



PRODUCT CATALOGUE 2014/2015

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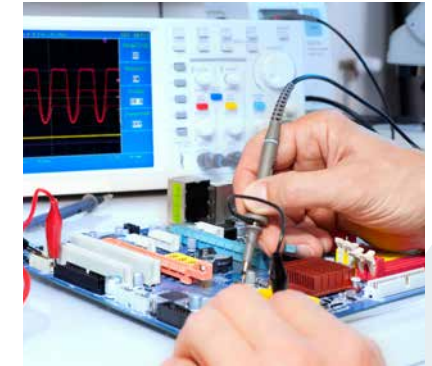
RESEARCH & DEVELOPMENT COMPANY ARMPOL LTD.

ABOUT THE COMPANY

ARMPOL conducts development and implementation works, and manufactures various kinds of products of advanced technical solutions in the field of mechanics, electrical engineering, electronics, hydraulics and pneumatics. The company primarily offers products for special purposes, including the military. The main areas of activity include: special containers, air conditioning systems, filtering and power generator systems.

Functioning since 1990, **ARMPOL** was in the forefront of companies operating in this sector on the domestic market. By providing their products for a specific sector, the Company has gained a good reputation in the field of modernity and quality of the applied solutions.

ARMPOL constantly expands the range of production and works on the innovation of its products, meeting the changing needs of the market and the growing expectations of Customers.



SPECIALIZATION

The company particularly specializes in publications and production of special mobile containers, adapted to the specific needs of the user. These containers, depending on the details of construction and the application of primary and specialized equipment, are designed to be used as: command and communication centers, command and refreshment facilities, storage and power supply centers, power supply centers, servicing and repair workshops, medical facilities, specialized laboratories, disinfection and decontamination stations, canteens, laundries and others.

In our offer there is also onboard equipment for specialized containers, including: modular basic equipment (suction and filtering systems, air conditioning, heating, power supply, air supply, dynamic dehumidification, generators etc.), modular specialized equipping (including communications, computer, workshop, medical, laboratory, power etc.), or autonomous sets of hydraulic systems for handling the containers.

Within this range, the Company offers a comprehensive implementation and cooperation in the implementation of analytical and conceptual studies, and development and implementation works. Development and implementation works regarding special products are executed in full cycle in accordance with the requirements of the NO defense standards. At each stage of implementation, the works are correctly documented.



RESEARCH & DEVELOPMENT COMPANY ARMPOL LTD.

RECOGNITION

ARMPOL was three times (2003, 2006 and 2013) the winner of the DEFENDER prize, awarded at the International Defense Industry Exhibition (MSPO) in Kielce for products in the field of national defense and security, distinguished by the originality and novelty of technical and technological ideas, operating values and favorable economic indicators.

Many years of experience, combined with high quality products and modernity of applied solutions make us a reliable, trustworthy partner for parties interested in collaboration.



photo Targi Kielce S.A.

SPECIALIZED CONTAINERS - COMMAND AND STAFF CONTAINERS

COMMAND AND STAFF CONTAINER KDS.ŁC-02

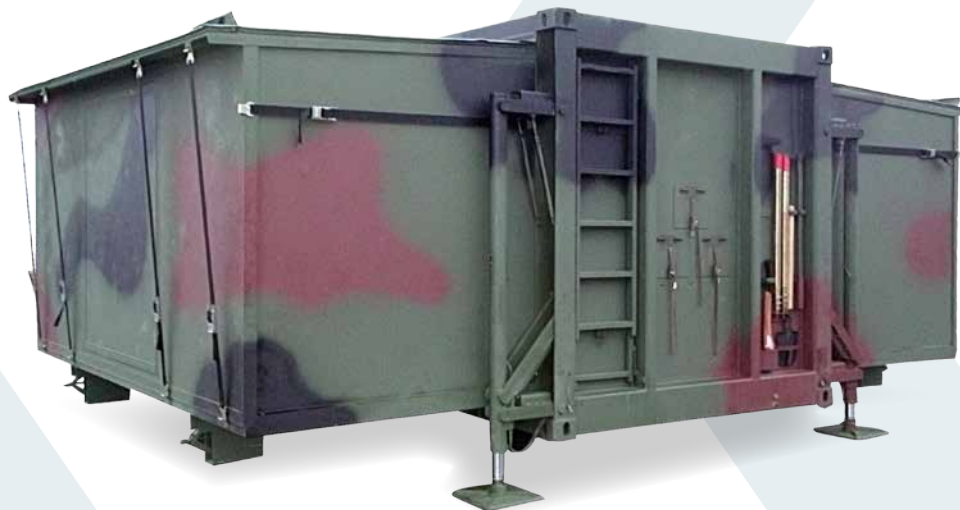
Command and staff container type KDS.ŁC-02 comprehensively ensures the conditions of work at the headquarters for 12 ÷ 16 members of functional staff teams. It is intended for use on command positions at various levels in the field conditions. The container is built based on the construction of the basic 20-foot 1C container according to a number of dimensional series and ISO classification. The container is unified with a container system of swap bodies and transport chassis used in the Armed Forces. The housing of the container is structurally divided inside into two compartments: technical - in front of the container, and utility. The technical compartment has equipment built on modular basis, including: air conditioning system (cooling and heating), ventilation and air filtering system, power supply system, hydraulic system and IT equipment. This equipment provides a comfortable working environment for the functional teams staff independent of atmospheric conditions present on the outside. Utility compartment is expanded to the sides of the container, after expanding it creates a large usable area plus 3x, adapted to specialized equipment - depending on its destination.

