
ACWS Series Air Compressor



User's Manual



Newport
Experience | Solutions

Warranty

Newport Corporation warrants that this product will be free from defects in material and workmanship and will comply with Newport's published specifications at the time of sale for a period of one year from date of shipment. If found to be defective during the warranty period, the product will either be repaired or replaced at Newport's option.

To exercise this warranty, write or call your local Newport office or representative, or contact Newport headquarters in Irvine, California. You will be given prompt assistance and return instructions. Send the product, freight prepaid, to the indicated service facility. Repairs will be made and the instrument returned freight prepaid. Repaired products are warranted for the remainder of the original warranty period or 90 days, whichever first occurs.

Limitation of Warranty

The above warranties do not apply to products which have been repaired or modified without Newport's written approval, or products subjected to unusual physical, thermal or electrical stress, improper installation, misuse, abuse, accident or negligence in use, storage, transportation or handling. This warranty also does not apply to fuses, batteries, or damage from battery leakage.

This warranty is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular use. Newport Corporation shall not be liable for any indirect, special, or consequential damages resulting from the purchase or use of its products.

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This manual has been provided for information only and product specifications are subject to change without notice. Any change will be reflected in future printings.

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Table of Contents

Warranty.....	ii
Table of Contents	iii
List of Figures	v
1 Safety Precautions	6
1.1 Safety Information.....	6
1.2 General Warnings.....	6
1.3 Air Compressor Safety Warnings.....	7
2 Installation	8
2.1 Unpacking and Inspection	8
2.2 Parts List.....	8
2.3 Storage.....	8
2.4 Preparation for Use.....	8
2.4.1 Work area set up.....	9
2.4.2 Initial air compressor set up	9
2.5 Operation	11
2.5.1 Turn on/off air compressor.....	11
2.5.2 Adjusting the outlet pressure	11
2.5.3 Air compressor operations.....	11
3 Maintenance	12
3.1 Maintenance Schedule.....	12
3.2 Maintenance Instructions.....	13
3.2.1 Checking oil level.....	13
3.2.2 Draining air tank condensate	13
3.2.3 Draining the air outlet filter	13
3.2.4 Checking the pressure relief valve	14
4 Troubleshooting	15
4.1 Troubleshooting Guide.....	15
Section 5 – Factory Service	17
4.2 Obtaining Factory Service.....	17

5 Service Form

18

List of Figures

Figure 1	Remove rubber plug and install air intake filter	9
Figure 2	Remove rubber plug on the oil pipe.....	10
Figure 3	Add oil and check oil level	10
Figure 4	ACWS Parts	11
Figure 5	Outlet filter bottom knob	13

1 Safety Precautions

1.1 Safety Information

The following are definitions of the Warnings, Cautions and Notes that are used throughout this manual to call your attention to important information regarding your safety, the safety and preservation of your equipment or an important tip.



WARNING

Warning is used to indicate dangers that could result in personal injury.



CAUTION

Caution is used to indicate situations that may result in damage to components of your air compressors.

1.2 General Warnings

Observe these general warnings when operating or servicing this equipment:

- Read the operating instructions and recommendations before using the compressor.
- Make sure the compressor is kept upright at all times.
- Heed all warnings on the unit and in the operating instructions.
- Do not use the compressor if the switch does not turn it on and off. Any compressor that cannot be controlled with the switch is dangerous and must be repaired.
- Disconnect power before cleaning and servicing the equipment. Do not use liquid or aerosol cleaners; use only a damp lint-free cloth.
- Lockout all electrical power sources before servicing the equipment.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.

1.3 Air Compressor Safety Warnings

Observe these safety warnings when operating the air compressor:

- Do not operate compressor with any damaged hose(s) or after the compressor or attachments have been dropped or damaged.
- The pressure relief valve is calibrated and sealed by the manufacturer. Do not tamper with it or change the setting.
- Risk of bursting - Do not adjust regulator higher than maximum stated pressure of attachment.
- Risk of injury - Do not direct air stream at people or animals.
- To reduce the risk of electric shock, do not expose to rain. Store indoors.
- Do not use to supply breathing air.
- Drain Tank monthly after use. Internal rust causes tank failure and explosion. It may be necessary to do more often when operated in high humidity.
- Add correct amount of compressor oil. Operating with low or no oil causes permanent damage and voids warranty.
- Compressor head gets hot during operation. Do not touch it or allow children nearby during or immediately following operation.
- The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to person.
- Industrial applications must follow OSHA guidelines.



