Both winter and summer energy savings. Transfers both latent and sensible energy, the first cost of the HVAC package.

ECWs also allow ventilated systems to be sized with smaller 15% or more outdoor air makeup. In new HVAC installations, it is typically the largest single source of energy consumption in residential and commercial buildings. ECW installations are economic on most new and retrofit HVAC systems with 15% or more outdoor air makeup. New HVAC installations, and are doing so without a significant energy penalty by including exhaust air energy recovery.

The ASHRAE Standard 62-1989 (Ventilation for Acceptable Indoor Air Quality) describes a recommended target rate of indoor air exchange of 0.3 air changes per hour as being sufficient for proper design and safe operation. The standard also recognizes that more air exchange is needed in large rooms and areas such as those in schools and hospitals. In such areas, the standard recommends 0.6 air changes per hour as being necessary to ensure proper ventilation.

The supply conditions are therefore completely defined as:

\[ T_s = 64 \quad \text{F} \quad e_s = 99 \quad \text{GR} \]

Performance Certification

NovelAire ECWs are ARI-certified using the 1987 ARI Standard 601 (Rating Air-Cooled Heat Exchangers) and ARI Standard 1604 (Rating Air-Air Energy Recovery Equipment).

The ASHRAE Standard 62-1989 (Ventilation for Acceptable Indoor Air Quality) describes a recommended target rate of indoor air exchange of 0.3 air changes per hour as being sufficient for proper design and safe operation. The standard also recognizes that more air exchange is needed in large rooms and areas such as those in schools and hospitals. In such areas, the standard recommends 0.6 air changes per hour as being necessary to ensure proper ventilation.

The supply conditions are therefore completely defined as:

\[ T_s = 64 \quad \text{F} \quad e_s = 99 \quad \text{GR} \]

The supply conditions are therefore completely defined as:

\[ T_s = 64 \quad \text{F} \quad e_s = 99 \quad \text{GR} \]

The supply conditions are therefore completely defined as:

\[ T_s = 64 \quad \text{F} \quad e_s = 99 \quad \text{GR} \]

The supply conditions are therefore completely defined as:

\[ T_s = 64 \quad \text{F} \quad e_s = 99 \quad \text{GR} \]
Both winter and summer energy savings

- Lower first costs on new installations
- Lower operating costs
- Transfers both latent and sensible energy
- Reduces the ventilation energy penalty
- Improves indoor air quality

Improving Indoor Air Quality

Ventilation accomplishes several objectives: (1) It purges the conditioned space of unwanted pollutants such as organic vapors, dust, mold, etc. (2) It purges the space of unwanted products of human activity such as tobacco smoke, carbon dioxide, bacteria, and germs.

Poor indoor air quality has been directly associated with the “sick building syndrome”, a condition that can result in high illness rates, absenteeism, and productivity decreases. Consequently, design managers are becoming increasingly aware of the need to design proper air quality into HVAC systems.

The American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 62 1989 (Ventilation for Acceptable Indoor Air Quality) describes a recommended target rate of air changes to renew air for a variety of application and building types. Building codes in the U.S. and abroad are advancing, increasingly more comprehensive in addressing ventilation requirements. Architects and engineers are growingly focused on creating healthy spaces.

ECW Selection and Calculations

ECW Selection

NovelAire offers a software selection program available by download at our website www.novelaire.com. The following equation shows the recommended S-factor [(S) = on a balanced system (Air Ratio = 1.0). For calculations using unbalanced systems (Air Ratio ≠ 1.0), the same software selection program or contact the factory for assistance.

For the purpose of this example, let’s assume that you choose an ECW544. At 4,500 cfm, from the plot featuring the model numbers, ECW544, the following values are observed:

- Exhaust Air (4)
  - Dry bulb temperature: 99.0˚F
  - Humidity: 100% RH
  - Total effectiveness: 74.0

- Supply Air (2)
  - Dry bulb temperature: 80.0˚F
  - Humidity: 50% RH
  - Total effectiveness: 79.5

- Return Air (3)
  - Dry bulb temperature: 80.0˚F
  - Humidity: 50% RH
  - Total effectiveness: 79.5

The supply conditions are therefore completely defined as:

\[ \frac{m_1}{m_2} = \frac{X_1}{X_2} = \frac{79.5}{74.0} = 0.752 \]

