DOUBLE EFFECT ABSORPTION CHILLERS

MODEL REW & RGWA SERIES

STEAM CONSUMPTION RATE: 3.9kg/(h·USRt)
                   : 3.95kg/(h·USRt)

*“Model 000” in this catalog is our model code.
**MODEL REW** is;

The double effect chiller is high efficiency model, the chiller is controlled by high performance microprocessor.

### ADVANCED MICROPROCESSOR

The microprocessor as the heart of the chiller has been improved to provide even better performance, enabling ideal operation control and operation information management.

1. **Quick startup for energy saving**
   
The time from operation start to actual running has been reduced by optimizing the amount of solution circulating at the operation start. This also saves energy at startup.

![Graph showing steam flow and chilled capacity over time](chart)

- Outlet temp. of high temp. generator
- Inlet temp. of high temp. generator
- Condensation temp. of high temp. generator
- Chiller on-off times
- Temp. of leaving/entering chilled water
- Temp. of leaving/entering cooling water
- Chiller running time
- Running time of refrigerant pump
- Running time of solution pump
- Refrigerant evaporation temp.
- Refrigerant condensing temp.
- Absorber solution temp.
- Valve opening position
- Running time of solution pump
- Running time of refrigerant pump

2. **Reduced dilution time at shutdown**
   
The minimum diluting time is decided according to the operation status at shutdown. Over-dilution is thus avoided and energy conserved.

3. **Interlocking circuits of auxiliary devices as standard**
   
Interlocking circuits are provided as standard for the pumps of the chilled water and cooling water and for the fan of the cooling tower. Also, the start-stop circuit of the cooling tower fan houses a temperature sensor as standard, for reduced initial costs.

4. **Digital display of operation status**
   
The control panel displays information required for operation management, such as the temperature of the chilled water, the cooling water, and the solution.

5. **Failure recovery function**
   
The chiller's sensors constantly monitor the operating status and condition. The automatic failure recovery function can remedy many abnormalities, thus minimizing stoppages owing to failures.

- Dew point control for high temp. generator
- Solution temperature control for high temp. generator
- High temperature generator keeping below ambient control

6. **Pre-alarm system for preventive maintenance**
   
The pre-alarm system gives advance notice about maintenance information, such as fouling in cooling water tubes and the time for replacing parts.

- Rise in LTD of cooling water
- Purge pump overload
- Replacement time for parts
- Abnormalities in level control of high temp. generator
- Rise in internal pressure
- Abnormalities indicated by temperature sensor (7-segment indication)
- Rise in temperature of entering cooling water
- Rise in concentration of solution in high temp. generator
- Rise in condensation temperature of high temp. generator
- Rise in temperature of solution of generators

7. **Instantaneous power-failure recovery circuit as standard**
   
As standard, the chiller contains an instantaneous power failure recovery circuit. An optional circuit is also available for power failures lasting up to 10 minutes. The circuitry enables the chiller to start automatically once power is recovered. However, this requires equipment to cut off the steam at power failure. When a power failure lasts longer than 10 minutes, a safety shutdown occurs.
Steam drain outlet temperature below 90°C, thus saving energy.

The steam drain is cooled down below 90°C, to prevent flushing at the drain outlet. Further, the drain trap is factory mounted to the chiller, thus reducing installation costs.

Excess steam start up consumption prevention

The steam valve is set to slow start to prevent excessive consumption of steam at cold start. Also, the operation system of the boiler minimizes problems.

No manual purge is required by Automatic Purge Unit

While the chiller is running, the ejector uses the discharge pressure of the solution pump to continuously feed noncondensables (hydrogen generated in the chiller and air leaked from outside) to the purge tank, thus keeping the inside of the chiller clean. Noncondensable gas and hydrogen gas accumulated in the purge tank is automatically discharged outside via the auto purge unit. This auto purge unit eliminates the need to purge hydrogen gas, and noncondensable, for ordinary air-conditioning purposes.

Marine-type water boxes as standard.

