CE

Fully Automatic A/C Service Station

ariazone 5001 FA

User's Manual

Thank you for choosing the Ariazone refrigerant processor. We are certain the unit will be a great asset for your company, allowing you to generate more revenue in the years to come. With its durability and superior design and technology, the Ariazone unit will be a loyal employee.

Before using the equipment, please read the following instruction manual. Should you have any further questions, please contact your nearest Ariazone dealer for further assistance.

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1. Introduction

The Ariazone 5001FA - Fully Automatic system is a user-friendly tool specifically designed for the automotive air-conditioning technicians, to carry out the following functions:

- Testing air conditioning system
- Recover and recycle refrigerant.
- Electronically gauge amount of refrigerant recovered from air-conditioning system.
- Electronically gauge amount of oil removed from air-conditioning system (if any).
- Evacuate air-conditioning system.
- Leak test air-conditioning system (under vacuum).
- Electronically charge lubricating oil or UV dye by volume into the air-conditioning system.
- Electronically charge refrigerant by weight.

The Ariazone system is a microprocessor control system. This provides electronically controlled functions, whilst keeping the operator constantly informed and in full control.

This unit has been designed and build with high level of reliability including maximum safety for the operator. The operator needs only to be responsible for the proper use and maintenance of the unit, in accordance with the manufacturer instructions found in this manual.

This manual contains important information pertinent to operator safety, and must accompany the unit, in the case of sale or transfer to another party.

Ariazone International reserves the right to modify this manual and the unit itself at any time without prior notice.

Environmental information

This product may contain substances that can be hazardous to the environmental or to human health if it's not disposed of properly.

Electrical and electronic equipments should never be disposed of in the usual municipal waste, but must be separately collected for their proper treatment (recycling).

We also recommend that you adopt appropriate measures for environmental protection: recycling of the internal and external packaging of the product, including batteries (if any).

With your help it is possible to protect our planet and improve the quality of life, by preventing potentially hazardous substances being released in to our environment.

2. SAFETY FIRST! Important safety information's

Ariazone 5001FA unit is extremely simple and reliable in selecting and performing all it's functions. Therefore, the user is not exposed to any risk, if the general safety guidelines reported below are followed, in association with proper use and maintenance of the unit (improper use and maintenance will reduce the safety of the unit).

- **Read this user manual carefully** before operating the unit. If you do not understand any section of this manual, please contact Ariazone International direct or your nearest Ariazone distributor.

- **This equipment is to be operated by accredited technician only!** Users must have basic knowledge of air-conditioning and refrigeration systems, including potential hazards associated with the handling of refrigerants and systems under high pressure.

- Handle refrigerant with care as serious injury may occur.
  Always wear appropriate protective clothing and safety glasses.

- **Avoid inhalation of the refrigerant**. Use only in well ventilated work areas.

- Use **only R134a** refrigerant with this equipment.

- Do not expose the machine to direct artificial heat or rain.

- **Do not tamper with or change** safety control devices or their settings.

- The power cable may only be connected to a socket with nominal voltage stated on the rating plate, located at the rear of the unit.

- Power lead plug to be connected **only to power point with an earth**.

- When transporting the unit **keep upright and remove refrigerant cylinder from platform**.

- Never operate the equipment with a damaged power lead, **replace it immediately.**

- **RISK OF ELECTRICAL SHOCK.** Before removing any protective cover from unit, **always unplug power lead from power point**.

- Do not cover ventilation openings when unit is operating.

- Maintenance is to be carried out as per the manufacturer recommendation shown in this manual. **Only Ariazone approved parts are to be used for maintenance and repairs.**

- Only autorised technician can mainentance the Ariazone units.

- Only non agresive substacens to be used for cleaning of the unit.

Note: Araizone 500-1FA does not contents flamable gases.

3. Technical Features

Refrigerant **R134a**

Electronic refrigerant scale .....**+/- 10 g resolution**

Load cell ..... **60kg with 150% overload capacity**

LP and HP gauges .....**AI-D 68 mm kl.1.0**

Recovery cylinder .....**12 kg** (27kg on Heavy Duty model)

Recovery pump **AI-FR11G, 275W**

Recovery rate ..... **380 g/min (liquid state)**

Vacuum pump .....**2 stage, 100 l/min (3.5cfm),**

Vacuum .....**3 x 10^{-1} Pa**

Filter dryers (main) .....**AI 162-1/4"** (x 1)

Filters dryer (primary)……..**AI 032-1/4"** (x 2)

Dimensions .....**W- 580 mm, D- 620 mm, H-1090 mm**

Weight ..... **76 kg** (83kg HD model)

Chassis ..... **Sturdy all steel construction powder coated.**

Supply voltage **230VAC/ 50Hz**

Power ..... **700 W**

Max. Currency **6.7A**

Noise level .....**< 70 dB (A).**

Fixed wheels……..**200mm (8") Heavy duty oil resistant**

Caster wheels…….. **75mm (3") Heavy duty oil resistant**

Working conditions ..... **5 - 45 °C ambient temperature, up to 80% humidity, 2000m altitude**

Measuring instrument..... **I kategory (Not to be mixed with II, III, IV category).**

Approvals ..... **EN 61010-1 Electric safety, EN 55014-1 EMC**

4. Display descriptions

HIgH PrES - Excess pressure in refrigerant cylinder

TArE - Calibrating the weight display to read -0.00 with an empty cylinder on platform.

TAr1 - Calibrating 0.00 on recovered oil vessel

TAr2 - Calibrating 0.00 on new oil vessel

SPAn - Calibrating of the refrigerant electronic scale

SPn1 - Calibrating of the recovered oil vessel electronic scale

SPn1 - Calibrating of the new oil vessel electronic scale

Err1 - Disconnected load cell lead or faulty load-cell.

CYL FULL - Refrigerant weight exceeds maximum allowable limit and will not recover any more refrigerant

nO rEF - No refrigerant pressure in service hoses, or manifold hand valves are not open

dOnE - The selected function is completed

FILT 99Hr - Displays filter life in number of hours when machine is switched on

PAUS - Recovery pause is running, for duration of three minutes.

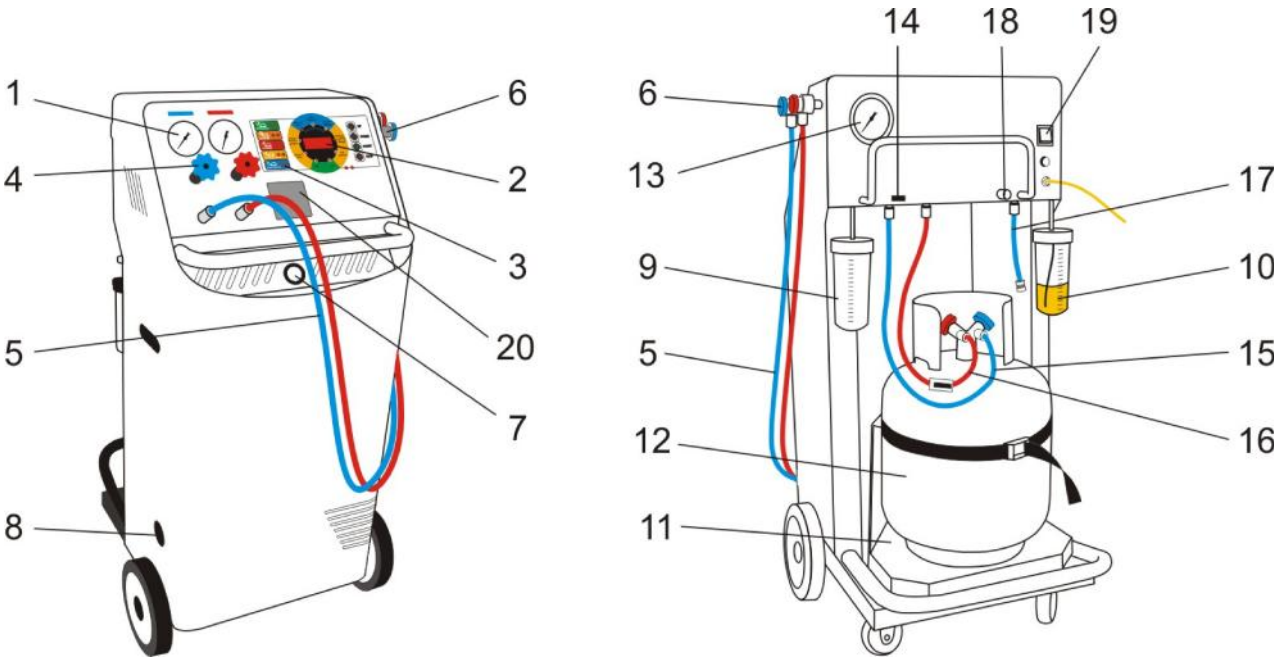
bUSY - Purge solenoid opens to cylinder vapour port to pressurize oil separator

