General alarm LED	Flashes if a shut-down condition exists, if an important sensor is out of order or after an emergency stop.
8	Automatic operation LED	Indicates that the regulator is automatically controlling the compressor.
9	Stop button	Button to stop the compressor. LED (8) goes out.
S2	Emergency stop button	Push button to stop the compressor immediately in the event of an emergency. After remedying the trouble, unlock the button by pulling it out.

3.3 Function keys

Control panel



Function keys

The keys (1) are used:

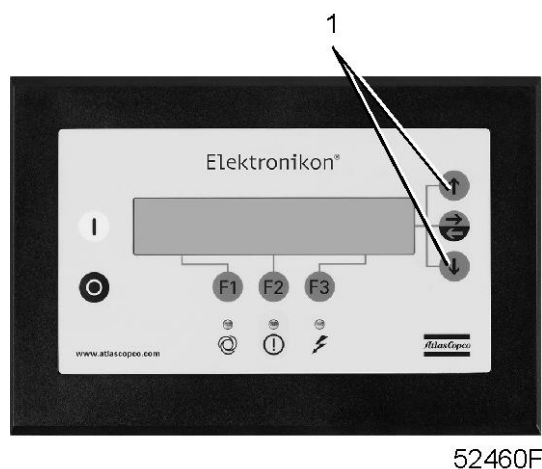
- To manually load/unload the compressor (not for VSD compressors)
- To call up or to program settings
- To reset a motor overload, shut-down or service message, or an emergency stop
- To access all data collected by the regulator

The functions of the keys vary depending on the displayed menu. The actual function is indicated just above the relevant key. The most common functions are listed below:

Designation	Function
“Add”	To add compressor start/stop commands (day/hour)
“Back”	To return to a previously shown option or menu
“Cancel”	To cancel a programmed setting when programming parameters
“Delete”	To delete compressor start/stop commands
“Help”	To find the Atlas Copco internet address
“Limits”	To show limits for a programmable setting
“Load”	To load the compressor manually
“Mainscreen”	To return from a menu to the main screen
“Menu”	Starting from the main screen, to have access to the submenus
“Menu”	Starting from a submenu, to return to a previous menu
“Modify”	To modify programmable settings
“Program”	To program modified settings
“Reset”	To reset a timer or message
“Return”	To return to a previously shown option or menu
“Unload”	To unload the compressor manually
“Extra”	To find the module configuration of the regulator

3.4 Scroll keys

Control panel



52460F

The keys (1) allow the operator to scroll through the display.

As long as a downwards pointing arrow is shown at the utmost right position of the display, the scroll key with the same symbol can be used to see the next item.

As long as an upwards pointing arrow is shown at the utmost right position of the display, the scroll key with the same symbol can be used to see the previous item.

When the scroll key is kept pressed, the scrolling is continued.

3.5 Emergency stop button


Control panel



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In case of emergency, press button (S2) to stop the compressor immediately.

At the occurrence of an emergency stop, the compressor element is stopped immediately and the solenoid valve will be deactivated by Elektronikon® regulator. No unload status is reached. The check valve prevents oil flow back from reversed rotation of the compressor element.

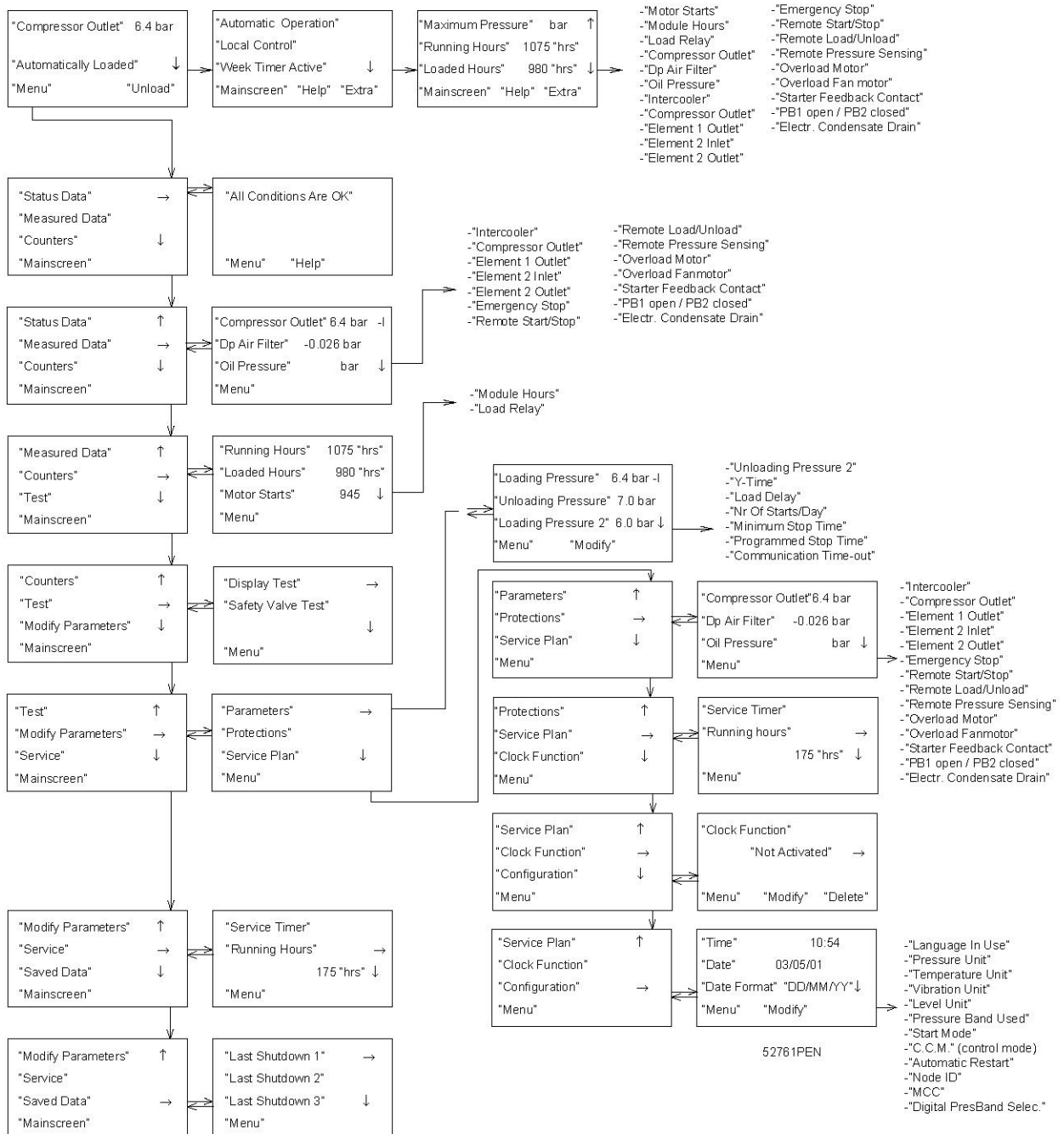
	Before starting any maintenance or repairs, wait until the compressor has stopped and open the isolating switch (customer's installation) to switch off the voltage to the compressor.
	Close the air outlet valve and open the manual condensate drain valves to depressurize the air system.
	Apply all relevant Safety precautions .

3.6 Control programs

Description

In order to facilitate programming and controlling, menu-driven control programs have been implemented in the regulator.

Menu flow for ZR/ZT 55 up to ZR/ZT 90 (simplified)



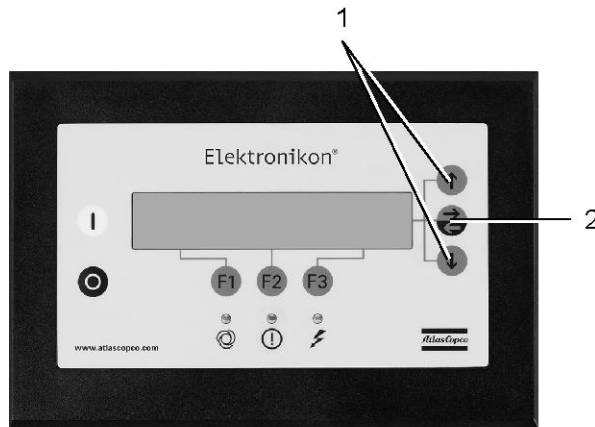
Main menu

Program	Function
Main screen	Shows in short the operation status of the compressor. Is the gateway to all functions.
"Status data"	Calls up the status of the compressor protection functions (shut-down, shut-down warning, service warning and warning). Resets a shut-down, motor overload and service condition.

Program	Function
“Measured data”	Calls up the data currently measured and the status of a number of inputs.
“Counters”	Calls up the running hours, regulator (module) hours and number of motor starts.
“Test”	Display test.
“Modify parameters”	Modifies the settings for: <ul style="list-style-type: none"> Parameters (e.g. loading and unloading pressures) Protections (e.g. temperature shut-down level) Service plans (timers for service plans) Clock functions (automatic compressor start/stop/pressure band commands) Configuration (time, date, display language,...)
“Service”	Calls up service plans and resets the timers after carrying out the service actions belonging to a plan.
“Saved data”	Calls up the saved data: last shut-down, last emergency stop data.
“Unload/Load”	Loads and unloads the compressor manually.

3.7 Calling up menus

Description



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Control panel

When the voltage is switched on, the Main screen is shown automatically.

Example of Main screen of ZR/ZT 55 up to ZR/ZT 90

“Compressor Outlet”		7.5 bar	
.			
“Automatically Loaded”			↓
“Menu”		“Unload”	
F1	F2	F3	

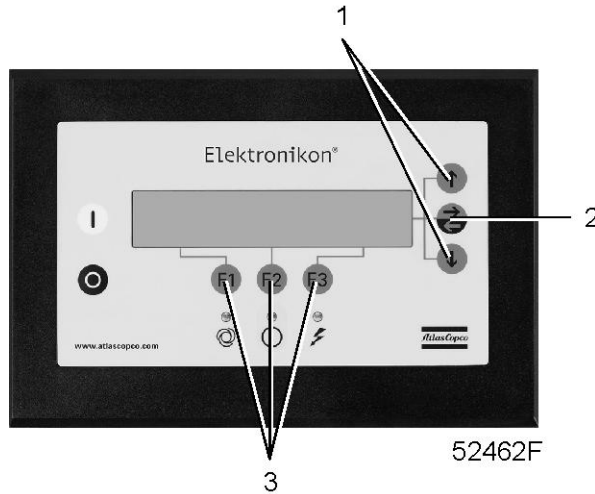
After pressing the “Menu” (F1) key, the option “Status Data” will be followed by a horizontal arrow:

- Either press the tabulator key (2) to select this menu,
- or use the arrow down key (1) until the desired submenu is followed by a horizontal arrow and then press the tabulator key (2) to select this menu.

The arrow down key (1) can be used for a quick look at the actual compressor status.

3.8 Main screen menu

Function



Control panel

The Main screen menu shows the status of the compressor operation and is the gateway to all functions implemented in the regulator.

Procedure

The Main screen is shown automatically when the voltage is switched on.

If the function or arrow keys (1, 2 and 3) are not used for some minutes, the regulator will automatically return to the Main screen.

Whenever displayed on a submenu screen, press the “Mainscreen” (F1) key to return to the Main screen.

Example of Main screen of ZR/ZT 55 up to ZR/ZT 90

“Compressor Outlet”		7.5 bar	
.			
“Automatically Loaded”			↓
“Menu”		“Unload”	
F1	F2	F3	

The display indicates:

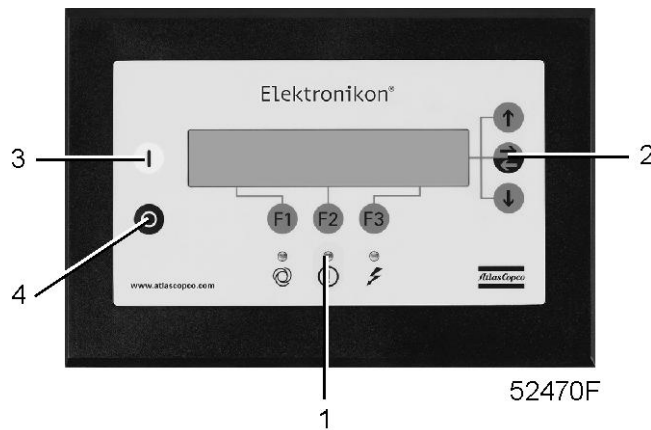
- The name of the sensor and its actual reading
- Messages regarding the compressor operating condition
- Just above the function keys (3), the actual functions of these keys

3.9 Status data menu

Warning

	<p>Before starting any maintenance or repairs, press the stop button (4), wait until the compressor has stopped, press the red emergency stop button and open the isolating switch (customer's installation) to switch off the voltage to the compressor.</p>
	<p>Close the air outlet valve and depressurize the air system.</p>

Function



Control panel

The Status data submenu gives information regarding the status of the compressor protection functions (shut-down, shut-down warning and service warning) and allows resetting of a shut-down, motor overload and service condition.

Procedure

Starting from the Main screen (see [Main screen menu](#)):

- Press the key “Menu” (F1): the option “Status Data” will be followed by a horizontal arrow.
- Press the tabulator key (2).

No message exists

- General alarm LED (1) is out and the message on the display will indicate that all conditions are normal:

“All Conditions Are OK”			
.			
.			
“Menu”	“Help”		
F1	F2	F3	

A shut-down message exists

- In case the compressor is shut down, LED (1) will blink.
- In case of a shut-down due to too high a temperature at the outlet of the compressor element:

"Element Outlet"		114 °C	
.			
"Shutdown"	"Maximum"	110 °C	
"Menu"***	"Help"	***"Reset"	
F1	F2	F3	

- The indicators (***) are blinking. The screen shows the actual reading and the shut-down setting.
- It remains possible to scroll through other menus, e.g. to check the values of other parameters. When returning to the "Status Data" menu, the option "Shutdowns" will blink. This option can be selected by pressing the tabulator key (2) to return to the above shut-down screen.

