LPG ROAD TANKERS & ISO TANK CONTAINERS
FOR SAFE TRANSPORTATION AND DISTRIBUTION OF LPG
Kadatec is European manufacturer of LPG storage tanks, road tankers, ISO tank containers and LPG equipment, located in Czech Republic. Kadatec’s storage tanks, tankers and containers are manufactured according to European standards, in a new spacious factory and on modern machinery. Our factory has a considerable production capacity of storage tanks, road tankers and containers per year.

Our company is ISO 9001:2009 certified. Our products comply with European quality requirements. In our manufacturing and delivery processes we follow the rules of quality and respect of the customer.

We started as a developing company and built on this base in our future orientation. Our team has a long experience in the branch of LPG, which helps us to better understand customer needs and new directions in the energy sector.

Our manufacturing program includes besides storage and transport divisions, also measuring and dispensing equipment. Further we cooperate with world leading manufacturers of LPG technologies in order to extend our offer to the complete technology solutions for LPG.

Our satisfied customers are located in Western and Eastern Europe, Russia and other CIS countries, and the Middle East.
We manufacture ADR compliant LPG road tankers in tank sizes 13 - 70 m³, suitable for LPG mixtures A, B, C.

Our road tankers are certified according to the ADR standard 2013 and European Transportation Pressure Equipment Directive TPED (2010/35/EU; NV 208/2011).

Road tankers are manufactured as bobtails and semitrailers on 1 (2) or 3 (4) axles. The chassis can be provided by the customer or we can supply the entire solution.

Our road tankers are made of highly resistant fine-grained steel, with accessories using modern materials (carbon, titanium, stainless steel). This makes us different from our competitors by achieving lower product weight for a given volume of tank. Tank surface is treated by nanotechnology, which increases self-cleaning ability and good abrasion resistance of the surface.

Measuring and dispensing devices are designed with components of world producers (Corken, Blackmer, Emerson, Endress+Hauser, Festo, REGO, Fisher, Cavagna, Elaflex etc.). Volume measurement is based on Coriolis mass principle and is the standard design solution on all our road tankers.

Measuring system Corio T includes an evaluation unit with electronic 10,4” LCD display Kadatec, with GPS and on-line remote data transfer from point of sale and immediate billing.

DISTRIBUTION VERSION:
- Manhole DN500 in the rear bottom of the tank;
- CORKEN hydraulic pump type ZH2000 / 3200 / 4200
- Measuring devices: dual-mass flow meters EMERSON or ENDRESS+HAUSER: density measurement, dispensing precision 0.2%!
- Differential valve and separator SAMPI (Liquid Controls);
- Hose reel HAAR HPSI 3A-F1 ¼ 600 600 405 R AIRSTAR Pm PSB with grounding cable D2.5mm Cu, with a grounding terminal;
- Liquid phase hose: hose length 40m, DN32, with pneumatic actuator and filling connection;
- Cabinet made of stainless steel with lights in 2x Ex-execution, with valves and connections;
- Bottom valves FISCHER/REGO/CAVAGNA;
- Connections, valves, ball valves;
- Temperature and pressure measurement in the pipes, tubular level gauge and filling control valves 8 pcs;
- Side level gauge in the tank;
- Pneumatic distribution for control of the bottom valves;
- Hydraulic distribution for the pump drive;
- Roof cover of polished stainless steel;
- LPG piping of stainless steel.

TRANSPORT VERSION:
- Manhole DN500 in the rear bottom of the tank;
- Cabinet made of carbon and stainless steel with valves and connections;
- Bottom valves FISCHER/REGO/CAVAGNA;
- Connections, valves, ball valves;
- Temperature and pressure measurement in the pipes, tubular level gauge;
- Level gauge side installation;
- Hose reel HAAR with grounding cable;
- Pneumatic distribution for control of the bottom valves;
- Roof cover of polished stainless steel;
- LPG piping of stainless steel.
Bobtails are used for LPG distribution in terrain, where a high agility is needed. Bobtails are assembled on chassis MAN, DAF, Volvo, Mercedes etc., on axles 4x2 (4x4) and 6x2 (6x4, 6x6). The transferring and metering systems are installed in the lateral cabinet made of stainless steel.

