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 .....**Al-D 68 mm kl.1.0**

Recovery cylinder .....**12 kg** (27kg on heavy duty model)

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

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

Vacuum pump .....**2 stage, 75 l/min,** (140 l/min available on request)

Vacuum .....**5 x 10^{-1} Pa**

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

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

Dimensions .....**W- 580 mm,** (23”) **D- 620 mm** (24,1/2”) **H-1090 mm** (43)

Weight ..... **75 kg** (82kg with 27 kg cylinder)

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

Supply voltage ..... **230VAC/ 50Hz** (110V/ 60Hz available on request)

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 category (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.

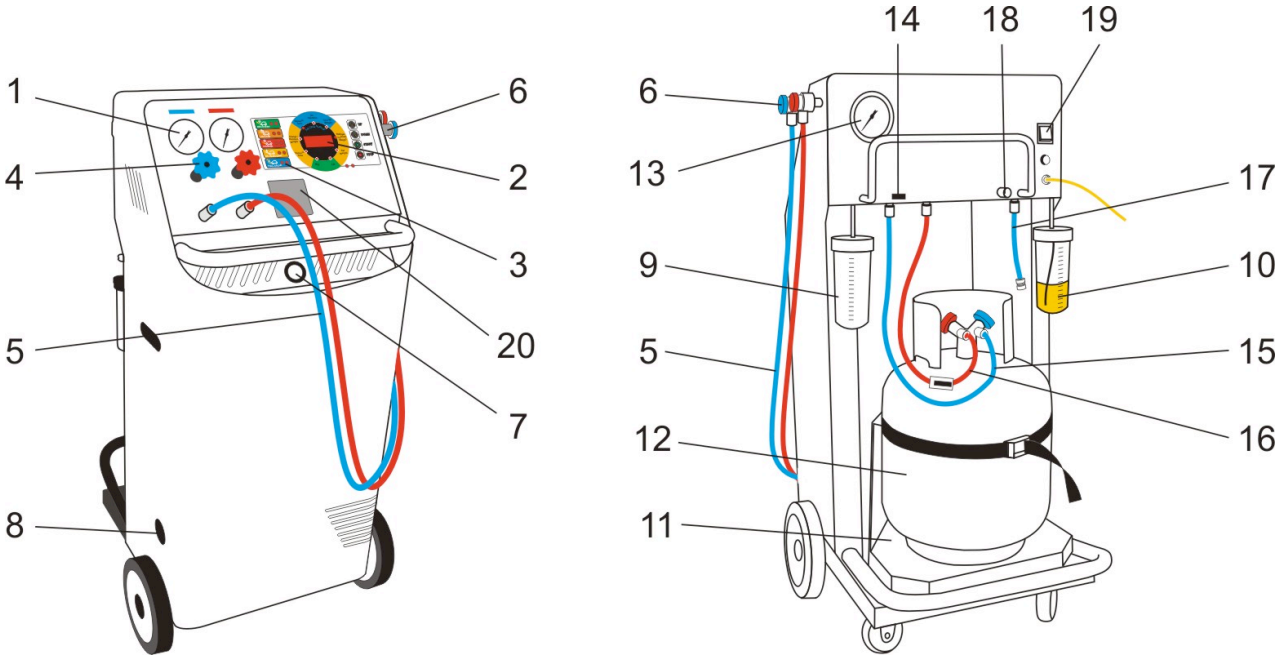
bUSY - Purge solenoid opens to cylinder vapour port to pressurize oil separator

