

ELECTRODRY GROUP

Air Conditioner Manual



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Disclaimer

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Introduction	4
Promoting Additional Services	4
History of Air Conditioners.....	5
Good Business Practice.....	5
<i>Quality service</i>	<i>5</i>
<i>Quality equipment</i>	<i>5</i>
<i>Qualified staff.....</i>	<i>5</i>
<i>Documentation</i>	<i>5</i>
<i>Chemicals, etc.....</i>	<i>6</i>
Chemical Safety.....	6
<i>General Chemical Safety.....</i>	<i>6</i>
Equipment Safety.....	7
<i>Electrical Safety</i>	<i>7</i>
Site and Personal Safety	7
Pre-Inspection	8
Cleaning your Air Conditioner	8
<i>Benefits of an Electrodry Air Conditioner Clean:</i>	<i>9</i>
<i>Types of Air Con Units.....</i>	<i>9</i>
<i>Split Systems.....</i>	<i>10</i>
<i>The split system breaks the air conditioning system into 2 units.....</i>	<i>10</i>
<i>Window Unit</i>	<i>10</i>
<i>Ducted systems</i>	<i>10</i>
<i>HVAR/HVAC/HVARC</i>	<i>10</i>
How to Clean an Air Conditioner Unit	11
What to Look For In the Pre-Inspection.....	11
Procedures for Pre-Inspection	11
<i>Ask Questions</i>	<i>11</i>
<i>Visual Inspection</i>	<i>12</i>
<i>Sell the service!</i>	<i>12</i>
<i>The Benefits of EcoProtect</i>	<i>13</i>
Air Conditioner Cleaning	14
<i>Tool Inspection.....</i>	<i>14</i>
<i>Preparation of Work Environment</i>	<i>14</i>
Equipment Preparation.....	14
<i>Internal unit (evaporative).....</i>	<i>14</i>
<i>Cleaning filter and cover</i>	<i>16</i>
<i>External Unit (Condenser)</i>	<i>16</i>
<i>Final Inspection</i>	<i>17</i>
<i>Pack up</i>	<i>17</i>

Introduction

The Electrodry Air Conditioner Cleaning service is a non-corrosive, low odour and biodegradable system which is designed to increase or maintain a cool room's efficiency, cleanliness and safety.

It enhances servicing from mechanics by cleaning the fans and fins that are a vital component between visits by the mechanic.

The process helps the owner of save money as the air conditioner will become more efficient, hence using less power. In some cases, an improvement of 25% can be gained on airflow leading to a 10% energy saving.

It also improves the aesthetics of the air conditioner by removing unsightly mould, dust and mess; as well as cleaning the air conditioning unit. This will also means fewer disruptions to the owner as cleaning of the air conditioner will only need to be a yearly event

Most of all, due to the removal of the mould present within the air conditioner. The owner will be able to claim that their cool room is compliant with HACCP regulations.

Promoting Additional Services

Many customers who have an air conditioner will probably have carpet or upholstered furnishings which needs to also be cleaned.

It is important that you mention to your customers the list of all services that you can professionally deliver. Doing additional work for your existing or new customers while you are already on site can save greatly on all business running costs. These include vehicle, promotional and advertising costs. It is important always to do your best and offer a professional service without making any claims that you can not guarantee to deliver.

A satisfied customer will not only use your service again, but will work as a free advocate for your business by recommending you to friends and associates. However, don't expect a customer to remember who you are, if you don't give them something to remind them of you. There is lots of marketing books out there that can help you in this area. We recommend that you become familiar with various marketing techniques and select those that are appropriate for your business.

Whatever marketing ideas you use will have minimal effect unless they are used consistently and in conjunction with the quality professional service.

Quality professional service means not only providing promptness and efficiency, it also includes giving value for money and excellent results.

History of Air Conditioners

Developed in 1902 by Willis Haviland Carrier

Designed to solve a humidity problem in a publishing company in Brooklyn, New York.

An air conditioner is very similar to another appliance in your home – the refrigerator. Air conditioners don't have the exterior housing a refrigerator relies on to insulate its cold box. Instead, the walls in your home keep cold air in and hot air out.

Good Business Practice

Professional air conditioner cleaners are expected to provide the following:

Quality service

This incorporates a reliable, prompt and efficient service. The client should be advised as to all procedures. The attending technician or technicians should be punctual, polite, helpful, and understanding of the clients' needs in relation to their goods to be cleaned. They should also be correctly attired (wear clean, correct uniform, etc.).

Quality equipment

This means vehicles and equipment that must be readily available and in good working order at all times. All equipment should be properly labelled with the Company name, telephone numbers and address as well as any appropriate safety advice. All equipment and vehicles should be checked and maintained regularly, without waiting for breakages to occur.

