

CO₂ Storage

ASCO CO₂ Storage Tanks Vacuum Insulated



ASCO CO₂ Storage Tanks include a high quality perlite vacuum insulation and are supplied complete with all pipework, valves, safety devices, liquid level indicator, pressure gauge, automatic pressure build up and pressure reducing systems allowing fast and easy installation on site.

The inner tank is made of stainless steel or carbon steel. The outer vessel has a durable protective coating to guard against corrosion.

All interconnecting pipework is made of stainless steel. Special connections are included to allow easy installation of any ancillary equipment such as vaporisers, cylinder filling systems, transfer pumps and dry ice machines etc.

- compact
- simple and safe to operate
- easily installed

Horizontal and vertical tanks

ASCO Storage Tanks are available as horizontal or vertical versions.

Cryogenic gases

Vertical ASCO Storage Tanks can also be configured for other liquefied cryogenic gases (N₂, O₂, Ar).

Specifications

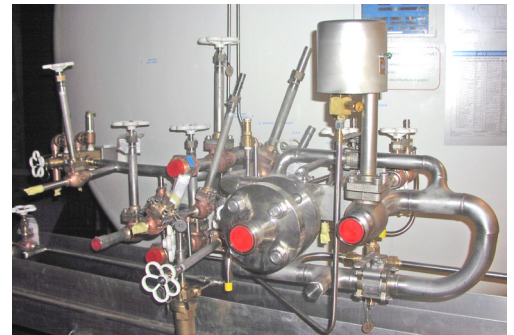
Inner vessel:	Stainless or carbon steel	Piping:	Stainless steel
Outer vessel:	Carbon steel	Level indication:	Differential pressure measuring device (outlet 4 - 20 mA)
Max. working pressure (CO₂ Tanks):	22 bar (319 psi)	Filling connections:	According to ASCO flow diagram
Insulation:	High quality vacuum perlite	Approval:	PED 2014/68/EU or AD2000 and other international codes

ASCO reserves the right to modify all specifications without prior notice.

ASCO CO₂ Storage Tanks: Special features

Advantages of ASCO vacuum insulated CO₂ Storage Tanks:

- Low maintenance
- Installation is straightforward
- All pipework on vacuum insulated tanks are made of stainless steel
- Vacuum insulated tanks include automatic pressure build up and pressure reducing systems
- Special connections are included to allow easy installation of vaporisers, cylinder filling systems, transfer pumps and dry ice machines
- Tanks can be ordered with different pipework arrangement for other liquefied cryogenic gases (Nitrogen, Oxygen, Argon)



Easy Handling and easy Installation on Site:



ASCO's vacuum insulated Storage Tanks are designed for easy handling and installation on site.

The stainless steel pipework offers the possibility to connect the following equipment to the tank:

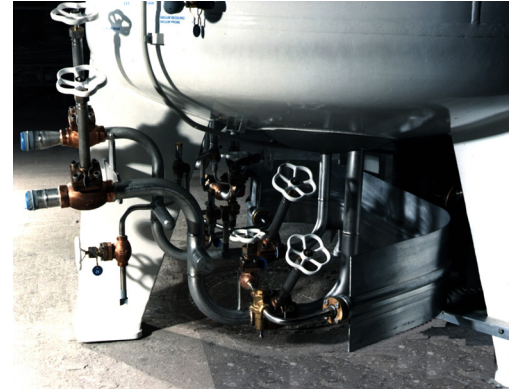
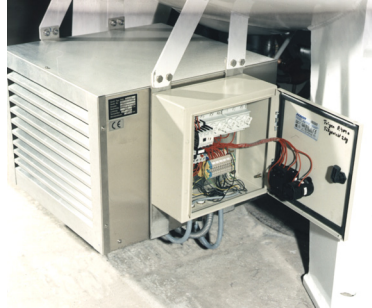
- CO₂ cylinder filling systems
- Atmospheric CO₂ vaporisers
- Dry ice pelletizers / block machines
- CO₂ production plants
- CO₂ recovery systems
- CO₂ transfer pumps

Typical ASCO CO₂ Pipework: Arrangement

All pipework and valves are made of stainless steel. Automatic pressure build up and pressure reducing systems are standardly included to provide stable tank pressure condition.

Optional:

If a tank is used for storing CO₂ without regular withdrawal, a refrigeration unit can be supplied.