CYL - This display allows the operator to set the maximum allowable refrigerant weight in cylinder.

OIL FULL - Operator should empty the oil vessel and press "STOP

Add OIL - Operator should fill the new oil vessel.

5. Ariazone 5001 FA - Main Parts & Features



1. Analog gauges - Two large analogue gauges display suction and discharge pressures, which are mounted on the front panel for easy viewing by the operator. Pressures are displayed in Bar & PSI and temperatures in degrees Celsius.

2. Display - Numerical display indicates value and led indicators above and below the numeric display inform the operator of the units of display and whether the display is indicating the weight of refrigerant currently within the cylinder, the amount of refrigerant being charged or the amount of refrigerant recovered is indicated in increments *of* .02g (.007oz).

3. Mode Enunciator - Led group and membrane switches. Five pairs of leds indicate the mode and status of the unit. These are used in conjunction with the adjacent membrane switches to select the Ariazone functions. Further, once the mode is in operation the pattern in which the Led's flash, indicate the activity of the system.
These can be viewed from several metres away.

4. Hand valves - The console hand manifold valves allow the operator to control the flow of the refrigerant (if desired).

5. Discharge & Suction Service Hoses - A pair of 1.8m (72") hoses are connected to the console, which allows the operator to connect the Ariazone system to the vehicle air-conditioning system service ports.

6. Service Hoses Quick Couplers - Service hose quick couplers allows the operator to connect the Ariazone system, to the vehicle air-conditioning system service ports without the risk of exhausting refrigerant in to the environment.

7. Moisture Indicator - The moisture indicator is conveniently mounted on the console for added protection to indicate the condition of refrigerant and filter change intervals. The following colours correspond to the following moisture content, Green or Blue Dry, Yellow or Pink Wet.

8. Vacuum Pump oil level - Oil level must be checked when the pump is running, the oil level should be even with the line on the sight glass. Under filling will result in poor vacuum performance. Over filling can result in oil exhausting from pump vent.

9. Recovered Oil Drain Reservoir - A vessel of 250ml (8.75oz) is mounted on the right rear of the unit to electronically gauge the amount of oil recovered from the air-conditioning system, if any.

10. Oil Storage Reservoir - A vessel of 250ml (8.75oz) is mounted on the left rear of the unit to electronically inject the oil back in to air conditioning system, or to select the desired amount of oil to be injected.

11. Cylinder platform / Electronic scale – To electronically display amount of refrigerant in storage cylinder, being recovered or charged in to air-conditioning system.

12. Refrigerant Cylinder 12 or 27kg is used to store the recovered and purified refrigerant.

13. Cylinder Non-condensable Indicator - A large pressure gauge is mounted on the back upper side of Ariazone unit to indicate to the technician of any non-condensable (air) built up in the storage cylinder.

14. PC communication port (if fitted)

15. Cylinder vapour hose

16. Cylinder liquid hose with ball valve

17. Adapter hose

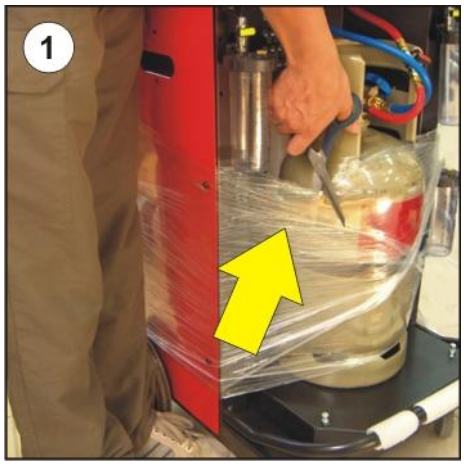
19. Power switch

20. Printer

6. Preparing the Machine for the First Use

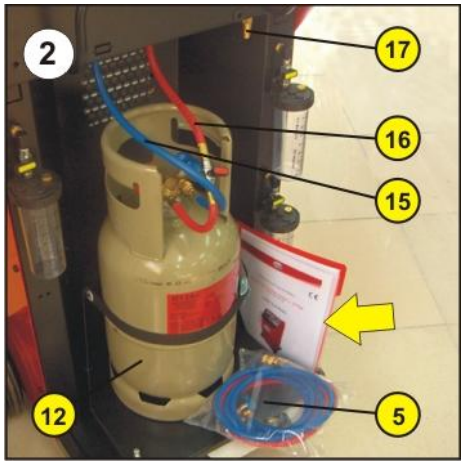
Perform the following steps to prepare the unit before the first use.

1. Remove the nylon wrapped and styrofoam insert behind the cyinder (12).



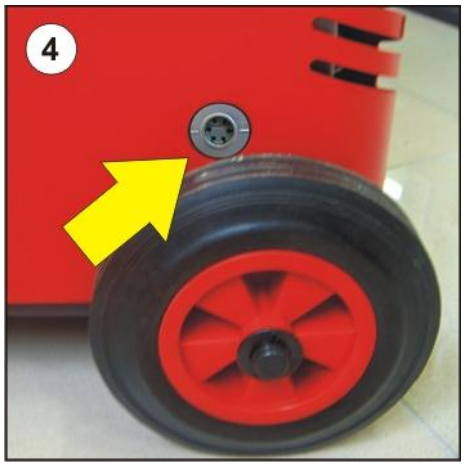
2. Check to ensure that all of the accessory components are present:

- Cylinder (12)
- Adapter (17)
- Cylinder vapor hose (15) - red
- Cylinder liquid hose with ball valve (16) - blue
- Service hoses with quick couplers (5)
- User's manual
- Cylinder strap



3. Check that the cylinder (12) is already placed on the platform (11) and properly secured with the strap provided. Unscrew two securing M6 bolts placed on each side of the platform basis app. 3-4 mm and LOCK them in place with nuts provided.

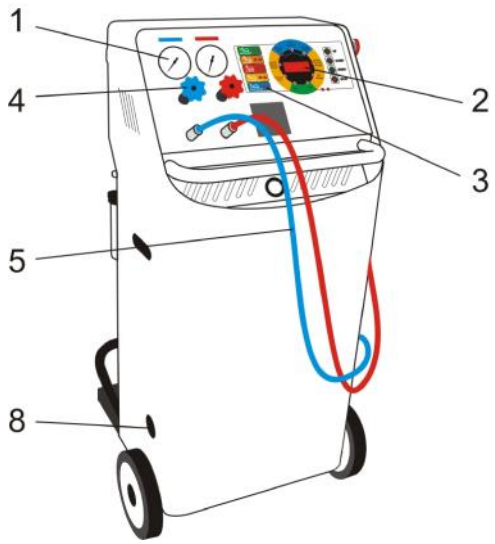
4. Check the vacuum pump oil level (8).
The oil level should be even with the line on the vacuum pump sight glass when the pump is not running.