Shut-down reset

- Switch off the voltage and remedy the trouble. After remedying and when the shut-down condition has disappeared, switch on the voltage and press the key "Reset" (F3).
- Press the keys "Menu" and "Mainscreen" to return to the Main screen and restart the compressor by means of start button (3).

A shut-down warning message exists

A shut-down warning level is a programmable level below the shut-down level.

- If a shut-down warning exists, LED (1) is alight. The Main screen will change into a screen similar to the one below:

"Compressor Outlet"		7.0 bar	
.			
***	"Shutdown Warning"	***	↓
"Menu"***		***"Unload"	
F1	F2	F3	

- The message "Shutdown Warning" appears.
- Press the key "Menu" (F1) and the tabulator key (2) to select the "Status data" menu; the option "Protection" is blinking.
- Scroll to this option and select it by pressing the tabulator key (2). A screen similar to the one below appears:

"Element 1 Outlet"		103 °C	
.			
"Shutd. Warn." "Maximum"		100 °C	
"Menu"***		***	
F1	F2	F3	

- The screen indicates that the temperature at the outlet of compressor element 1 exceeds the programmed shut-down warning level.
- If necessary, stop the compressor by means of stop button (4) and wait until it has stopped.
- Switch off the voltage, inspect and remedy.
- The warning message will disappear automatically as soon as the warning condition disappears.

A service warning exists

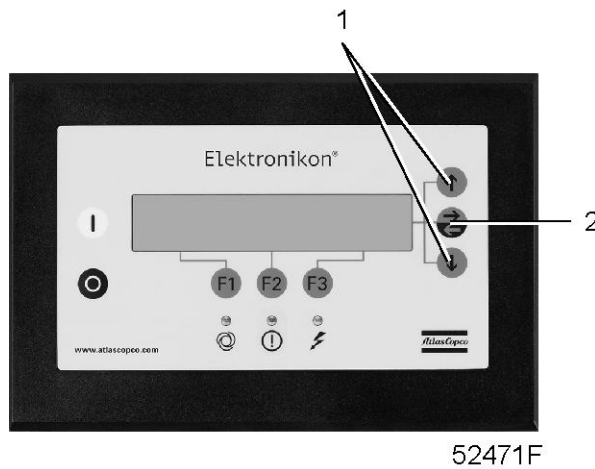
- LED (1) is alight. The Main screen will change into a screen similar to the one below:

"Compressor Outlet"		7.0 bar	
.			
"**Service Required**"			
"Menu"***		***"Unload"	
F1	F2	F3	

- The indicators (***) are blinking and the service warning message appears.
- Press the key Menu (F1) and the tabulator key (2) to select the "Status data" menu: the option "Service" is blinking.
- Scroll to this option and select it by pressing the tabulator key (2); two options may blink:
 - "Inputs": if the programmed service level of a component is exceeded (e.g. the maximum pressure drop of the air filter).
 - "Plan": if a service plan interval is exceeded.
- Stop the compressor and switch off the voltage.
- In case the service message was referring to "Inputs" (air filter): replace the filter, switch on the voltage, scroll in the "Status Data" menu to "Inputs" and press the "Reset" key to reset the service message.
- In case the service message was referring to "Plan": carry out the service actions related to the indicated plans. Reset the timers of the related plans. Contact your Atlas Copco Customer Centre. See [Service menu](#).

3.10 Measured data menu

Control panel



Function

To call up information regarding the actually measured data and the status of some inputs such as the motor overload protection. Consult the menu flow in section [Control programs](#).

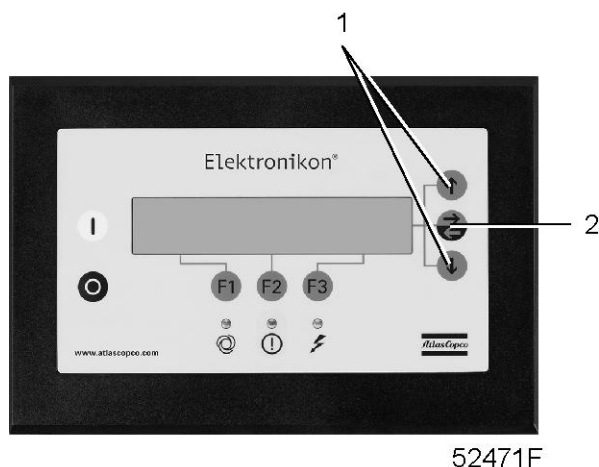
Procedure

Starting from the Main screen (see [Main screen menu](#)):

- Press the key “Menu” (F1).
- Press the arrow down key (1) until “Measured Data” is followed by a horizontal arrow.
- Activate the menu by pressing the tabulator key (2).
- By pressing the scroll keys (1), a number of actually measured data can be found.
- If one of the sensors is linked to a shut-down, service or warning function, both the actually measured value as well as the corresponding shut-down, warning or service level can be called up by pressing key (2).

3.11 Counters menu

Control panel



Function

To call up:

- The running hours
- The loaded hours
- The number of motor starts
- The number of hours the regulator (module) has been under tension
- The number of load cycles

Procedure

Starting from the Main screen (see [Main screen menu](#)):

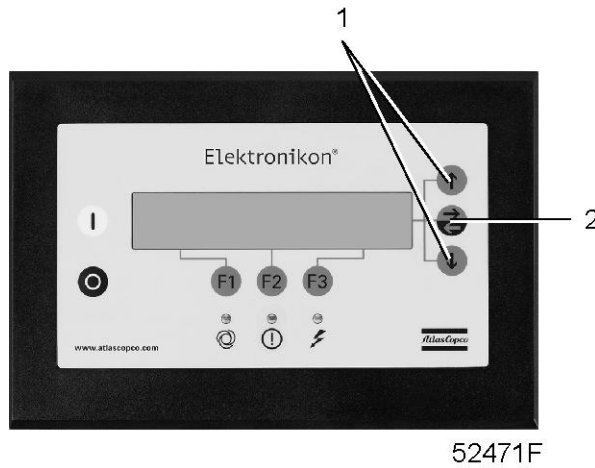
- Press the key “Menu” (F1).
- Press the arrow down key (1) until “Counters” is followed by a horizontal arrow.
- Press the tabulator key (2) to activate the menu.
- By pressing the arrow key (1), the above-mentioned data can be found.

Example of a Counters screen

.			
“Running Hours”		2455 “hrs”	
“Loaded Hours”		1973 “hrs”	
“Motor Starts”		945	↓
“Menu”			
F1	F2	F3	

3.12 Test menu

Control panel



Function

To carry out a display test, i.e. to check whether the display and LEDs are still intact.

Procedure

- Starting from the Main screen (see [Main screen menu](#)), press the “Menu” (F1) key.
- Press arrow down key (1) until “Test” is followed by a horizontal arrow.
- Activate the menu by pressing the key (2).

To perform a display test:

- If necessary, scroll through the menu until “Display Test” is followed by a horizontal arrow.
- Press the key (2).
- During testing, the regulator will generate a series of patterns on the display which enable the operator to check that each pixel still functions normally; the LEDs are lit at the same time.
- Press the “Menu” key (F1) to return to the submenu.

3.13 Modify parameters menu

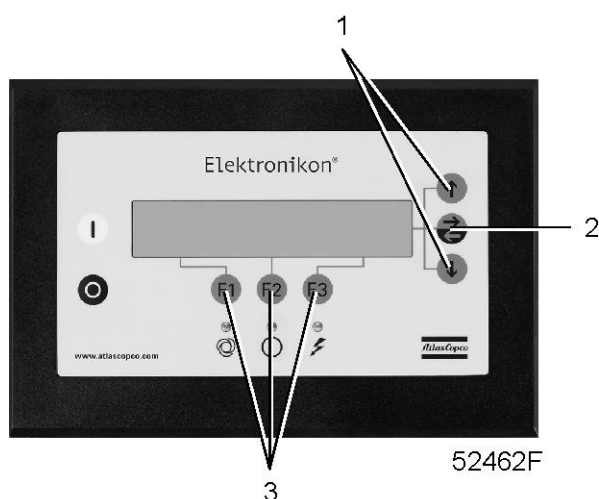
Function

To modify a number of programmable settings:

- Parameters (see section [Modifying parameters](#)).
- Protections (see section [Modifying protections](#)).
- Service plan settings (see section [Modifying service plan settings](#)).
- Clock function settings (see section [Modifying clock function settings](#)).
- Configuration settings (see section [Modifying configuration settings](#)).

3.14 Modifying parameters

Control panel



Function

To modify a number of parameters. Consult the menu flow in section [Control programs](#).

Procedure

Starting from the Main screen (see [Main screen menu](#)):


- Press the key “Menu” (F1).
- Press the arrow down key (1) until “Modify Parameters” is followed by a horizontal arrow.
- Activate the menu by pressing the tabulator key (2).
- The first item “Parameters” will be followed by a horizontal arrow.
- Press the tabulator key (2): the first items and their settings will appear.
- Press the arrow down key (1) until the parameter to be modified is followed by a horizontal arrow.

Modifying the loading pressure setpoint

If desired, the operator can program two pressure bands (Loading pressure/Unloading pressure and Loading pressure 2/Unloading pressure 2).

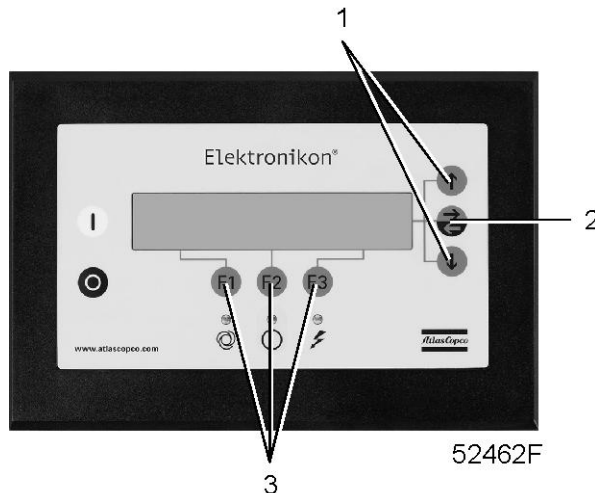
- Consult the section Procedure to select “Loading Pressure”.

- The screen shows the current setting. To modify this setting, press the key “Modify” (F2); the setting will blink.
- The key “Limits” (F2) can be used to find out the limitations for the parameter.
- Use the scroll keys (1) to change the setting.
- Press the key ”Program” (F1) to program the new value or the key “Cancel” (F3) to cancel the modification operation.
- The procedure to modify other parameters pressure is similar.

	<p>The regulator will not accept new values beyond the limitations. Press the key “Limits” to check the limitations for the parameter. Consult Programmable settings for the most important settings.</p>
---	---

3.15 Modifying protection settings

Control panel



Function

To modify protection settings:

- “Shutdown”, e.g. for the compressor element outlet temperature
- “Shutdown warning”, e.g. for the compressor element outlet temperature
- “Service warning”, e.g. for the maximum pressure drop over the air filter

To check various compressor conditions, e.g. the status of the emergency stop button. Some parameters cannot be modified.

Procedure

Starting from the Main screen (see [Main screen menu](#)):

- Press the “Menu” (F1) key.
- Press the arrow down key (1) until “Modify parameters” is followed by a horizontal arrow.
- Activate the menu by pressing the tabulator key (2).
- Press the arrow down key (1) until “Protections” is followed by a horizontal arrow.


- Press the tabulator key (2): the first items will appear.
- Press the arrow down key (1) until the item to be modified is followed by a horizontal arrow and press the tabulator key (2).

Modifying settings for the compressor element temperature

- Consult the section Procedure above to select the parameter “Element 1 outlet”.
- The screen (see example below) shows the current temperature on the first line and the shut-down setting on the third line. To modify the setting, press the “Modify” (F2) key; the setting will flash.
- The “Limits” (F2) key can be used to find out the limits for the parameter.
- Use the scroll keys (1) to change the setting.
- Press ”Program” (F1) to program the new value or “Cancel” (F3) to cancel the modification operation.
- The screen (see example below) shows a horizontal arrow indicating that the shut-down warning value can be modified (the procedure is similar to the description above).
- The procedure to modify other items is similar. For some settings, a delay can be programmed.

Example of the screen for ZR/ZT compressors

“Element 1 outlet”		178 °C	
			→
“Shutdown”	“Maximum”	235 °C	
“Menu”	“Modify”		
F1	F2	F3	

	The regulator will not accept new values beyond the limits. Press the key “Limits” to check the limits for the parameter. Consult Programmable settings for the most important settings.
---	--


3.16 Modifying service plans

Function

To modify the hour intervals for the service levels.

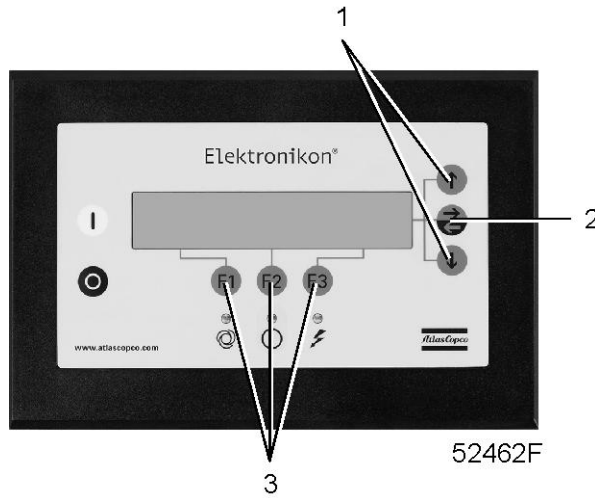
Service plans

The service actions to be carried out are grouped in plans called Service level A, B, C or D. When reaching an interval, a message will appear on the screen indicating which Service plans are to be carried out.