WARNING

Save these instructions and always read instructions before operations.

2 Installation

2.1 Unpacking and Inspection

Unpack the air compressor unit and all of the hardware. Inspect all of the parts for shipping damage. Inform Newport Corporation and shipping company immediately for any visible damages to the parts.



WARNING

You are urged to save the packaging material in case you need to ship your equipment in the future. Also, do not dispose of the shipping restraints. They are reusable and needed for the integrity of the system during shipment.

2.2 Parts List

Parts included with the ACWS compressor:

- Compressor unit (with air intake filter)
- Oil bottle
- Instruction manual
- Product certificate

2.3 Storage

Store the air compressor properly before and after use.



CAUTION

Packed compressors must be stored in a dry, well ventilated, dust free area, with an ambient temperature between -10 to 40 °C maximum.

2.4 Preparation for Use

Read and understand the safety instructions before using Newport ACWS Series air compressor.

2.4.1 Work area set up

- Designate a work area that is clean and dry, with a cool ambient temperature (up to 34 °C).
- Locate the compressor on a flat level surface to ensure proper pump lubrication and to prevent damage to the unit. Keep 12” of space around the unit to allow air circulation.
- Intake air must be free from dirt, coarse solids, abrasive particles and gaseous impurities.
- Route the power cord properly to prevent tripping or exposing the power cord to possible damage.

	<p>CAUTION</p> <p>Be careful about high heat or high humidity conditions as you will need to replace the filter and oil much more frequently.</p>
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2.4.2 Initial air compressor set up

	<p>WARNING</p> <p>The compressor is shipped without oil. Please add oil before use. Running the air compressor with the incorrect amount of oil will cause damage to the unit and void the warranty. To prevent damage, do not use with overfilled or low oil.</p>
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- 1) Remove the rubber plug on the air intake pipe and put on the air intake filter included with the compressor.



Figure 1

Remove rubber plug and install air intake filter

- 2) Remove the rubber plug on the oil pipe.



Figure 2 Remove rubber plug on the oil pipe

- 3) Carefully cut the tip of the funnel cap included with the air compressor, remove the round cap from the bottle of oil included and put the funnel cap on securely.
- 4) Carefully add oil to the oil pipe. Add around 500 ml oil and check the oil sight glass on the other side of the air compressor.



Figure 3 Add oil and check oil level

- 5) Fill the tank with oil until the level is aligned with the red OIL mark on the sign next to the sight glass.
- 6) Refit the rubber plug to the oil pipe to cover the port opening.
- 7) Refit the air intake filter if removed while filling with oil



WARNING

To prevent serious injury from burns, do not add or change the oil while the compressor is in operation.



CAUTION

Use ROLOIL-SINCOM/32E oil with ACWS compressors. Using other types of oil will void the warranty and likely damage the unit.

2.5 Operation

2.5.1 Turn on/off air compressor

Make sure that the power supply voltage is the same with what's indicated on the data label: 230V/50 Hz or 115V/60 Hz. Use only 3-pole receptacles that accept the compressor's plug.

The on/off switch is located on the top of the pressure switch (see Figure 4). To switch the unit on, turn the switch to position "1". When switched on, the compressor starts to build up pressure until the tank reaches the maximum allowed pressure (8 bar/120 psi). The unit will then be automatically switched off until air is used and the pressure in the tank drops to the minimum operating pressure (6 bar/90 psi), at which point the compressor automatically switches on.