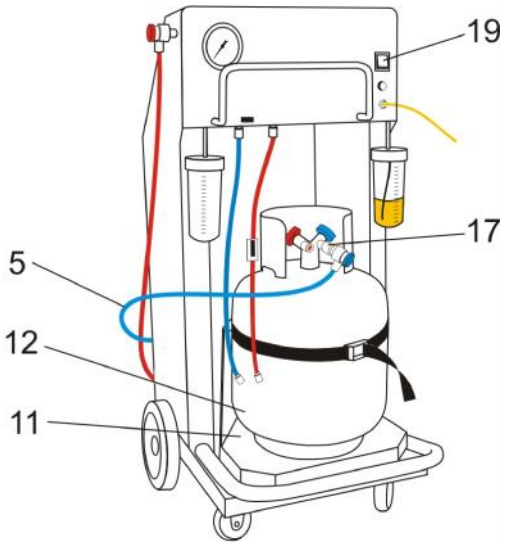


5. Power up (19) the unit. The unit will perform a lamp test, whereby all LED displays are illuminated. This will enable the operator to determine if any displays have failed. After the sequence has been completed, the display (2) will indicate FILT - 99Hr. This is the number of hours left before equipment servicing is required and the amount of refrigerant in the cylinder (12).
If the cylinder is delivered empty, display should indicate app. 0kg of refrigerant in the cylinder. If not, please perform TARE function (0kg calibration, paragraph 15).

6. Mode Selection. To select a mode of operation, press either the "UP" or "DOWN" arrow keys until the LED indicator (3) is beside the desired function. Press 'START' key which will cause the unit to enter the selected mode. Any mode that has been selected can be exited by pressing the 'STOP' key.
Note, that if a valid key was depressed, the unit will beep. If an inappropriate selection has been made, i.e. attempting to select a mode whilst another mode is in operation, the unit will ignore the pressed key and will not beep.

7. Refrigerant cylinder (12) fitted on a platform is evacuated during the production process. **Anyway, check if refrigerant cylinder (12) is evacuated** (during the transport and delivery, vacuum could be lost). If the vacuum is lost, please perform following steps to Evacuate refrigerant cylinder (12) before filling it with refrigerant:

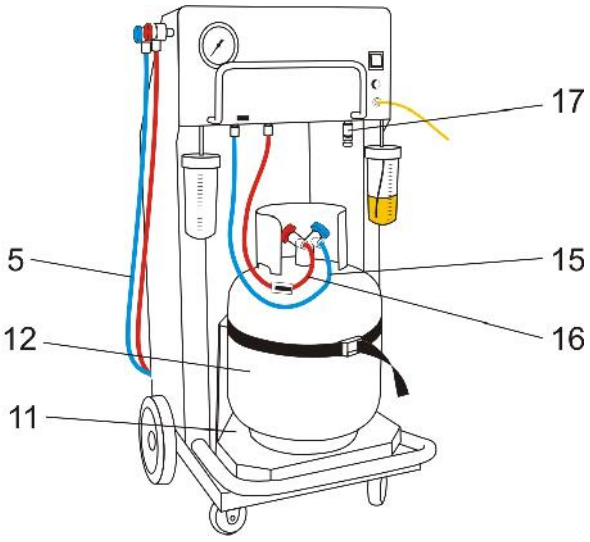




- Connect blue service hose (5) to cylinder (12) by using adaptor (17).
- Open cylinder (12) valve, service hose (5) quick coupling and handle (4) on the unit panel.
- Press the 'UP" key twice to select Evacuation function. Press, "START" and with the keys "UP" and "DOWN" select 30 minutes. Press "START" key again and the unit will start the evacuation process.
- After 30 min. the unit will automatically stop. **Close the cylinder valve**, disconnect the service hose (5) and adapter (17) from cylinder, place to the storage ports and connect liquid hose (16) to the cylinder liquid side and vapor hose (15) to the cylinder vapor side.

LIQUID AND VAPOR HOSES MUST BE CONNECTED TO VAPOR AND LIQUID PORTS ON THE STORAGE CYLINDERS. INCORRECT CONNECTION WILL CAUSE CHARGING TO BE VERY SLOW.

9. Open both cylinder valves and open liquid hose (16) ball valve.



The unit is now ready for use.

7. Printer

The printer is equipped with two keys and green led:

>> Paper feed
II on line / off line

The green led shows the state of the printer:

Led constantly ON - Printer in line

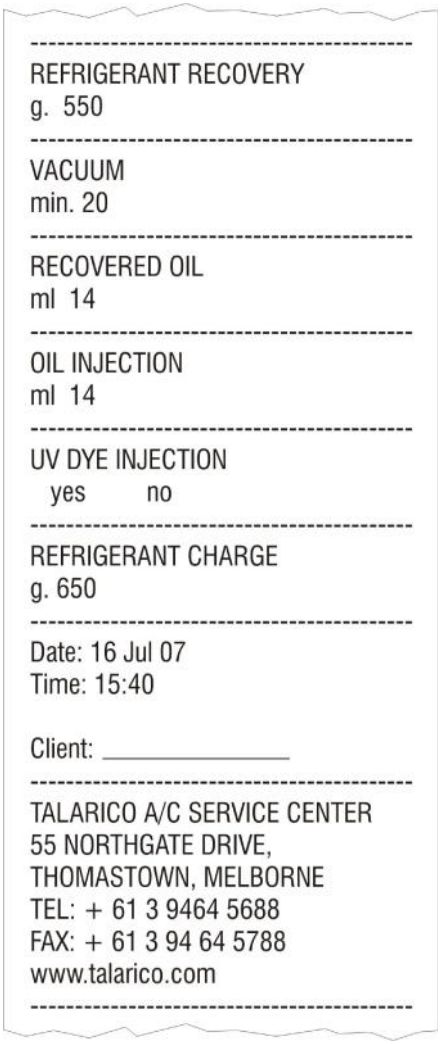
Led blinking - Printer not in line or no paper

Led off - Press **II**. If the problem persists, contact authorized distributor or manufacturer.

Printer roll specifications,
Paper width: 57-58mm
Max paper thickness: 80 µ

Printing report:

After completion of every operation the unit will print a report as per list on the right --->



