Description

A/C Re~New has been used successfully for many years to improve the performance of air conditioning and refrigeration systems. A/C Re~New provides significant saving in energy use. It also quiets noisy systems and extends the life of the system. It is a lubricant that blends with the system's oil, lasting for the life of the equipment.

Application

A/C Re~New can be used in air conditioning and refrigeration applications. The pressurized package, 4057-50, is formulated for use in R-22, R-410A as well as other refrigerants in systems up to 5 tons. Multiple cans should be used to treat larger commercial systems such as packaged units or larger refrigeration systems. Additionally, the product is available in unpressurized 4 oz. bottles and 32 oz. quarts. Install with the A/C Re~New Injector.

Packaging

- Pressurized can: 4057-50
- “2+1” start-up kit: 4057-52
- 1 quart (32 fl. oz.): 4057-54
- 4 fluid ounce can: 4057-55
- A/C Re~New Injector Tool: 4057-99
- Injection Valve: 4300-89

A/C Re~New in the Compressor

- Improved lubricity through reduced friction drag
- Cleaner system
- Quieter Operation
A/C Re-New Technology Testing Results

Residential air conditioning systems account for up to 70% of the home’s energy consumption. And when the outdoor temperature rises the system works longer and harder. Through tests on actual installations, the A/C Re-New technology has demonstrated its ability to reduce the air conditioning systems energy use on average by 11% It has also been found to improve the system’s cooling performance and quiet noisy systems.

Energy Savings

<table>
<thead>
<tr>
<th>Number of units tested</th>
<th>Outdoor Temperature</th>
<th>Average Running amps Before A/C Re-New</th>
<th>Average Running amps After A/C Re-New</th>
<th>% Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>73.3°F</td>
<td>15.8</td>
<td>14.1</td>
<td>10.8%</td>
</tr>
<tr>
<td>12</td>
<td>56.4°F</td>
<td>17.4</td>
<td>16.5</td>
<td>5.2%</td>
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</tbody>
</table>

Noise Reduction

<table>
<thead>
<tr>
<th>A/C Re-New</th>
<th>A/C Re-New</th>
<th>Decibel Drop</th>
</tr>
</thead>
<tbody>
<tr>
<td>77.08</td>
<td>75.12</td>
<td>1.96</td>
</tr>
</tbody>
</table>

Cooling Performance

<table>
<thead>
<tr>
<th>Average Air Duct Temp. Before A/C Re-New</th>
<th>Average Air Duct Temp. After A/C Re-New</th>
<th>Temperature Drop</th>
</tr>
</thead>
<tbody>
<tr>
<td>57.4°F</td>
<td>54.2°F</td>
<td>3.2°F</td>
</tr>
</tbody>
</table>

Falex Pin Test

This test is used to evaluate wear and tear, friction and extreme pressure properties of materials and lubricants. A rotating pin, also referred to as a journal, is lubricated with the test product and is compressed between two V-shaped blocks. Pressure (depicted by the red arrows) is added at increasing levels until the pin fails. The goal is to determine how much load or force the lubricant can withstand before it fails. Therefore, the higher the load, the better the lubricant. Three typical industry oils (Mineral Oil, Alkylbenzene and POE) were tested, both alone and then mixed appropriately with A/C Re-New. A/C Re-New significantly improved the oil’s load-to-failure points.

Falex Pin & V-Block Testing Results

Compressor Wear Test

This test evaluated how well A/C Re-New reduced metal wear in operating compressors. Six reciprocating compressors were tested with R-22 refrigerant and mineral oil for a period of 500 hours. A/C Re-New was applied to half of the compressors. As shown in the pictures to the right, the bearing wear on the compressors was significantly reduced in those compressors containing A/C Re-New. Less wear means the equipment will last longer and reduced friction results in lower energy consumption. Similar results were achieved in scroll compressors (photos available).
Directions for Use

For R-22 systems and other systems where the low side pressure is below 65 psi:

- One can will treat systems up to 5 tons
- Multiple cans should be used to treat larger commercial systems such as packaged units, split systems, etc