Container KDS.ŁC-02 is highly mobile, easy to fold and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports ZPH.20-02.w.ŁC type, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport.

This container - after appropriate adaptation and completion, may be used in other applications, e.g. as medical, leisure and other purpose container.

TECHNICAL AND OPERATION PARAMETERS

Container type	KDS.ŁC-02
Container documentation	KDS.ŁC.02-00.00.00.00.00
Empty weight of the container	8 500 kg
Maximum gross weight of the container (with equipment)	12 000 kg
External dimensions of the folded container (length x width x height)	6,058 x 2,438 x 2,438 m
External dimensions of the expanded container (length x width x height)	6,058 x 6,060 x 2,438 m
Basic loading space (for equipment transport)	10,5 m ²
The total floor area of the container (after expanding)	25,0 m ²
Time of container unloading from the means of transport	to 10 min (using supports)
Time of container expansion and preparation for work	to 40 min (depending on conditions)
Time of container assembly on the means of transport	to 15 min (using supports)
Time of container folding and preparation for transport	to 40 min (depending on conditions)
Height of container lifting (using supports ZPH.20-02.w.ŁC)	max. 1800 mm
The recommended number of personnel	driver + 3 persons
The range of container use temperatures	from -30°C to +55°C
The range of storage container temperatures	from -40°C to +65°C



SPECIALIZED CONTAINERS - COMMAND AND STAFF CONTAINERS

STAFF CONTAINER BUS KAS.15-01 (AS-250AM)

Staff container bus type KAS.15-01 (AS-250AM) comprehensively ensures the conditions of staff work at the headquarters for 8 ÷ 10 of functional staff members on command positions at various levels in the field conditions.

The container is built based on the construction of the basic 15-foot container according to ISO standards. The housing of the container is structurally divided inside into two compartments: technical - in front of the container, and utility.

The basic equipment - built in the technical compartment, includes the following: air conditioning system (cooling and heating), ventilation and air filtering system, power supply system, hydraulic system and IT equipment. This equipment provides a comfortable working environment for the users, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Utility compartment is expanded by 3x to create a large usable area, adapted to specialized equipment - depending on its destination. Container KDS.ŁC-02 is highly mobile, easy to fold with stable supporting structure equipped with autonomous reloading system ZPH.15-02,w.AS. The container ensures a comfortable working environment for the users, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination. IT equipment of KAS.15-01 container ensures presentation, processing, exchange and collection of data by the internal and additional external LAN and by WAN, using connections to different command systems. The open structure and design of the equipment allows for its easy adaptation to user's requirements.

This container - after appropriate adaptation and completion, may be used in other applications, e.g. as medical, leisure and other purpose container.

TECHNICAL AND OPERATION PARAMETERS

Container type	KAS.15-01 (AS-250AM)
Container documentation	KAS.15.01-00.00.00.00.00
Empty weight of the container	3 500 kg
Maximum gross weight of the container with equipment	8 000 kg
External dimensions of the folded container (length x width x height)	4,522 x 2,438 x 2,438 m
External dimensions of the expanded container (length x width x height)	4,522 x 6,400 x 2,438 m
Basic loading space (for equipment transport)	6,4 m ²
The total floor area of the container (after expanding)	21,4 m ²
Time of container unloading from the means of transport	to 10 min (using supports)
Time of container expansion and preparation for work	to 30 min (depending on conditions)
Time of container assembly on the means of transport	to 15 min (using supports)
Time of container folding and preparation for transport	to 40 min (depending on conditions)
Height of container lifting (using supports ZPH.15-02,w.AS)	max. 1 800 mm
The recommended number of personnel	driver + 3 persons
The range of container use temperatures	from -30°C to +55°C
The range of storage container temperatures	from -40°C to +65°C



SPECIALIZED CONTAINERS - COMMAND AND STAFF CONTAINERS

CONTAINER COMMAND POST MSD.PO-E1

Container command post MSD.PO-E1 comprehensively ensures the conditions of staff work for 10 ±12 operators at the command positions of the division/subdivision levels in field conditions.

