ASCO CO₂ Gas Revert Recovery Systems

**ASCO CO₂ Gas Revert Recovery Systems** are engineered to efficiently recover the revert CO₂ gas from ASCO Dry Ice Pellet and Block Machines which normally direct the revert (flash) gas to the atmosphere.

**Advantages of CO₂ Revert Recovery Systems:**
- Reducing dry ice production costs up to 50% by recovering the normally “lost” CO₂ gas due to vent typical of dry ice manufacturing
- Automatic (PLC) operation
- Heavy duty, compact and efficient design
- Packaged, prepiped and prewired for timely installation

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Revert CO₂ gas (lb/h)</th>
<th>Absorbed kW (HP) approx.</th>
<th>Est. cooling water consumption m³/h (ft³/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRS300*</td>
<td>300 kg/h (661)</td>
<td>77 (103.26)</td>
<td>7.94 (280.4)</td>
</tr>
<tr>
<td>RRS440*</td>
<td>440 kg/h (970)</td>
<td>94 (126.06)</td>
<td>11.64 (411.13)</td>
</tr>
<tr>
<td>RRS560</td>
<td>560 kg/h (1'235)</td>
<td>119 (159.58)</td>
<td>14.82 (523.36)</td>
</tr>
<tr>
<td>RRS1000</td>
<td>1'000 kg/h (2'205)</td>
<td>206 (276.25)</td>
<td>26.46 (934.43)</td>
</tr>
<tr>
<td>RRS1500</td>
<td>1'500 kg/h (3'307)</td>
<td>340 (455.95)</td>
<td>39.69 (1'401.64)</td>
</tr>
<tr>
<td>RRS2000</td>
<td>2'000 kg/h (4'409)</td>
<td>478 (641.01)</td>
<td>52.92 (1'868.85)</td>
</tr>
</tbody>
</table>

* available also with air cooling

**How the ASCO CO₂ Revert Recovery System interconnects with ASCO Dry Ice Equipment:**

1. Liquid CO₂ to tank
2. **ASCO RRS System**
3. Revert CO₂ gas
4. **ASCO Liquid CO₂ Tank**
5. Liquid CO₂ out
6. **ASCO Dry Ice Machine**
7. Dry ice

Larger sizes available on request.
ASCO CO₂ Gas Revert Recovery Systems: Special features

**CO₂ buffer balloon**
Specially designed, made of food-grade acceptable material, to provide a constant back pressure to the dry ice machine as well as provide constant supply conditions of CO₂ flow to the gas compressor. Local conditions may require reheating of the CO₂ revert gas which can be supplied as required for each application.

**CO₂ compressor**
A two-stage, water-cooled, dry running CO₂ compressor with separate cooler for each stage compresses the revert gas up to approx. 18 to 20 barg.

**CO₂ liquefier**
Liquefies the compressed CO₂ gas though a standard refrigeration loop. The re-liquefied CO₂ is then returned to the liquid CO₂ storage tank for reuse in dry ice production.

**Control system**
A central control system automatically controls the entire process and houses the electric motor distribution, starting, operator interface and PLC control system.

**Guarantee:**
Our equipment is guaranteed against faulty workmanship or materials for a period of 12 months following date of despatch.

**Modification:**
We reserve the right to modify any part of the specifications without prior notice.

ASCO CO₂ Gas Revert Recovery System and Automatic Dry Ice Machine
ASCO CO₂ Gas Revert Recovery System: Available standard capacities

Pos. 001

ASCO CO₂ Gas Revert Recovery System RRS300W (water-cooled)

To recover up to 300 kg/h (661.39 lb/h) of revert CO₂ gas from the production of dry ice.