To facilitate tube inspection and cleaning, a marine-type water box is provided as standard for the chilled and cooling water system. Also, the cover of the water box is hinged so that tubes can be cleaned easily at the jobsite.
**SCOPE OF SUPPLY**

<table>
<thead>
<tr>
<th>Item</th>
<th>Scope of Supply</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiller</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Control panel</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>System wiring and pipework</td>
<td>○</td>
<td>Connecting piping between absorber and condenser is not required.</td>
</tr>
<tr>
<td>Absorber solution and refrigerant</td>
<td>○</td>
<td>Amount for initial charging</td>
</tr>
<tr>
<td>Factory test</td>
<td>○</td>
<td>Airtightness test only</td>
</tr>
<tr>
<td>Transportation</td>
<td>○</td>
<td>Tie point is FOB Yokohama or Tokyo port (Note 1)</td>
</tr>
<tr>
<td>Supervision of installation at site</td>
<td>×</td>
<td>(as option) (Note 1)</td>
</tr>
<tr>
<td>Fixing anchor bolts</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Protection during conveyance</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Disposal of packing materials</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Nitrogen gas for storage</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Commissioning Supervision</td>
<td>×</td>
<td>(as option) (Note 1, Note 2)</td>
</tr>
<tr>
<td>Foundation work</td>
<td>×</td>
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</tr>
<tr>
<td>External pipework</td>
<td>×</td>
<td>Companion-flanges not included.</td>
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<tr>
<td>External wiring</td>
<td>×</td>
<td>Interlock wiring not included.</td>
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<tr>
<td>Final coat of paint on chiller</td>
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<td>Control panel installed at site.</td>
</tr>
<tr>
<td>Insulation work for chiller</td>
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</tr>
<tr>
<td>Factory witnessed test</td>
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</tr>
<tr>
<td>Cooling water temperature control</td>
<td>×</td>
<td>For chilled water and cooling water</td>
</tr>
<tr>
<td>Thermometers, pressure gauges</td>
<td>×</td>
<td></td>
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<tr>
<td>Flow meter</td>
<td>×</td>
<td></td>
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<tr>
<td>Drain valve, air vent valve</td>
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<td></td>
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<tr>
<td>Anchor bolts</td>
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<td></td>
</tr>
<tr>
<td>Instruction manual</td>
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<td>Three copies</td>
</tr>
<tr>
<td>Fuses</td>
<td>○</td>
<td>Spares</td>
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</tbody>
</table>

Notes:
1. Please be ready to supply water, electricity, gas and consumables required for installation, test operation and adjustment at supervision.
2. If the temperature of the entering cooling water decreases to 15°C or lower, the temperature of the cooling water must be controlled.

The ON-OFF control circuit for the cooling tower fan is provided as standard (including thermal sensor).
## MODEL: REW & RGWA

### SCOPE OF SUPPLY

**Notes:**
- Transportation
- Factory test
- System wiring and pipework
- Chiller

### MODEL

<table>
<thead>
<tr>
<th>MODEL</th>
<th>COOLING CAPACITY</th>
<th>DIMENSION</th>
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<tr>
<td></td>
<td>MODEL</td>
<td>COOLING CAPACITY</td>
</tr>
<tr>
<td></td>
<td>kW</td>
<td>L/min</td>
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<tr>
<td></td>
<td></td>
<td>kPa</td>
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<tr>
<td></td>
<td></td>
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<tr>
<td></td>
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<td>kg/h</td>
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<tr>
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</table>

### CHILLED WATER

| MODEL | TEMPERATURE | PRESSURE | FLOW RATE | PRESSURE DROP | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | PASS | CONNECTION SIZE | PASS | PASS | CONNECTION SIZE | PASS | PRESSURE DROP | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | PASS | CONNECTION SIZE | PASS | PRESSURE DROP | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION SIZE | PASS | CONNECTION Size: 550.8x841.9
Refrigeration Cycle

Refrigerant is vaporized and chilled the chilled water in the evaporator. Vaporized refrigerant is absorbed by strong solution in the absorber. Refrigerant absorbed strong solution become weak. Weak solution cannot absorb refrigerant anymore. The weak solution is send to low stage generator and heated and partially concentrated. Weak solution is send to high stage generator and heated by steam and become strong. Strong solution is come back to absorber mixed with intermediate solution. Separated refrigerant vapor is heating low stage generator solution and condensed. Condensed refrigerant & separated refrigerant is cooled by cooling water in the condenser and become water refrigerant and come back to evaporator and vaporized again.