Fixed structure for 4x2 (4x4) bobtails with a total weight of 18 tons. The advantage of a fixed structure is a low-lying stainless steel cabinet on a side of the vehicle. It is a very compact solution with compressor.

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tank tare weight (kg)</th>
<th>Max. load (kg) (propane)</th>
<th>Max. load (kg) (butane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 400</td>
<td>2 300</td>
<td>4 500</td>
<td>2 550</td>
<td>3 350</td>
<td>11 220</td>
<td>6 888</td>
<td>8 200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tank tare weight (kg)</th>
<th>Max. load (kg) (propane)</th>
<th>Max. load (kg) (butane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 600</td>
<td>2 300</td>
<td>6 470</td>
<td>2 530</td>
<td>3 335</td>
<td>14 320</td>
<td>10 332</td>
<td>12 300</td>
</tr>
</tbody>
</table>
Fixed structure for 6x2 (6x4, 6x6) vehicles with a total weight of 26 tonnes. The tank volume 25-29m³ depends on weight of the chassis, which is always specified by the customer. The advantage of a fixed structure is a low-lying stainless steel cabinet on a side of the vehicle.

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tank tare weight (kg)</th>
<th>Max. load (kg) (propane)</th>
<th>Max. load (kg) (butane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 200</td>
<td>2 400</td>
<td>6 300</td>
<td>2 550</td>
<td>3 500</td>
<td>13 780</td>
<td>11 004</td>
<td>12 220</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tank tare weight (kg)</th>
<th>Max. load (kg) (propane)</th>
<th>Max. load (kg) (butane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 100</td>
<td>2 400</td>
<td>6 580</td>
<td>2 550</td>
<td>3 550</td>
<td>13 685</td>
<td>11 382</td>
<td>12 315</td>
</tr>
</tbody>
</table>
LPG BOBTAIL 6x2 WITH TRAILER JACK

FIXED STRUCTURE 27 M³ WITH TRAILER JACK 23 M³

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tank tare weight (kg)</th>
<th>Max. load (kg) (propane)</th>
<th>Max. load (kg) (butane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 090</td>
<td>2 400</td>
<td>9 610</td>
<td>2530</td>
<td>3 500</td>
<td>14 420</td>
<td>11 378</td>
<td>13 080</td>
</tr>
<tr>
<td>23 090</td>
<td>2 400</td>
<td>6 960</td>
<td>2 510</td>
<td>3 300</td>
<td>6 550</td>
<td>9 698</td>
<td>11 450</td>
</tr>
</tbody>
</table>

Fixed structure is additionally equipped with compressor Corken 291.
LPG TRAILERS AND SEMI-TRAILERS ON 1 AXLE

1-AXLE SEMI-TRAILERS 25-34 M³ (DISTRIBUTION VERSION)

Our 1-axle semitrailers replace completely and excel in technical and economical view the swap containers (shorter length of 6m, conical tank embodiment, lower height of max. 3.5m, low centre of gravity). Another advantage of these semi-trailers is the possibility to share the same tractor with the large semi-trailers, so that the tractor has a versatile application. The 1-axle semitrailer also has a higher transport capacity compared to the swap container.

The tandem trailer as supplement to the bobtail has a great advantage in a very short length and a high manoeuvrability. The train consisting of a tanker and a trailer is very short. The tandem trailer compared to the classical solution of the semitrailer allows lifting of the front axle and thus sparing the tires.