Scope of supply:
- CO₂ gas balloon buffer storage (mounted remotely or directly on the RRS)
- CO₂ compressor, dry running 2 stage, water cooled
- CO₂ liquefier, refrigerant, water cooled with stainless steel CO₂ condenser
- Allowance for insulated outlet CO₂ liquid line from the RRS to the liquid CO₂ storage tank (up to 10 m) (32.8 ft)
- Central control panel with operator interface
- Modularized design is prepiped, prewired and precabled for fast installation

Utility specifications - excluding options and accessories:
- Power supply 380-415 V, 50 Hz / 440-460 V, 60 Hz, 3 Ph, (other voltages available on request)
- Power consumption at 400 V, 50 Hz: 94.1 / 77 kW (126.19 / 103.26 HP) (connected / absorbed)
- Cooling water flowrate: 7.94 m³/h (280.4 ft³/h) (based on max 32 °C inlet temperature)
- Instrument air, 6 bar (87.02 psi), dry, oil free: < 1 Nm³/h (35.3 ft³/h)

Utility consumptions are approximate and subject to detailed engineering.

Pos. 002

ASCO CO₂ Gas Revert Recovery System RRS440W (water-cooled)

To recover up to 440 kg/h (970.03 lb/h) of revert CO₂ gas from the production of dry ice.

Scope of supply:
- CO₂ gas balloon buffer storage (mounted remotely or directly on the RRS)
- CO₂ compressor, dry running 2 stage, water cooled
- CO₂ liquefier, refrigerant, water cooled with stainless steel CO₂ condenser
- Allowance for insulated outlet CO₂ liquid line from the RRS to the liquid CO₂ storage tank (up to 10 m 32.8 ft)
- Central control panel with operator interface
- Modularized design is prepiped, prewired and precabled for fast installation

Utility specifications - excluding options and accessories:
- Power supply 380-415 V, 50 Hz / 440-460 V, 60 Hz, 3 Ph (other voltages available on request)
- Power consumption at 400 V, 50 Hz: 115.5 / 94.4 kW (154.89 / 126.59 HP) (connected / absorbed)
- Cooling water flowrate: 11.64 m³/h (411.13 ft³/h) (based on max 32 °C inlet temperature)
- Instrument air, 6 bar (87.02 psi), dry, oil free: < 1 Nm³/h (35.3 ft³/h)

Utility consumptions are approximate and subject to detailed engineering.
ASCO CO₂ Revert Recovery System: Available standard capacities

Pos. 003

ASCO CO₂ Gas Revert Recovery System RRS560W (water-cooled)

To recover up to 560 kg/h (1'234.59 lb/h) of revert CO₂ gas from the production of dry ice.

Scope of supply:
- CO₂ gas balloon buffer storage (mounted remotely or directly on the RRS)
- CO₂ compressor, dry running 2 stage, water cooled
- CO₂ liquefier, refrigerant, water cooled with stainless steel CO₂ condenser
- Allowance for insulated outlet CO₂ liquid line from the RRS to the liquid CO₂ storage tank (up to 10 m) (32.8 ft)
- Central control centre and control panel with operator interface
- Modularized design is prepiped, prewired and precabled for fast installation

Utility specifications - excluding options and accessories:
- Power supply 380 - 415 V, 50 Hz / 440 - 460 V, 60 Hz, 3 Ph (other voltages available on request)
- Power consumption at 400 V, 50 Hz: 145.5 / 119 kW (195.12 / 159.58 HP) (connected / absorbed)
- Cooling water flowrate: 14.82 m³/h (523.36 ft³/h) (based on max 32 °C inlet temperature)
- Instrument air, 6 bar (87.02 psi), dry, oil free: < 1 Nm³/h (35.3 ft³/h)

Utility consumptions are approximate and subject to detailed engineering.

part no. 900145

Pos. 004

ASCO CO₂ Gas Revert Recovery System RRS1000W (water-cooled)

To recover up to 1'000 kg/h (2'204.62 lb/h) of revert CO₂ gas from the production of dry ice.