Similarly, it can calculate the exhaust air ratio, which is defined as:

\[ \frac{m_2}{m_1} = \frac{X_2}{X_1} = \frac{74.0}{79.5} = 0.935 \]

ii. Exact Determination of Supply and Exhaust Air Conditions

This section shows how a detailed picture of all incoming and outgoing flows can be derived from the example shown. The effectiveness chart is not shown as accurately described by the following equation:

\[ \frac{X_2}{X_1} = \frac{m_2}{m_1} \frac{T_1}{T_2} \]

Where:

- $m_1$: supply mass flow rate
- $m_2$: exhaust mass flow rate
- $T_1$: supply dry bulb temperature
- $T_2$: exhaust dry bulb temperature
- $X_1$: sensible, latent, or total heat effectiveness
- $X_2$: air bypass for total effectiveness; for latent effectiveness, total enthalpy for total effectiveness; for sensible effectiveness, heat plus latent effectiveness, total enthalpy for total effectiveness.

Note: detailed ECW wheel and cassette specifications and software selection programs are available for download at www.novelaire.com.

ECW Features and Benefits

NovelAire ECWs are comprised of our unique corrugated synthetic fiber-based media integrated with proven rotary scroll air handling units. The use of a synthetic fiber-based media maximizes desiccant loading for efficient dehumidification, while the unique construction of the media sheet reduces internal cross leakage and enhances face flatness. The ECW achieves complete water washability, requires no maintenance, and to minimize operating costs. Since HVAC equipment heat the indoor air, the exhaust air is being reduced in energy penalty.

ECW Selection

As discussed above, the ASHRAE Standard (Method of Testing Moisture-Resistant Paper Air Heat Exchangers) and ASHRAE Standard 180 (Ratings Air-Heat Energy Recovery Equipment) apply to the design.

The NovelAire ECW is designed for all season ventilation, providing acceptable IAQ year-round, normally without intervention or return flows for a variety of applications. The unitary wheel construction maximizes face flatness and reduces cross leakage. The wheel is completely water washable.

The ECW is designed for all season ventilation, providing acceptable IAQ year-round, normally without intervention or return flows for a variety of applications.

Performance Certification


ECW Cassettes

The ECW features flanged-end construction with removable side panels.

- No-maintenance bearings standard on small cassettes
- Flanged-outboard bearings used on larger cassettes
- Full-contact brush seal minimum leakage
- Adjustable purge section reduces cross contamination
- Direct drive motor with Power Twist link belt
- Optional variable speed drive motor available

Note: detailed ECW wheel and cassette specifications and software selection programs are available for download at www.novelaire.com.

ECW Features and Benefits

NovelAire ECWs are comprised of our unique corrugated synthetic fiber-based media integrated with proven rotary scroll air handling units. The use of a synthetic fiber-based media maximizes desiccant loading for efficient dehumidification, while the unique construction of the media sheet reduces internal cross leakage and enhances face flatness. The ECW achieves complete water washability, requires no maintenance, and to minimize operating costs. Since HVAC equipment heat the indoor air, the exhaust air is being reduced in energy penalty.

Improving Indoor Air Quality

Ventilation accomplishes several objectives: (1) It purges the conditioned space of unwanted pollutants such as organic vapors, dust, mold, etc. (2) It purges the space of unwanted products of human activity such as tobacco smoke, carbon dioxide, bacteria, and germs.

Poor indoor air quality has been directly associated with the “sick building syndrome”, a condition that can result in high illness rates, absenteeism, and productivity decreases. Consequently, design managers are becoming increasingly aware of the need to design proper air quality into HVAC systems.

The American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 62 1989 (Ventilation for Acceptable Indoor Air Quality) describes a recommended target rate of air changes to renew air for a variety of application and building types. Building codes in the U.S. and abroad are advancing, increasingly more comprehensive in addressing ventilation requirements. Architects and engineers are growingly focused on creating healthy spaces.

ECW Selection

NovelAire offers a software selection program available by download at our website www.novelaire.com. The following equation shows the recommended S-factor [(S) = on a balanced system (Air Ratio = 1.0). For calculations using unbalanced systems (Air Ratio ≠ 1.0), the same software selection program or contact the factory for assistance.