How to open printer cover

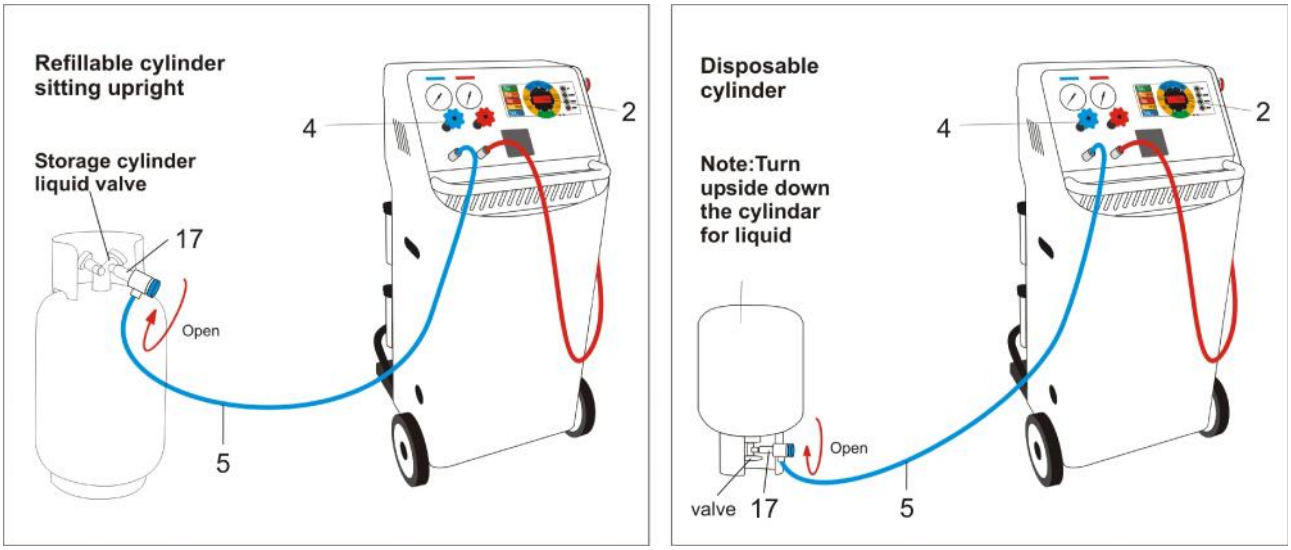
How to load paper load

How to close the cover

8. Refrigerant Cylinder Filling Procedure

The cylinder (12) may be filled with refrigerant by following procedures.

a. Using refillable cylinder procedure
Have cylinder sitting upright, connect the suction (blue) service hose (5) to storage cylinder **liquid valve** by using the refrigerant cylinder adapter (17), open **liquid valve** on storage cylinder, open service hose quick coupling (5) and console blue hand valve (4) **>>>**



b. Using disposable cylinder procedure
Connect the suction (blue) service hose (5) to a storage cylinder valve by using the refrigerant cylinder adapter (17). Turn upside down the cylinder for liquid, open the valve on the storage cylinder, open service hose quick coupling (5) and console blue hand valve (4) **>>>**

>>> With "UP" key select the Recovery function and press "START". With "UP" or "DOWN" keys select amount of refrigerant to be transferred. Press "START" key and unit will automatically transfer the refrigerant from storage cylinder to the unit cylinder (12).

When the desired amount of refrigerant is transferred, close the storage cylinder valve and allow the unit to recover the refrigerant from the service hose (5). Once the function is completed the unit will display symbol "DONE" and the amount of refrigerant transferred will be displayed in kg or lb on main display (2).

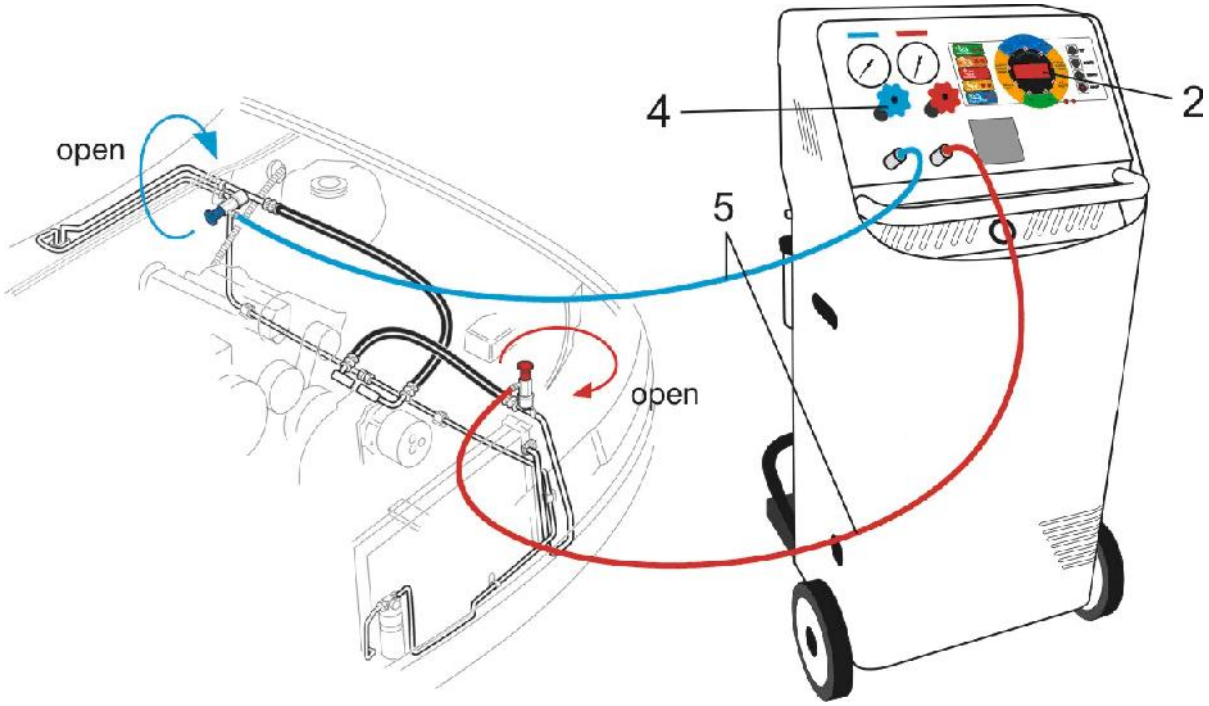
The cylinder may be taken to your refrigerant supplier and refilled. We recommend that the cylinder is not filled to its maximum capacity or the unit will not allow you to recover, due to the safety features incorporated.

Important:
- Always keep a minimum of 2 kg in the cylinder (12).
- Do not allow the cylinder (12) to be filled above 80% capacity.
- Never transport an overfilled cylinder. Refrigerant expands when heated and may cause the pressure relief valve to open and exhaust refrigerant in to the atmosphere or the cylinder may rupture.

9. Connecting Ariazone 5001FA to the A/C system

Use the service hose (5) quick-connect couplers to connect the hoses to the A/C system service ports, bearing in mind that BLUE must be connected to the low-pressure **(suction)** side and RED to high pressure **(discharge)** side.
If the system is equipped with a single service port, connect only the relative hose.

Note: Before connecting the quick couplers, clean the a/c ports of any foreign material.



Winding the quick coupler hand wheel clockwise, will allow the refrigerant to flow through the hoses. Turning hand wheel in opposite direction, the flow will be closed. If there is any refrigerant in the air-conditioning system, the pressure gauges will indicate a pressure rise.

Important: Console manifold hand valves (4) need to stay closed, not to allow refrigerant to enter the service equipment until the required function has been selected.

Ariazone 5001FA gauges (suction & discharge) are important and useful instruments, the operator should have basic understanding between gauge reading and air-conditioning system operation, in order to correctly diagnose any possible system malfunction.

10. Individual function selection procedure

With this procedure, all functions (refrigerant recovery & recycling, A/C system evacuation, recovered oil drain, new oil and UV dye injection and refrigerant charge) can be performed individually.
The values for the quantity of refrigerant recovered, quantity of the oil recovered, vacuum time, quantity of oil injected and quantity of refrigerant charged into the a/c system are automatically printed at the end of each single operation.

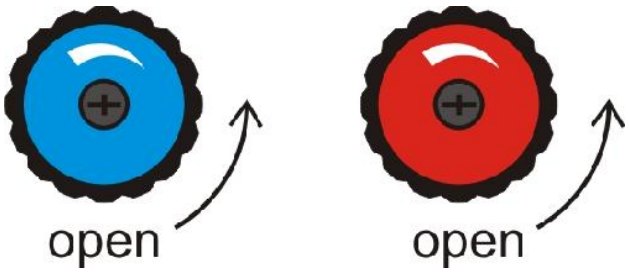
10.1. Recovery & Recycling Mode

The purpose of the Recovery & Recycling mode is to recover refrigerant from the air conditioning system, which will condense, purify and store the liquid refrigerant in the storage cylinder ready for re-use.