Piping Flow Diagram

Notes:
1. Indicate our scope of supply.
2. Indicated parts in this drawing is our sample.
3. Holding chilled water quantity must be more than 5 times of flow rate.
Refrigeration Cycle

- **Evaporator Shell**
- **Chilled water boxes & cover**
- **Refrigerant piping**

Refrigerant is vaporized and chilled the chilled water in the evaporator. Vaparized refrigerant is absorbed by strong solution in the absorber.

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**Maintenance Space & Insulation Area**

**Maintenance Space**

- Evaporator Shell
- Chilled water boxes & cover
- Refrigerant piping

**Cold Insulation Part**
- Cold Insulation

**Hot Insulation**
- Hot Insulation
- Low Stage Generator

**High temperature Shell side**
- High temperature Generator shell
- Solution Piping
- Solution heat exchangers

**Low temperature shell side**
- Steam header
- Refrigerant steam piping

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**Model (REW) | 015 | 018 | 021 | 025 | 028 | 032 | 036 | 040 | 045 | 050 | 056 | 063 | 070**
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**a (mm) | 1805 | 1805 | 1805 | 1805 | 2345 | 2345 | 2345 | 2345 | 2345 | 2420 | 2420 | 2670 | 2920 | 3170**
**b (mm) | 1775 | 1775 | 1775 | 1775 | 2315 | 2315 | 2315 | 2315 | 2320 | 2320 | 2390 | 2390 | 2640 | 2890 | 3140**
**c (mm) | 220 | 245 | 245 | 270 | 245 | 245 | 270 | 270 | 300 | 300 | 300 | 300 | 300 | 300**
**d (mm) | 790 | 835 | 870 | 929 | 902 | 910 | 997 | 1019 | 1070 | 1095 | 1290 | 1290 | 1290 | 1290**
**e (mm) | 510 | 535 | 570 | 605 | 585 | 610 | 645 | 670 | 690 | 715 | 820 | 820 | 820 | 820**
**f (mm) | 3520 | 3615 | 3685 | 3804 | 3732 | 3765 | 3912 | 3959 | 4060 | 4110 | 4610 | 4610 | 4610 | 4610**
**g (mm) | 5620 | 5620 | 5620 | 5620 | 6665 | 6665 | 6665 | 6665 | 6810 | 6810 | 7360 | 7860 | 8360**
**h (mm) | 400 | 425 | 460 | 495 | 475 | 500 | 540 | 560 | 585 | 610 | 765 | 765 | 765 | 765**
**i (mm) | 820 | 865 | 935 | 1005 | 970 | 1015 | 1095 | 1135 | 1185 | 1235 | 1545 | 1545 | 1545 | 1545**
**j (mm) | 1735 | 1735 | 1730 | 1730 | 2680 | 2680 | 2680 | 2680 | 2580 | 2580 | 3150 | 3650 | 4190**
**k (mm) | 180 | 205 | 205 | 230 | 205 | 205 | 230 | 230 | 255 | 255 | 255 | 255 | 255 | 255**

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**Cold Surface m²**
- Model (REW) 015: 8.0
- Model (REW) 018: 8.5
- Model (REW) 021: 9.0
- Model (REW) 025: 10.0
- Model (REW) 028: 11.5
- Model (REW) 032: 12.5
- Model (REW) 036: 13.1
- Model (REW) 040: 15.0
- Model (REW) 045: 16.0
- Model (REW) 050: 17.0
- Model (REW) 056: 22.8
- Model (REW) 063: 24.0
- Model (REW) 070: 25.9

**Hot Surface m²**
- Model (REW) 015: 13.5
- Model (REW) 018: 14.6
- Model (REW) 021: 15.0
- Model (REW) 025: 16.6
- Model (REW) 028: 18.4
- Model (REW) 032: 19.2
- Model (REW) 036: 21.2
- Model (REW) 040: 21.6
- Model (REW) 045: 23.0
- Model (REW) 050: 24.1
- Model (REW) 056: 30.1
- Model (REW) 063: 31.7
- Model (REW) 070: 34.2
EBARA REFRIGERATION EQUIPMENT & SYSTEMS CO., LTD.

Head Office & Sales Department
3-2-16 Ohmorikita, Ohta-ku, Tokyo 143-0016, JAPAN

EBARA CORPORATION

Head Office:
11-1, Haneda Asahi cho, Ohta-ku, Tokyo, 144-8510 Japan
Phone: +81-3-3743-6111 Fax: +81-3-3745-3356

All specifications are subject to change without notice.
"Model Code" in this catalog is our model code.

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