	Always consult your Atlas Copco Customer Centre in case any timer should be changed. The intervals must not exceed the programmed nominal values.
---	---

3.17 Programming clock function

Control panel



Function

To program:

- Time-based start/stop commands for the compressor
- Time-based change-over commands for the net pressure band

Programming start, stop and pressure band commands

In this example, the compressor will be programmed as follows:

- On Monday at 06:15 starting in pressure band 1
- On Friday at 18:00 changing over to pressure band 2
- On Saturday at 18:00 stopping

Starting from the Main screen (see [Main screen menu](#)):

- Press the key “Menu” (F1).
- Press the arrow down key (1) until “Modify Parameters” is followed by a horizontal arrow.
- Activate the menu by pressing tabulator key (2).
- Use the arrow down key (1) to scroll until the option “Clock Function” is followed by a horizontal arrow.
- Activate the menu by pressing tabulator key (2); following screen appears:

“Clock Function”			→
		“Not Activated”	
.			
“Menu”	“Modify”	“Delete”	
F1	F2	F3	

- Press the tabulator key (2), following screen appears:

"Monday"			→
"Tuesday"			
"Wednesday"			↓
"Menu"		"Delete"	
F1	F2	F3	

- Use the scroll keys (1) until the day on which a command must be programmed is followed by a horizontal arrow. Press the tabulator key (2); following screen appears:

--:--	-----		→
--:--	-----		
--:--	-----		↓
"Menu"	"Modify"	"Delete"	
F1	F2	F3	

- Press the key "Modify" (F2). The first two dashes will flash. Use the scroll keys (1) to enter "06". Press the tabulator key (2) to jump to the following two dashes. Use the scroll keys to enter "15". Press the tabulator key to jump to the row of dashes. Use the scroll keys to enter the command "Start Compressor".
- Press the key "Program" to program the command : "06:15 Start Compressor".
- Press the arrow down key (1); the horizontal arrow indicates that the second line is accessible. Press the key "Modify" and modify this line in a similar way to the following command: "06:15 Pressure Band 1".
- Press the key "Menu" (F1) and scroll to "Friday":

"Thursday"			↑
"Friday"			→
"Saturday"			↓
"Menu"		"Delete"	
F1	F2	F3	


- Programming the command to change over at 18 o'clock to "Pressure Band2" is carried out in a similar way as described above.
- Press the key "Menu" (F1) and scroll to "Saturday". Programming the command "18:00 Compressor Stop" is carried out in a similar way as described above.

Activating/deactivating the timer

- The timer can only be activated if at least one start/stop command is programmed.
- Starting from the Main screen, press the key "Menu" (F1).
- Use arrow down key (1) until the option "Modify Parameters" is followed by a horizontal arrow.
- Press the tabulator key (2) to activate the menu.
- Use the arrow down key until the option "Clock Function" is followed by a horizontal arrow, press the tabulator key (2), following screen appears:

"Clock Function"			→
.		"Not Activated"	
"Menu"	"Modify"	"Delete"	
F1	F2	F3	

- Press the key "Modify", "Not Activated" starts blinking.
- Press the arrow down key (1) "Not Activated" changes to "Activated".
- Press the key "Program".

	<p>It is necessary to program the start/stop commands in successive order timewise. Program the commands from Monday till Sunday, e.g.:</p> <ul style="list-style-type: none"> • 07.30 Start Compressor • 07.30 Pressure Band 1 • 08.30 Pressure Band 2 • 18.00 Stop Compressor
	<p>Make sure that the timer function is activated ("Activated"). If not, the programmed start/stop commands will not be executed.</p>
	<p>The timer can be deactivated again. In this case, the programmed start/stop commands will not be executed (but remain in the memory of the regulator).</p>

Modifying a command

Suppose the command to stop the compressor on Saturday 18:00 is to be modified, i.e. stopping at 17 o'clock instead of 18 o'clock.

- Starting from the Main screen, press the key "Menu" (F1), press the arrow down key (1) until the option "Modify Parameters" is followed by a horizontal arrow.
- Activate the menu by pressing the tabulator key (2).
- Use the arrow down key (1) to scroll until the option "Clock Function" is followed by a horizontal arrow. Press the tabulator key, following screen appears:

"Clock Function"			→
.		"Not Activated"	
"Menu"	"Modify"	"Delete"	
F1	F2	F3	

- Press the tabulator key (2), following screen appears:

"Monday"			→
"Tuesday"			
"Wednesday"			↓
"Menu"		"Delete"	
F1	F2	F3	

- Scroll through the display until "Saturday" is followed by a horizontal arrow. Press the tabulator key (2). If necessary, scroll through the commands until the command to be modified is followed by a horizontal

arrow. Press the key “Modify”, the first two digits of the command start blinking. Modify as required using the scroll keys, i.e. in the example above change “18” into “17” using the arrow up key (1).

- If necessary, press the tabulator key (2) to go to the next field to be modified, the minutes indication and the start/stop/pressure band indication.
- Press the key “Program” to program the new command or the key “Cancel” to quit without reprogramming.

Adding a command at the end of an existing list

- Starting from the Main screen, press the key “Menu” (F1), press the arrow down key until the option “Modify Parameters” is followed by a horizontal arrow.
- Activate the menu by pressing the tabulator key (2).
- Use the arrow down key (1) to scroll until the option “Clock Function” is followed by a horizontal arrow. Press the tabulator key, following screen appears:

“Clock Function”			→
		“Not Activated”	
.			
“Menu”	“Modify”	“Delete”	
F1	F2	F3	

Suppose the command to stop the compressor at 18:00 must be added to the list of Monday

- Press the tabulator key (2), following screen appears:

“Monday”			→
“Tuesday”			
“Wednesday”			↓
“Menu”		“Delete”	
F1	F2	F3	

- Scroll through the display until “Monday” is followed by a horizontal arrow. Press the tabulator key (2). Scroll through the compressor start/stop/pressure band commands until the first empty command line is indicated by the horizontal arrow.
- Press the key “Modify”; the first two digits start blinking. Enter “18:00 Compressor Stop” using the scroll keys (1) to modify a field and the tabulator key (2) to jump from one field to another.
- Press the key “Program” to program the new command or the key “Cancel” to quit without reprogramming.

Adding a command between two existing commands

Suppose the command “17:00 Pressure Band 2” must be added to the following list:

- 06:00 Start Compressor
- 06:00 Pressure Band 1
- 18:00 Stop Compressor

The regulator does not allow to enter a new command which is situated before the last command in the list timewise.

Scroll through the display until the command before which the new command must be entered is followed by a horizontal arrow (in the example above: “18:00 Stop Compressor”) and press the key “Modify”.

Change this command to the new command (in the example above “17:00 Pressure Band 2”)

Press the arrow down key and add the last command of the list (in the example above “18:00 Stop Compressor” and press the key “Program”.

Deleting a command

- Starting from the Main screen, press the key “Menu” (F1), press the arrow down key until the option “Modify Parameters” is followed by a horizontal arrow.
- Activate the menu by pressing the tabulator key (2).
- Use the scroll keys (1) to scroll until the option “Clock Function” is followed by a horizontal arrow. Press the tabulator key, following screen appears:

“Clock Function”			→
		“Not Activated”	
“Menu”	“Modify”	“Delete”	
F1	F2	F3	

Deleting all commands

- Press the key “Delete” in the screen above. A question to confirm the deleting operation will appear.

Deleting all commands of a specific day

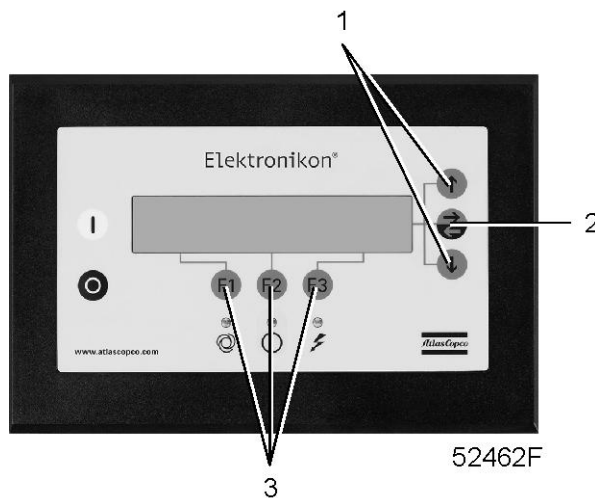
- Scroll through the display until the desired day is followed by a horizontal arrow. Press the key “Delete”, a question to confirm the deleting operation will appear.

Deleting a specific command

- Scroll through the display until the command to be deleted is followed by a horizontal arrow. Press the key “Delete”, a question to confirm the deleting operation will appear.

3.18 Modifying configuration settings

Control panel



Function

To modify a number of parameters. Consult the menu flow in section [Control programs](#).

Procedure

Starting from the Main screen (see [Main screen menu](#)):

- Press the key “Menu” (F1).
- Press the arrow down key (1) until “Modify Parameters” is followed by an arrow pointing to the right.
- Activate the menu by pressing tabulator key (2).
- Press the arrow down key (1) to scroll until “Configuration” is followed by a horizontal arrow.
- Activate the menu by pressing tabulator key (2): the first item will appear. Scroll through the display until the option to be modified is followed by a horizontal arrow. Select the option by pressing the tabulator key (2).
- In case of the option “Time”, the second line on the screen indicates the actual setting, e.g. “14:30”. To modify this setting, press the key “Modify” (F2); the first field “14” will blink.
- Use the scroll keys (1) to change the setting, then press the tabulator key (2) to go to the next field “30”. The setting of this field can now be modified using the scroll keys (1).
- Press the key ”Program” (F1) to program the new value or the key “Cancel” (F3) to cancel the modification operation (the original value will be retained).
- The procedure to modify other parameters is similar.

Programming compressor control modes

The compressor can be controlled locally, remotely or via a local area network (LAN).

Procedure

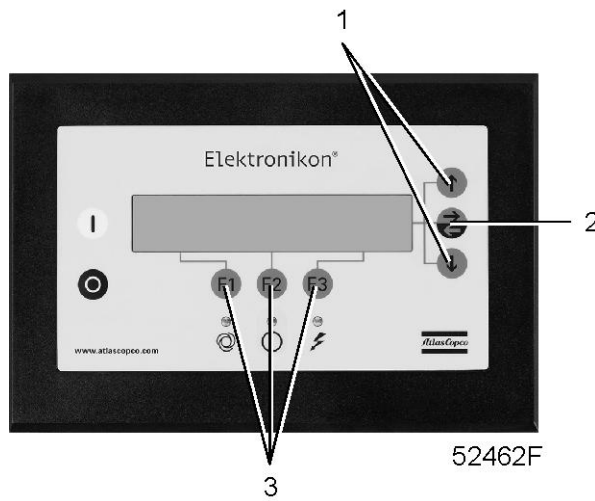
- Activate the menu “Configuration” as described above.
- Scroll through the display until the option “C.C.M.” is indicated and press the “Modify” key. Following screen appears:

.			
“C.C.M.”		“Local Control”	
.			
“Program”		“Cancel”	
F1	F2	F3	

- “Local Control” is blinking, use the scroll keys (1) to select the desired control mode.
- Press the key “Program” to program the new control mode or “Cancel” to quit without reprogramming.

3.19 Service menu

Control panel



Function

- To reset the service plans which are carried out.
- To check when the next service plans are to be carried out.
- To find out which service plans were carried out previously.

Service plans

A number of service operations are grouped (called Level A, Level B, etc...). Each level stands for a number of service actions to be carried out at the time intervals programmed in the Elektronikon regulator.

When a service plan interval is reached, a message will appear on the screen, see section [Status data](#). After carrying out the service actions related to the indicated levels, the timers are to be reset.

Example

Service plans	Intervals
Service plan A	Every 4000 running hours
Service plan B	Every 8000 running hours
Service plan C	Every 16000 running hours

Service actions according to	Intervals
Service plan A	4000 running hours
Service plan A and B	8000 running hours
Service plan A	12000 running hours
Service plan A, B and C	16000 running hours
...	...

Procedure

Starting from the Main screen (see [Main screen menu](#)):

- Press the key “Menu” (F1).
- Press the arrow down key (1) until “Service” is followed by a horizontal arrow.
- Activate the menu by pressing tabulator key (2).
- A screen similar to the one below appears:

“Service Timer”			
“Running Hours”			→
		7971 “hrs”	↓
“Menu”		“Reset”	
F1	F2	F3	


- The screen shows that the total compressor running time is 7971 hours.
- Press the tabulator key (2), following screen appears:

“Next Timer”			
“Level”		A B	
		8000 “hrs”	↓
“Back”		“Reset”	
F1	F2	F3	

- The screen shows that the next service plans to be carried out are plans A and B and that these plans are to be carried out every 8000 running hours.
- Press the arrow down key (1) to find out which service plans were carried out previously, following screen appears:

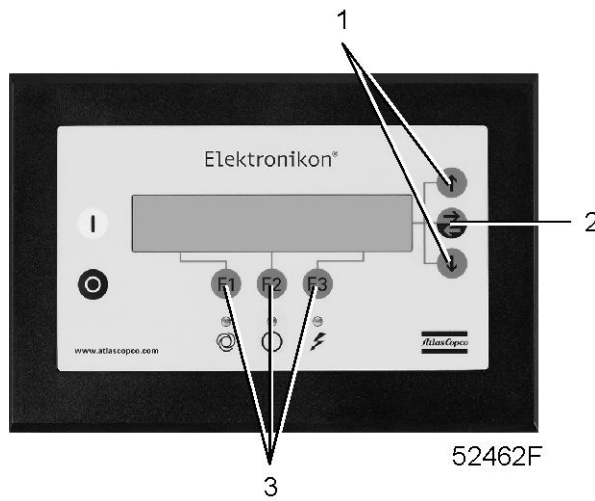
“Previous Timer”			↑
“Level”		A	
		4008 “hrs”	
“Back”			
F1	F2	F3	

- The screen shows that plan A was carried out at 4008 running hours.
- Stop the compressor, switch off the voltage and carry out the service operations related to the indicated service plans, see section [Preventive maintenance schedule](#).
- Switch on the voltage and scroll to the “Next Timer” service screen.
- Press the “Reset” button (F3). Confirm the question for resetting.