To initiate the Recovery mode, press the ’DOWN’ key once, followed by ’START’ on the console. Display will show "- - - -". Now, there are two choices:

1. To recover all the refrigerant from a storage cylinder or A/C system, press “START” again.

2. To select quantity of refrigerant to be recovered or transferred from a storage cylinder or A/C system, use the "UP" or "DOWN" keys to select the desired amount, and press "START”



Note: Open the hand manifold valves (4) on the console to allow the flow of the refrigerant from the a/c system before making the above selection.
Also, open valves on the unit storage cylinder (12) and ball valve on the cylinder liquid hose (16).

During the recovery process, the ’Recovery’ mode enunciators will now be ON and the display (2) will indicate the amount of refrigerant being recovered.

In normal operation the above condition will be maintained until a vacuum of -0.4 bar (15 In Hg) is reached at either the discharge or suction ports. When this occurs, the machine will beep once, and the Ariazone will enter the recovery "PAUSE" mode. In this mode, the Ariazone will shut down the recovery function and pause for 3 min., which during this time the recovery mode enunciator will be ON constantly. The display (2) will indicate "PAUSE". During this function, the Ariazone is monitoring whether the air-conditioning system pressure is increasing, due to any refrigerant that may be left in the accumulator or dryer. If the pressure increases above zero, the machine will re-start the recovery function automatically recover the remaining refrigerant.

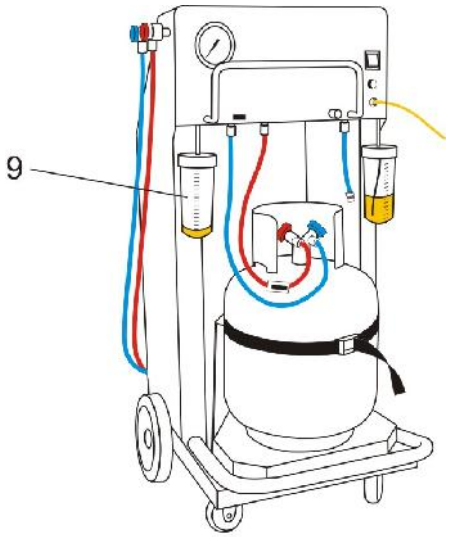
If at the end of Recovery process a sufficient vacuum has been maintained, the Ariazone will stop, and the display (2) will indicate alternately ’DONE’ and the amount of refrigerant recovered will be displayed in (kg or lb) depending on the operator’s selection.

Press ’STOP’ on the console, the unit will display "busy" for 5 seconds.

The values for the quantity of refrigerant recovered will be automatically printed.

Recovered Oil Drain

After completion of recovery function, the unit will automatically drain the recovered oil (if any) into recovered oil vessel (9) to electronically calculate amount of oil that has been recovered. The value of the recovered oil will be automatically printed.



back view

Conditions that will halt the recovery mode

The above sequence assumes that neither the stop button was pressed, or that no undesirable condition occurred. The following conditions will cause the Ariazone unit to halt the recovery function.

1. **Refrigerant cylinder (12) full.** To protect the storage cylinder from being overfilled, the unit will not allow the operator to recover refrigerant once it has reached 80% of its capacity.

2. **Air conditioning system empty.** If the A/C system pressure is not above atmospheric pressure, the recovery function will not be activated.

3. **High Pressure.** If the operating pressure of the Ariazone exceeds 26 bar (350 psi), the Ariazone unit will stop and display ’**H- PRES’**. The following can cause the above:

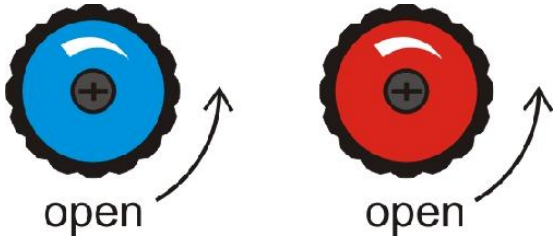
- Cylinder (12) valves not open.
- Restricted cylinder hose (16). Check the ball valves.
- Excessive high ambient temperatures.
- Excessive air in refrigerant cylinder
- Faulty pressure control
- Recovery pump thermo control faulty.

In all the above circumstances, press the ’STOP’ key to return to the machines initial mode.

10.2. Evacuation Mode

In the evacuation mode the air and moisture in the air conditioning system is *removed* and *exhausted* to the atmosphere. The evacuation mode runs for a predetermined time selected by the operator.

To initiate evacuation mode, press the ’DOWN’ key twice, followed by the ’START’ key. Select the desired evacuation duration by pressing the ’UP’ key to increase or ‘DOWN’ key to decrease *time duration*. Once the desired time has been selected press the ’START’ key and the function will commence.



Note: During evacuation mode manifold hand valves (4) on the console must be open.

The evacuation time can be set from one minute to eight hours.
At any time the evacuation time can be paused or cancelled by pressing the stop button once to pause, or twice to cancel the function.

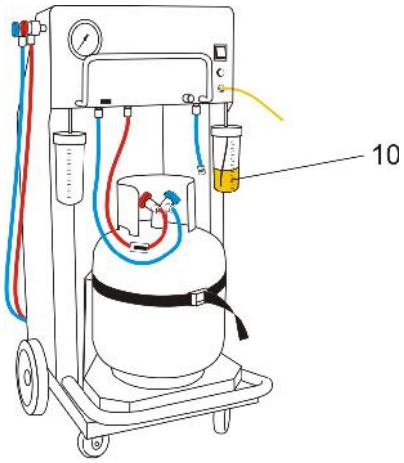
The Ariazone 5001FA system has a unique function that if the evacuation function is selected and there is residual refrigerant in the air conditioning system, greater then 0.6 bar or 9 psi, the unit would detect this condition, whereby it will beep six times to warn the operator. After this warning the unit will automatically recover the residual refrigerant once it has recovered the entire refrigerant it will start the selected evacuation function automatically.

Leak testing: After the evacuation process is completed, close both hand valves **on** console (4). By closing the valves the unit is "isolated" from the A/C system to allow for monitoring of any possible vacuum leak, which may exist in the air- conditioning system. This is achieved by monitoring the suction and discharge gauges or micron gauge connected on the vacuum port (18).

After completion of evacuation function, the unit will automatically print the report.

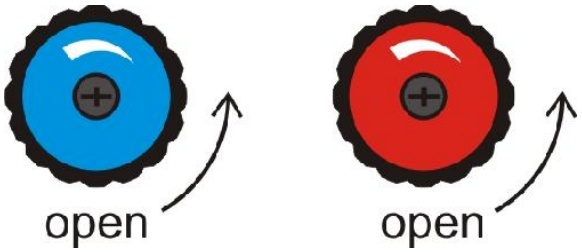
10.3. Oil or UV dye Injection Mode

The purpose of this function is to batch a user-defined quantity of refrigerant oil or UV dye from the oil reservoir (10) on the Ariazone 5001FA to the vehicle air-conditioning system.



back view

Important: The Ariazone 5001 requires that the air conditioning system has previously been evacuated to a maximum vacuum before this function can be carried out.



Open the discharge (Red) and suction (Blue) hand manifold valves (4) on the console. Make sure you have sufficient oil in the oil reservoir (10).

Select the Oil Injection mode by pressing the ' UP or DOWN' keys, followed by the 'START' key. Select the desired amount of refrigerant oil 'UP' key to increase or 'DOWN' key to decrease the value. Once the desired amount has been selected press the 'START' key and the function will commence.