For the purpose of this example, let’s assume that you choose an ECW544. At 4,500 cfm, from the plot featuring the model numbers, ECW544, the following values are observed:

- Exhaust Air (4)
  - Dry bulb temperature: 99.0˚F
  - Humidity: 100% RH
  - Total effectiveness: 74.0

- Supply Air (2)
  - Dry bulb temperature: 80.0˚F
  - Humidity: 50% RH
  - Total effectiveness: 79.5

- Return Air (3)
  - Dry bulb temperature: 80.0˚F
  - Humidity: 50% RH
  - Total effectiveness: 79.5

The supply conditions are therefore completely defined as:

\[ \frac{m_1}{m_2} = \frac{X_1}{X_2} = \frac{79.5}{74.0} = 0.752 \]

Similarly, it can calculate the exhaust air ratio, which is defined as:

\[ \frac{m_2}{m_1} = \frac{X_2}{X_1} = \frac{74.0}{79.5} = 0.935 \]

ii. Exact Determination of Supply and Exhaust Air Conditions

This section shows how a detailed picture of all incoming and outgoing flows can be derived from the example shown. The effectiveness chart is not shown as accurately described by the following equation:

\[ \frac{X_2}{X_1} = \frac{m_2}{m_1} \frac{T_1}{T_2} \]

Where:

- $m_1$: supply mass flow rate
- $m_2$: exhaust mass flow rate
- $T_1$: supply dry bulb temperature
- $T_2$: exhaust dry bulb temperature
- $X_1$: sensible, latent, or total heat effectiveness
- $X_2$: air bypass for total effectiveness; for latent effectiveness, total enthalpy for total effectiveness; for sensible effectiveness, heat plus latent effectiveness, total enthalpy for total effectiveness.

Note: detailed ECW wheel and cassette specifications and software selection programs are available for download at www.novelaire.com.

ECW Selection

NovelAire offers a software selection program available by download at our website www.novelaire.com. The following equation shows the recommended S-factor [(S) = on a balanced system (Air Ratio = 1.0). For calculations using unbalanced systems (Air Ratio ≠ 1.0), the same software selection program or contact the factory for assistance.

For the purpose of this example, let’s assume that you choose an ECW544. At 4,500 cfm, from the plot featuring the model numbers, ECW544, the following values are observed:

- Exhaust Air (4)
  - Dry bulb temperature: 99.0˚F
  - Humidity: 100% RH
  - Total effectiveness: 74.0

- Supply Air (2)
  - Dry bulb temperature: 80.0˚F
  - Humidity: 50% RH
  - Total effectiveness: 79.5

- Return Air (3)
  - Dry bulb temperature: 80.0˚F
  - Humidity: 50% RH
  - Total effectiveness: 79.5

The supply conditions are therefore completely defined as:

\[ \frac{m_1}{m_2} = \frac{X_1}{X_2} = \frac{79.5}{74.0} = 0.752 \]

Similarly, it can calculate the exhaust air ratio, which is defined as:

\[ \frac{m_2}{m_1} = \frac{X_2}{X_1} = \frac{74.0}{79.5} = 0.935 \]

ii. Exact Determination of Supply and Exhaust Air Conditions

This section shows how a detailed picture of all incoming and outgoing flows can be derived from the example shown. The effectiveness chart is not shown as accurately described by the following equation:

\[ \frac{X_2}{X_1} = \frac{m_2}{m_1} \frac{T_1}{T_2} \]

Where:

- $m_1$: supply mass flow rate
- $m_2$: exhaust mass flow rate
- $T_1$: supply dry bulb temperature
- $T_2$: exhaust dry bulb temperature
- $X_1$: sensible, latent, or total heat effectiveness
- $X_2$: air bypass for total effectiveness; for latent effectiveness, total enthalpy for total effectiveness; for sensible effectiveness, heat plus latent effectiveness, total enthalpy for total effectiveness.

Note: detailed ECW wheel and cassette specifications and software selection programs are available for download at www.novelaire.com.
Both winter and summer energy savings
➣ lowers first costs on new installations
➣ transfers both latent and sensible energy

Improving Indoor Air Quality
Ventilation accomplishes several objectives: (1) it purges the conditioned space of unwanted pollutants such as organic vapors, dust, radon, etc. and, (2) it purges the space of contaminants of human activity such as tobacco smoke, carbon dioxide, bacteria, and germs.

Poor indoor air quality has been directly associated with the "sick building syndrome," a condition that results in high illness rates, absenteeism, and productivity decreases. Consequently, design engineers are being increasingly aware of the need to design proper air quality into HVAC systems.

ASHRAE Standard 68-1991 (Ventilation for Acceptable Indoor Air Quality) describes a recommended target rate of air makeup to air for a variety of application and building types. Building codes in the U.S. and abroad are becoming increasingly more comprehensive in addressing ventilation requirements. Architects and engineers are, with increasing frequency, including greater amounts of fresh air makeup in their HVAC systems, and are doing so to improve a significant energy penalty by including exhaust air energy recovery.