	The “Reset” button only appears when the “Next Timer” level is almost reached.
	After pressing the arrow down key in the “Service Timer” screen, the “Life Time” hours are shown, i.e. the number of hours elapsed since initial programming ex-factory. This timer is not taken into account.

3.20 Saved data menu

Control panel



Function

To call up some data saved by the regulator. These data are:

- Last shut-down data
- Last emergency stop data

Procedure

Starting from the Main screen (see [Main screen menu](#)):

- Press the key “Menu” (F1).
- Press the arrow down key (1) until “Saved Data” is followed by a horizontal arrow.
- Activate the menu by pressing the tabulator key (2).
- The first option is shown “Last shutdown 1”.
- Press the tabulator key (2) to find out the date, time and other data reflecting the status of the compressor at the last shut-down.
- If desired, scroll through the other items.

3.21 Programmable settings

Parameters

		Minimum setting	Factory setting	Maximum setting
Motor running time in star	sec	10	10	30
Load delay time (star-delta)	sec	10	10	30
Number of motor starts	starts/day	0	240	240
Minimum stop time	sec	20	20	99
Programmed stop time	sec	3	3	20
Power recovery time (ARAVF)	sec	15	15	3600

		Minimum setting	Factory setting	Maximum setting
Restart delay	sec	0	3	255
Communication time-out	sec	10	20	60
Unloading pressure	bar(e)	4.5	7.0	7.25
Unloading pressure	psig	65	101.5	105.2
Loading pressure	bar(e)	4.5	6.5	7.25
Loading pressure	psig	65	94.3	105.2

Protections

		Minimum setting	Factory setting	Maximum setting
Oil pressure (shut-down warning level)	bar(e)	1.0	1.3	1.9
Oil pressure (shut-down warning level)	psig	14.5	19	27.5
Oil pressure (shut-down level)	bar(e)	1.0	1.2	1.9
Oil pressure (shut-down level)	psig	14.5	17.4	27.5
Delay at start, oil pressure	sec	15	15	20
Delay at signal, oil pressure	sec	0	6	9
Compressor element 1 outlet temperature (shut-down warning level)	°C	100	210	220
Compressor element 1 outlet temperature (shut-down warning level)	°F	212	410	428
Compressor element 1 outlet temperature (shut-down level)	°C	211	220	220
Compressor element 1 outlet temperature (shut-down level)	°F	412	428	428
Compressor element 2 outlet temperature (shut-down warning level)	°C	100	210	220
Compressor element 2 outlet temperature (shut-down warning level)	°F	212	410	428
Compressor element 2 outlet temperature (shut-down level)	°C	211	220	220
Compressor element 2 outlet temperature (shut-down level)	°F	412	428	428
Compressor element 2 inlet temperature (shut-down warning level)	°C	40	65	80
Compressor element 2 inlet temperature (shut-down warning level)	°F	104	149	176
Compressor element 2 inlet temperature (shut-down level)	°C	66	70	80
Compressor element 2 inlet temperature (shut-down level)	°F	151	158	176
Oil temperature (shut-down warning level)	°C	40	65	80
Oil temperature (shut-down warning level)	°F	104	149	176
Oil temperature (shut-down level)	°C	40	70	80

		Minimum setting	Factory setting	Maximum setting
Oil temperature (shut-down level)	°F	104	158	176
Service warning level for DP, air filter	mbar	100	44	44
Service warning level for DP, air filter	psi	1.45	0.6	0.6
Delay at signal, DP air filter	sec	0	60	255

Service plans

		Minimum setting	Factory setting	Maximum setting
Service plan A (running hours)	hr	See remark	3600	See remark
Service plan B (running hours)	hr	See remark	8000	See remark
Service plan C (running hours)	hr	See remark	16000	See remark
Service plan I (running hours)	hr	See remark	2000	See remark

Remark

A number of service operations are grouped (Level A, Level B, ...). Each level stands for a number of service operations to be carried out at the intervals programmed. Consult your Atlas Copco Service Centre.

Terminology

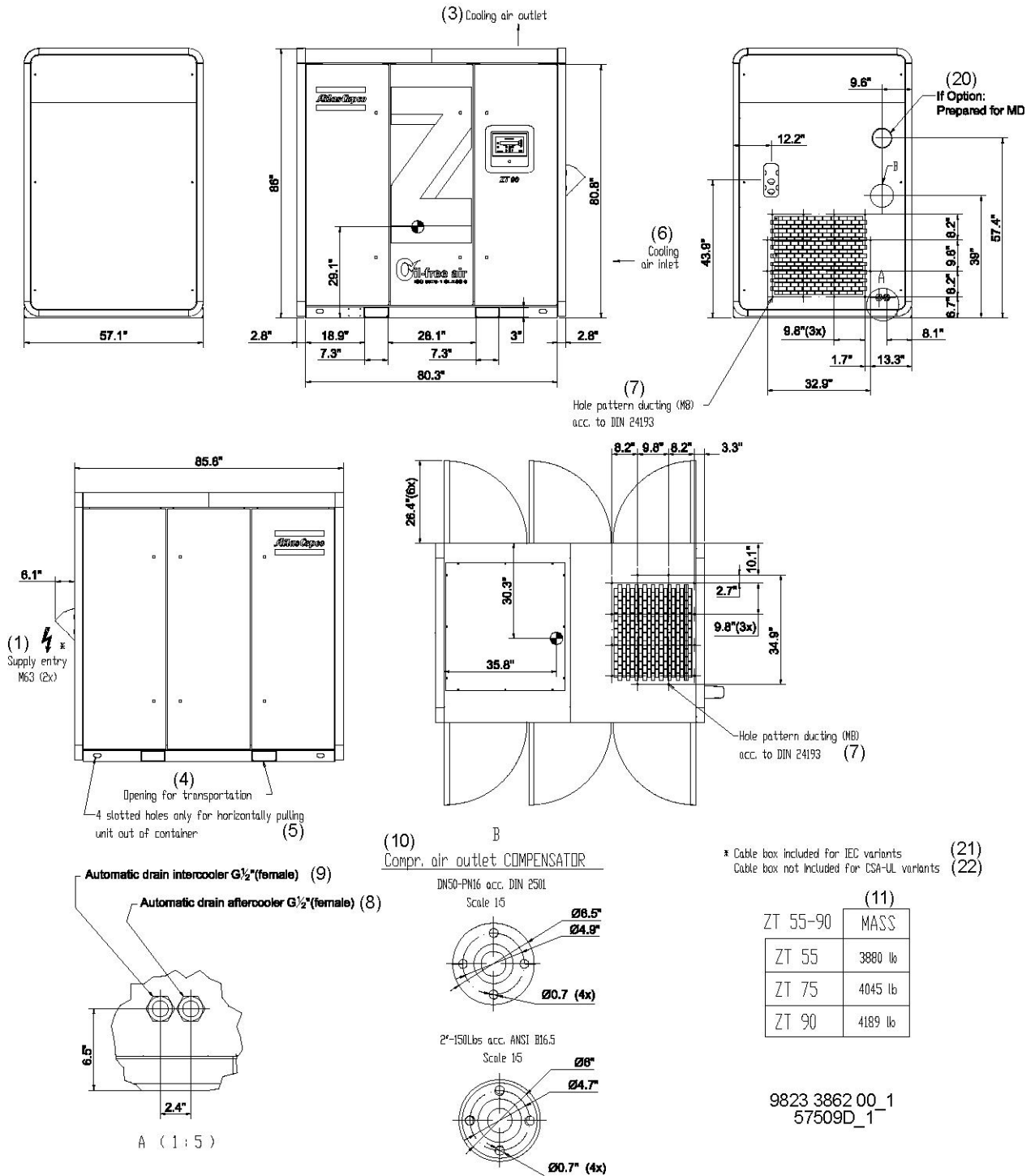
Term	Explanation
ARAVF	Automatic restart after voltage failure. See Elektronikon regulator.
Compressor element 1/2	Element 1 stands for the low-pressure compressor element; element 2 stands for the high-pressure compressor element. The regulator does not accept illogical settings, e.g. if the warning level is programmed at 205 °C, the minimum limit for the shut-down level changes into 206 °C. The recommended difference between the warning level and shut-down level is 10 °C.
Compressor element 1/2	Element 1 stands for the low-pressure compressor element; element 2 stands for the high-pressure compressor element. The regulator does not accept illogical settings, e.g. if the warning level is programmed at 401 °F, the minimum limit for the shut-down level changes into 402 °F. The recommended difference between the warning level and shut-down level is 18 °F.
Required stop period/Minimum stop time	Once the compressor is automatically stopped, it will remain stopped for the minimum stop time (approx. 20 seconds), whatever happens with the air net pressure. In automatic operation, the compressor will not be stopped by the regulator until a standstill period of at least the sum of the minimum stop time and required stop period is expected. However, if the decrease in air net pressure should require a new start of the compressor, the regulator will start the compressor after the minimum stop time.
Power recovery time	Is the period within which the voltage must be restored to have an automatic restart. Is accessible if the automatic restart is activated. To activate the automatic restart function, consult Atlas Copco.
Unloading/ Loading pressure	The regulator does not accept illogical settings, e.g. if the unloading pressure is programmed at 7.0 bar(e), the maximum limit for the loading pressure changes into 6.9 bar(e). The recommended minimum pressure difference between loading and unloading is 0.6 bar.

Term	Explanation
Unloading/ Loading pressure	The regulator does not accept illogical settings, e.g. if the unloading pressure is programmed at 101 psig, the maximum limit for the loading pressure changes into 100 psig. The recommended minimum pressure difference between loading and unloading is 9 psig.
Delay at shut-down signal	Is the period during which the signal must exist before the compressor is shut down. If it should be required to program this setting at another value, consult Atlas Copco.

4 Installation

4.1 Dimension drawings

Dimension drawing, ZT Pack

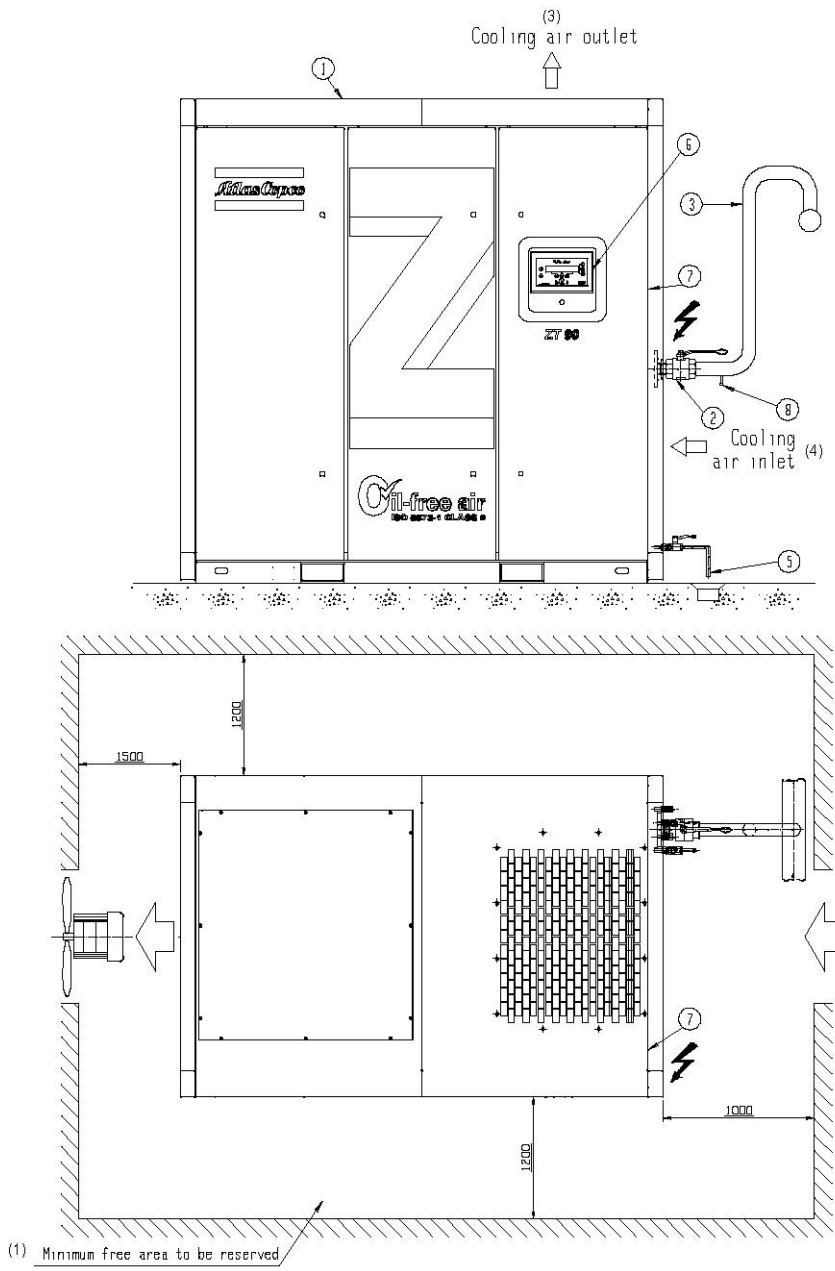


Text on drawing

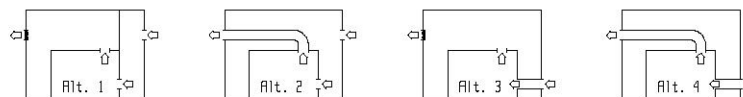
Ref	Name
(1)	Voltage supply entry
(2)	Compressed air outlet
(3)	Cooling air outlet
(4)	Opening for transportation
(5)	4 slotted holes only for horizontally pulling unit out of container
(6)	Cooling air inlet
(7)	Hole pattern ducting
(8)	Automatic drain, aftercooler
(9)	Automatic drain, intercooler
(10)	Compressed air outlet, compensator
(11)	Mass
(18)	Cooling Full-Feature air outlet
(19)	Cooling Full-Feature air inlet
(20)	If option: Prepared for MD
(21)	Cable box included for EC variants
(22)	Cable box not included for CSA/UL variants
(23)	Automatic drain, regeneration outlet
(24)	Low load drain (optional)
(25)	Automatic drain, extra aftercooler