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

18. Vacuum port for micron gauge

19. Power switch

20. Printer

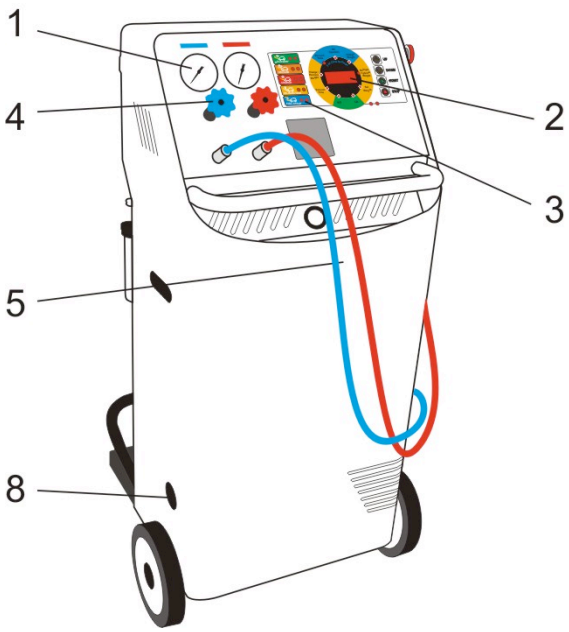
6. Preparing the machine for use

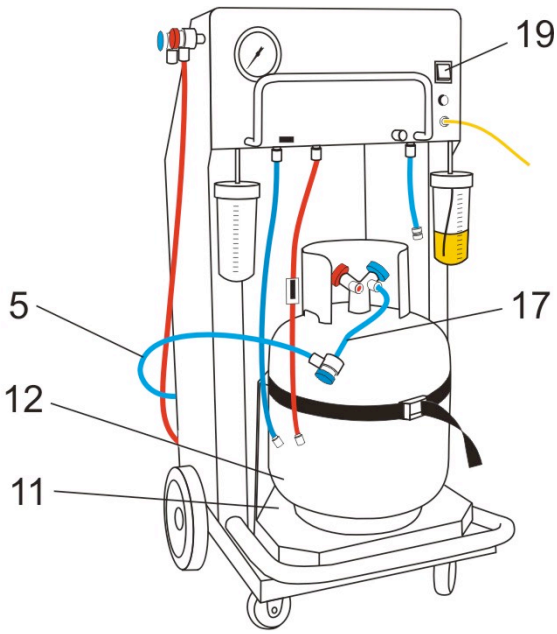
Perform the following steps to prepare the Ariazone System for use.

1. Remove the unit packaging.

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

- Cylinder (12) (if ordered)
- Adapter hose (17)
- Cylinder hoses (15) and (16)
- Service hoses (5)
- User's manual
- Cylinder strap





3. Place the cylinder (12) on the Ariazone platform (11) and secure it with the strap provided.

4. Check the vacuum pump oil level (8). The oil level should be slightly above the line on the 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 the number of hours left before equipment servicing is required followed by the amount of refrigerant in the storage cylinder (12).

6. Mode Selection. To select a mode of operation, press either the 'UP or 'DOWN' arrow keys until the enunciator (3) is beside the desired function. Press 'START' which will cause the Ariazone 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 Ariazone unit will beep.

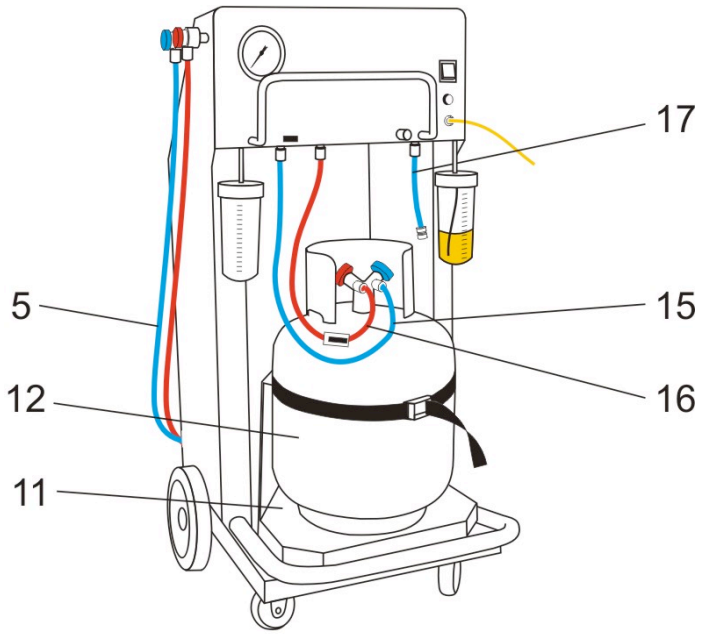
If an inappropriate selection has been made, i.e. attempting to select a mode whilst another mode is in operation, the Ariazone unit will ignore the key pressed and not beep.