Pressure and Level Indicator:

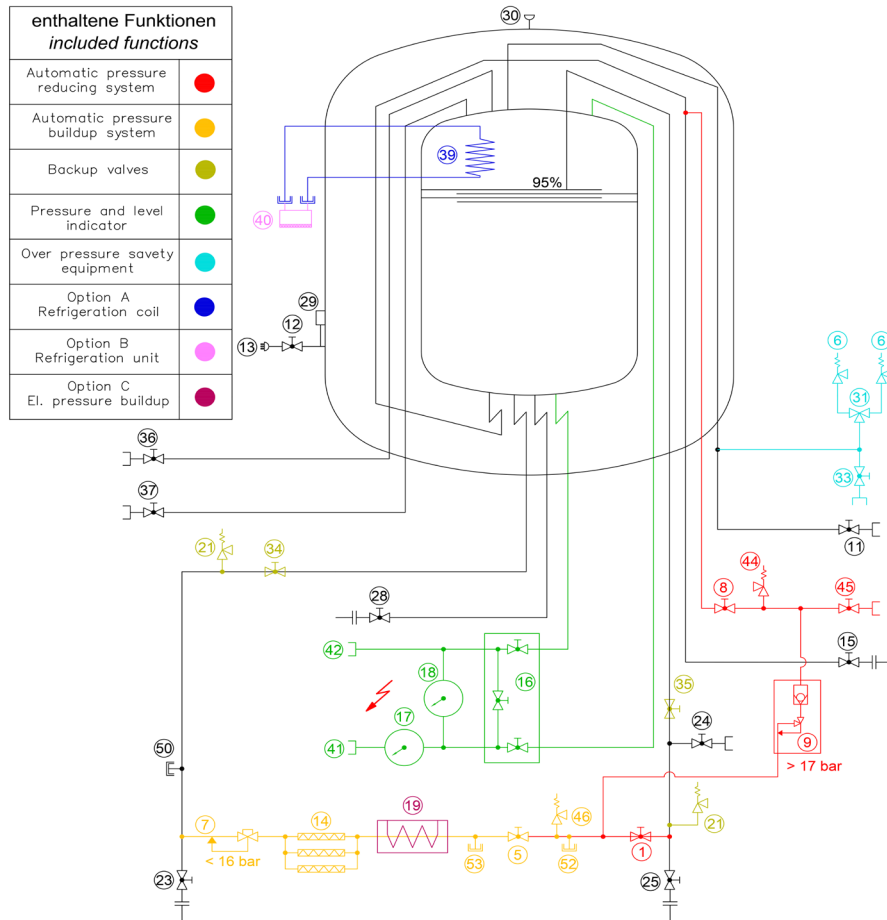


Differential pressure indicator Media 7 for liquid level indication

- Microprocessor-controlled transmitter with interface for configuration and programming on site
- Digital display (LCD) for temperatures down to -40°C with 100% bar graph as well as alarm and warning markers
- Two-wire connection for 4 - 20 mA signal