The NovelAire ECW is designed to provide for all season ventilation efficiency, including greater amounts of fresh air makeup in their HVAC systems. Ventilation accomplishes several objectives: (1) it purges the conditioned space of unwanted pollutants such as organic vapors, dust, radon, etc. and, (2) it purges the space of contaminants of human activity such as tobacco smoke, carbon dioxide, bacteria, and germs.

Poor indoor air quality has been directly associated with the "sick building syndrome," a condition that results in high illness rates, absenteeism, and productivity decreases. Consequently, design engineers are being increasingly aware of the need to design proper air quality into HVAC systems.

ASHRAE Standard 68-1991 (Ventilation for Acceptable Indoor Air Quality) describes a recommended target rate of air makeup to air for a variety of application and building types. Building codes in the U.S. and abroad are becoming increasingly more comprehensive in addressing ventilation requirements. Architects and engineers are, with increasing frequency, including greater amounts of fresh air makeup in their HVAC systems, and are doing so to improve a significant energy penalty by including exhaust air energy recovery.

Improve Indoor Air Quality
Ventilation accomplishes several objectives: (1) it purges the conditioned space of unwanted pollutants such as organic vapors, dust, radon, etc. and, (2) it purges the space of contaminants of human activity such as tobacco smoke, carbon dioxide, bacteria, and germs.

Poor indoor air quality has been directly associated with the "sick building syndrome," a condition that results in high illness rates, absenteeism, and productivity decreases. Consequently, design engineers are being increasingly aware of the need to design proper air quality into HVAC systems.

ASHRAE Standard 68-1991 (Ventilation for Acceptable Indoor Air Quality) describes a recommended target rate of air makeup to air for a variety of application and building types. Building codes in the U.S. and abroad are becoming increasingly more comprehensive in addressing ventilation requirements. Architects and engineers are, with increasing frequency, including greater amounts of fresh air makeup in their HVAC systems, and are doing so to improve a significant energy penalty by including exhaust air energy recovery.

Molecular sieve desiccant reduces cross contamination
Fluted geometry minimizes internal cross leakage
Unitary wheel construction maximizes face flanges
No-maintenance bearings standard on small cassettes
ECW Selection and Calculations
Performance Certification
NovelAire ECWs are ANSI certified using the ASHRAE Standard 84-1991 (Performance Certification) and ARI Standard 1400 (Rating Air- and Air-Energy Recovery Equipment)

The NovelAire Technologies Energy Conservation Wheel (ECW) is a counter flow heat exchanger designed to provide maximum energy efficiency in ventilated systems where heated or cooled air is exhausted and outdoor air is introduced as makeup.

Where: m is sensible, latent, or total heat effectiveness; X = dry bulb temperature for sensible effectiveness, humidity ratio for latent effectiveness, total for total effectiveness; e min = mass flow rate of the exhaust; m in = mass flow rate of the supply; m out = mass flow rate of the outlet; e in = minimum value of other mass flow rate.

I. Exact Determination of Supply and Exhaust Air Conditions
This section shows how a detailed picture of all incoming and outgoing flows can be derived from the example shown.

Computations for moisture content of the supply: (0.0142 lb moisture/lb dry air)

The ASHRAE Standard 68-1991 (Ventilation for Acceptable Indoor Air Quality) recommends a target ratio of supply air makeup to exhaust air makeup. Building codes in the U.S. and abroad are increasingly more comprehensive in addressing ventilation requirements. Architects and engineers are, with increasing frequency, including greater amounts of fresh air makeup in their HVAC systems, and are doing so to improve a significant energy penalty by including exhaust air energy recovery.

II. Exact Determination of Supply and Exhaust Air Conditions
This section shows how a detailed picture of all incoming and outgoing flows can be derived from the example shown. The efficiency chart is not an image accurately described by the following equations:

\[
\begin{align*}
\frac{m_{\text{in}}}{m_{\text{out}}} &= \frac{X_{\text{in}} - X_{\text{out}}}{X_{\text{in}} - X_{\text{out}}} \\
\frac{e_{\text{in}}}{e_{\text{out}}} &= \frac{e_{\text{in}} - e_{\text{out}}}{e_{\text{in}} - e_{\text{out}}} \\
\end{align*}
\]
LEAKAGE AND EXHAUST AIR TRANSFER

Leakage-Outdoor Air Correction Factor (OACF)