After completion of oil injection, the unit will automatically print the report of the oil injected into the A/C system.

Conditions that will prevent oil injection

The Ariazone will not inject oil if the following conditions exist:

- Insufficient vacuum.
- Hand manifold valves (4) **not opened** on console.
- Schrader valve on A/C system service port not depressed.
- No oil in the reservoir (10).

10.4. Refrigerant Charge Mode

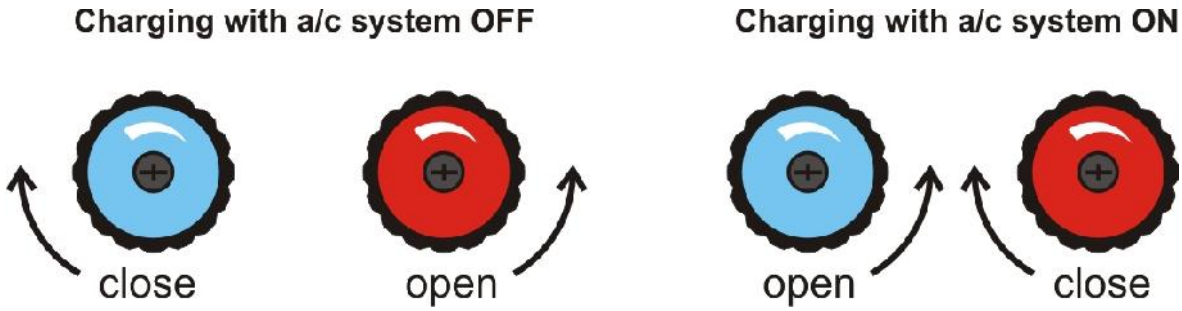
The purpose of the refrigerant charge mode is to batch a user-defined weight amount of refrigerant into the air-conditioning system.

Important: Ariazone recommends that the A/C system is always properly evacuated for a minimum time of 30 min and vacuum leak tested, before refrigerant is charged in to the A/C system. This process will help protect our environment and the air-conditioning system.

To initiate charging mode, press the 'UP' key twice, followed by the 'START' key. Select the desired refrigerant amount by pressing the 'UP' key to increase or 'DOWN' key to decrease. The smallest increment of refrigerant charge weight is 0.02 kg. If the units of weight are to lb the smallest increment of refrigerant charge weight is 0.02lb. The maximum refrigerant weight that can be set at this point is determined by the actual refrigerant weight available in the cylinder (12).

Holding the 'UP' or 'DOWN' keys for longer than two second will cause the increments of weight change to increase or decrease rapidly.

Once the refrigerant charge weight has been set, press the 'START' key and open appropriate hand manifold valve depending on whether you are charging with the engine running or engine stationary and if the A/C system is OFF or ON.



The display (2) will start from zero and will indicate the amount of refrigerant that has been charged into the air-conditioning system. This function can be paused at any time, by pressing the 'STOP' key once, or twice, to cancel the function.

If the charge function has been paused, the amount of refrigerant that has been charged to that point will be displayed, to continue the charge function press the 'START' key.
Once the present refrigerant weight has been charged, the charge function will automatically stop and the display will indicate 'DONE'. The operator can return the machine to its initial state by pressing 'STOP' key on the console.
After completion of refrigerant charge, the unit will automatically print the report of the amount of refrigerant charged into the A/C system.

Conditions that will prevent refrigerant charging

- If there is little or no refrigerant in cylinder (12). The operator will not be able to select the desired amount of refrigerant required.
- If the cylinder (12) valve is closed.
- If the hand manifold valve (4) is closed.
- If the A/C system service port Schrader valve is not depressed

11. Automatic Cycle Procedure

In the Automatic cycle mode, all the operations (refrigerant recovering and recycling, recovered oil discharge, evacuation, new oil injection and refrigerant charging) are performed automatically, in one cycle.
Quantity of the refrigerant recovered, recovered oil, vacuum time, new oil injected and refrigerant charged into the A/C system are printed at the end of each single operation.

Fig 1, to initiate the Automatic cycle mode, press the 'UP' key once, followed by 'START' on the console. Display will show "- - - -" and recovery weight led will flash. Press "START" button to confirm the recovery function.

Fig1.

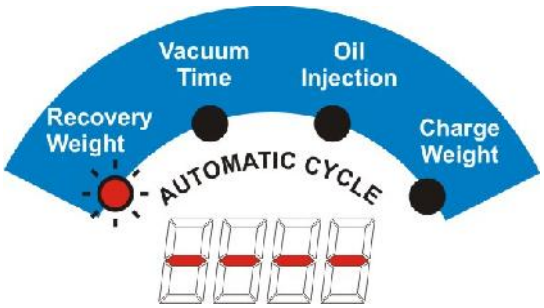


Fig 2, is flashing vacuum time led. Select the desired evacuation duration by pressing the 'UP' key to increase or 'DOWN' key to decrease *time duration*. Once the desired time has been selected press the 'START' key.

Fig 2.

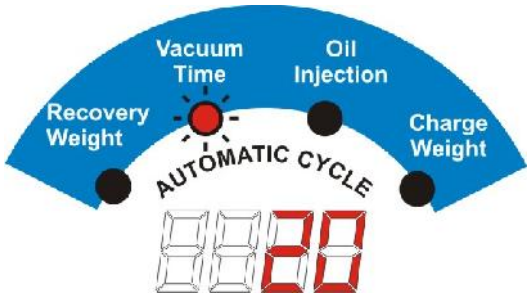


Fig 3, oil injection enunciator is flashing. Operator can choose automatic oil injection by pressing "START" button or to select the different amount of refrigerant oil by 'UP' key to increase or 'DOWN' key to decrease the value. Once the desired amount has been selected press the 'START' key.

Fig 3.

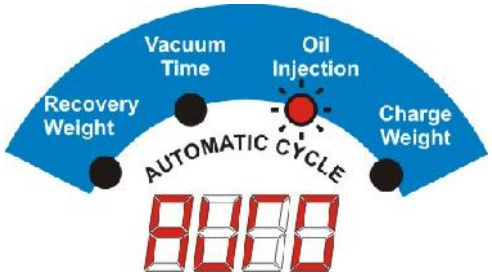
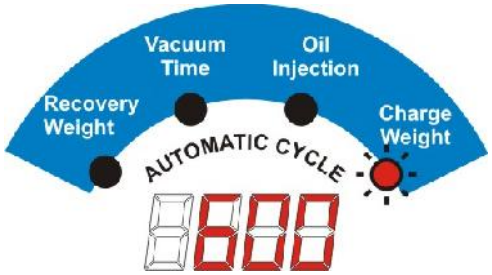
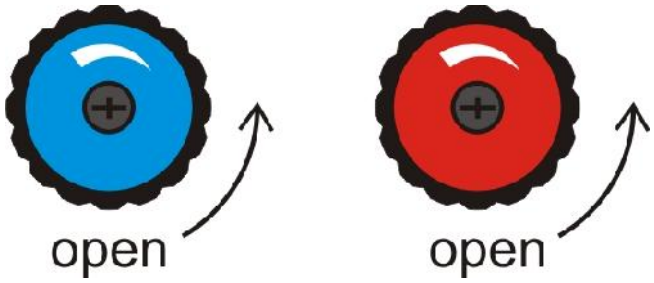


Fig 4, select the amount of refrigerant by 'UP' key to increase or 'DOWN' key to decrease the value. Once the desired amount has been selected press the 'START' key.

Fig4.



Note: Open the hand manifold valves (4) on the console to allow the flow of the refrigerant from the a/c system before making the above selection.



The unit will perform all tasks in one automatic cycle and will print reports at the end of each single operation.