Vertical vacuum insulated ASCO CO₂ Tanks

Flow diagram No. 700

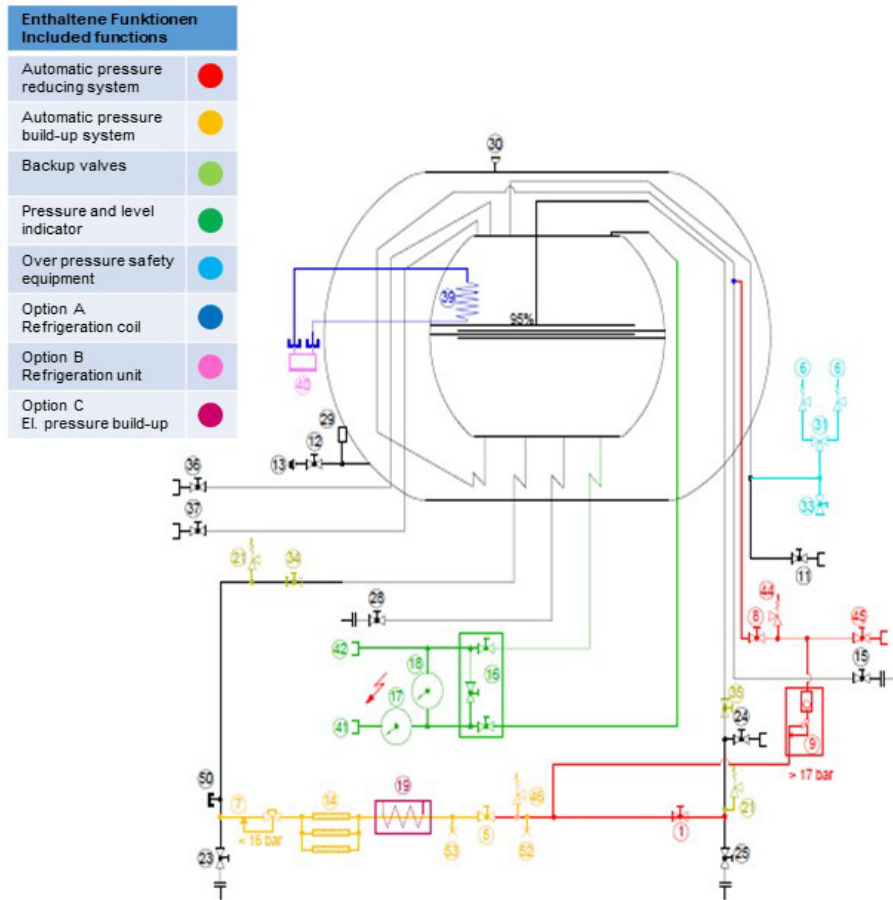


All pipework is aligned inside the tank and the connections are at the bottom of the tank.

- | | | | |
|----|---|----|-------------------------------------|
| 1 | Shut-off valve pressure reducing system | 28 | Valve for liquid withdrawal |
| 5 | Shut-off valve pressure building system | 29 | Evacuation connection outer casting |
| 6 | Main safety valve | 30 | Bursting disk for outer tank |
| 7 | Pressure building regulator | 31 | Change over valve |
| 8 | Shut-off valve pressure reducing system | 33 | Vent valve |
| 9 | Pressure reducing regulator | 34 | Back-up valve liquid line |
| 11 | Vent valve | 35 | Back-up valve gas line |
| 12 | Valve for vacuum probe | 36 | Valve for gas withdrawal |
| 13 | Vacuum probe | 37 | Valve for gas withdrawal |
| 14 | Vaporiser for pressure building system | 39 | Refrigeration coil |
| 15 | Valve for liquid withdrawal (vaporiser) | 40 | Refrigeration unit |
| 16 | Thee valve manifold | 41 | Connection for pressure measuring |
| 17 | Pressure gauge | 42 | Connection for pressure measuring |
| 18 | Liquid level indicator | 44 | Line safety valve |
| 19 | Electrical pressure building heater | 45 | Valve for plant |
| 21 | Line safety valve | 46 | Line safety valve |
| 23 | Valve for liquid fill connection | 50 | Connection for liquid withdrawal |
| 24 | Overflow valve | 52 | Connection for liquid withdrawal |
| 25 | Valve for gas fill connection | 53 | Connection for liquid withdrawal |

Horizontal vacuum insulated ASCO CO₂ Tanks

Flow diagram No. 750



All pipework is aligned inside the tank and the connections are at the bottom of the tank.

- | | | | |
|----|---|----|-------------------------------------|
| 1 | Shut-off valve pressure reducing system | 28 | Valve for liquid withdrawal |
| 5 | Shut-off valve pressure build-up system | 29 | Evacuation connection outer casting |
| 6 | Main safety valve | 30 | Bursting disk for outer tank |
| 7 | Pressure build-up regulator | 31 | Change over valve |
| 8 | Shut-off valve pressure reducing system | 33 | Vent valve |
| 9 | Pressure reducing regulator | 34 | Back-up valve liquid line |
| 11 | Vent valve | 35 | Back-up valve gas line |
| 12 | Valve for vacuum probe | 36 | Valve for gas withdrawal |
| 13 | Vacuum probe | 37 | Valve for gas withdrawal |
| 14 | Vaporiser for pressure build-up system | 39 | Refrigeration coil |
| 15 | Valve for liquid withdrawal (vaporiser) | 40 | Refrigeration unit |
| 16 | Thee valve manifold | 41 | Connection for pressure measuring |
| 17 | Pressure gauge | 42 | Connection for pressure measuring |
| 18 | Liquid level indicator | 44 | Line safety valve |
| 19 | Electrical pressure build-up heater | 45 | Valve for plant |
| 21 | Line safety valve | 46 | Line safety valve |
| 23 | Valve for liquid fill connection | 50 | Connection for liquid withdrawal |
| 24 | Overflow valve | 52 | Connection for liquid withdrawal |
| 25 | Valve for gas fill connection | 53 | Connection for liquid withdrawal |

Vertical vacuum insulated ASCO Storage Tanks: Available standard capacities

Pos. 001

6.4 t (14'110 lb) / 6'400 l vertical, vacuum insulated storage tank

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated

- diameter: 1'600 mm (63 in) / height: 7'500 mm (295 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **6'100 kg (13'448 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel made of stainless steel

part no.

