



Stationary reservoirs RDKh and transport tanks TsZhU.

RDKh reservoirs are designed for long-term storage of liquid low-temperature carbon dioxide (CO₂) without limitation of term.

Volumes of reservoirs are from 4.0 to 50.0 m³ with operating pressure of 2.0 MPa.

TsZhU tanks are designed for transportation of liquid low-temperature carbon dioxide from the manufacturer or storehouse to the place of consumption.

Volumes of tanks are from 10.0 to 18.0 m³ with operating pressure of 2.0 MPa.

Microprocessor-controlled converter PMP-118 along with multichannel indicator of MS type (**designation for order – MS-K-500-BL-LIN-VZ-UKM10-L4M**) is used for measurement of level, volume, and weight of liquid carbon dioxide in reservoirs and tanks manufactured by Ltd. “CaDi”.



This measuring system operates independently by means of lithium battery which is included into MS indicator. The system allows indication of temperature (°C) and amount of liquid carbon dioxide in reservoir in the following units of measurement:

- “m³”, with accuracy of 0.01 m³,
- “ton”, with accuracy up to 10 kg,
- “m”, level of liquid carbon dioxide in reservoir, with accuracy ±5 mm,
- “per cent”, filling of reservoir.

Designation for order – PMP-118, designation of reservoir where the device is to be installed, serial No. and year of manufacture.

If reservoir is newly produced, it is necessary to provide sketch of insulated reservoir internal vessel for calculation and ordering of device PMP-118.

Carbon dioxide filling and discharge are performed using **ball cocks**. All fittings are made of special low alloy carbon steel 09G2S.

Safety system of reservoirs and tanks includes safety valves and safety diaphragms mounted on three-way ball cocks allowing their checking and repair without reservoir shutdown and emptying.



Unit of safety diaphragms



Unit of safety valves

LIST OF FITTINGS ON PDKh RESERVOIRS

Item No.	Fitting identification	Fitting designation	Q-ty
1.		Block of safety valves	
1.1.	DM 02-100 (or analogue)	Manometer, 40 kgf/cm ² , M20x1.5, cl. 1,5	2
1.2.	KD 200	Safety valve (Dn15, Pn25, actuation pressure 20.0±0.1 kgf/cm ²)	2
1.3.	ZART 025.025.25-03R	Ball cock, shutoff, flange, three-way, T-shape (Dn25, Pn25, inlet - ex. 5, outlet - ex. 4)	1
1.4.	KD 25.05.00.000-02	Attachment fitting of safety valve	2
2.		Block of safety diaphragms	
2.1.	KD 25.06.00.000	Branch pipe	2
2.2.	KD 25.03.00.000.	Unit of diaphragms	2
2.3.	MR	Safety diaphragm (Dn 25 mm, D _{op} 25 mm, D _{full} 60 mm, actuation pressure 22.0...24.0 kgf/cm ² at T=20 °C, material - nickel NP-2)	2+1 in SPTA
2.4.	ZART 025.025.25-03R	Ball cock, shutoff, flange, three-way, T-shape (Dn25, Pn25, inlet - ex. 5, outlet - ex. 4)	1
3.		Shut-off valving	
3.1.	ZARD 032.025.25-03R	Ball cock, shutoff, flange (Dn32, Pn25, ex. 5)	5 (4*)