4.2 Installation proposals

Installation proposal, ZT Pack



(2) (4) Ventilation proposal:



9823 3887 00
57513D

Text on figures

Ref	Name
(1)	Minimum free area to be reserved
(2)	Ventilation proposal
(3)	Cooling air outlet
(4)	Cooling air inlet

Description

Ref	Description
1	Install the compressor on a level floor suitable for taking the weight of the compressor. Recommended minimum distance between the top of the bodywork and the ceiling: 1200 mm (46.80 in).
2	Remove the plastic plug or cap (if provided) from the compressor air outlet pipe and install an air outlet valve. Close the valve and connect it to the air net.
3	The pressure drop over the delivery pipe can be calculated as follows: $dp = (L \times 450 \times Q_c^{1.85}) / (d^5 \times P)$ <ul style="list-style-type: none"> • dp = pressure drop (recommended maximum = 0.1 bar) • L = length of outlet pipe in m • d = inner diameter of the delivery pipe in mm • P = absolute pressure at the compressor outlet in bar(a) • Qc = free air delivery of the compressor in l/s The connection of the compressor air delivery pipe should be made on top of the main air net pipe to minimize carry-over of possible remainder of condensate.
4	The inlet grids and ventilation fan should be installed in such a way that any recirculation of cooling air to the compressor is avoided. The air velocity to the grids should be limited to 5 m/s (195 in/s). The required ventilation capacity (per compressor installed) to limit the compressor room temperature can be calculated as follows: On ZT compressors: $Q_v = 0.92 N / dT$ <ul style="list-style-type: none"> • Qv = required ventilation capacity in m³/s • N = shaft input of the compressor in kW • dT = temperature rise over ambient in °C If cooling air ducts are installed, the maximum allowable pressure drop over the ducts is 30 Pa. Common ducting for several compressors is not allowed.
5	Lay out the drain piping from automatic condensate outlets (EWD) towards the condensate collector. The drain pipes must not dip into the water of the collector. It is recommended to provide a funnel to allow visual inspection of the condensate flow.
6	Elektronikon control system with control panel.
7	See Electric cables for the recommended cable size of the supply cables. 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.
8	Provide a condensate drain valve in the lowest part of the pipe between the compressor outlet valve and the air net.

4.3 Electric cables

Remarks

	<ul style="list-style-type: none"> • The cable sizes below are applicable for the MAINS + EARTH CABLE • The cable size is valid at maximum ambient temperature of 40 °C. The cable size is valid at maximum ambient temperature of 104 °F.
--	--

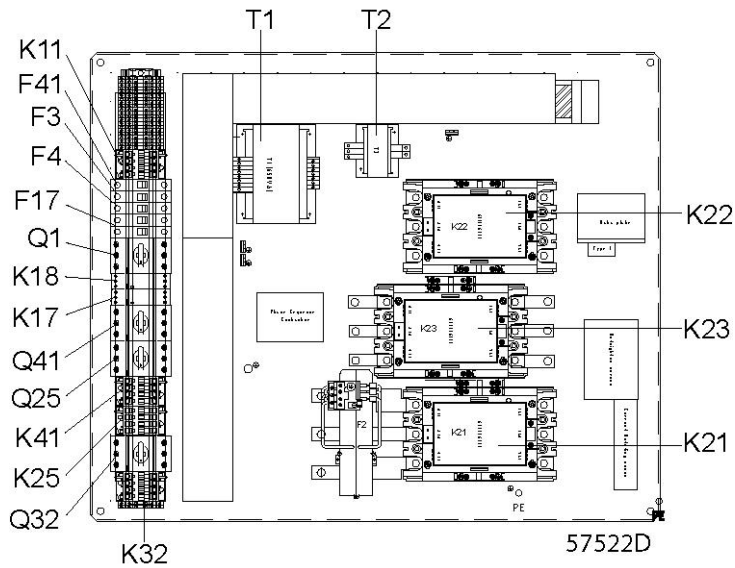
60Hz IEC

Pack compressors

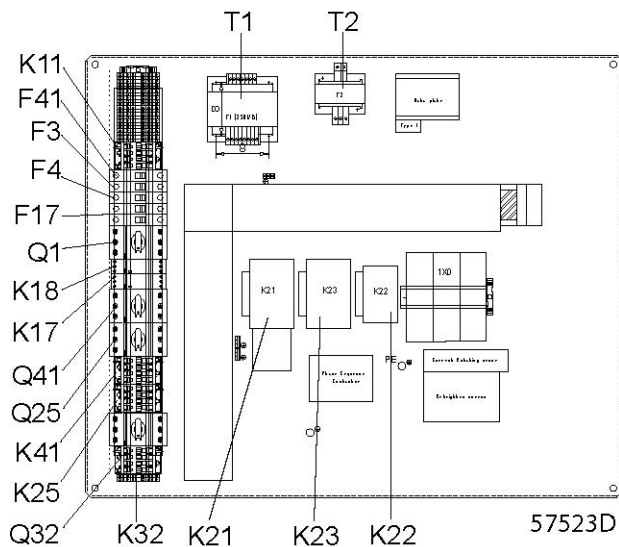
	380 V
ZT/ZR55	3 x 70 + 35 mm ²

4.4 Electric connections

Example of electric cabinet



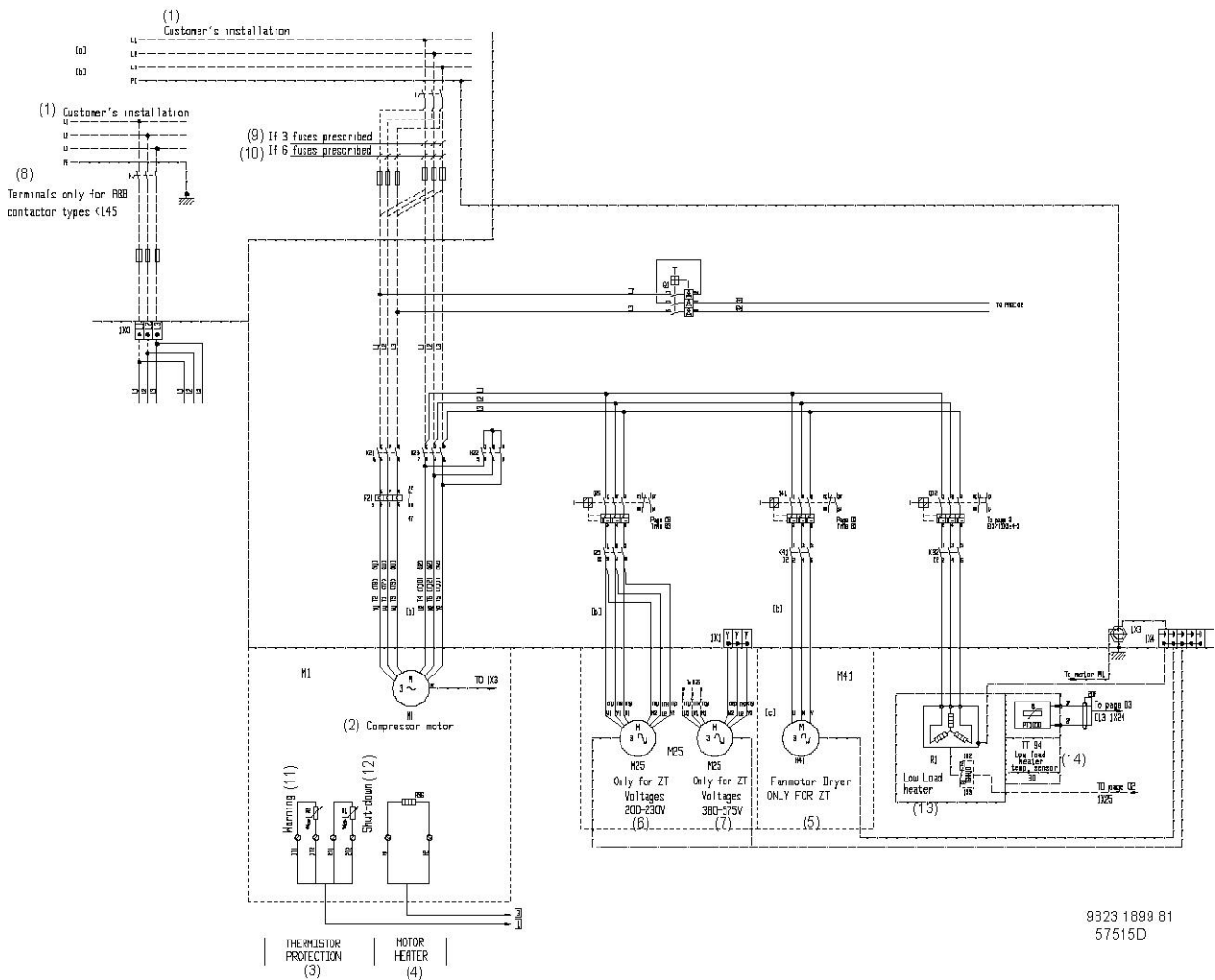
Typical example



Typical example

Ref	Name
F3/4	Circuit breakers, control circuit
F17	Circuit breaker for electronically controlled automatic condensate drains
F21	Overload relay, drive motor
K11	Auxiliary relay, loading
K21	Line contactor
K22	Star contactor
K23	Delta contactor
Q1	Circuit breaker
T1	Main transformer
T2	Transformer, control circuit
1X0	Power supply terminals
1X4/5/6/7	Terminal strips

Electric diagram



9823 1899 81
57515D

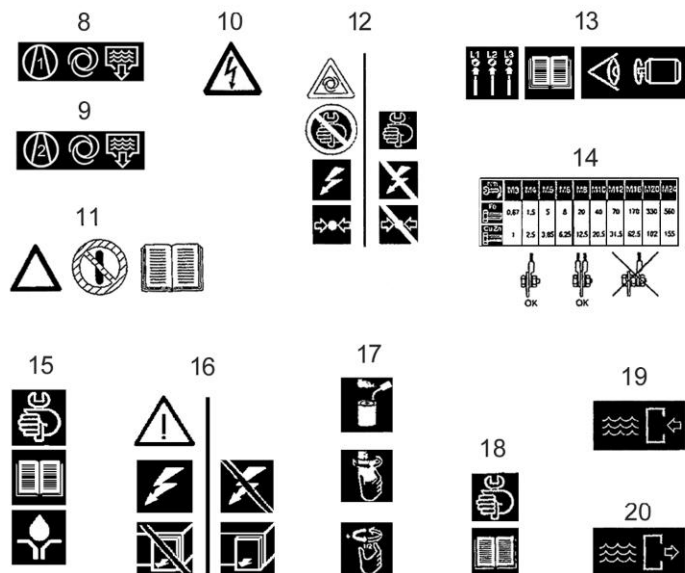
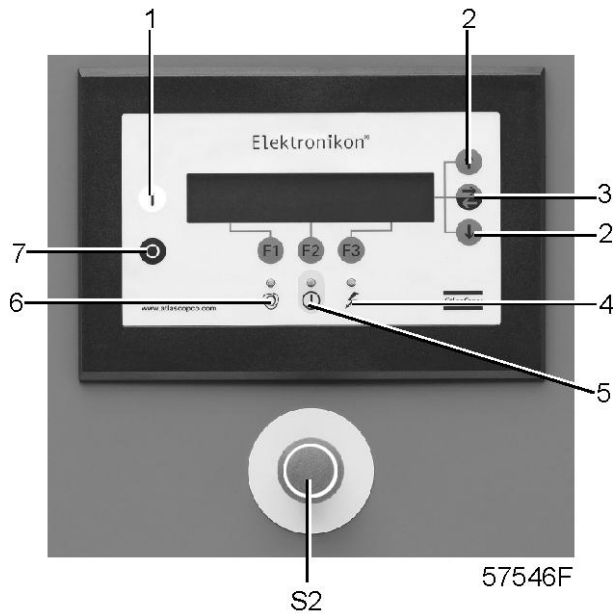
Diagram for Pack and Full-Feature compressors with YD starter

Ref	Name
(1)	Customer's installation
(2)	Compressor motor
(3)	Thermistor protection
(4)	Motor heater
(5)	Fan motor, external dryer. Only for ZT compressors.
(6)	Only for ZT 200-230V
(7)	Only for ZT 380-575V
(8)	Terminals only for ABB contactor types <145
(9)	If 3 fuses prescribed
(10)	If 6 fuses prescribed
(11)	Warning
(12)	Shut-down
(13)	Low load heater
(14)	Temperature sensor, low load heater

Ref	Name
(15)	To be installed by the customer

4.5 Pictographs

Explanation of pictographs



Ref	Name
1	Start
2	Scroll keys
3	Tabulator key

Ref	Name
4	Voltage on
5	Alarm
6	Automatic operation
7	Stop
8	Automatic condensate outlet, intercooler
9	Automatic condensate outlet, aftercooler
10	Warning: under tension
11	Read Instruction book before starting the compressor
12	Switch off the voltage and depressurize the compressor before maintenance or repair
13	Before connecting the compressor electrically, consult the Instruction book for the motor rotation direction
14	Torques for steel (Fe) or brass (CuZn) bolts
15	Consult the Instruction book before greasing
16	Switch off the voltage before removing the protecting cover inside the electric cabinet
17	Oil the gaskets, screw on the filters and tighten by hand (approx. one half turn)
18	Consult the Instruction book before maintenance or repair
19	Cooling water inlet
20	Cooling water outlet
S2	Emergency stop

5 Operating instructions

5.1 Operation introduction

Warning



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

Ambient conditions

Consult [“Limits”](#) for the limits with regard to the ambient conditions and altitude operation.