CO₂

900800



Pos. 002

11.0 t (24'251 lb) / 11'000 l vertical, vacuum insulated storage tank

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'200 mm (87 in) / height: 6'400 mm (252 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **10'540 kg (23'237 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

LIN, LOX, LAR:

- maximum net capacity of **10'450 litres (2'761 gal)**
- MAWP 18.5 bar (268 psi)
- inner vessel made of stainless steel

part no.

CO₂

LIN, LOX, LAR

900737

4046463



Pos. 003

17.0 t (37'479 lb) / 17'000 l vertical, vacuum insulated storage tank

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'200 mm (87 in) / height: 8'950 mm (352 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **16'290 kg (35'913 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

LIN, LOX, LAR:

- maximum net capacity of **16'150 litres (4'266 gal)**
- MAWP 18.5 bar (268 psi)
- inner vessel made of stainless steel

part no.

CO₂

LIN, LOX, LAR

900741

4046464



Vertical vacuum insulated ASCO Storage Tanks: Available standard capacities

Pos. 004

20.0 t (44'093 lb) / 20'000 l vertical, vacuum insulated storage tank

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'200 mm (87 in) / height: 10'250 mm (404 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **19'160 kg (42'241 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

LIN, LOX, LAR:

- maximum net capacity of **19'000 litres (5'019 gal)**
- MAWP 18.5 bar (268 psi)
- inner vessel made of stainless steel

part no.

CO₂ 900743
LIN, LOX, LAR 4046465



Pos. 005

23.0 t (50'706 lb) / 23'000 l vertical, vacuum insulated storage tank

Only available for CO₂ storage

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'200 mm (87 in) / height: 11'600 mm (457 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **22'110 kg (48'744 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

part no.

CO₂ 900744



Pos. 006

28.0 t (61'729 lb) / 28'000 l vertical, vacuum insulated storage tank

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'500 mm (98 in) / height: 10'350 mm (407 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **26'820 kg (59'128 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

LIN, LOX, LAR:

- maximum net capacity of **26'600 litres (7'027 gal)**
- MAWP 18.5 bar (268 psi)
- inner vessel made of stainless steel

part no.

CO₂ 900745
LIN, LOX, LAR 4046466



Vertical vacuum insulated ASCO Storage Tanks: Available standard capacities

Pos. 007

32.0 t (70'548 lb) / 32'300 l vertical, vacuum insulated storage tank

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'500 mm (98 in) / height: 11'600 mm (457 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **30'660 kg (67'594 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

LIN, LOX, LAR:

- maximum net capacity of **30'690 litres (8'107 gal)**
- MAWP 18.5 bar (268 psi)
- inner vessel made of stainless steel

part no.

CO₂ 900746
LIN, LOX, LAR 4046467



Pos. 008

37.0 t (81'571 lb) / 36'600 l vertical, vacuum insulated storage tank

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'500 mm (98 in) / height: 12'900 mm (508 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **35'450 kg (78'154 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

LIN, LOX, LAR:

- maximum net capacity of **34'770 litres (9'185 gal)**
- MAWP 18.5 bar (268 psi)
- inner vessel made of stainless steel

part no.

CO₂ 900747
LIN, LOX, LAR 4046468



Pos. 009

41.0 t (90'390 lb) / 41'000 l vertical, vacuum insulated storage tank

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'500 mm (98 in) / height: 14'200 mm (557 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **39'280 kg (86'598 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

LIN, LOX, LAR:

- maximum net capacity of **38'950 litres (10'290 gal)**
- MAWP 18.5 bar (268 psi)
- inner vessel made of stainless steel

part no.

CO₂ 900748
LIN, LOX, LAR 4046469



Vertical vacuum insulated ASCO Storage Tanks: Available standard capacities

Pos. 010

50.0 t (110'231 lb) / 50'000 l vertical, vacuum insulated storage tank

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 3'000 mm (118 in) / height: 12'000 mm (472 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **47'900 kg (105'601 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

LIN, LOX, LAR:

- maximum net capacity of **47'500 litres (12'548 gal)**
- MAWP 18.5 bar (268 psi)
- inner vessel made of stainless steel

part no.

CO₂ 900750
LIN, LOX, LAR 4046470



Pos. 011

60.0 t (132'277 lb) / 61'000 l vertical, vacuum insulated storage tank

Only available for LIN, LOX, LAR storage

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 3'000 mm (118 in) / height: 13'900 mm (472 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **59'500 kg (131'175 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

LIN, LOX, LAR:

- maximum net capacity of **57'950 litres (15'309 gal)**
- MAWP 18.5 bar (268 psi)
- inner vessel made of stainless steel

part no.

