

# CO<sub>2</sub> Gas Revert Recovery

## ASCO CO<sub>2</sub> Gas Revert Recovery Systems (RRSi)



**ASCO** CO<sub>2</sub> Gas Revert Recovery Systems are engineered to efficiently recover the revert CO<sub>2</sub> gas from **ASCO** Dry Ice Pellet and Block Machines which normally direct the revert (flash) gas to the atmosphere.

### Advantages of CO<sub>2</sub> Revert Recovery Systems:

- Reducing dry ice production costs up to 50 % by recovering the normally “lost” CO<sub>2</sub> 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

When dry ice is produced the conversion rate from liquid CO<sub>2</sub> to dry ice is approx. 40 - 45 %. This means 55 - 60 % is lost to the atmosphere. This conversation rate is a physical fact and therefore, unfortunately, not to change. **With the ASCO CO<sub>2</sub> Revert Recovery System (RRS), however, most of the CO<sub>2</sub> can be recovered** which leads to a **final conversion rate of approx. 90 - 95 %**.

As models of **ASCO's i-Series**, the CO<sub>2</sub> Gas Revert Recovery Systems RRSi are equipped with state-of-the-art remote control devices and thus is ready for a wide range of services in the areas of **Remote Access, Remote Data, Remote Management**.

### Specifications

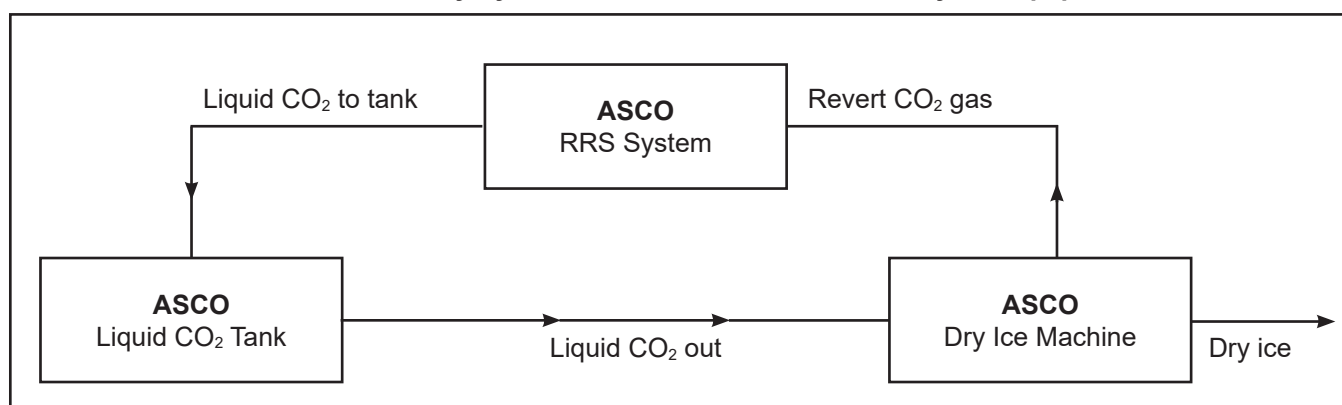
Model	RRS 320i	RRS 540i	RRS 1020i
Revert CO <sub>2</sub> gas (lb/h)	320 kg/h (705)	540 kg/h (1190)	1020 kg/h (2249)
Absorbed power in kW (HP) approx.	75.9 (101.8)	114.4 (153.4)	186.4 (250)
Installed power in kW (HP)	88.8 (119.1)	145.3 (194.9)	249.3 (334.3)
Est. cooling water flow rate requirement m <sup>3</sup> /h (ft <sup>3</sup> /h)	15.1 (533)	24.1 (851)	40.2 (1420)
Weight in kg (lb) approx.	8500 (18739)	8500 (18739)	10500 (23148)
Dimensions LxWxH in mm (ft)	7200 x 2000 x 5900 (23.62 x 6.56 x 19.36)	7200 x 2000 x 5900 (23.62 x 6.56 x 19.36)	6800 x 5400 x 6700 (22.31 x 17.72 x 21.98)
Voltage:	400 VAC ± 5 % / 3ph + PE / 50 Hz		
Instrument control air:	< 2m <sup>3</sup> /h (< 70.3 ft <sup>3</sup> /h), 6 bar g (87 psi), dew point -40 °C (F), oil free		
Sound level:	approx. 86 dB		

Exact specification according to technical offer details.