Conditions that will prevent automatic cycle procedure

a. If there is little or no refrigerant in cylinder (12). Display shows "ADD REF".
The operator must add refrigerant into unit cylinder (12) (see item 7)

b. If the recovered oil vessel is full, the "recovered oil led" will flash and display will show "OIL FULL". The operator must empty the oil vessel.

Note: If the recovered oil vessel becomes full during the oil drain, the led will flash and process will be stopped. Display will show "OIL FULL". Operator must empty the vessel and press "STOP". The automatic cycle will then continue.
New value of the recovered oil will be added to the previous and at the end the printed report will show total amount of the recovered oil.

c. If new oil vessel is empty, the "new oil led" will flash and display will show "ADD OIL".
The operator must fill the oil vessel.

Note: During the process of oil injection, if there is insufficient oil in the new vessel, the display will show "ADD OIL". The operator must add the oil in the vessel and press "STOP". The automatic cycle will continue.

d. Refrigerant cylinder (12) full. To protect the storage cylinder from being overfilled, the Ariazone unit will not allow the operator to recover refrigerant once it has reached 80% of its capacity.

e. If the hand manifold valve (4) console are closed.

f. If the A/C system service port Schrader valve is not depressed

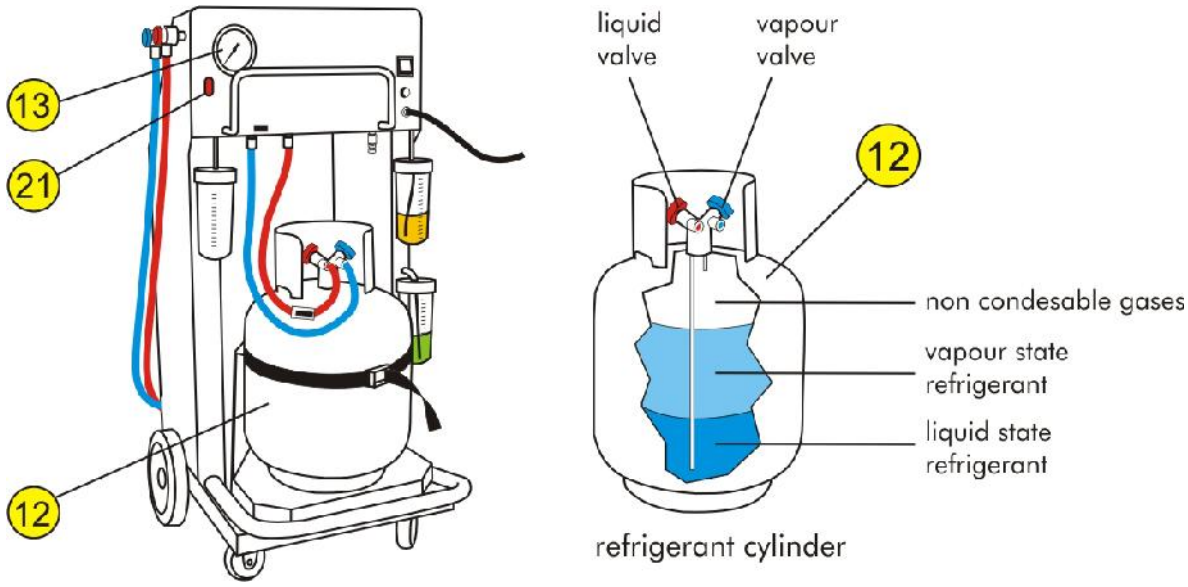
g. High Pressure. If the operating pressure of the Ariazone exceeds 26 bar (350 psi), the Ariazone will stop and display '**H- PRES'**. The following can cause the above:

- Cylinder (12) valves not open.
- Restricted cylinder hose (16). Check the ball valves.
- Excessive high ambient temperatures.
- Excessive air in refrigerant cylinder.
- Faulty pressure control
- Recovery pump thermo control faulty.

In all the above circumstances, press the 'STOP' key to return to the machines initial mode

12. Cylinder Air Purge

Every week check if there is non-condensable (air) build up in the refrigerant cylinder.



First, measure the ambient temperature. Then read the cylinder pressure on rear gauge (13) and compare it with the temperature pressure chart, affixed to the machine.

If the cylinder pressure is higher than the pressure/temperature chart, there are non-condensable gases (air) in the cylinder (12). Slightly OPEN ball valve (21) to purge the non-condensable gases (air) from the cylinder (12) and bring back the pressure to the recommended chart values.

Note: After recovery process it is normal that cylinder pressure is higher than the pressure/temperature chart shows. Always read the cylinder pressure gauge (13) first thing in the morning before operating the machine.

Example: Ambient temp. 20 °C, the cylinder pressure should be 4.7 bar.

Ambient temperature	***Air purge gauge readings***	
(C°)	**bar**	**PSI**
8	2.9	42
12	3.4	49
18	4.3	63
20	4.7	68
22	5.1	73
24	5.4	79
26	5.8	84
28	6.2	90
30	6.7	96
34	7.6	110
38	8.6	124
42	9.7	14.1
46	10.9	157
50	12.1	175

13. Service Procedure

The following table describes the service intervals of the unit.

Every 100 Working Hours /Once a Year Service
The service alarm will alert the operator for maintenance and filter replacement.

Interval	Component	Procedure
Every 100 Hr / Once a year	Main Filter Dryer	Replace
Every 100 Hr / Once a year	Primary Recovery Line Filter	Replace
Every 100 Hr / Once a year	Vacuum Pump Oil - 330ml	Drain and refill
Every 100 Hr / Once a year	Service hose "O" rings	Check / Replace
Every 100 Hr / Once a year	Gauges	Test calibration
Every 100 Hr / Once a year	Weight Platform	Test calibration

Service Kit 100Hr
(Vacuum pump Oil (330ml) x 2, Recovery Line Filter, Main Filter Dryer, Service Hoses "O" rings)
Art. No: 000774
Pack. Dimensions: 120 x 200 x 210mm

Every 300 Working Hours Service
The unit requires 100 hour service plus replacing of oil separator, primary charging filter and recovery pump (compressor) oil.

Interval	Component	Procedure
300 Hours	Oil Separator	Replace
300 Hours	Primary Charging Line Filter	Replace
300 Hours	Recovery Pump Oil - 400ml	Drain and refill
300 Hours	Main Filter Dryer	Replace
300 Hours	Primary Recovery Line Filter	Replace
300 Hours	Vacuum Pump Oil - 330ml	Drain and refill
300 Hours	Service hose "O" rings	Check / Replace
300 Hours	Gauges	Test calibration
300 Hours	Weight Platform	Test calibration

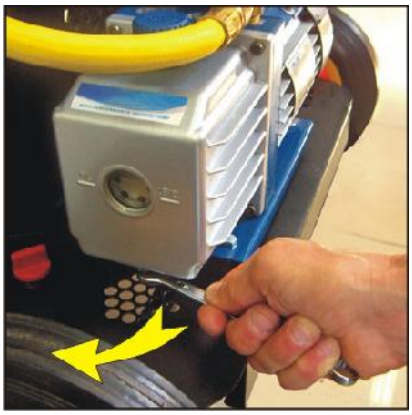
Service Kit 300Hr
(Vacuum pump Oil (330ml) x 2, Recove. Line Filter, Main Filter Dryer, Service Hoses "O" rings, Charging Line Filter, Oil Separator, Recov. Pump Oil - 500ml)
Art. No: 001048
Pack. Dimensions: 120 x 200 x 210mm

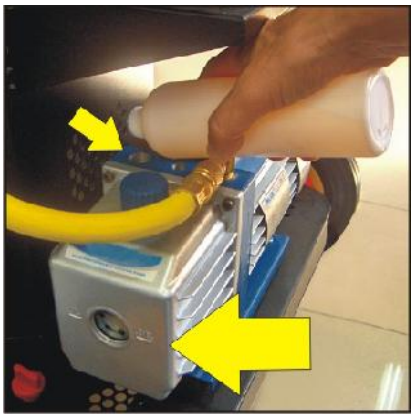
Manufacturer recommends a record of all services on the machine to be kept.