Scope of supply:
- CO₂ gas balloon buffer storage (mounted remotely or directly on the RRS)
- CO₂ compressor, dry running 2 stage, water cooled
- CO₂ liquefier, refrigerant, water cooled with stainless steel CO₂ condenser
- Allowance for insulated outlet CO₂ liquid line from the RRS to the liquid CO₂ storage tank (up to 10 m) (32.8 ft)
- Central control panel with operator interface
- Modularized design is prepiped, prewired and precabled for fast installation

Utility specifications - excluding options and accessories:
- Power supply 380 - 415 V, 50 Hz / 440 - 460 V, 60 Hz, 3 Ph (other voltages available on request)
- Power consumption at 400 V, 50 Hz: 252.5 / 206.2 kW (338.61 / 276.52 HP) (connected / absorbed)
- Cooling water flowrate: 26.46 m³/h (934.43 ft³/h) (based on max 32 °C inlet temperature)
- Instrument air, 6 bar (87.02 psi), dry, oil free: < 1 Nm³/h (35.3 ft³/h)

Utility consumptions are approximate and subject to detailed engineering.

part no. 900146
**ASCO CO₂ Gas Revert Recovery System RRS1500W (water-cooled)**

To recover up to **1'500 kg/h (3'306.93 lb/h)** of revert CO₂ gas from the production of dry ice.

**Scope of supply:**
- CO₂ gas balloon buffer storage (mounted remotely or directly on the RRS)
- CO₂ compressor, dry running 2 stage, water cooled
- CO₂ liquefier, refrigerant, water cooled with stainless steel CO₂ codenser
- Allowance for insulated outlet CO₂ liquid line from the RRS to the liquid CO₂ storage tank (up to 10 m) (32.8 ft)
- Central control centre and control panel with operator interface
- Modularized design is prepipd, prewired and precabled for fast installation

**Utility specifications - excluding options and accessories:**
- Power supply 380 - 415 V, 50 Hz / 440 - 460 V, 60 Hz, 3 Ph (other voltages available on request)
- Power consumption at 400 V, 50 Hz: 415 / 340 kW (556.52 / 455.95 HP) (connected / absorbed)
- Cooling water flowrate: 39.69 m³/h (1'401.64 ft³/h) (based on max 32 °C inlet temperature)
- Instrument air, 6 bar (87.02 psi), dry, oil free: < 1 Nm³/h (35.3 ft³/h)

Utility consumptions are approximate and subject to detailed engineering.

**ASCO CO₂ Gas Revert Recovery System RRS2000W (water-cooled)**

To recover up to **2'000 kg/h (4'409.25 lb/h)** of revert CO₂ gas from the production of dry ice.

**Scope of supply:**
- CO₂ gas balloon buffer storage (mounted remotely or directly on the RRS)
- CO₂ compressor, dry running 2 stage, water cooled
- CO₂ liquefier, refrigerant, water cooled with stainless steel CO₂ codenser
- Allowance for insulated outlet CO₂ liquid line from the RRS to the liquid CO₂ storage tank (up to 10 m) (32.8 ft)
- Central control panel with operator interface
- Modularized design is prepipd, prewired and precabled for fast installation

**Utility specifications - excluding options and accessories:**
- Power supply 380 - 415 V, 50 Hz / 440 - 460 V, 60 Hz, 3 Ph (other voltages available on request)
- Power consumption at 400 V, 50 Hz: 585.5 / 478.8 kW (785.17 / 642.08 HP) (connected / absorbed)
- Cooling water flowrate: 52.92 m³/h (1'868.85 ft³/h) (based on max 32 °C inlet temperature)
- Instrument air, 6 bar (87.02 psi), dry, oil free: < 1 Nm³/h (35.3 ft³/h)

Utility consumptions are approximate and subject to detailed engineering.
ASCO - the complete CO₂ Solution

Complete your ASCO CO₂ Production- / Recovery Plant with some of our many accessories

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