Moving/lifting

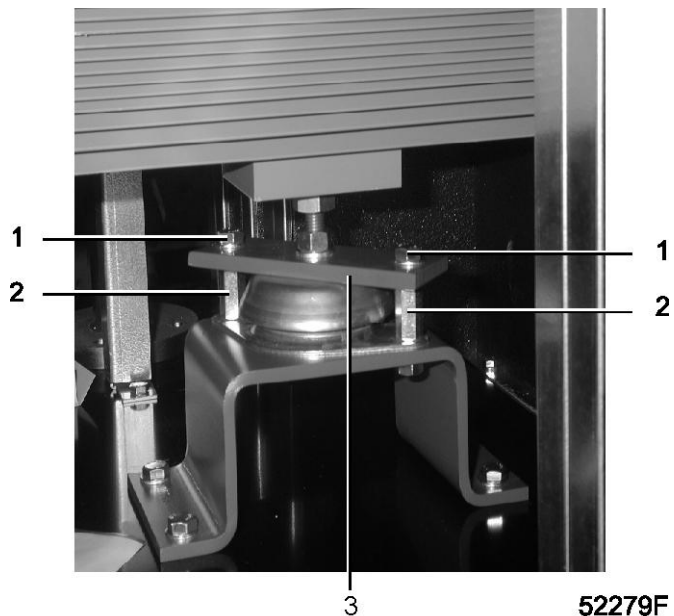
In order not to damage the frame, the compressor must be moved either by a lift truck or by using lifting equipment as described below.

When moving the compressor with a lift truck, use the slots in the frame. Make sure that the forks protrude from the other side of the frame. When moving the compressor with a lifting device, insert beams in the slots. Make sure that the beams cannot slide and that they protrude from the frame equally. The chains must be held parallel to the bodywork by chain spreaders in order not to damage the compressor. The lifting equipment must be placed in such a way that the compressor is lifted perpendicularly. Lift gently and avoid twisting.

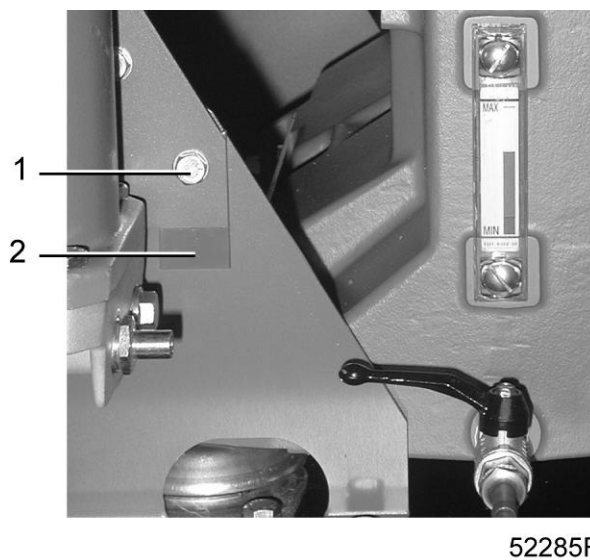
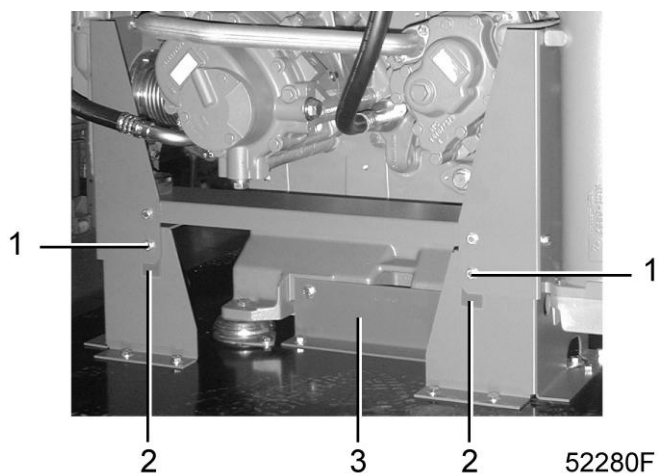
5.2 Initial start-up

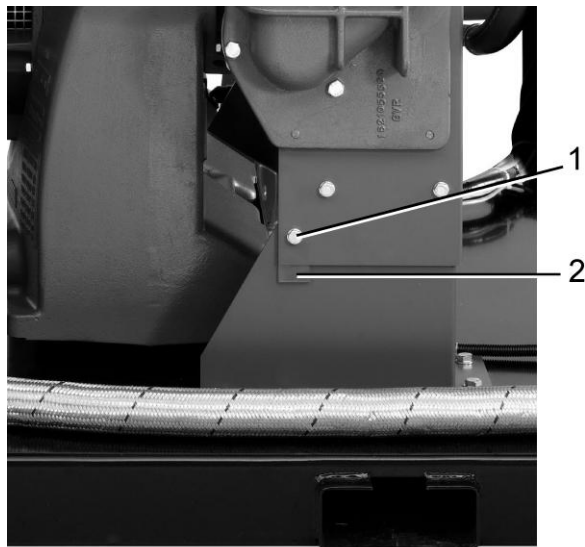
Procedure

- Consult [Electric cables](#), [Installation proposals](#) and [Dimension drawings](#).
- A sticker dealing in short with the operation instructions is delivered with the literature set. Affix the sticker next to the control panel.
- A number of VCI (Volatile Corrosion Inhibitor) plates are provided inside the bodywork to protect the compressor against corrosion. Remove the plates.
- The compressor and motor are secured to the frame immobilizing the vibration dampers during transport:
 - At the motor side, loosen nut (1), remove bolts (2) and turn bracket (3) 90°. Tighten nut (1).



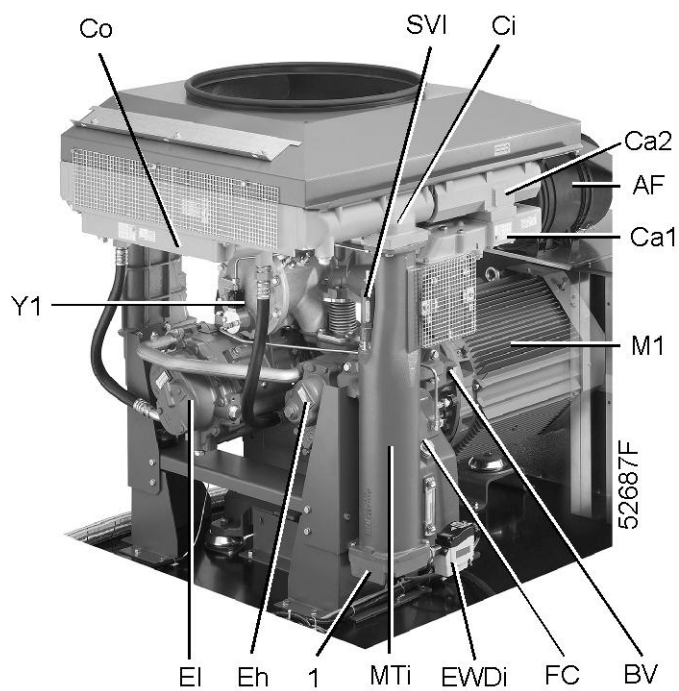
- On ZT compressors, remove bolts (1) and supports (2) immobilizing the vibration dampers of the coolers. Remove support (3), immobilizing the vibration dampers of the gear casing.





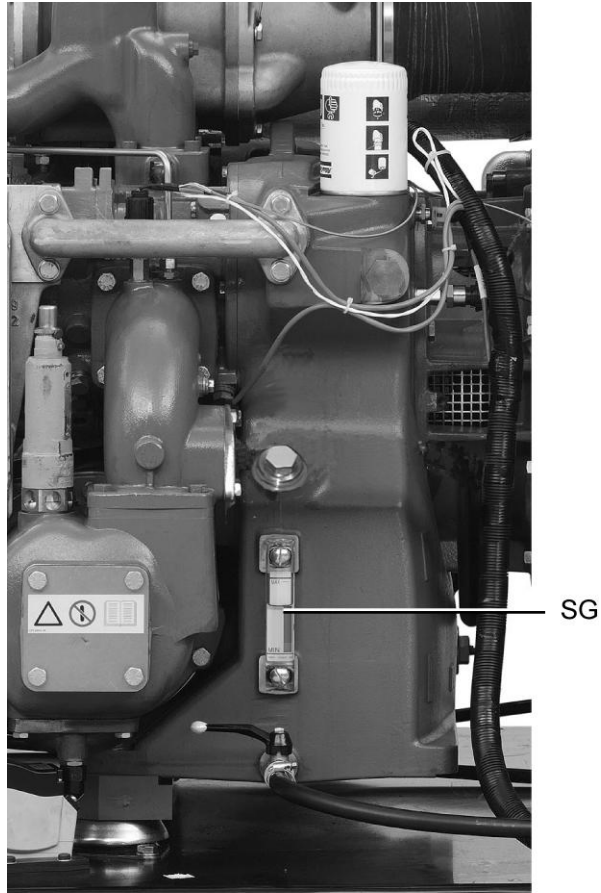
52286F

- Remove flange (1) and take out the silica gel bags installed in the intercooler at the condensate drain receiver side. Refit the flange.



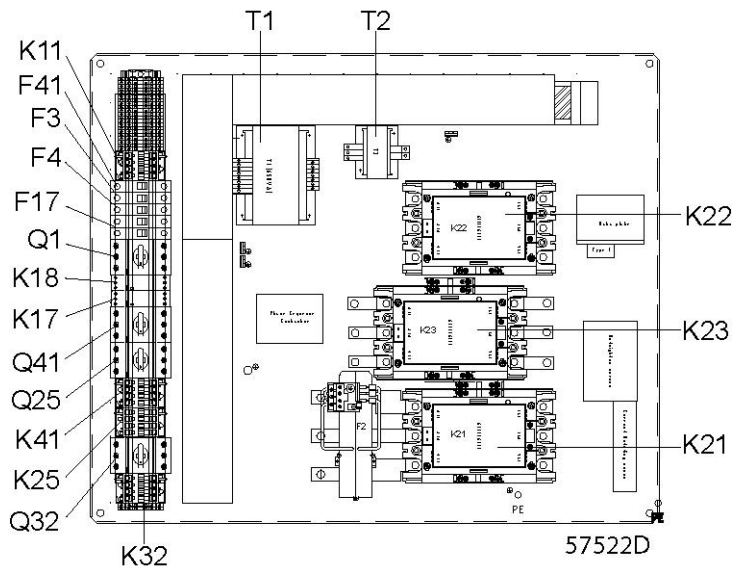
Position of silica gel bags on ZT compressors

- Check that the gear casing is filled with oil: the level should be in the middle of sight-glass (SG).

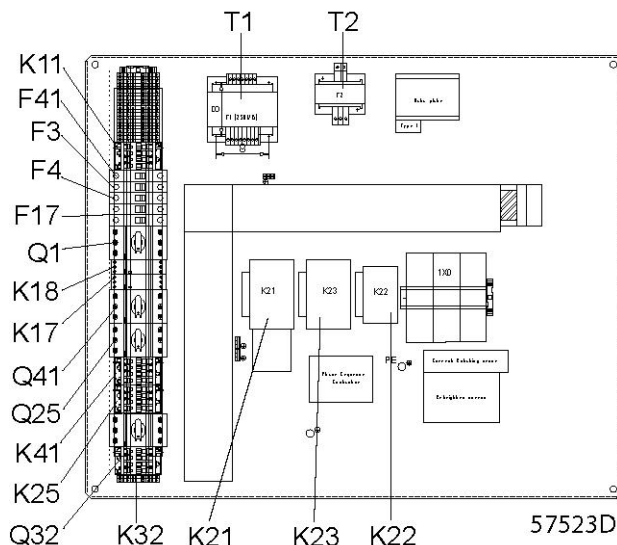


53298F

- Check that the electrical connections correspond to the local codes. The installation must be earthed and protected by fuses in all phases. An isolating switch must be provided.
- Check the connections at the primary sides of transformers (T1 and T2).