Each vehicle should be presentable and properly signed written. It should be clearly defined who is responsible for the maintenance of equipment and vehicles to ensure their availability and readiness.

Qualified staff

This requires that all personnel involved in all of the procedures are properly trained and skilled in their areas of involvement. This could include the receptionist (telephonist), office staff and on-site technicians. This could mean attending appropriate Training courses relevant to the job specification of each member of staff involved.

Communication skills are of the utmost importance for all personnel involved in the Service industry.

Documentation

Provision of professional documentation, which means the availability of all appropriate forms, starting with the initial telephone call checklist, pre-inspection forms, through to a final account.

Chemicals, etc.

Provision of chemicals and appropriate ancillary supplies must be constantly maintained and re-stocked. All chemicals should be clearly labelled and stored in appropriately ventilated areas. For all chemicals that are used and carried either at the factory/warehouse, in each vehicle or on site safety data sheets (SDS) must be available. Health and Safety

Ensuring safety is a prime responsibility of any professional. These incorporate provision of a healthy and safe environment for the technician as well as customers.

Chemical Safety

General Chemical Safety

1. Store chemicals securely in correctly labelled appropriate containers.
2. Containers used on site should be correctly labelled
3. All safety data sheets (SDS) must be available wherever chemicals are being used or carried (vehicle, on site, factory)
4. Carry and use protective equipment such as chemical resistant gloves, respirators with appropriate filter cartridges and eye protection.
5. Dispose of waste and unused chemical properly in accordance with local regulations as per Australian and New Zealand standards
6. Always read labels and observe safety considerations
7. Do not sniff chemicals or containers to find out what it is. If in doubt, throw it out
8. Wash your hands well after handling any chemicals or containers with chemicals
9. Avoid skin contacts with chemicals.

10. Continuous exposure to even the mildest of chemicals can lead to problems. Nearly all chemicals can have a threshold limit value (TLV). This rates the parts per million at which exposure may become a problem
11. Always cap your chemicals immediately following their use
12. Never leave any chemicals unattended
13. Ensure that children or pets do not have access to the area while chemicals are being used

Equipment Safety

Electrical Safety

1. Have all electrical equipment regularly checked and serviced at least every 12 months (more often if equipment is used in a construction site. Inspect power cords for wear, fraying or other damage
2. All electrical equipment that is not marked as being double insulated, should be properly earthed (grounded)
3. Use an earth leakage protection device and check all power points are earthed
4. Never disconnect safety features on equipment
5. Do not allow electrical cords or plugs to become wet
6. If you blow a fuse in a fuse box, replace it with the correct size fuse wire (15 Amps for power points are standard throughout Australia)
7. Disconnect power cords from sockets before doing any maintenance on your Equipment
8. Disconnect electricity before filling equipment with water

Site and Personal Safety

1. Ask the customer if there are site risks that you need to be aware of such as trip hazards or faulty power points.

2. Undertake a risk inspection before commencing works. Complete the pre-inspection on the Electrodry Invoice
3. Arrange equipment so that it is out of traffic ways
4. Arrange hoses and power cords so that people cannot trip
5. Always ask people to keep children away from the work area at all times
6. When not using hoses, turn off pressure hoses to prevent accidental spraying of fluids and keep a tool connected to the vacuum hose to prevent accidental injury
7. Use drop sheet to help prevent slippery floors
8. Post caution signs to warn customers that floors may be slippery and give verbal warnings as well
9. Ask customers if any occupants suffer allergic reactions, and take appropriate actions or precautions. Certain chemicals (usually perfumed deodorants used in some chemicals, solvents, alkaline or acid solutions or enzymes) or even just raised humidity levels can trigger attacks in hypersensitive people. Sometimes the fine dust kicked up by pre-vacuuming or brushing the air conditioner can fill the air with dust.
10. Use correct lifting techniques to avoid back injury

Pre-Inspection

The first and most important step in Air Conditioner cleaning is the pre-inspection and pre-testing. An informed opinion regarding the best method of cleaning and decontamination to be used can only be achieved following the thorough inspection.

Cleaning your Air Conditioner

This dramatically improve the efficiency of your air conditioner with this unique, hygienic and healthy system. Slash your energy bills by cleaning your air conditioning. Electrodry Air Conditioner Cleaning can reduce your energy usage by up to 20%.

Air conditioners often run 12+ hours every day and filters become clogged with mould, dirt and contaminants, causing the system to overwork and dramatically reduce efficiency. Filters are also expensive to replace.

Air Conditioner Cleaning by Electrodry removes the mould, dirt and contaminants from your Air Conditioner and its filter enabling it to function effectively, dramatically increasing cooling and airflow and making it healthier for you and your family – particularly important for families with respiratory issues.

