

# All about



Besides CO2 and Cryogenic Transportable and Storage Tanks we also manufacture and supply:

- Automatic CO2 Production Plants
- CO2 Stack Gas Recovery Plants
- Fermentation CO2 Recovery Systems
- CO2 Gas Recovery Systems for Dry Ice Machines
- Dry Ice Slices/Block/Pelletizer Machines
- Dry Ice Blasting Systems **ASCOJET**
- CO2 Pumps and Cylinder Filling Systems
- CO2 Atmospheric Vaporisers
- CO2 Detectors
- CO2 Flowmeters
- Low to Low Pressure CO2 Transfer Pumps
- CO2 Testing Equipment (Dew Point / Purity / Carbonation)
- Ancillary CO2 Equipment

Ask us for further details and offer:

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# CO<sub>2</sub> and Cryogenic 20' ISO Tank Containers



**ASCO** CO2 and Cryogenic 20' ISO Tank Containers include a high quality vacuum super insulation and are supplied complete with all pipework, valves, safety devices, liquid level indicator, pressure gauge and optional with transfer pump and filling hoses.

Inner vessels made of stainless steel - used for multipurpose transportation of CO2, N2, O2 and Ar. **ASCO** offers also vertical CO2 and Cryogenic storage tanks.

20' CO2 ISO Tank Container



Design Codes: ADR, RID, IMDG, UIC - AD-Merkblatt

Specific Data of 20'000 l CO2 / Cryogenic 20' ISO Tank Container

|                             |  |
|-----------------------------|--|
| <b>Frame</b>                |  |
| Type                        | Integral Reinforced  |
| Material                    | Carbon Steel   |
| Dimensions                  | 6058 (L) x 2591 (H) x 2438 mm (W)  |
| <b>Instrumentation</b>      |  |
| Differential Pressure Gauge | DP gauge with computerised calibrated dial face for direct reading in kg       |
| Pressure Gauge              | Indicating tank pressure   |
| <b>Piping / Valves</b>      |  |
| Pipework Material           | Stainless Steel Type 304 (L)   |
| Pipe Sizes                  | Liquid 50 mm 2" (Delivery)   |
| Pipe Sizes                  | Gas 40 mm 2" DN32  |
| Pipe Sizes                  | Pressure Raising Liquid Inlet 20 mm  |
| Instrumentation Pipes       | 304/304L stainless steel/copper  |
| Valves                      | Ball valve in stainless steel for CO2<br>Bronze globe valves for cryogenic     |
| Trycocks                    | At 95 % of gross volume/at max. gross  |
| Flow diagram                | In accordance with drawing   |
| <b>Cabinet Arrangements</b> |  |
| Operators Side              | Stainless steel compartment with upwards opening hinged stainless steel doors. |
| Document Holder             | Lockable holder installed next to cabinet                                      |
| <b>Painting</b>             |  |
| Tank and frame              | White painted  |

3. Documentation

|         |  |
|---------|--|
| Manuals | Three (3) in total of the Operations and Maintenance Manuals |
|---------|--|

4. Vessel Test

|              |   |
|--------------|---|
| Inner Vessel | X-ray in accordance with code. Hydraulic test, black light test, helium mass-spectrometer, nitrogen thermal |
| Outer Jacket | Helium mass-spectrometer  |

We reserve the right to change specifications without notice.

Specific Data of 20'000 l CO2 / Cryogenic 20' ISO Tank Container

1. Rating

|  |         |
|--|---------|
| Type                                       | 20000 l |
| Gross Volume (l)                           | 19650   |
| Container gross weight (kg) Carbon Dioxide | 28200   |
| Container gross weight (kg) Oxygen         | 29840   |
| Tare Container (kg) Incl. Pump             | 8600    |
| Payload (kg) LCO2                          | 19600   |
| Payload (kg) LIN                           | 14950   |
| Payload (kg) LOX                           | 21240   |
| Payload (kg) LAR                           | 26130   |
| Length (mm)                                | 6058    |
| Width (mm)                                 | 2438    |
| Height (mm)                                | 2591    |
| Voidage                                    | 5 %     |