7. Evacuate refrigerant cylinder. Please perform following steps to Evacuate refrigerant cylinder (12) before filling with refrigerant:
- Connect Ariazone service hose (5) to cylinder (12) with adaptor (17).
- Open cylinder (12) valve, service hose (5) quick coupling and handle (4) on the command panel.
- Press the 'UP" arrow key 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.

Note, Ariazone recommends that a 25kg refrigerant cylinder be evacuated for a minimum time of 30 minutes.

- After 30 min. the unit will automatically stop. After closing the cylinder valve, disconnect the service hose (5) and adapter (17) from cylinder and place to the storage ports.

8. Place refrigerant cylinder on Ariazone platform and secure with strap provided. Connect cylinder hoses. Liquid hose (16) to the liquid side on the cylinder and vapour hose (15) to the vapour side.



back view

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

The Ariazone 5001FA 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 Ariazone International or authorized distributor.

Paper width: 57-58mm
Max paper thickness: 80 µ

Printing report:

After completion of every operation the unit will print a report as follows.

REFRIGERANT RECOVERY
g. 550

VACUUM
min. 20

RECOVERED OIL
ml 14

OIL INJECTION
ml 14

UV DYE INJECTION
yes no

REFRIGERANT CHARGE
g. 650

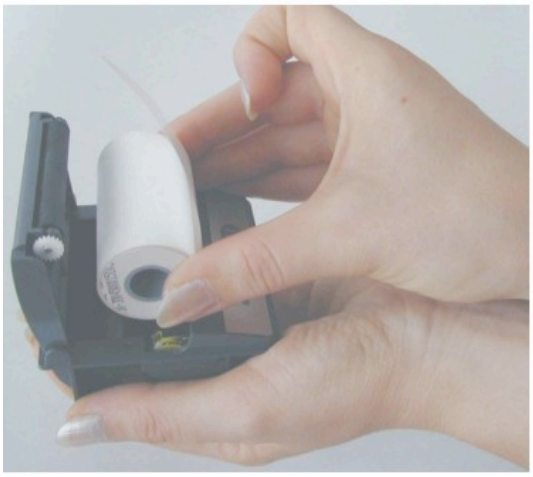
Date: 16 Jul 07
Time: 15:40

Client: _____

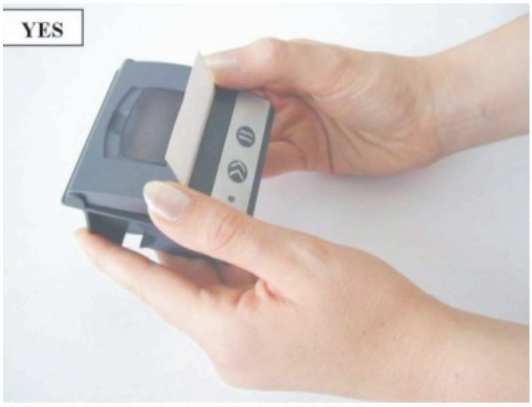
TALARICO A/C SERVICE CENTER
55 NORTHGATE DRIVE,
THOMASTOWN, MELBORNE
TEL: + 61 3 9464 5688
FAX: + 61 3 94 64 5788
www.talarico.com

1. How to open the cover

Pull the lever until the cover is released from it's locking position. To avoid damages to the lever do not use excessive force.

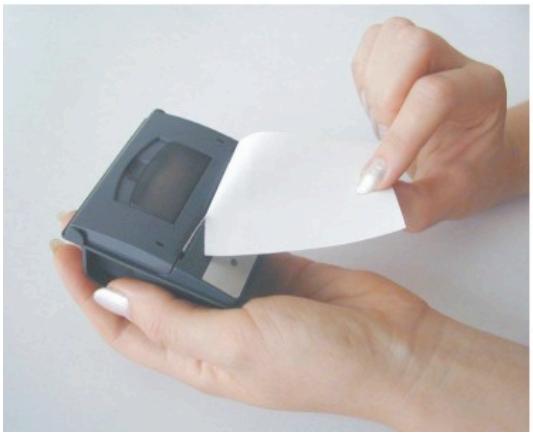


2. How to load paper roll



3. How to close the cover group correctly

Press on both sides of the cover group simultaneously.