By increasing the efficiency of the air conditioner it takes less time to reach the desired temperature. This means that with just a 10% improvement in efficiency the running time can be reduced by up to 40% as the thermostat of your air conditioner will automatically turn off the system once it reaches the desired temperature. This can mean big savings on your electricity bills.

The Electrodry Air Conditioner cleaning system uses anti-static cleaning products with the use of EcoProtect a 12 month residual life. Other air conditioning cleaning systems require cleaning every 3 to 6 months.

Benefits of an Electrodry Air Conditioner Clean:

Improve air quality by removing allergens which are blown through your home

Saves electricity with improved air conditioner efficiency

- Improves your comfort with better air conditioner performance
- Extends the life of your air conditioner
- The cleaning will last for at least 12 months, when a full service is performed.
- You can be confident the work is being done by a professional

Types of Air Con Units

- Split systems
- Window units
- Ducted systems
- HVACR
- Cool Rooms

Split Systems

- Ideal for air conditioning one room or a specific area of a home
- Wall-mounted
- Less expensive to install than a ducted system and typically cheaper to run

The split system breaks the air conditioning system into 2 units

Evaporative unit (internal unit) – located inside the house and handles air cooling and distribution

Condensing unit (external unit) - installed outside of the house and contains the compressor which is linked to the internal unit via drain pipes and electric cables

Window Unit

- Designed to be fitted in window sills
- Houses all the necessary components, namely the compressor, condenser, expansion valve or coil, evaporator and cooling coil enclosed in a single box

Ducted systems

- Operates from a central location and warm or cool air is sent to the various rooms of the house via a network of ducts
- Ducts are hidden in the wall and roof and only discreet wall and roof panels are visible
- More expensive than a split system

HVAR/HVAC/HVACR

HVAC (heating, ventilating, and air conditioning; also heating, ventilation, and air conditioning) is the technology of indoor and vehicular environmental comfort. Its goal is to provide thermal comfort and acceptable indoor air quality. HVAC system design is a sub discipline of mechanical engineering, based on the principles of thermodynamics, fluid mechanics, and heat transfer. Refrigeration is sometimes added to the field's abbreviation as HVAC&R or HVACR, or ventilating is dropped as in HACR (such as the designation of HACR-rated circuit breakers).

Cool Room

A Cool Room is a popular appliance in commercial industries, that consists of a thermally insulated compartment and a heat pump (mechanical, electronic or chemical) that transfers heat from the inside to its external environment so that the inside of the cool room is cooled to a temperature below the ambient temperature of the external environment. Refrigeration is an essential food storage technique in developed countries. The lower temperature lowers the reproduction rate of bacteria, so the refrigerator reduces the rate of spoilage. A refrigerator maintains a temperature a few degrees above the freezing point of water. Optimum temperature range for perishable food storage is 3 to 5 °C

How to Clean an Air Conditioner Unit

What to Look For In the Pre-Inspection

When we carry out our pre-inspection we are looking for things that could cause us problems before, during and after the cleaning procedures.

They are things such as:

1. Age and condition
2. Soiling
3. Mould growth
4. Type and extent of contamination
5. Residues or results of previous cleaning

Procedures for Pre-Inspection

Ask Questions

Ask the customer questions like the following:

1. The age and any previous cleaning history of the Air Conditioner
2. If there are any particular concerns or problems that the customer knows of.

Visual Inspection

Inspect each mattress and make note of any problems or pre-existing conditions.

1. Look for pre-existing conditions that may affect the functioning of the air conditioner
 - 1.1 Stains, spots, cracks etc.
 - 1.2 Note the type and amount of general soiling

2. Identify and categorise type and extent of contamination:

Microbial contaminants

- 2.1 Mould
 - 2.2 Fungi
 - 2.3 Bacteria
3. Some things to remember about Air Conditioning cleaning
 - 3.1 Never promise to remove any everything
 - 3.2 Set up drop sheet
 - 3.3 Safely set up ladder
 - 3.4 Open the access cover
 - 3.5 Sometimes, no matter what you do, certain degradation can remain after cleaning
 - 3.6 Show the customer the visible dirt and build-up

Sell the service!

Explain the procedure

Show the customer the visible contaminants in the filter and plastic bib

Show the customer the reading on the Anemometer before and after the cleaning

Explain how having the air conditioner maintained on a regular basis can reduce the cost of electricity used.