2. Tank

|                                  |   |
|----------------------------------|---|
| <b>Inner Vessel</b>              | 20000 l   |
| Material                         | Stainless Steel Type 1.4311/EN10028-7 or equivalent     |
| Maximum Allowed Working Pressure | 22 bar g  |
| Test and Calculation Pressure    | 29.9 bar g  |
| Design Codes and regulations     | ADR, RID, IMDG (UN-T75), UIC                            |
| Pressure Vessel Code             | AD 2000 Regelwerk                                       |
| Design Temperature               | -196/+50 °C   |
| Baffles                          | 2 in accordance with ADR                                |
| <b>Outer Vessel</b>              |   |
| Material                         | Carbon Steel  |
| Design Pressure                  | -1 bar g (full vacuum)                                  |
| Design Temperature               | -20/+50 °C  |
| Outer Diameter                   | 2420 mm   |
| Overall Length                   | 6058 mm   |
| <b>Insulation</b>                |   |
| Type                             | Vacuum + Multi-Layer Insulation                         |
| Evaporation Rate CO2             | 0.37 % of content                                       |
| Evaporation Rate LIN             | 0.52 % of content                                       |
| Vacuum Level                     | warm tank 1 year after delivery (less than) 100 microns |
| Vacuum Couplings                 | ASCO design   |

20' Cryogenic ISO Tank Container

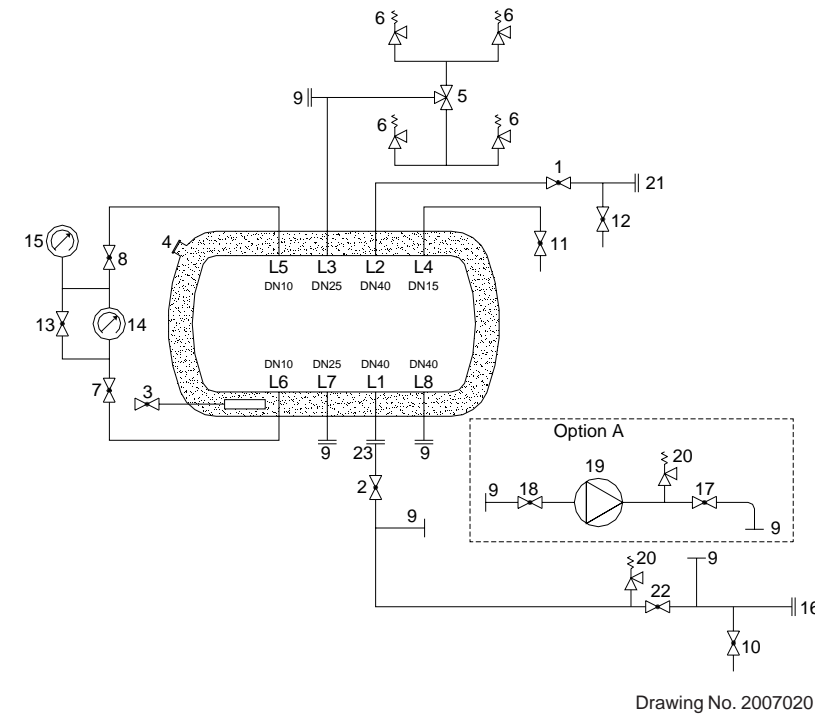


All ISO tank containers are vacuum multi-laminar super insulated.