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tank tare weight (kg)</th>
<th>Max. load (kg) (propane)</th>
<th>Max. load (kg) (butane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 750</td>
<td>2 400</td>
<td>5 100</td>
<td>2 490</td>
<td>3 150</td>
<td>6 230</td>
<td>9 135</td>
<td>10 875</td>
</tr>
<tr>
<td>23 090</td>
<td>2 400</td>
<td>6 960</td>
<td>2 510</td>
<td>3 300</td>
<td>6 550</td>
<td>9 698</td>
<td>11 450</td>
</tr>
</tbody>
</table>
Semitrailers profit from the advantages of a conical tank design: low center of gravity, high stability in operation, high maneuverability, especially in the cities.

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tank tare weight (kg)</th>
<th>Max. load (kg) (propane)</th>
<th>Max. load (kg) (butane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 000</td>
<td>2 510/2 400</td>
<td>10 000</td>
<td>2 510</td>
<td>3 650</td>
<td>11 100</td>
<td>18 900</td>
<td>22 500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tank tare weight (kg)</th>
<th>Max. load (kg) (propane)</th>
<th>Max. load (kg) (butane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 000</td>
<td>2 510/2 400</td>
<td>11 000</td>
<td>2 530</td>
<td>3 700</td>
<td>11 700</td>
<td>20 160</td>
<td>24 000</td>
</tr>
</tbody>
</table>
### 3-Axles Semi-Trailer 49 - 70 M³ - Transport

#### LPG SEMI-TRAILERS ON 3 AXLES - TRANSPORT VERSION

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tank tare weight (kg)</th>
<th>Max. load (kg) (propane)</th>
<th>Max. load (kg) (butane)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>51 750</strong></td>
<td>2 510/2 400</td>
<td>11 600</td>
<td>2 500</td>
<td>3 650</td>
<td>11 730</td>
<td>21 735</td>
<td>25 875</td>
</tr>
<tr>
<td><strong>50 340</strong></td>
<td>2 510/2 400</td>
<td>11 300</td>
<td>2 500</td>
<td>3 650</td>
<td>11 650</td>
<td>21 143</td>
<td>25 170</td>
</tr>
<tr>
<td><strong>62 950</strong></td>
<td>2 510/2 400</td>
<td>13 760</td>
<td>2 530</td>
<td>3 700</td>
<td>13 400</td>
<td>26 439</td>
<td>31 475</td>
</tr>
</tbody>
</table>

[Image of LPG semi-trailers on 3 axles - transport version]

---

*Note: Dimensions and weights are approximate and subject to change.*
MEASURING SYSTEM FOR ROAD TAKERS

MEASURING SYSTEM CORIO T WITH EVALUATION UNIT KMV3150-CorioTank

Corio T measuring system is intended to be mounted on LPG road tankers and is designed for measuring LPG (mass and volume) in real time during dispensing. The system has a high measuring accuracy (0.2%) and provides immediate information on gas composition and quality. The system can be equipped with GPS technology and on-line remote data transfer from the point of sale and immediate billing. The measuring system is certified according to European Directive 2004/22/EC of measuring instruments and is the standard feature on all our road tankers.

Measuring system Corio T consists of hydraulic part, manufactured by Endress+Hauser or Emerson, and electronic part, which is evaluation unit type KMV3150-CorioTank for the evaluation and control of electronic outputs and inputs.

Following information is displayed on the LCD multifunctional display and printed on the bill:

- Immediate dispensing in kilograms and litres simultaneously
- Immediate gas density and propane-butane mixture in %
- Current pump performance in kg/min
- Information on temperature compensation at 15°C

The system is optionally equipped with GPRS / GPS or GLONASS technology, which assures:

- Data transfer to the central customer server
- Online monitoring of vehicle route and information about dispensing from the road tanker
- Immediate invoicing for dispensed gas from the office of gas owner.