CO₂ 900830
LIN, LOX, LAR 4046470



Pos. 012

73.0 t (160'938 lb) / 73'000 l vertical, vacuum insulated storage tank

Only available for CO₂ storage.

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 3'000 mm (118 in) / height: 16'400 mm (646 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **69'930 kg (154'169 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel

part no.

CO₂ 900751



Vertical vacuum insulated ASCO Storage Tanks: Available standard capacities

Pos. 013

100.0 t (220'462 lb) / 100'000 l vertical, vacuum insulated storage tank

part no.

Only available for CO₂ storage

CO₂

900752

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 3'600 mm (142 in) / height: 15'350 mm (604 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)

CO₂: (available options please see flow diagram no. 700)

- maximum filling weight of **95'800 kg (211'203 lb)**
- safety valve setting 22 bar (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel
- available options please see flow diagram no. 700



Horizontal vacuum insulated CO₂ Storage Tanks: Available standard capacities

Pos. 014

11.0 t (24'251 lb) / 11'000 l horizontal, vacuum insulated CO₂ storage tank

part no. 900804

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'200 mm (86.61 in) / length: 6'400 mm (252 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)
- maximum filling weight of **10'540 kg (23'237 lb)**
- safety valve setting 24 bar (348 psi) (if stainless steel upgrade 22 bar) (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel
- available options please see flow diagram no. 750



Pos. 015

17.0 t (37'478.6 lb) / 17'000 l horizontal, vacuum insulated CO₂ storage tank

part no. 900805

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'200 mm (87 in) / length: 9'000 mm (352 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)
- maximum filling weight of **16'290 kg (35'919 lb)**
- safety valve setting 24 bar (348 psi) (if stainless steel upgrade 22 bar) (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel
- available options please see flow diagram no. 750



Pos. 016

20.0 t (44'093 lb) / 20'000 l horizontal, vacuum insulated CO₂ storage tank

part no. 900906

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'200 mm (87 in) / length: 10'250 mm (404 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)
- maximum filling weight of **19'160 kg (42'241 lb)**
- safety valve setting 24 bar (348 psi) (if stainless steel upgrade 22 bar) (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel
- available options please see flow diagram no. 750



Horizontal vacuum insulated CO₂ Storage Tanks: Available standard capacities

Pos. 017

28.0 t (61'729 lb) / 28'000 l horizontal, vacuum insulated CO₂ storage tank

part no. 900807

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'500 mm (98 in) / length: 10'400 mm (407 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)
- maximum filling weight of **26'820 kg (59'128 lb)**
- safety valve setting 24 bar (348 psi) (if stainless steel upgrade 22 bar) (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel
- available options please see flow diagram no. 750



Pos. 018

32.0 t (70'548 lb) / 32'300 l horizontal, vacuum insulated CO₂ storage tank

part no. 900808

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'500 mm (98 in) / length: 11'600 mm (457 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)
- maximum filling weight of **30'660 kg (67'594 lb)**
- safety valve setting 24 bar (348 psi) (if stainless steel upgrade 22 bar) 319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel
- available options please see flow diagram no. 750



Pos. 019

37.0 t (81'571 lb) / 36'600 l horizontal, vacuum insulated CO₂ storage tank

part no. 900809

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'500 mm (98 in) / length: 12'900 mm (508 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)
- maximum filling weight of **35'450 kg (78'154 lb)**
- safety valve setting 24 bar (348 psi) (if stainless steel upgrade 22 bar) (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel
- available options please see flow diagram no. 750



Horizontal vacuum insulated CO₂ Storage Tanks: Available standard capacities

Pos. 020

41.0 t (90'390 lb) / 41'000 l horizontal, vacuum insulated CO₂ storage tank

part no. 900810

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 2'500 mm (98 in) / length 14'150 mm (557 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)
- maximum filling weight of **39'280 kg (86'598 lb)**
- safety valve setting 24 bar (348 psi)(if stainless steel upgrade 22 bar) (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel
- available options please see flow diagram no. 750



Pos. 021

50.0 t (110'231 lb) / 50'000 l horizontal, vacuum insulated CO₂ storage tank

part no. 900811

Tank to be supplied complete with all pipework in stainless steel, valves, safety devices, differential pressure liquid level indicator, vacuum insulated.

- diameter: 3'000 mm (118 in) / length: 11'990 mm (472 in)
- including registration by German TÜV according to PED 2014/68/EU and AD2000 (also for CH)
- maximum filling weight of **47'900 kg (105'601 lb)**
- safety valve setting 24 bar (348 psi) (if stainless steel upgrade 22 bar) (319 psi)
- inner vessel standardly made of carbon steel, also available in stainless steel
- available options please see flow diagram no. 750