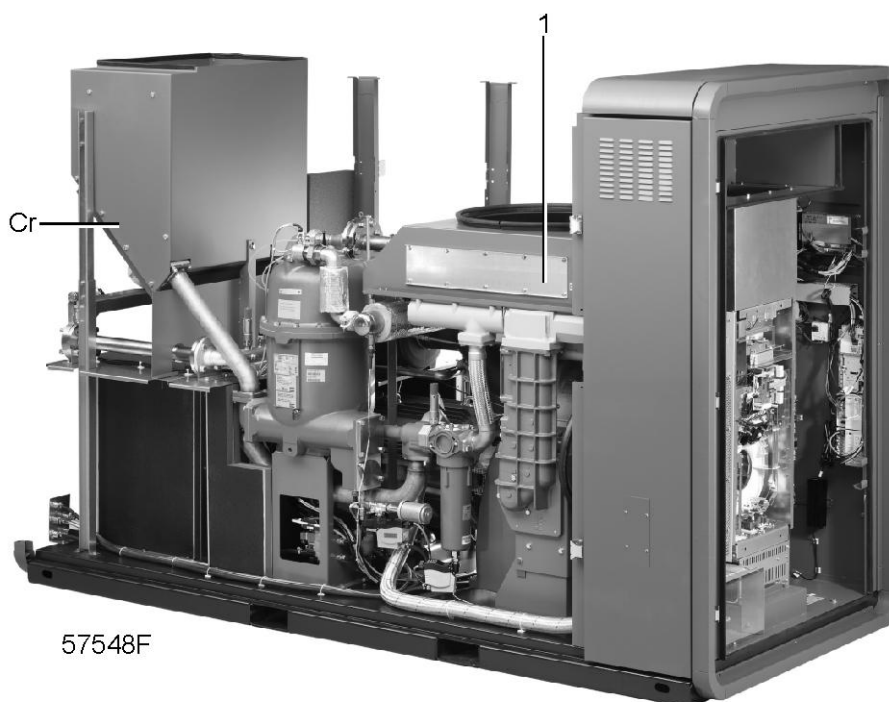


Typical example



Typical example

- Switch on the voltage. Start the compressor and stop it immediately. Check for correct direction of rotation while the motor is coasting to a stop. An arrow on the gear casing indicates the correct rotation direction. If the rotation direction is wrong, switch off the voltage and reverse two incoming electric lines.
- On ZT compressors, remove panel (1) and check the rotation direction of the fan motor. If the rotation direction is wrong, switch off the voltage and reverse two connections at terminals 221 up to 226 of terminal strip (1X1).



- Run the compressor for a few minutes and check that it operates normally.
- Stop the compressor. If necessary, top up the gear casing with oil to the middle of sight-glass (SG).

5.3 Before starting

Safety

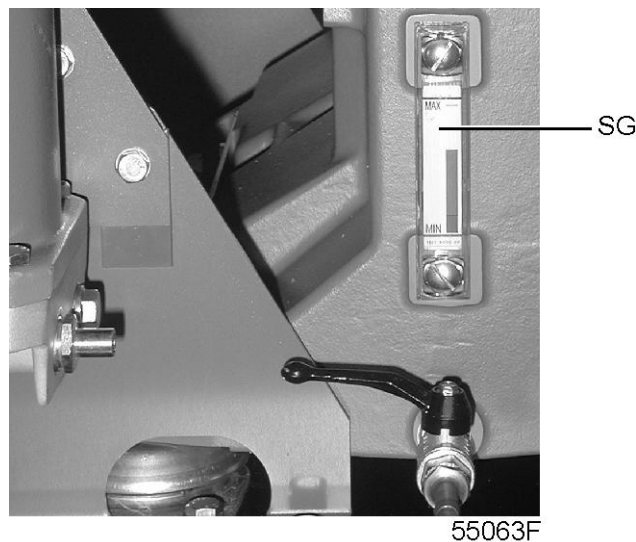


The operator must apply all related [“Safety precautions”](#).

Procedure

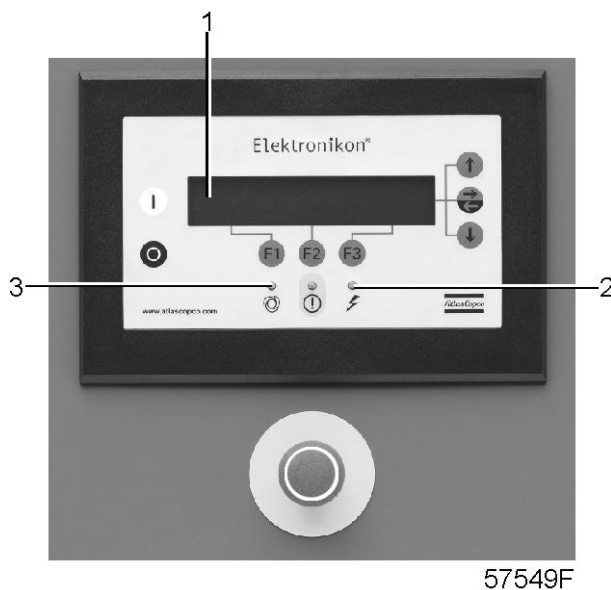
Step	Action
1	Check the oil level, which must be in the middle of sight-glass (SG). Top up, if necessary, with the correct type of oil.

Position of oil sight-glass on ZT compressors



5.4 Starting

Control panel

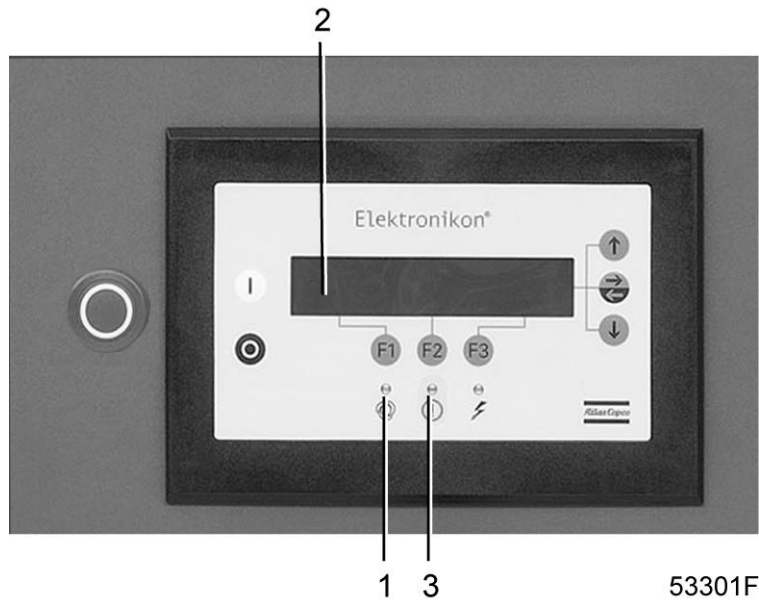


Procedure

Step	Action
1	Open the air outlet valve (customer's installation).
2	Switch on the voltage and check that voltage on LED (2) lights up.
3	Press start button (1). The compressor starts running and automatic operation LED (3) lights up.
	<ul style="list-style-type: none"> • When the compressor is stopped and automatic operation LED (3) is alight, the compressor may start automatically. • If the start/stop timer is active, the compressor may start automatically, even if it was stopped manually.

5.5 During operation

Control panel



53301F

Procedure

When automatic operation LED (1) is alight, the Elektronikon regulator is automatically controlling the compressor: the air delivery is matched to the air consumption, the compressor will start and stop whenever necessary.

Keep all doors closed during operation.

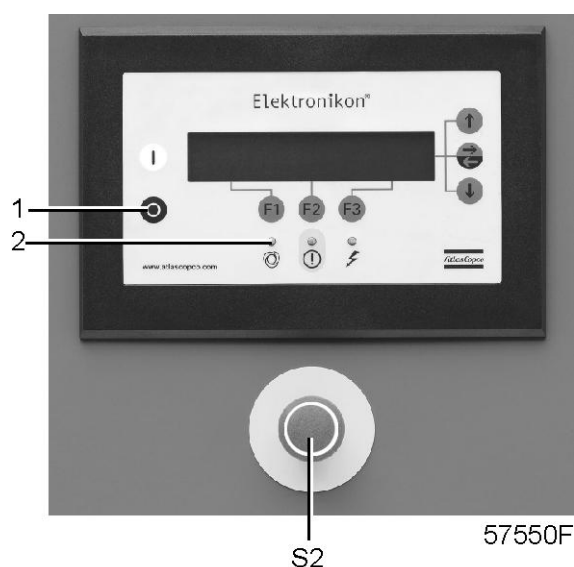
Step	Action
1	Daily check the display (2) for readings and messages. Normally, the main screen is shown (see below), indicating the compressor outlet pressure, the status of the compressor and the functions of the keys below the display.
2	Always check the display and remedy the trouble if alarm LED (3) is alight or blinks. See “Elektronikon control system” .
3	The display will show a service message if a service plan interval has been exceeded or if a service level for a monitored component has been exceeded. Carry out the service actions of the indicated plans or replace the component and reset the relevant timer. Consult your Atlas Copco Customer Centre. See also “Preventive maintenance schedule” .
4	Regularly check the actual compressor status by pressing the down key from the main screen.
	<ul style="list-style-type: none"> • Before starting any maintenance or repairs, stop the compressor, wait until it has stopped. • Close the air outlet valve and press the test buttons on top of the electronic water drains to depressurize the air system. • Open the isolating switch (customer's installation) to switch off the voltage to the compressor.

Example of the main screen


Compressor Outlet		7.0 bar	
Automatically Loaded			↓
Menu		Unload	
F1	F2	F3	

5.6 Stopping

Control panel



Procedure

 Frequently stopping the compressor using the emergency stop button may damage the compressor, only use the emergency stop button in case of emergency.

Step	Action
1	Press the test button on top of the electronic water drains while the compressor is running loaded.
2	Press stop button (1): the compressor will stop and LED (2) will go out.
3	Close the air outlet valve.
4	To stop the compressor immediately, press emergency stop button (S2).
5	Close the cooling water inlet valve.

5.7 Taking out of operation

Procedure

Step	Action
1	Close the air outlet valve and stop the compressor.
2	Switch off the voltage. Disconnect the compressor from the mains.
3	Shut off and depressurise the part of the air net which is connected to the outlet valve. Disconnect the compressor air outlet pipe from the air net.
4	Drain oil and condensate circuits.
5	Disconnect the compressor condensate piping from the condensate drain net.

6 Maintenance

6.1 Maintenance warnings

Warnings



Before starting any maintenance or repairs:

- Stop the compressor. Close the air outlet valve.
- Press the test buttons on top of the electronic water drains to depressurize the air system.
- Press the emergency stop button (S2).
- Open the isolating switch (customer's installation) to switch off the voltage to the compressor.

Warranty-Product Liability

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

6.2 Preventive maintenance schedule

Regular service operations

To ensure safe operation and long service life, carry out following operations at the interval (period or running hours) which comes first. The "longer interval" checks must also include the "shorter interval" checks.

The local Atlas Copco Customer Centre may overrule the maintenance schedule depending on the environmental and working conditions of the compressor.

Period	Running hours	Operation
Daily	8	Check readings on display.
Daily	8	Check that condensate is discharged during loading.
Daily	--	Check oil level. Before starting, the level should be in the middle of the sight-glass.
Weekly	--	Drain condensate from the air receiver, if installed
3-monthly	--	Clean compressor.
3-monthly	--	Check for possible leaks.
3-monthly	500	Check coolers, clean if necessary.
When displayed	--	Carry out the service actions according to the displayed service plans.

6.3 Service kits

Service kits

Atlas Copco Customer Centres will be glad to provide you with a wide range of service kits. Service kits comprise all parts needed for servicing components and offer the benefits of genuine Atlas Copco parts while keeping the maintenance budget low. All service kits are mentioned in the relevant Parts Lists.

6.4 Service agreements

Atlas Copco Customer Centres have a range of service agreements to suit your needs:

- An Inspection plan.
- A Preventive maintenance plan.
- A Total responsibility plan.

Contact your Customer Centre to agree on a tailor-made service agreement. It will ensure optimum operational efficiency, minimize downtime and reduce the total life cycle costs.

6.5 Service plan

A number of service operations are grouped (called Level A, Level B, Level C, ...). Each level stands for a number of service actions to be carried out at the time intervals programmed in the Elektronikon regulator.

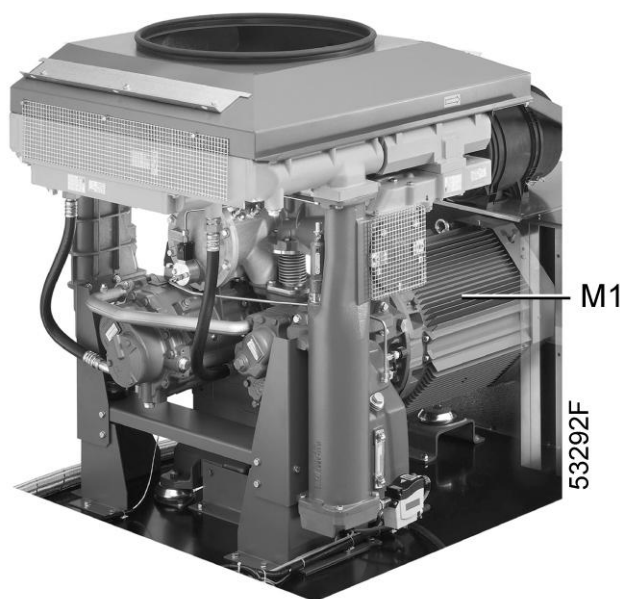
When reaching a level, a message will appear on the screen. After carrying out all service actions, the interval timers are to be reset using the key "Reset" in menu "Service". Consult your Atlas Copco Customer Centre.

6.6 Motor greasing


Fan motor of ZT compressors

The bearings of the fan motor are greased for life. Contact your Customer Centre for the replacement interval of the motor bearings.

Drive motor (M1) of ZT compressor



Motor grease


	Do not mix greases of different types.
---	--

The recommended motor grease is KLÜBERQUIET BQH 72-102. Contact your Customer Centre for the greasing quantity and interval for the motor bearings.

6.7 Oil specifications

Oil type

Use Atlas Copco Roto-Z oil which has been specially developed for oil-free rotary compressors. This oil has a long service life and ensures optimum lubrication.