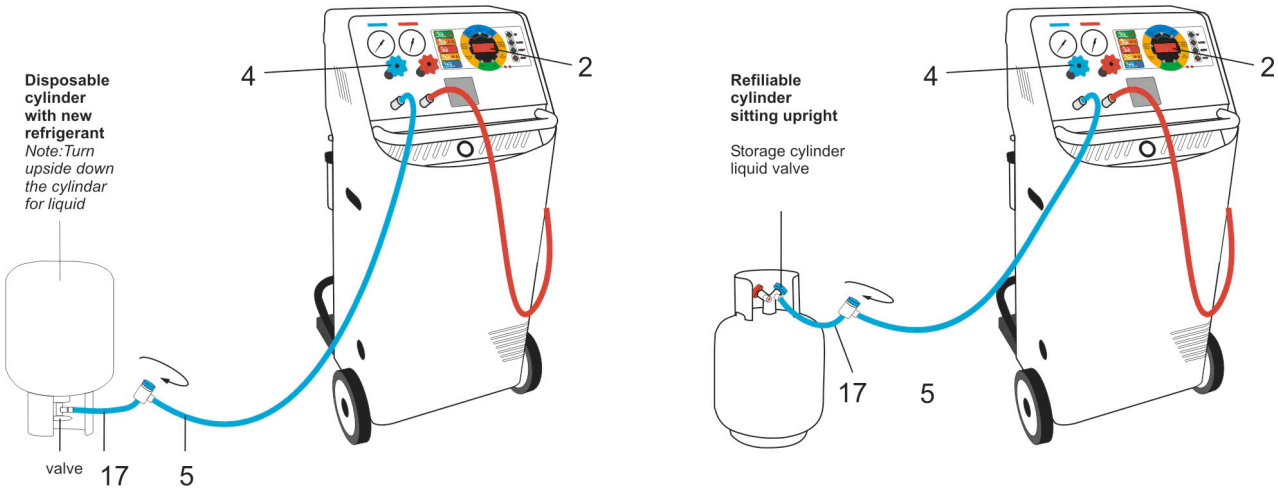


4. How to cut the correctly

Pull the paper towards the tear bar from one side to another.

8. Filling cylinder with refrigerant

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



a. Using disposable cylinder

Connect the suction (blue) service hose (5) to a storage cylinder liquid valve by using the adapter hose (17). Open liquid valve on the *storage* cylinder, open service hose quick coupling (5) and hand manifold blue valve (4) .

With "UP & DOWN" keys, select the recovery function. By pressing "START" key, select amount of refrigerant to be transferred, with the UP and DOWN key. The Ariazone unit will automatically transfer the selected amount of refrigerant from the storage cylinder to the Ariazone cylinder (12).

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

b. Using refillable cylinder

Have cylinder sitting upright, connect the suction (blue) service hose (5) to storage cylinder **liquid** valve by using the refrigerant transfer hose (17) supplied, open liquid valve on storage cylinder, open service hose quick coupling (5) and console blue hand valve (4)

Important:

a. Always keep a minimum of 2.5 - 3 kg in the 5001FA cylinder (12).