Explain the health risks involved in having a dirty air conditioner

1. Legionnaires Disease
2. Respiratory issues can be enhanced – Dust can trigger asthma attacks

Explain the benefits of using Eco Protect

The Benefits of EcoProtect

1. **Cleaning your air con is good but EcoProtecting your Air con is BEST**
2. With a clean alone, needs to be done every 3-6 months. With EcoProtect it will last up to 24 months or 2 years
3. Depending on how much the unit is used, cleaning and EcoProtecting is ideally done every 12 months
4. EcoProtector is a hydrophilic (water loving) protector. This means that when the gas passes through the evaporative coil and the moisture forms around the coil (condensation) the coil will simply clean itself
5. This layer is only 1Micron thick where some products that boast similar results are up to 1mm thick
6. This layer allows the system to continue to clean itself
7. Hydrophilic properties keep the system cleaner longer. This is where the biggest electrical savings are made
8. As the system keeps cleaning itself, the air delivered is cleaner and healthier for longer
9. Further reduced maintenance of the machine

Air Conditioner Cleaning

Tool Inspection

1. Check all your equipment
2. Ensure that vacuum motors and pumps are working efficiently (see section on Safety)
3. Check that everything such as brushes, hoses and tools are in good condition, and clean

Preparation of Work Environment

1. Ask customers to keep children and pets well away from the work area.
2. Clear a suitable space in which to work.
3. Cover surfaces with drop sheets or masking sheets to protect them.
4. Ensure the air conditioner is treated in an area with good ventilation, open windows.
5. Cover slippery floors with drop sheets and install safety signs. Over-sprays can be slippery and can cause slip fall accidents.
6. Check that you have all tools and chemicals to do the job at hand. Fill up Eco-Clean bottles.

Equipment Preparation

1. Prepare the Anemometer for Air Conditioner cleaning before entering the customers' home.
2. Prepare a clean, black cloth in the display unit for the mattress cleaning demonstration
3. Ensure you have clean, white towels on hand for wiping up overspray

Internal unit (evaporative)

1. Take filters out

2. Use an anemometer to test the air flow and temperature while showing the customer
3. Record these figures in your own notes. They don't need to be left with the customer unless requested

Isolate Power

- 1. Work is not to be completed while machine is live**
2. As water is being used around electrical devices the power must be isolated
3. Find the separate fuse and switch it off. Red rubber gloves must be worn
4. Using electrical tape, tape the switch off
5. Test the machine to confirm the unit is not live. Use the remote or buttons on the device to see if it will turn on
6. If there is not a specified fuse or switch, all power must be turned off. If the power turns on, it is not isolated.

The job can still be done using the fully portable device (one in each city). In this case the customer needs to turn off all the devices in the house. Customer needs to turn off all of their devices

Set-up

1. Remove cowling
2. Place grey brackets into the side of the air con unit
3. Place elastic over the top of the unit
4. Ensure bags funnel drops into a clean 20L bucket
5. Ensure plastic plate is in place under the air con
6. Wear safety goggles and face mask
7. Mix cleaner at 19:1 with hot water (Tap hot water, do not use immersion heater) in solo pump sprayer. That is 50ml of concentrate with 950ml of hot water
8. Remove thermostat

Cleaning

1. Gently vacuum electrical area and cover off with non-stick tape
2. Spray down fins with Eco-Protect cleaner
3. Allow dwell time of 10 minutes
4. Set up Maxi or Sabrina with hot water
5. Spray unit down with pressurised hot water
 - 5.1 Start at back of unit using 85degree fan jet
 - 5.2 Work towards the front of the machine changing to the direct fan jet as soon as possible
 - 5.3 Spray into the barrel under the fins where the air is expelled
 - 5.4 Wipe down unit as much as possible with white towel

Cleaning filter and cover

1. Spray with cleaner
2. Allow dwell time
3. Using the Sabrina, clean the filters with a hot-water clean
4. ***Optional*** apply EcoProtect to fin unit of condenser (50-60ml of EcoProtect)

External Unit (Condenser)

1. Place down drop sheet if necessary
2. Spray outside unit with cleaner with cover on
3. Spray inside machine onto fans and fin unit
4. Allow dwell time
5. Using Maxi spray down with pressurised water
6. Allow to dry
7. ***Optional*** apply Eco Protect to fin unit of condenser (60-65ml of Eco Protect)
8. Replace cover if necessary

9. Tidy and wipe down
10. NOTE: sometimes you will be asked to open the condenser unit. Due to age you may not be able to open the condenser cover
11. DON'T STRESS
12. If this happens you simply need to spray cleaner, water and EcoProtect through the vents
13. However this should be found and identified to the customer during pre-inspection

Final Inspection

1. Un-isolate power and turn Air con on
2. Using anemometer in the **same location** as at the start of the job, test the air flow and temperature while showing the customer
3. Compare these figures to the ones collected at the start of the job
4. Even if these figures are not different the machine will still deliver a healthier environment

Pack up

1. Remove bib and bucket
2. Show the customer the bucket if they are interested
3. Replace filters
4. Clean up and remove all equipment