1. Confirm that you have all the required items for the application.
2. Use one can of A/C Re-New for up to 5 tons of system capacity. For larger systems, multiple cans should be used. And for system capacities that fall between multiples of 5 tons (3 tons, 7 1/2 tons, etc.), round up to the next multiple of 5 tons to determine the required charge of A/C Re-New. For example, use two cans to treat 7 1/2 tons. The slightly higher dose of A/C Re-New is nominal and considered acceptable.
3. Oil removal. For systems over 10 tons, it is recommended that 4 fluid ounces of system oil be removed for every 5 tons of capacity. For example, remove 12 fluid ounces of oil from a 15 ton system, and install three cans of A/C Re-New.
4. Be sure to exercise and use good air conditioning, refrigeration service practices at all times.
5. Close Injection Valve, and attach it to the can of A/C Re-New.
6. Connect one end of the charging hose to the Injection Valve, and then connect the other end of the hose to an access port on the low pressure side.
7. Slightly crack the hose fitting connected to the Injection Valve in order to purge air from the hose. Then, quickly re-tighten fitting.
8. With can upright, open the Injection Valve and allow the A/C Re-New mixture to charge into the system. The A/C Re-New is pressurized sufficiently to overcome low side system pressures below 65 psi. Charging will take 2-3 minutes.
9. If additional cans are to be added, leave hose connected but close Injection Valve. With Injection Valve closed, remove it from the spent can. (Be careful as can will be under some pressure.) Attach new can of A/C Re-New and open Injection Valve to inject product. Repeat for all additional cans.
10. Close Injection Valve, then follow by disconnecting both ends of hose. Remove Injection Valve.
12. Properly discard the empty A/C Re-New can.

For R-410A systems and other systems where the low side pressure is ABOVE 65 psi while running:

IMPORTANT: System must be pumped down to lower the low side pressure to 40-50 psi. Since low side pressures in a R-410A system are higher than the pressure in the A/C Re-New can, you must first pump down the system to inject the product. To do so, follow the below instructions.

1. Secure electric power to the unit and connect the refrigerant manifold, as shown in Figure 2.
2. Close the liquid line valve and turn the compressor on to start pumping refrigerant into the condenser.
3. Operate the compressor until the suction gauge on the manifold shows a pressure of 40 to 50 psi (lower pressure than what is in the can). CAUTION: Do not pump completely down as low pressure cut-off or high pressure relief could engage.
4. When the pressure on the suction gauge is between 40 and 50 psi, turn the compressor off and immediately close the suction line valve. This procedure traps most of the refrigerant in the condenser allowing you to inject the A/C Re-New. (Be sure the pressure in the low side is between 40 and 50 psi)
5. Shake can well. Be sure piercing valve handle is turned fully counter clockwise and then attach piercing valve to can. Be sure not to cross thread or over tighten.
6. Attach other end of charging hose to low side service port. As this is done, there will be a very small release of system charge that will purge air from the hose. Additionally, where permissible by law, the hose can be purged by slightly unscrewing the piercing valve from the can allowing the system’s charge to enter and purge the hose.
7. Turn piercing valve handle fully clockwise to pierce can then, turn piercing valve handle counter clockwise to open valve and install A/C Re–New. Allow approximately 2-3 minutes for product to completely enter the system.

8. Once product is dispensed, close piercing valve and remove hose from low side service port.

9. After the charging hose is disconnected from the system, open the valves to allow the refrigerant back into the rest of the system. Run the system continuously for 1 hour or more to allow product to fully circulate through system.

Instructions for Using the A/C Re–New Injector Tool

If desired, the unpressurized packages may be used. This includes the 4 fluid ounce bottle (4057-55) and the quart (4057-54). Use of the A/C Re–New Injector Tool (4057-99) is recommended for installation.

Installing A/C Re–New

a. Attach a vacuum pump to the other end, as shown, using another short hose with a shut-off valve. Draw vacuum on extra hose, then close its valve. Proceed to step 4.

b. As an alternative method without the vacuum pump, use a clean manifold hose set and proper service techniques to push the A/C Re–New into the low side with high side pressure. Be sure to purge or “burp” all lines.

1. Secure hose-end to suction side fitting, with valve in closed position. Once attached, crack valve quickly to purge.

2. Add 4 fl. oz. A/C Re–New

   Add 4 fl. oz. to cylinder and the close cylinder lid to seal.

3. Close When Evacuated

4. a) Open Briefly to Pressure Canister

   b) Open Slightly to Let Oil into the System

5. Once installed, close this valve and disconnect from low side fitting.

6. Close up cylinder to prevent any contamination from entering it.

Read and understand the product’s label and Material Safety Data Sheet (“MSDS”) for precautionary and first aid information. The MSDS is available on the Nu-Calgon website at www.nucalgon.com.