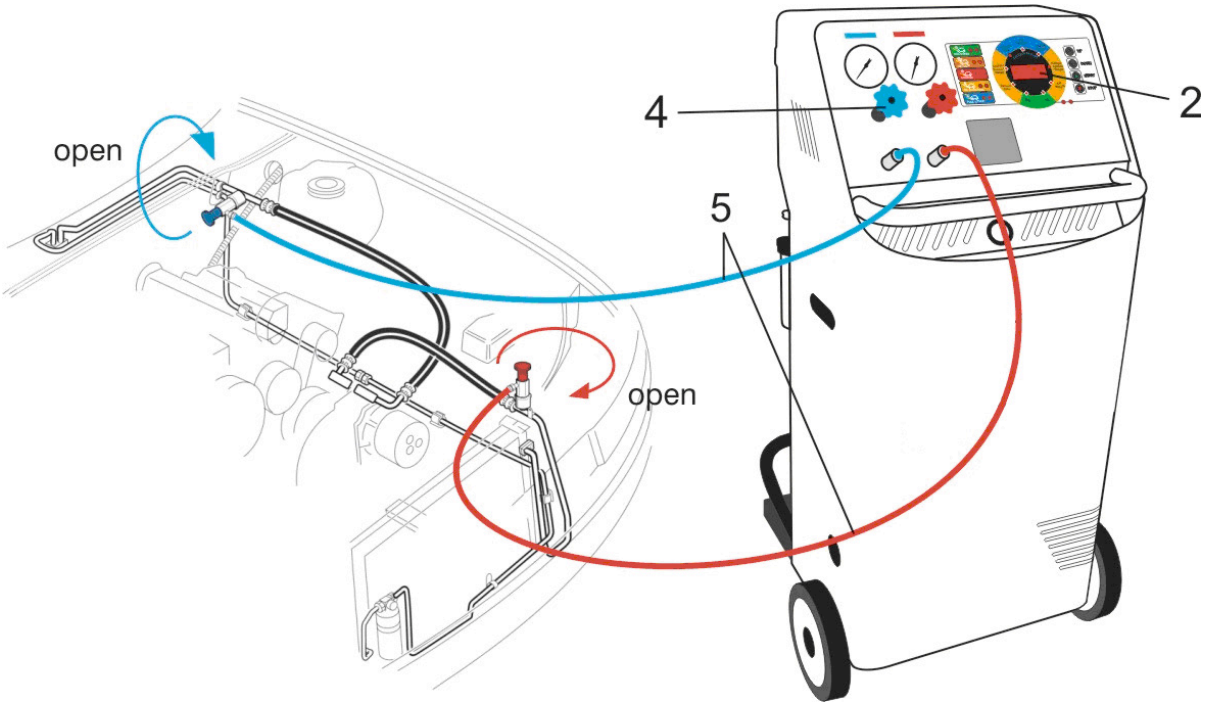
b. Do not allow the cylinder to be filled above 80% capacity.

c. 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.

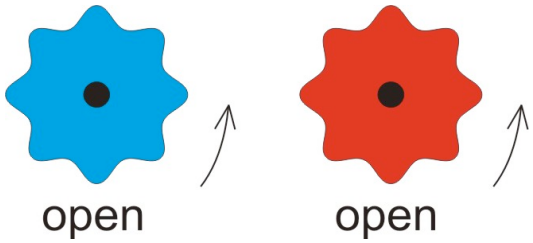
10.1. Recovery & Recycling Mode

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.

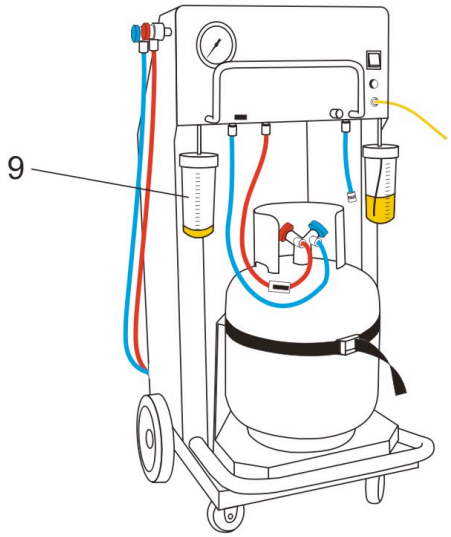
If at the end of Recovery process a sufficient vacuum has been maintained, the Ariazone will stop, and the display (2) will indicate alternately 'DONE' and the amount of refrigerant recovered will be displayed in (kg or lb) depending on the operator's selection.

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:

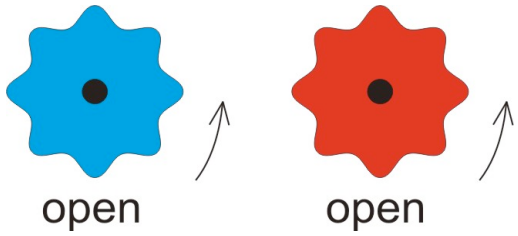
- Cylinder (12) valves not open.
- Restricted cylinder hose (16). Check the ball valves.
- Excessive high ambient temperatures.
- Excessive air in refrigerant cylinder
- Faulty pressure control
- Recovery pump thermo control faulty.

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.

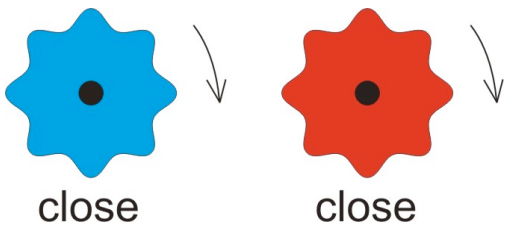


Note: During evacuation mode manifold hand valves (4) on the console must be open.