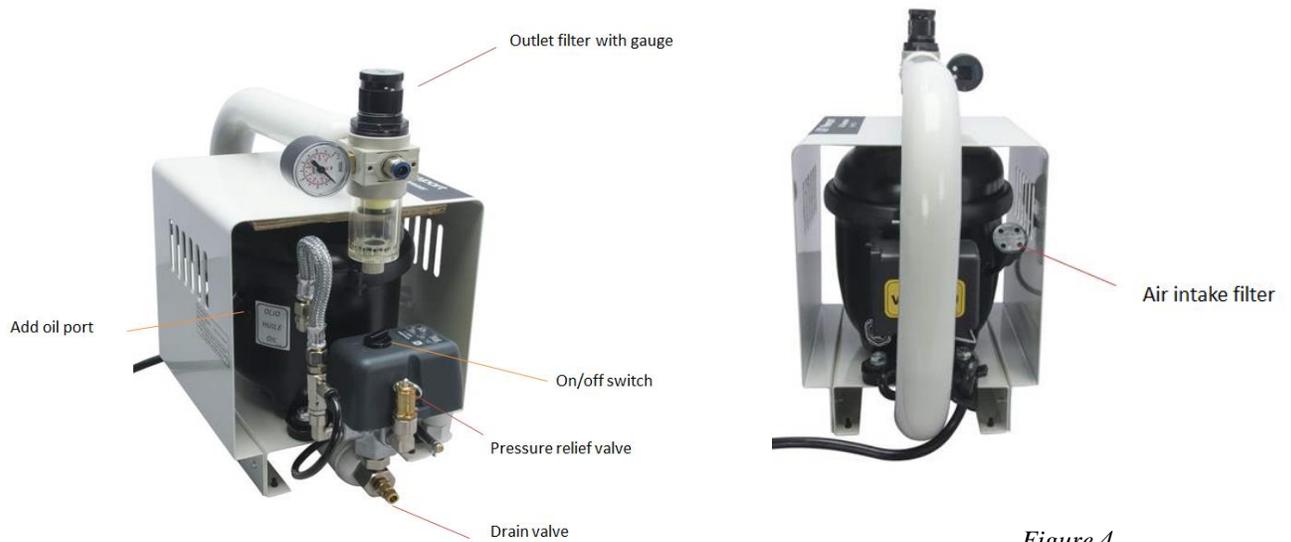


Figure 4

A

CWS Parts

2.5.2 Adjusting the outlet pressure

Outlet pressure can be adjusted using the knob on the filter/regulator so that the air output is enough for the application, but the output will not exceed the maximum air pressure specified by the application. Turn the knob clockwise to increase the pressure and counter-clockwise to decrease pressure.

2.5.3 Air compressor operations

When properly installed, the compressor will operate within less than 50% duty cycle. Check air connections and leaks regularly to prevent overheating caused by compressor operating with larger than 50% duty cycle. Contact Newport technical support if the air compressor is operating with larger than 50% duty cycle.

3 Maintenance

3.1 Maintenance Schedule



WARNING

Do not perform any maintenance until the unit is cooled down.

Following are general guidelines for maintenance checks of the air compressor.

Weekly:

Check for oil leaks, abnormal noise or vibration.

Monthly:

Check oil level.

Drain the condensate that has collected in the air tank. It may be necessary to do more often when operated in high humidity.

Drain the water collected in the air outlet filter.

Clean the compressor using a soft cloth. Wipe off any oil or dirt.

Check compressor efficiency (make sure all nuts and bolts are tight, check for air leaks, pressure hose wear, pipe fittings and electrical connections).

Every 3 months:

Check the air intake filter. Replace if necessary.

Annually:

Replace oil.

Check pressure relief valve function.



CAUTION

The environment in which the compressor is used, and the frequency of use can affect how often you need to perform the above maintenances. For example, under high humidity condition, drain condensate weekly or daily to prevent damage to the unit.

3.2 Maintenance Instructions

3.2.1 Checking oil level

Check oil level through the sight glass weekly to make sure the oil level is aligned with the red marker line next to the sight glass (See Figure 3). Add or remove oil as needed.

3.2.2 Draining air tank condensate

- Run the compressor to pressurize the air tank, then switched off the compressor.
- Move the air compressor to an appropriate place for draining purposes.
- Use a container underneath the drain valve to prevent spilling. Slightly tilt your ACWS Series air compressor forward and release the drain valve (see Figure 4, open about a $\frac{1}{4}$ turn) to let the condensate out.
- Close the drain valve.

3.2.3 Draining the air outlet filter

- Run the compressor to pressurize the air tank, then switch off the compressor.
- Use a container below the filter to prevent any spilling.
- Turn the knob underneath the air outlet filter open to let moisture out (see Figure 4).
- Close the knob when finished.