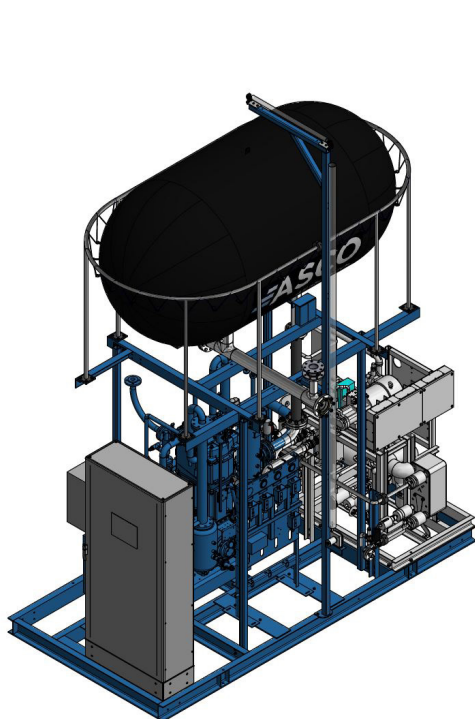
## ASCO CO<sub>2</sub> Gas Revert Recovery Systems: Special features

CO <sub>2</sub> buffer balloon	Specially designed, made of foodgrade acceptable material, to provide a constant back pressure to the dry ice machine as well as provide constant supply conditions of CO <sub>2</sub> flow to the gas compressor. Local conditions may require reheating of the CO <sub>2</sub> revert gas which can be supplied as required for each application.
CO <sub>2</sub> compressor	A water-cooled, dry-running, non-lubricated and oil-free 2-stage CO <sub>2</sub> piston compressor, with separate cooling for each stage, compresses the recovered gas down to 18-20 barg.
CO <sub>2</sub> liquefier	Liquefies the compressed CO <sub>2</sub> gas though a standard refrigeration loop. The re-liquefied CO <sub>2</sub> is then returned to the liquid CO <sub>2</sub> 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.

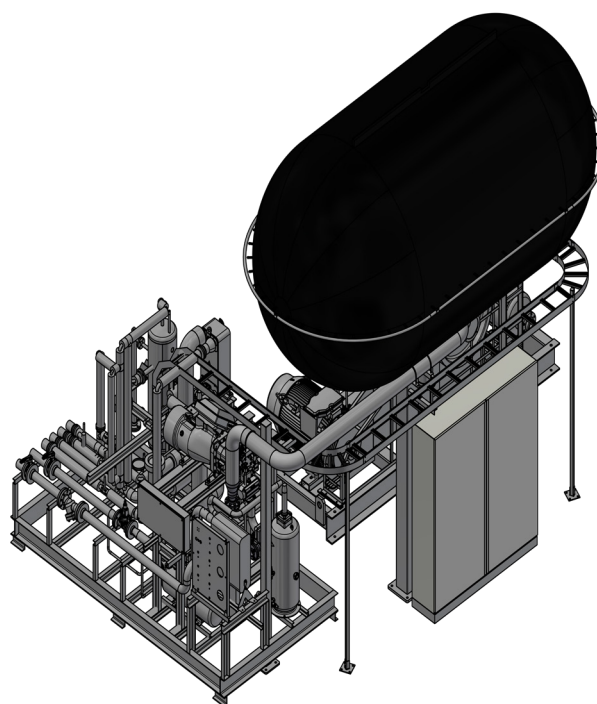
### How the ASCO CO<sub>2</sub> Revert Recovery System interconnects with ASCO Dry Ice Equipment:



## ASCO CO<sub>2</sub> Gas Revert Recovery System RRS: Sample views



Example RRS 320i



Example RRS 1020i

Pos. 001

## ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 320i (water-cooled)

part no. 901504

To recover up to **320 kg/h (705 lb/h)** of revert CO<sub>2</sub> gas from the production of dry ice.