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.

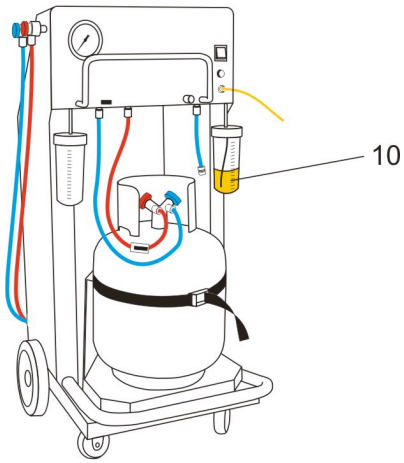
Leak testing: After the evacuation process is completed, close both hand valves **on** console (4). By closing the valves the unit is "isolated" from the A/C system to allow for monitoring of any possible vacuum leak, which may exist in the air- conditioning system. This is achieved by monitoring the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



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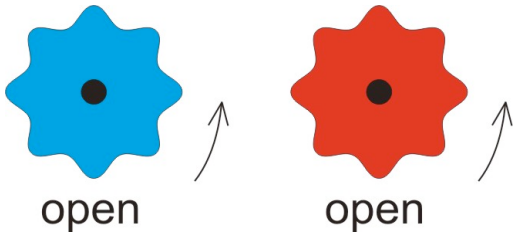
Important: The Ariazone 5001 requires that the air conditioning system has previously been evacuated to a maximum vacuum before this function can be carried out.



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

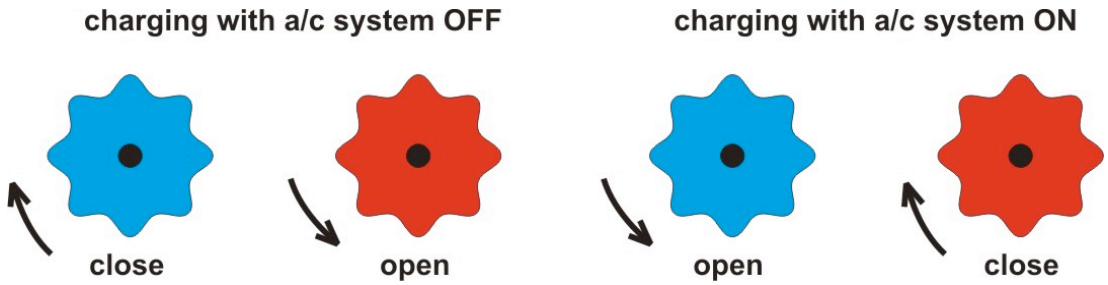
The purpose of the refrigerant charge mode is to batch a user-defined weight amount of refrigerant into the air-conditioning system.

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.

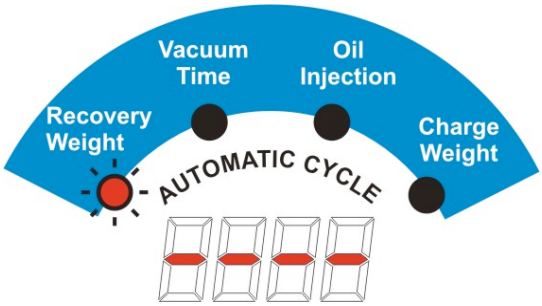


Fig 2, is flashing vacuum time led. Select the desired evacuation duration by pressing the 'UP' key to increase or 'DOWN' key to decrease *time duration*. Once the desired time has been selected press the 'START' key.

Fig 2.

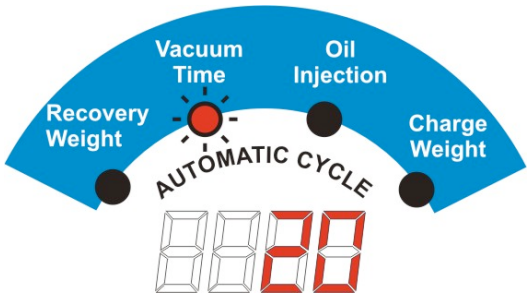


Fig 3, oil injection enunciator is flashing. Operator can choose automatic oil injection by pressing "START" button or to select the different amount of refrigerant oil by 'UP' key to increase or 'DOWN' key to decrease the value. Once the desired amount has been selected press the 'START' key.