Note: Always wear appropriate protect clothing and safety glasses when servicing the machine.

100 Working Hours / Yearly - Service Procedure

(a) Switch ON the machine.
(b) Select RECOVERY function and allow it to run its full cycle.
Low pressure gauge should display arr. 0 Bar.
(c) Switch OFF the machine and disconnect power lead from power point.
(d) Remove top and front cover by unscrewing 5 x M6 bolts on each side.
(e) Check condition of service hoses and seals ("O" rings). Replace if necessary.
(f) Drain vacuum pump oil by removing drain plug, allow all the oil to drain in to a suitable container. Dispose of the oil properly. Re-fit drain plug and re-fill pump with Ariazone high grade vacuum pump oil. Please note**,** when the pump is operating the oil should be level with the sight glass indicator.





(g) Replace main filter dryer, making sure the flow direction is correct **(Arrow Pointing DOWN).**
Always use two wrenches for filter removal and replacement

(h) Replace primary recovery line filter, making sure the flow direction is correct **(Arrow Pointing DOWN).**
(i) After the system has been completely serviced reset the filter replacement interval to 99 hours.
(j) Check load cell calibration and condition of cylinder platform. Recalibrate if necessary. Check and adjust platform stops, making sure that platform is not touching chassis.
(k) Check and test calibration of suction, discharge and cylinder gauges, adjust or replace as necessary.
(l) Run and test all functions making sure that they are operating correctly.
(m) Test all machine pipe joints and connections for any possible leaks.
(n) Check condition of power lead and main power switch, replace lead if frayed or damaged.
(o) Clean machine and refit main cover.

14. Calibration Procedures

14.1. Calibrating of Refrigerant Cylinder (12) Load Cell:

Step1 - Tare
(Calibrating the weight display to read 0.00 with an empty cylinder on the platform)

(a) Place standard empty cylinder or calibrated weight on the cylinder platform (11), making sure that cylinder hoses are resting on calibrated weight or cylinder.
(b) Switch ON the unit with the main power switch, while holding "UP" key depressed.
(c) When **"TARE"** (not TAR1 or TAR2) will be displayed on screen, release "UP" key and wait for the sound signal (beep).
(d) Press, "START" key when sound signal “beep” is heard. Display should read **"DONE".**
If not, repeat the procedure.
(e) After "DONE" the unit display should show app. 0.00 kg.

Step 2 - Span
(Calibrating the refrigerant cylinder (12) electronic scale)

(a) Add an additional known weight of 10kg minimum on the existing calibrated weight or standard empty cylinder.
(b) Switch ON the unit with "DOWN" key depressed. When display read, **"SPAN"** (not SPA1 or SPA2), release "DOWN" key.
(c) Use "UP" or "DOWN" key to move span until display shows the value of known weight added at item (a)
(d) Press "START" key to exit and save.

14.2. Calibrating of the Recovered Oil Vessel (9) Load Cell

Step 1 - Tare
(Calibrating the weight display to read 0.00 when recovered oil vessel (9) is empty)

(a) Place empty plastic vessel on recovered oil (9) load cell.
(b) Switch ON the unit with the main power switch, while holding "UP" key depressed.
(c) When **"TAR1"** (not TARE or TAR2) will be displayed on screen, release "UP" key and wait for the sound signal (beep).
(d) Press "START" key when sound signal “beep” is heard. Display should read "DONE". If not, repeat the procedure.

Step 2 - Span
(Calibrating the recovered oil vessel (9) electronic scale)

(a) Add 200ml of oil into the recovered oil vessel (9).
(b) Switch ON the unit with "DOWN" key depressed. When display read, **"SPN1"** (not SPAN or SPN2), release "DOWN" key.
(c) Use "UP" or "DOWN" key to set the correct weight of 200ml (the display (2) should indicate the weight of 0.200 kg).
(d) Press "START" key to lock in correct weight and exit.

14.3. Calibrating of the new oil vessel (10) load cell

Step 1 - Tare
(Calibrating the weight display to read 0.00 when new oil vessel (10) is empty)

(a) Place empty plastic vessel on new oil (10) load cell.
(b) Switch ON the unit with the main power switch, while holding "UP" key depressed.
(c) When **"TAR2"** (not TARE or TAR1) will be displayed on screen, release "UP" key and wait for the sound signal (beep).
(d) Press "START" key when sound signal “beep” is heard. Display should read "DONE". If not, repeat the procedure.

Step 2 - Span
(Calibrating the new oil vessel (10) electronic scale)

(a) Add 200ml of oil into the new oil vessel (10).
(b) Switch ON the unit while holding "DOWN" key until the unit display’s **"SPN2"** (not SPAN or SPN1).
(c) Use "UP" or "DOWN" keys to set the correct weight of 200ml (the display (2) should indicate same weight of 0.200 kg).
(d) Press ’START’ key to lock in correct weight and exit.

15. Settings

15.1. Set up of maximum allowable refrigerant weight in cylinder

(a) Switch ON the unit with "START" key depressed and release when display reads **"CYL"** (not CYL1 or CYLL).
(b) Use "UP" or "DOWN" keys to set the cylinder weight to 80% of its capacity (22kg max. for 27kg cylinder).
(c) Press “START” to save the above settings.

15.2. Set up of maximum recovered oil level in plastic vessel (9)

(a) Switch ON the unit with "START" key depressed and release when display reads **"CYL1"** (not CYL or CYLL).
(b) Use "UP" or "DOWN" keys to set the maximum recovered oil level into the plastic vessel (9). (150ml recommended).
(c) Press “START” to save the above settings

15.3. Set up of minimum refrigerant weight into cylinder (12)

(a) Switch ON the unit with "START" key depressed and release when display reads **"CYLL"** (not CYL or CYL1).
(b) Use "UP" or "DOWN" keys to set the minimum refrigerant into the cylinder (2 kg or more recommended)
(c) Press “START” to save the above settings.

15.4. Adjust Date/Time

Switch ON the unit (19) while holding both "UP" & "DOWN" keys depressed to enter into date/time adjusting mode. By using "UP" and "DOWN" keys simply adjust: ***Y***ear, ***M***onth, ***D***ate, ***H***ours, ***M***inutes and press "START" key to confirm.

Notes:

D E C L A R A T I O N O F C O N F O R M I T Y

The company: Ariazone International Europe
15-ti Korpus bb.,
6000 Ohrid,
MACEDONIA

Hereby declares that the product:

Ariazone 5001FAHD - Automotive A/C Service Station

Meets all requirements of European Directives:
2006/95/EC (ex 73/23/EEC) Low Voltage Directive
2004/108/EC Electromagnetic Compatibility
98/37/EC Machine Directive
and subsequent amendments entered in force to the date of declaration.
The following standards and technical specifications, conforming to EEC Harmonized Regulations were applied:

EN 61010-1:2001 with cross references: EN 60227, EN 60245, EN 60309:2003; EN 60799, EN 60804, EN 60825-1
EN 55014-1; EN ISO 12100-1; EN ISO 12100-2;
EN ISO 12100-1:2003; EN ISO 12100-2:2003

The producer also declares that equipment confirms Directives and Standards when used according to manufacturer specifications.

Date and place of issuing:

Ohrid, _____

Serial No: _____

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