### Scope of supply:

- CO<sub>2</sub> gas balloon buffer storage (mounted remotely or directly on the RRS)
- CO<sub>2</sub> compressor, dry running 2 stage, water cooled
- CO<sub>2</sub> liquefier, refrigerant, water cooled with stainless steel CO<sub>2</sub> condenser
- Allowance for insulated outlet CO<sub>2</sub> liquid line from the RRS to the liquid CO<sub>2</sub> storage tank (up to 10 m) (33 ft)
- Central control panel with operator interface
- Modularized design is prepiped, prewired and precabled for fast installation
- ASCO i-Series connection for remote maintenance and diagnostics

The RRS 320i should be positioned as close as possible to the dry ice production (max. 8m distance and max. 4 arches).

**Utility specifications according to technical offer details -without options and accessories**



Example picture

Pos. 002

## ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 540i (water-cooled)

part no. 901505

To recover up to **540 kg/h (1190 lb/h)** of revert CO<sub>2</sub> gas from the production of dry ice.

### Scope of supply:

- CO<sub>2</sub> gas balloon buffer storage (mounted remotely or directly on the RRS)
- CO<sub>2</sub> compressor, dry running 2 stage, water cooled
- CO<sub>2</sub> liquefier, refrigerant, water cooled with stainless steel CO<sub>2</sub> condenser
- Allowance for insulated outlet CO<sub>2</sub> liquid line from the RRS to the liquid CO<sub>2</sub> storage tank (up to 10 m 33 ft)
- Central control panel with operator interface
- Modularized design is prepiped, prewired and precabled for fast installation
- ASCO i-Series connection for remote maintenance and diagnostics

The RRS 540i should be positioned as close as possible to the dry ice production (max. 8m distance and max. 4 arches).

**Utility specifications according to technical offer details -without options and accessories**



Example picture

## ASCO CO<sub>2</sub> Gas Revert Recovery System RRS: Available standard capacities

Pos. 003

### ASCO CO<sub>2</sub> Gas Revert Recovery System RRS1020i (water-cooled)

part no. 901506

To recover up to **1020 kg/h (2'249 lb/h)** of revert CO<sub>2</sub> gas from the production of dry ice.

#### Scope of supply:

- CO<sub>2</sub> gas balloon buffer storage (mounted remotely or directly on the RRS)
- CO<sub>2</sub> compressor, dry running 2 stage, water cooled
- CO<sub>2</sub> liquefier, refrigerant, water cooled with stainless steel CO<sub>2</sub> condenser
- Allowance for insulated outlet CO<sub>2</sub> liquid line from the RRS to the liquid CO<sub>2</sub> 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
- ASCO i-Series connection for remote maintenance and diagnostics

The RRS 1020i should be positioned as close as possible to the dry ice production (max. 8m distance and max. 4 arches).

**Utility specifications according to technical offer details -without options and accessories**



Example picture

## ASCO CO<sub>2</sub> Gas Revert Recovery System RRS: Options

### Remote PanelView

part no. 4070295

The ASCO Remote PanelView makes it possible to monitor the system at a second location up to 95m (311 ft) away.

### Spare parts package

The spare parts package includes parts for 2 years of operation. Designed according to the system size:

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 320i**

part no. 4070292

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 540i**

part no. 4070293

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 1020i**

part no. 4070294

### Water Cooling System (Induced Draft Axial Fan Counterflow)

High performance cooling water system with a corrosion resistant cooling tower, complete with cooling water pump, associated valves and accessories for the cooled water needed.

Designed according to the system size:

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 320i (5.1 kW)**

**part no. 4070296**

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 540i (11 kW)**

**part no. 4070297**

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 1020i (11.8 kW)**

**part no. 4070298**

### Water Cooling System (Closed Circuit)

High performance closed circuit cooling water systems are used as an alternative to open circuit cooling with heat exchangers in those cases where the cooling liquid for the user's equipment needs to keep its chemical and physical properties constant over time and not be contaminated by external elements. Generally filled with water or water with glycol.

Designed according to the system size:

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 320i (6.6 kW)**

**part no. 4070299**

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 540i (13.2 kW)**

**part no. 4070300**

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 1020i (14 kW)**

**part no. 4070301**

### Water Cooling System (Adiabatic Cooler)

Ideal for saving water at a high efficiency at the same time. A high performance cooled water system with a corrosion resistant cooling tower, complete with cooling water pump, associated valves and accessories.