Fig 3.

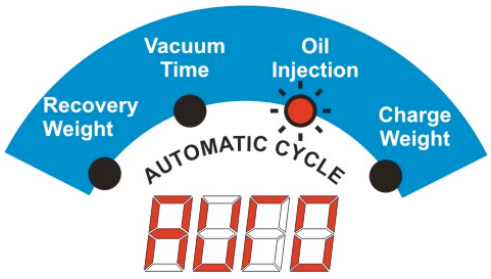
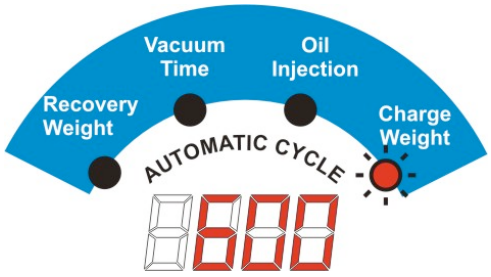
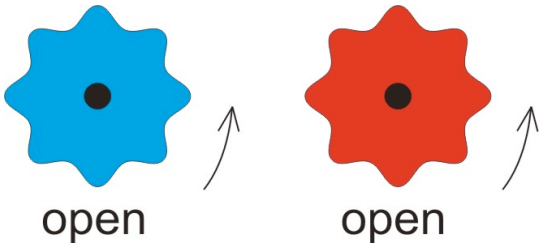


Fig 4, select the amount of refrigerant by 'UP' key to increase or 'DOWN' key to decrease the value. Once the desired amount has been selected press the 'START' key.

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

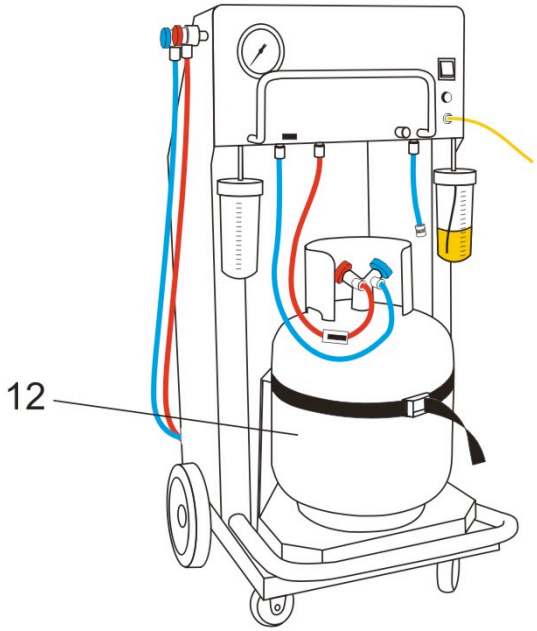
g. High Pressure. If the operating pressure of the Ariazone exceeds 26 bar (350 psi), the Ariazone will stop and display '**H- PRES'**. The following can cause the above:

- 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.

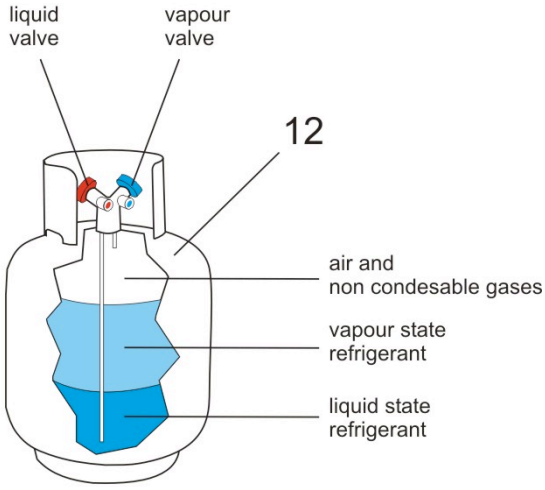
In all the above circumstances, press the 'STOP' key to return to the machines initial mode

12. Cylinder Air Purge

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



back view



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, close vapour valve on the cylinder, disconnect the hose and purge the non-condensable gases (air) from the cylinder through cylinder vapour valve and bring back to the chart values.

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

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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 for the Ariazone system.