20' CO2 ISO Tank Container  
mounted on optionally available Semi-Trailer



Typical Flow Diagram for 20' ISO Tank CO2 Container



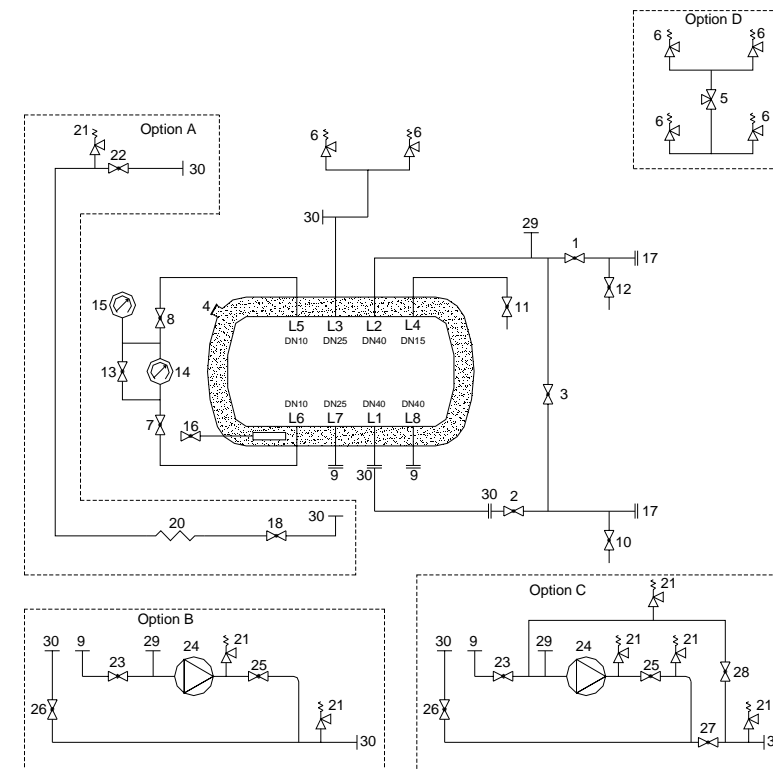
- 1 Vapour Balance Line Valve
- 2 Main Bottom Isolation Valve
- 3 Vacuum Point
- 4 Bursting Disc Vacuum Jacket
- 5 Divertor Valve
- 6 Safety Valve
- 7 Instrument Liquid Valve
- 8 Instrument Gas Valve
- 9 Flange Connection with Blindflange (without option)
- 10 Fill and Discharge Line Purge Valve
- 11 Trycock Nett Capacity 95% Valve
- 12 Vapour Line Purge Valve
- 13 Level Gauge Balance Line Valve
- 14 Liquid Gauge Level
- 15 Pressure Gauge
- 16 Connection Fill and Discharge Line (Flange Coupling)
- 17 Liquid from Pump Delivery Valve
- 18 Pump Isolation Valve
- 19 Pump
- 20 Thermal Relief Valve
- 21 Connection Vapour Line (Flange Coupling)
- 22 Fill and Discharge Valve
- 23 Flange Connection

Drawing No. 2007020



Machinery compartment with transfer pump on one side and lockable hose boxes with transfer hoses mounted on opposite side.

Typical Flow Diagram for 20' ISO Tank Cryogenic Container



- 1 Vapour Balance Line Valve
- 2 Bottom Fill Isolation Valve
- 3 Top Fill Isolation Valve
- 4 Bursting Disc Vacuum Jacket
- 5 Divertor Valve
- 6 Safety Valve
- 7 Instrument Liquid Valve
- 8 Instrument Gas Valve
- 9 Flange Connection with Blindflange (without option)
- 10 Fill Line Purge Valve
- 11 Trycock Nett Capacity 95% Valve
- 12 Vapour Line Purge Valve
- 13 Level Gauge Balance Line Valve
- 14 Liquid Gauge Level Valve
- 15 Pressure Gauge
- 16 Vacuum Point
- 17 Flange Connection with Blindflange
- 18 Liquid to Pressure Build Up Valve
- 19 Pump
- 20 Fin Vaporiser
- 21 Thermal Relief Valve
- 22 Pressure Build Up Gas Return Valve
- 23 Liquid to Pump Fill Valve
- 24 Pump
- 25 Liquid from Pump Delivery Valve
- 26 Pump By-pass Valve
- 27 Liquid from Pump Delivery Valve
- 28 Bottom Fill Pump Isolation Valve
- 29 Coupling with Plug
- 30 Flange Connection

Drawing No. 2007020

Machinery Compartment of 20' ISO Tank Container



All stainless steel pipework and valves neatly arranged in lockable machinery compartment.

Outside of the machinery compartment is a lockable document holder installed.



-6-

20' CO2 ISO Tank Container mounted on Semi-Trailer with tractor



Model 20'000 I mounted on optionally available semi-trailer

These ISO Tank Containers are vacuum multi-laminar super insulated.

All tank containers are designed for transportation by road, ship and rail of carbon dioxide, liquid oxygen, nitrogen and argon.

Design codes: ADR, RID, IMDG, UIC - AD-Merkblätter

20' Cryogenic ISO Tank Container on Semi-Trailer with tractor

-7-



All ISO Tank Containers include:

- inner vessel made of **stainless steel**
- all pipe work made of **stainless steel**
- all valving necessary for proper operation (stainless steel ball valves for CO2 and bronze globe valves for Cryogenic)
- all necessary safety equipment
- all instrument and safety lines that form part of the tank, including pressure and level gauge
- transfer pump and filling hoses (optional)