Designed according to the system size:

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 320i (9.7 kW)**

**part no. 4070302**

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 540i (20 kW)**

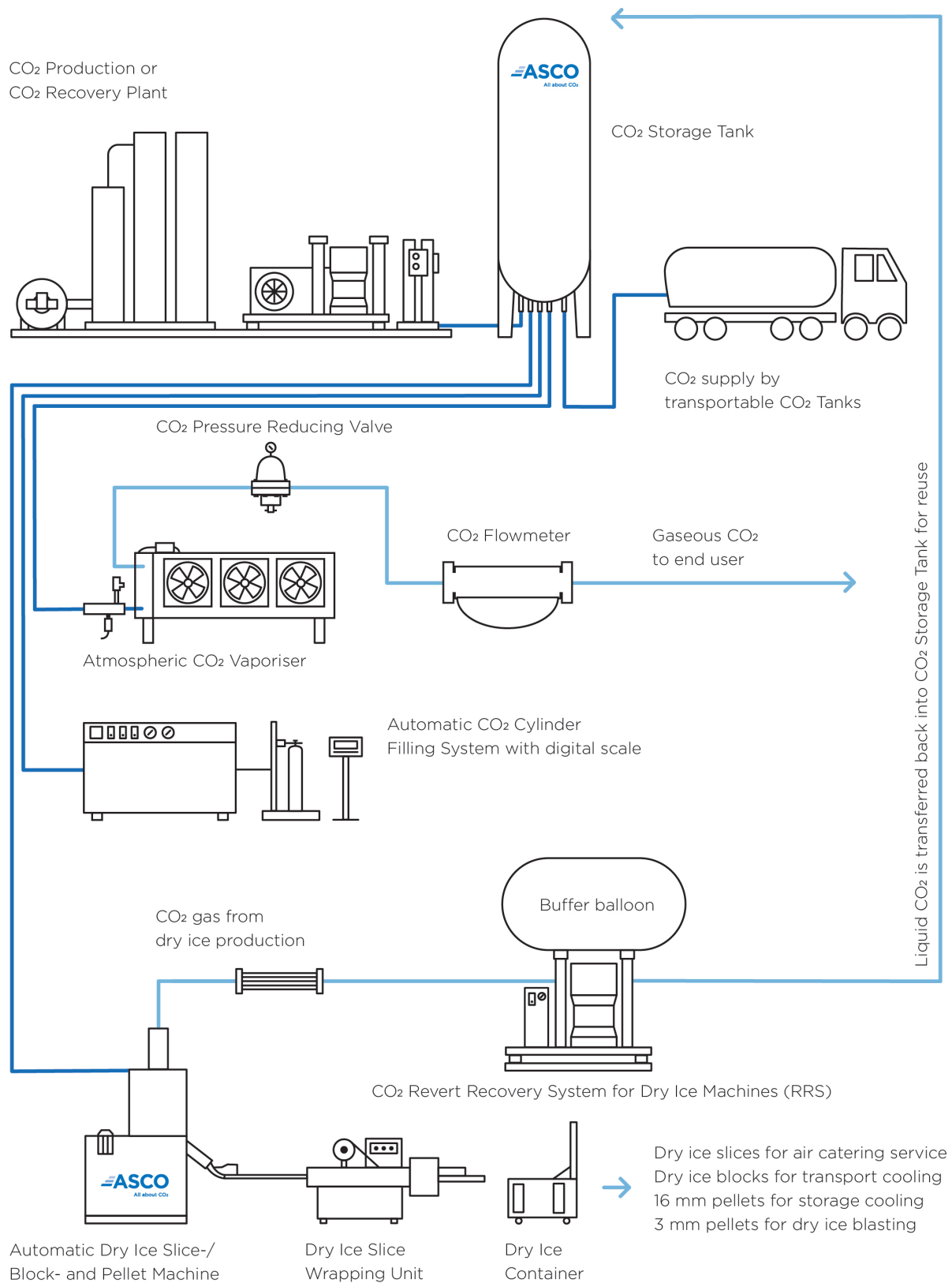
**part no. 4070303**

**ASCO CO<sub>2</sub> Gas Revert Recovery System RRS 1020i (23 kW)**

**part no. 4070304**

# ASCO - the complete CO<sub>2</sub> Solution

Complete your ASCO CO<sub>2</sub> Production- / Recovery Plant with some of our many accessories



All photos and drawings are used for marketing purposes only.