<table>
<thead>
<tr>
<th>Pressure Differential</th>
<th>EATR 4.0%</th>
<th>0.1%</th>
<th>0.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0&quot;</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>0.5&quot;</td>
<td>1.05</td>
<td>1.05</td>
<td>1.05</td>
</tr>
<tr>
<td>3.0&quot;</td>
<td>1.12</td>
<td>1.12</td>
<td>1.12</td>
</tr>
</tbody>
</table>

Exhaust Air Transfer Ratio (All Models)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>ECW364</th>
<th>ECW484</th>
<th>ECW604</th>
</tr>
</thead>
<tbody>
<tr>
<td>EATR</td>
<td>1.03</td>
<td>1.05</td>
<td>1.12</td>
</tr>
<tr>
<td>EATR</td>
<td>1.04</td>
<td>1.06</td>
<td>1.16</td>
</tr>
<tr>
<td>EATR</td>
<td>1.04</td>
<td>1.07</td>
<td>1.18</td>
</tr>
</tbody>
</table>

Effective (4" Depth)

<table>
<thead>
<tr>
<th>Diameter (inches)</th>
<th>Sensible</th>
<th>Latent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECW1326</td>
<td>144</td>
<td>140</td>
</tr>
<tr>
<td>ECW1206</td>
<td>140</td>
<td>132</td>
</tr>
<tr>
<td>ECW966</td>
<td>129</td>
<td>129</td>
</tr>
<tr>
<td>ECW1026</td>
<td>128</td>
<td>128</td>
</tr>
<tr>
<td>ECW906</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>ECW846</td>
<td>124</td>
<td>124</td>
</tr>
<tr>
<td>ECW806</td>
<td>124</td>
<td>124</td>
</tr>
<tr>
<td>ECW786</td>
<td>123</td>
<td>123</td>
</tr>
<tr>
<td>ECW784</td>
<td>127</td>
<td>127</td>
</tr>
<tr>
<td>ECW726</td>
<td>126</td>
<td>126</td>
</tr>
<tr>
<td>ECW724</td>
<td>126</td>
<td>126</td>
</tr>
<tr>
<td>ECW664</td>
<td>126</td>
<td>126</td>
</tr>
<tr>
<td>ECW604</td>
<td>124</td>
<td>124</td>
</tr>
<tr>
<td>ECW546</td>
<td>122</td>
<td>122</td>
</tr>
<tr>
<td>ECW424</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>ECW364</td>
<td>118</td>
<td>118</td>
</tr>
</tbody>
</table>

Effective (6" Depth)

<table>
<thead>
<tr>
<th>Diameter (inches)</th>
<th>Sensible</th>
<th>Latent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECW13212</td>
<td>140</td>
<td>140</td>
</tr>
<tr>
<td>ECW12012</td>
<td>132</td>
<td>132</td>
</tr>
<tr>
<td>ECW10212</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td>ECW9012</td>
<td>127</td>
<td>127</td>
</tr>
<tr>
<td>ECW8412</td>
<td>124</td>
<td>124</td>
</tr>
<tr>
<td>ECW8012</td>
<td>123</td>
<td>123</td>
</tr>
<tr>
<td>ECW7812</td>
<td>121</td>
<td>121</td>
</tr>
<tr>
<td>ECW7212</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>ECW6612</td>
<td>119</td>
<td>119</td>
</tr>
<tr>
<td>ECW6012</td>
<td>116</td>
<td>116</td>
</tr>
<tr>
<td>ECW5412</td>
<td>112</td>
<td>112</td>
</tr>
<tr>
<td>ECW4212</td>
<td>109</td>
<td>109</td>
</tr>
<tr>
<td>ECW3612</td>
<td>107</td>
<td>107</td>
</tr>
</tbody>
</table>

Flow Rate (cfm)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>ECW364</th>
<th>ECW484</th>
<th>ECW604</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
</tbody>
</table>

Flow Rate (cfm)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>ECW364</th>
<th>ECW484</th>
<th>ECW604</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
</tbody>
</table>

Flow Rate (cfm)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>ECW364</th>
<th>ECW484</th>
<th>ECW604</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
</tbody>
</table>

Flow Rate (cfm)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>ECW364</th>
<th>ECW484</th>
<th>ECW604</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
</tbody>
</table>

Flow Rate (cfm)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>ECW364</th>
<th>ECW484</th>
<th>ECW604</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>10000</td>
<td>12500</td>
<td>17500</td>
</tr>
</tbody>
</table>

The information contained in this brochure is believed to be accurate by NovelAire Technologies, but is not warranted.

Website: www.novelaire.com

(225) 924-0427