LIST OF FITTINGS ON TsZhu TANKS

Pos.	Fitting identification	Fitting designation	Q-ty
1.		Block of safety valves	
1.1.	DM 02-100 (or analogue)	Manometer, 40 kgf/cm ² , M20x1.5, cl. 1,5	2
1.2.	KD 200	Safety valve (Dn15, Pn25, actuation pressure 20.0±0.1 kgf/cm ²)	2
1.3.	ZART 025.025.25-03R	Ball cock, shutoff, flange, three-way, T-shape (Dn25, Pn25, inlet - ex. 5, outlet - ex. 4)	1
1.4.	KD 25.05.00.000-02	Attachment fitting of safety valve	2
2.		Block of safety diaphragms	
2.1.	KD 25.06.00.000	Branch pipe	1
2.2.	KD 25.03.00.000.	Unit of diaphragms	1
2.3.	MR	Safety diaphragm (Dn 25 mm, D _{op} 25 mm, D _{full} 60 mm, actuation pressure 22.0...24.0 kgf/cm ² at T=20 °C, material - nickel NP-2)	1+1 in SPTA
3.		Shut-off valving	
3.1.	ZARD 032.025.25-03R	Ball cock, shutoff, flange (Dn32, Pn25, ex. 5)	2
3.2.	NP.100.000.00.01	Fitting Tr70x4 (with blind joints)	2
3.3.	GE2 (or analogue)	Ball cock, shutoff (Dn10, thread DN 3/8" internal/internal)	1

* For RDKh produced by Ltd. "CaDi" before 01.01.2015.



Pos. 1.1



Pos. 1.2

Pos. 1.3
Pos. 2.4

Pos. 1.4



Pos. 3.1



Pos. 2.1



Pos. 2.2



Pos. 2.3



Pos. 3.2

Additional equipment.

Floating magnetic indicators of IPM-1200...2400 type. IPM indicator is of pointer type, it indicates reservoir filling from 0 to 100%. IPM indicators have universal



connecting dimensions (flange) and are installed on the majority of horizontal-type reservoirs and transport tanks produced in the territory of the Russian Federation since 1970s. IPM indicator may be installed on all reservoirs and tanks produced by Ltd. "CaDi" as well.

Designation for order – floating magnetic indicator IPM-1600, where "1600" is diameter of reservoir internal vessel in mm.

Electronic weighting unit for stationary reservoirs of horizontal type.

Strain-gauge weight-measuring electronic device (TVEU) is a system for weighting of horizontal-type reservoirs for liquid carbon dioxide storage. Equipment set consists of four strain indicators (three standard sizes are possible: for 10, 15, and 25 tons) and electronic weighting indicator. Passport of certified measuring device and certificate of primary calibration are supplied completed with equipment.



Installation of strain-gauge weighting systems is possible both for new reservoirs for liquid carbon dioxide storage and for previously used reservoirs. Inaccuracy of measurement does not exceed 0.1%. Simplicity of installation allows to install the system independently. **Designation for order – Strain-gauge weight-measuring electronic device TVEU-10.0**, where "10.0" is a volume of stationary reservoir in m³.

Threaded fitting (thread Tr70x4) is installed additionally on outlet dispensing cocks "Liquid" and "Gas" of RDKh-type reservoirs



and is designed for connecting metal hoses for CO₂ overflow or other equipment. Fittings with threads M70x4 and S70x4 may be produced as well.

Designation for order – NP.100.000.00.01 Fitting Tr70x4.

Additional services.**Production of reservoirs and tanks with shell made of stainless steel.**

In accordance with the Customer's option, manufacturing of RDKh and TsZhU with shell made of stainless steel (smooth or mat) is possible. Shell material is steel AISI 430 or analogue.

Production of RDKh-type storage reservoirs with increased service life of vessel.

Service life of RDKh-type reservoirs manufactured in standard execution is 15 years. In accordance with the Customer's option, vessels with service life of 20 years may be produced (by means of increase in thickness of vessel walls). **Installation of liquid carbon dioxide overflow station into tambour of transport tank of TsZhU type.** Station purchased from our company shall be mounted on TsZhU tank in the territory of our enterprise. **Designation for order: SPU10/50T or SPU15/20T.**

Installation of pump for filling carbon dioxide cylinders and fire extinguishers into tambour of TsZhU-type transport tank. Designation for order: SZU-500T.

Advertising slogan. In accordance with the Customer's option, an advertising slogan on reservoirs and tanks may be produced as per previously agreed sketch.



Picture shows installation of SPU15/20T station into the tambour