	Never mix oils of different brands or types.
---	--

Atlas Copco Roto-Z oil

Atlas Copco Roto-Z oil can be ordered in following quantities:

Quantity	Ordering number
20 l can 5.28 Us gal can 4.40 Imp gal can 0.70 cu.ft can	2908 8501 01
209 l drum 55.18 Us gal drum 45.98 Imp gal drum 7.32 cu.ft drum	2908 8500 00

6.8 Storage after installation

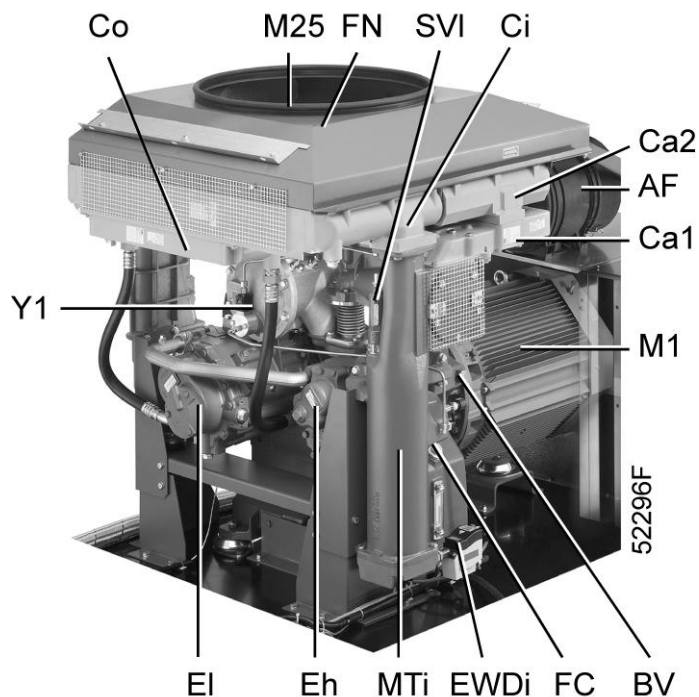
Run the compressor, e.g. twice a week, until warm.

If the compressor is going to be stored without running from time to time, protective measures must be taken. Consult Atlas Copco.

7 Servicing procedures

7.1 Air filter (AF)

Location of the air filter on ZT compressors

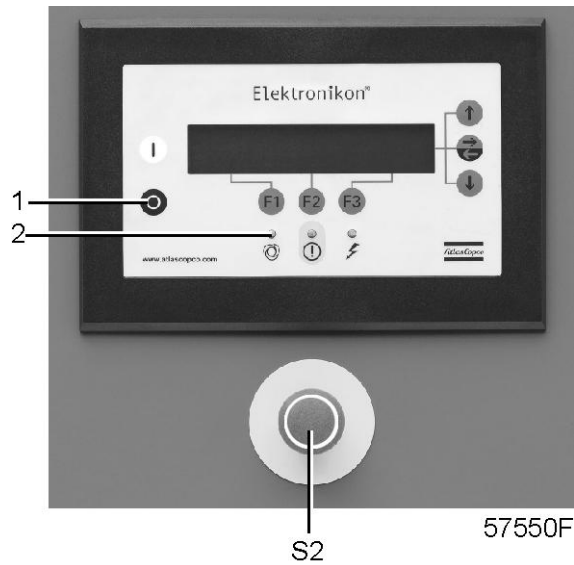


Procedure

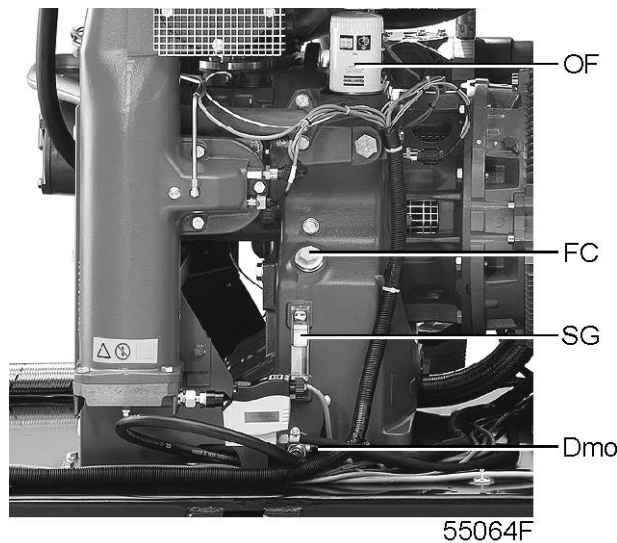
Step	Action
1	Stop the compressor and switch off the voltage to the compressor.
2	Remove the filter.
3	Fit the new filter.
4	After carrying out the service actions of the related service plan, the service warning must be reset. See also “Preventive maintenance schedule” .

7.2 Oil and oil filter change

Control panel



Oil system components, ZT



Procedure

Step	Action
1	Run the compressor until warm.
2	Press stop button (1), wait until the compressor has stopped, press emergency stop button (S2) and switch off the voltage to the compressor.
3	Remove filler plug (FC). Drain the compressor sump by opening drain valve (Dmo). Close the valve after draining. Drain the oil cooler by removing its drain plug and vent plug. Drain the oil of the compressor elements. Yellow-painted drains plugs are provided on both elements.

Step	Action
4	Remove the oil filter (OF). Clean the filter seat, oil the gasket of the new filter and screw it into place until the gasket contacts the seat. Then tighten by hand.
5	Fill the compressor sump to the middle of the oil level sight-glass (SG) with oil as specified in "Oil specifications" . Reinstall the filler plug.
6	Switch on the voltage. Unlock the emergency stop button.
7	Run the compressor for a few minutes. Stop the compressor. If necessary, top up the gear casing with oil to the middle of the sight-glass (SG).
8	After carrying out the maintenance operations of the related service plan, the service warning must be reset. See also "Preventive maintenance schedule" .

7.3 Safety valves

Testing

The valves can be tested on a separate compressed air line. If a valve does not open at the pressure specified in ["Settings of safety valves"](#), consult Atlas Copco.




- Never run the compressor without safety valves.
- No adjustments are allowed.

8 Problem solving

8.1 Faults and remedies

Warnings

	<ul style="list-style-type: none"> • Before starting any maintenance or repairs, stop the compressor, wait until it has stopped. • Close the air outlet valve and press the test button on top of the electronic water drains to depressurize the air system. • Open the isolating switch (customer's installation) to switch off the voltage to the compressor. • Apply all relevant "Safety precautions".
---	---

Problem solving, compressor

Condition	Fault	Remedy
Compressor capacity or working pressure lower than normal	Air consumption exceeds capacity of compressor	Check pneumatic plant
	Safety valves leaking	Remove leaking valve and have it inspected
Oil pressure too low	Oil level too low	Top up level to the middle of the oil level sight-glass
	Oil filter clogged	Replace filter
Air temperature above normal	Inlet temperature too high due to bad room ventilation or recirculation of cooling air	Improve ventilation of compressor room and avoid cooling air recirculation
	Air filter clogged	Replace filter
Condensate is not discharged from condensate traps during operation	Discharge flexible clogged	Check and correct as necessary
	Electronic water drain malfunctioning	Consult Atlas Copco
LED's of electronic water drain do not light up	Compressor is running unloaded	LED's will light up when the compressor is loaded again.
	Power supply to EWD's faulty	Check power supply. Compare power supply with voltage mentioned on data label of EWD
	Power supply board defective	Check and replace as necessary
No condensate discharged when pressing test button on EWD	System pressure lower than 0.8 bar(e)/11.6 psig	Load the compressor; as soon as the system pressure exceeds 0.8 bar(e), condensate will be discharged
	Condensate inlet and/or outlet blocked	Check and correct as necessary
	Control board defective	Check and replace if necessary
	Solenoid valve defective	Check and replace if necessary

Condition	Fault	Remedy
Condensate only discharged when test button is pressed	Sensor dirty	Clean sensor
	Air pressure below minimum pressure	Increase air pressure
EWD continuously discharges air	Control air blocked	Check and correct as necessary
	Sensor dirty	Clean sensor

9 Principal data

9.1 Readings on display

Display



57551F

Reference	Unit	Reading
Outlet pressure	bar(e)	Depends on pressure setpoint.
Maximum working pressure	bar(e)	See "Compressor data" .

9.2 Settings of safety valves

Settings

Reference	Value	Value
Low-pressure safety valve	3.7 bar(e)	54 psig
High-pressure safety valve, ZT/ZR55/75 7.25 bar/105 psi and ZT/ZR 7.5 bar/109 psi	9.3 bar(e)	135 psig


9.3 Circuit breakers and fuses

60Hz IEC

ZT/ZR55

Voltage	F21 (A)	Q25 (A)	Q32 Pack and Full-Feature (A)	Q41 (A)	Q1 (A)	Fuses Type 2gG (A)
380 V	80	4.8	6.3	2.8	1.2	200

Location of components

	See "Electrical system" for location of components.
---	---

9.4 Reference conditions

Reference	Unit	Value
Absolute inlet pressure	bar(a)	1
Absolute inlet pressure	psi	14.50
Relative air humidity	%	0
Air inlet temperature	°C	20
Air inlet temperature	°F	68
Cooling water inlet temperature	°C	20
Cooling water inlet temperature	°F	68

9.5 Limitations

Limitations	Value	Value
Maximum air inlet temperature	40 °C	104°F
Minimum air inlet temperature	0 °C	32 °F

9.6 Compressor data

ZT - 7.25 bar - 60Hz

	Unit	ZT55
Nominal working pressure	bar	7
Nominal working pressure	psi	101.53
Maximum working pressure, ZT Pack	bar	7.25
Maximum working pressure, ZT Pack	psi	105.15

	Unit	ZT55
Maximum working pressure, ZT Full-Feature	bar	7.0
Maximum working pressure, ZT Full-Feature	psi	101.53
Power input at maximum working pressure, ZT Pack	kW	70.1
Power input at maximum working pressure, ZT Pack	hp	94.01
Power input at maximum working pressure, ZT Full-Feature	kW	71.0
Power input at maximum working pressure, ZT Full-Feature	hp	95.21
Oil capacity	l	38
Oil capacity	Us gal	10.04
Oil capacity	Imp gal	8.36
Oil capacity	cu.ft	1.34
Sound pressure level (According to PNEUROP/CAGI test code with a tolerance of +/- 3 dB under free field conditions at 1 m distance) (According to PNEUROP/CAGI test code with a tolerance of +/- 3 dB under free field conditions at 39 in distance)	dB	72

10 Pressure equipment directives

PED instructions

ZR/ZT 55 Pack up to ZR/ZT 90 Pack are pressure assemblies of cat. I according to 97/23/EC.

Parts of article 3.3 of 97/23/EC are subject to good engineering practice.

Parts of category I according to 97/23/EC are integrated into the machine and fall under the exclusion of article I, section 3.6.

Parts subject to the Simple Pressure Vessel Directive 87/404/EEC are excluded from 97/23/EC according to article I, section 3.3.

The following pressure bearing parts are of category higher than I :

- Safety valve: Category IV
Design code: AD-Merkblätter, A2
- Vessel IMD260: Category III
Design pressure 11 bar(e) (159.54 psig), content 91 l (24.02 US gal / 20.02 Imp gal / 3.19 cu.ft)
Design standard: ASME section VIII div. 1.

11 Documentation

Declaration of conformity

Typical example of a Declaration of Conformity document



EC DECLARATION OF CONFORMITY

- 1
- 2 We, Atlas Copco Airpower n.v., declare under our sole responsibility, that the product
- 3 Machine name
- 4 Machine type
- 5 Serial number
- 6 Which falls under the provisions of article 12.2 of the EC Directive 2006/42/EC on the approximation of the laws of the Member States relating to machinery, is in conformity with the relevant Essential Health and Safety Requirements of this directive.

The machinery complies also with the requirements of the following directives and their amendments as indicated.

7	Directive on the approximation of laws of the Member States relating to	Harmonized and/or Technical Standards used	Att'mnt
a.	Pressure equipment 97/23/EC		
b.	Machinery safety 2006/42/EC	EN ISO 12100 – 1 EN ISO 12100 – 2 EN 1012 – 1	
c.	Simple pressure vessel 87/404/EEC		
d.	Electromagnetic compatibility 2004/108/EC	EN 61000-6-2 EN 61000-6-4	
e.	Low voltage equipment 2006/95/EC	EN 60034 EN 60204-1 EN 60439	
f.	Outdoor noise emission 2000/14/EC		
g.	Equipment and protective systems in potentially explosive atmospheres 94/9/EC		
h.	Medical devices General 93/42/EEC	EN ISO 13845 EN ISO 14971 EN 737-3	
i.			

- 8 The harmonized and the technical standards used are identified in the attachments hereafter

9	Conformity of the specification to the Directives (incl. Technical File)		Conformity of the product to the specification and by implication to the directives	
10				
11	Issued by	Product engineering	Manufacturing	
12	Name			
13	Signature			
14	Date			

Form 6009 xxxx xx
ed. xx, xxxx-xx-xx

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For info, please contact your local Atlas Copco representative

What sets Atlas Copco apart as a company is our conviction that we can only excel in what we do if we provide the best possible know-how and technology to really help our customers produce, grow and succeed.

There is a unique way of achieving that - we simply call it the Atlas Copco way. It builds on **interaction**, on long-term relationships and involvement in the customers' process, needs and objectives. It means having the flexibility to adapt to the diverse demands of the people we cater for.

It's the **commitment** to our customers' business that drives our effort towards increasing their productivity through better solutions. It starts with fully supporting existing products and continuously doing things better, but it goes much further, creating advances in technology through **innovation**. Not for the sake of technology, but for the sake of our customer's bottom line and peace-of-mind.

That is how Atlas Copco will strive to remain the first choice, to succeed in attracting new business and to maintain our position as the industry leader.