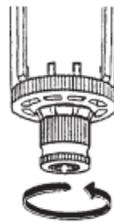


Figure 5

Outlet filter bottom knob

3.2.4 Checking the pressure relief valve

- Run the compressor to pressurize the air tank, then switch off the compressor.
- Gently pull the ring at the end of the pressure relief valve to see if air is released. If so, your pressure relief valve is functioning. If not, please contact customer service.

4 Troubleshooting

4.1 Troubleshooting Guide

Problem	Possible Causes	Possible Solutions
Compressor adding oil process takes too long	Rubber cap on the air intake port is not taken off.	Take off the rubber cap on the air intake pipe port.
Compressor does not start or restart	No power at outlet.	Reset circuit breaker, or have outlet serviced by a qualified technician.
	Power cord not plugged in properly.	Check that cord is plugged in securely.
	Pressure in air tank too high.	Operate the pressure relief valve to exhaust some of the tank pressure.
	Thermal overload switch active	When cooled, the compressor will automatically turn on at the suitable temperature.
	Leaking non-return valve.	Check for air leaking from the valve. Unscrew the valve cap and remove the rubber seal. Clean the rubber seal and its seat with a dry cloth. Refit the seal and the valve cap. If leakage persists replace the valve.
	Broken starter relay. Faulty condenser	Contact customer service Contact customer service
Compressor does not reach maximum pressure	Air leak	Apply soapy water to joints while the air compressor is pressurized. Look for air bubbles to identify the air leak. Tighten up connections that has air leak. Contact customer service if not able to resolve.
	Air intake filter clogged	Clean or replace the filter
	Failure in the non-return valve	Contact customer service
Compressor runs but pressure increases too slowly	Rubber cap on the air intake port is not taken off.	Take off the rubber cap on the air intake pipe port.
	Air intake filter clogged	Clean or replace the filter
	Air leak	Apply soapy water to joints while the air compressor is pressurized. Look for air bubbles to identify the air leak. Tighten up connections that has air leak. Contact customer service if not able to resolve.

The compressor starts and stops more frequently than usual	Large amount of condensate in air tank.	Remove condensate.
	Air leak	Apply soapy water to joints while the air compressor is pressurized. Look for air bubbles to identify the air leak. Tighten up connections that has air leak. Contact customer service if not able to resolve.
The compressor does not switch on when pressure is under the minimum level and/or does not switch off at max. pressure	Defective pressure switch	Contact customer service
The compressor gets very hot and/or uses a lot of oil	Oil level incorrect	Check oil level and make sure the correct amount of oil is in the compressor
	Wrong oil used in compressor	Drain and refill with correct oil.
	Air leak	Apply soapy water to joints while the air compressor is pressurized. Look for air bubbles to identify the air leak. Tighten up connections that has air leak. Contact customer service if not able to resolve.
	Air intake filter clogged	Clean or replace the filter
	Outside air temperature too high	Move air compressor to a cooler location or add ventilation.
Compressor starts when no air is tapped	Air leak	Apply soapy water to joints while the air compressor is pressurized. Look for air bubbles to identify the air leak. Tighten up connections that has air leak. Contact customer service if not able to resolve.
Compressor stops after working normally	Thermal protection	The motor incorporates automatic thermal protection which stops the compressor when the oil temperature is too high. The compressor can be restarted after approx 50 minutes.

Section 5 – Factory Service

4.2 Obtaining Factory Service

To obtain information concerning factory service, contact Newport Corporation or your Newport representative. Please have the following information available.

1. Model number.
2. Purchase order number.
3. Complete description of the problem.

If components are to be returned to Newport Corporation, you will be given a Return Number, which you should reference in your shipping documents.

Please fill out the service form located on the next page, and have the information ready when contacting Newport Corporation. Include the completed service form with any parts or components that are returned.

5 Service Form

Vibration Control Products

Name

RETURN AUTHORIZATION #

Company

(Please obtain prior to return of item)

Address

Country

Date

P.O. Number

Phone Number

Item(s) Being Returned:

Model #

Serial # (or manufacturing date)

Description

Reason for return of goods (please list any specific problems)

Please Describe the Problem:

(Attach additional sheets as necessary)

Where is the Equipment Installed?

(factory, controlled laboratory, out-of-doors, etc.)

Maximum Air Pressure available?

Regulated? Yes No

Any additional information. (If special modifications have been made by the user, please describe below).