Interval	Component	Procedure
100 Hours	Main Filter (AI-162-1/4")	Replace
100 Hours	Primary Filters (AI-032-1/4")	Replace
100 Hours	Vacuum Pump Oil	Drain and refill
400 Hours	Oil Separator	Replace
100 Hours	Gauges	Test calibration
100 Hours	Weight Platform	Test calibration
100 Hours	Oil vessels	Test calibration

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

13.1 Filter Dehydrator Replacement Procedure

(a) Power up machine.
(b) Select recovery function and allow it to run its full cycle.
(c) Switch machine and disconnect power lead from power point.
(d) Remove main cover by removing 3 retainers on each side and slide forward.
(e) Remove pipe connected to the top of the filter dryer.
(f) Remove primary filters and replace with new units.
(g) Hold filter extension with suitable spanner and remove filter.
(h) Re-fit filter by revisiting operation (f) and (e).
Important: The flow arrow on filter must be pointing down.
Note: Re-fit new filter immediately after the old one has been removed. Do not allow internal contamination of the machine. Uncap new filter dryer when you are ready to install it. Prolonged exposure to the ambient will contaminate new filter dryer.
(i) Power up Ariazone unit.
(j) Charge service hoses (5).
(k) Select and start recover function for 3 seconds.
(l) Test filters connections for any possible leaks with suitable leak tester.
(m) Disconnect power clean the machine and refit the cover.

WARNING: Always use two wrenches for filter removal and replacement

13.2 Vacuum Pump Oil Drain & Refill

Drain vacuum pump by turning the drain plug anti-clockwise and allow all the oil to drain into a suitable container. Dispose of used oil properly. Close drain and refill pump with high quality Ariazone vacuum pump oil, fill up to oil indicator on viewing glass.

Note: Use only high quality *Ariazone* vacuum pump oil.

Important: 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 out from the vent tube.

14. Calibration Procedure

14.1. Calibrating of refrigerant cylinder load cell:

Tare function - Calibrating the weight display to read 0.00 with an empty cylinder on the platform and hoses connected to the cylinder.

(a) Place empty cylinder on Ariazone platform (12).
(b) Connect the hoses (16 & 17) to the cylinder.
(c) Switch ON the unit while holding "UP" button until the unit display's '**TArE**'.
(d) Release 'UP' key.
(e) Wait for sound signal and press the 'START' button.
(f) Display should indicate 'DONE'.

Span function - Calibrating the electronic scale

(a) Place known weight of. 20 kg (44lb) on top of empty cylinder. Make sure it is placed centrally on the cylinder and platform.
(b) Switch ON the unit while holding 'DOWN' switch until the unit display's '**SPAn**'.
(c) Set the correct known weight by pressing the 'UP' or "DOWN" buttons. The display (2) should indicate the known weight, 20kg (44lb).
(d) Press 'START' button to lock in correct weight.

The unit now is calibrated

14.2. Calibrating of the recovered oil vessel load cell

Tare function

(a) Place empty recovered oil vessel
(b) Switch ON the unit while holding "UP" button until the unit display's **'TAr 1'.**
(c) Release 'UP' key.
(d) Press 'START' button after sound signal and display will indicate 'DONE'

Span function

(a) Place 150ml of oil into the recovered oil vessel
(b) Switch ON the unit while holding "DOWN" button until the unit display's **'SPn 1'.**
(c) Set the correct weight 150ml by pressing the 'UP' or "DOWN" buttons. The display (2) should indicate same weight of 0.150.
(d) Press 'START' button to lock in correct weight.

14.3. Calibrating of the new oil vessel load cell

Tare function
(a) Place empty new oil vessel
(b) Switch ON the unit while holding "UP" button until the unit display's **'TAr 2'.**
(c) Release 'UP' key.
(d) Press 'START' button after sound signal and display will indicate 'DONE'

Span function
(a) Place 200ml of oil into the new oil vessel
(b) Switch ON the unit while holding "DOWN" button until the unit display's **'SPn 2'.**
(c) Set the correct weight 200ml by pressing the 'UP' or "DOWN" buttons. The display (2) should indicate same weight of 0.200.
(d) Press 'START' button to lock in correct weight

14.4. Adjust Date/Time (only where printer fitted)

Switch ON the unit (19) while holding both "UP"&"DOWN" switches 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" to confirm.