Technical data:

<table>
<thead>
<tr>
<th>Measured liquid</th>
<th>Liquefied gas DIN 51622 / EN 589</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum liquid flow QLmax / QLmin (kg/min)</td>
<td>190 / 33</td>
</tr>
<tr>
<td>Accuracy of measurement</td>
<td>0.2% at 100 kg/min</td>
</tr>
<tr>
<td>Maximum operating pressure pmax / pmin (MPa)</td>
<td>1.8 / 0.7</td>
</tr>
<tr>
<td>Operating temperature (°C)</td>
<td>-40/+50</td>
</tr>
<tr>
<td>Maximum noise level (dB)</td>
<td>&lt;60</td>
</tr>
<tr>
<td>Rated supply voltage of the measuring unit</td>
<td>~ 200V 240V, 50/60 Hz</td>
</tr>
<tr>
<td>Rated input in operation without heating /with heating (W)</td>
<td>70 / 250</td>
</tr>
<tr>
<td>Electronic counter consumption</td>
<td>= 12V / max. 1500 mA</td>
</tr>
</tbody>
</table>

Approvals

EC-Type examination certificate according to MID 2004/22/EC
20FT ISO TANK CONTAINERS KC240/20 AND KC243/20

Description:

ISO tank containers are designed for:
* safe transportation of liquefied petroleum gas by road, rail, river and sea. Suitable for both domestic and international transport;
* filling, draining and temporary storage or backup storage of LPG for different technologies.

Container provides full inviolability and integrity during delivery and temporary storage of cargo. It has a solid construction, ensuring its multiple use.

The container has a fixed structure, equipped with corner brackets, designed for loading, unloading, stacking and fastening.

KC243/20 — 25,5m³ ISO Tank Container:

ISO tank container is equipped with:
* Waves breakers
* Manhole DN500
* Footbridges and protective roof
* Stainless steel cabinet containing:
  * Closing mechanism 2" drain/refill of liquid phase
  * Closing mechanism 2" drain/refill of gaseous phase designed to equalize the pressure in the tank during filling and discharge of vapour loads
  * Safety valves, level gauge with a drainage device with three shut-off valves, pressure gauge.
  * Tube leading to the tank bottom to ensure the complete drainage of liquid cargo.

Technical data:

Max. specific gravity (kg / l) 0,7
Max. working pressure (bar) 16,4
Test pressure (bar) 25
Operating temperature (°C) -40/+50
Medium Liquefied gas DIN 51622 / EN 589
Authorized max. weight of upper tank containers during stacking (kg) 19 2000

Materials:
- Tank vessel P460LN2 (EN 10028-3)
- Frame S355J2H (EN 10025-2); S235JRH (EN 10025-2)
- Roof Stainless steel 1.4301 (EN 10088-2)

Surface coating According to EN ISO 12944-5
ESD protection YES
Approvals PED, ISO 1496-3, CSC, IMDG, RID, ADR

Dimensions and parameters (type 1CC):

<table>
<thead>
<tr>
<th>Tank capacity (l)</th>
<th>Outer diameter (mm)</th>
<th>Nominal length (mm)</th>
<th>Nominal width (mm)</th>
<th>Nominal height (mm)</th>
<th>Tare weight (kg)</th>
<th>Max. load (kg)</th>
<th>Max. gross weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 900</td>
<td>2 400</td>
<td>6 058 -6</td>
<td>2 438 -5</td>
<td>2 591 -5</td>
<td>6 700</td>
<td>14 300</td>
<td>21 000</td>
</tr>
<tr>
<td>25 500</td>
<td>2 430</td>
<td>6 058 -8</td>
<td>2 438 -5</td>
<td>2 591 -5</td>
<td>5 900</td>
<td>15 100</td>
<td>21 000</td>
</tr>
</tbody>
</table>
KADATEC s.r.o.
Industrial zone
257 64 Zdislavice
Czech Republic
Phone: +420 317 705 090
Fax: +420 317 705 071
Mobile: +420 724 850 699
Mailto: kadatec@kadatec.cz

www.kadatec.cz