The container body is built based on the steel construction of the basic 15-foot container according to ISO standards. The container walls are covered with laminated multi-layer boards of high thermal and acoustic insulation, and required mechanical resistance. The housing of the container is structurally divided inside into two compartments: technical - in front of the container, and utility.

The basic equipment - built in the technical compartment, includes the following: air conditioning system (cooling and heating), ventilation and air filtering system, power supply system, hydraulic system and IT equipment. These systems provide a comfortable working environment for the users, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination. Utility compartment is expanded by 3x to create a large usable area, adapted to specialized command and communication equipment.

IT equipment of MSD.PO-E1 container command post ensures presentation, processing, exchange and collection of data by the internal and additional external LAN and by WAN, using connections to different command systems. The open structure and design of the equipment allows for its easy adaptation to user's requirements. This container - after appropriate adaptation and completion, may be used in other applications, e.g. as medical, leisure and other purpose container.

Container body used in the position MSD.PO-E1 is characterized by mobility, ease of folding and stability of the superstructure fitted with an autonomous loading set ZPK.15-02, w.SD. This body - after appropriate adaptation and completion, may also be used in other applications, e.g. as medical, leisure and other purpose containers.

Command post MSD.PO-E1 is provided for transport and cooperation with the container transport set KZT.15-01, based on a modernized off-road vehicle STAR 266K (6x6) - including off-road trailer PTJ.04-01 (with built-in power generator).

TECHNICAL AND OPERATION PARAMETERS

Type of container command post	MSD.PO-E1
Documentation of container command post	MSD.PO.E1-00.00.00.00.00
Empty weight of container command post	4 500 kg
Maximum load of container command post with equipment	5 000 kg
External dimensions of the of container command post folded (length x width x height)	4,522 x 2,438 x 2,438 m
External dimensions of the of container command post expanded (length x width x height)	4,600 x 6,400 x 2,800 m
Basic loading space container command post (for equipment transport)	5,5 m ²
Total floor area of container command post (after expanding)	14,0 m ²
Time of container command post unloading from the transport means	to 10 min (using supports)
Time of the body expanding and preparation of container command post for work	to 15 min (depending on conditions)
Time of assembly of container command post on the means of transport	to 10 min (using supports)
Time of disassembly of container command post and preparation for transport	to 20 min (depending on conditions)
Lifting height of container command post (using supports ZPK.15-02,w.SD)	max. 1 800 mm
The recommended number of personnel	driver + 2 persons
Range of used temperatures of container command post	from -30°C to +55°C
The range of container command post storage temperatures	from -40°C to +65°C



SPECIALIZED CONTAINERS - COMMAND POST AND LEISURE CONTAINERS

COMMAND AND LEISURE CONTAINER KDS.SC-02

Command and leisure container KDS.SC-02 secures adequate working and rest conditions for the commander in the field operations. It is designed for use in the field command posts from battalion level and above.

The container is built based on the construction of the basic 20-foot 1C container according to a number of dimensional series and ISO classification. The container is unified with a container system of swap bodies and transport chassis used in the Armed Forces.

The housing of the container is structurally divided inside into two compartments: technical - in front of the container, and utility. The basic equipment - built in the technical compartment, includes the following: air conditioning system (cooling and heating), ventilation and air filtering system, power supply system, hydraulic system and IT equipment. These systems provide a comfortable working environment for the commander and commanding personnel, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Utility compartment (together with additional floor area obtained by expanding of the rear part of the container) is divided by additional insulating partition wall into operational and leisure parts.

Container KDS.SC-02 is highly mobile, easy to fold and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports ZPH.20-02,w.SC type, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport.

This container - after appropriate adaptation and completion, may be used in other applications, e.g. as medical, leisure and other purpose container.



TECHNICAL AND OPERATION PARAMETERS

Container type	KDS.SC-02
Container documentation	KDS.SC.02-00.00.00.00.00
Empty weight of the container	from 7 100 kg (depending on equipment)
Maximum gross weight of the container (with equipment)	12 000 kg
External dimensions of the folded container (length x width x height)	6,058 x 2,438 x 2,438 m
External dimensions of the expanded container (length x width x height)	8,080 x 2,438 x 2,438 m
Basic loading space (for equipment transport)	10,5 m ²
The total floor area of the container (after expanding)	14,5 m ²
Time of container unloading from the means of transport	to 10 min (using supports)
Time of container expansion and preparation for work	to 30 min (depending on conditions)
Time of container assembly on the means of transport	to 15 min (using supports)
Time of container folding and preparation for transport	to 30 min (depending on conditions)
Height of container lifting (using supports ZPH.20-02,w.SC)	max. 1 800 mm
The recommended number of personnel	driver + 2 persons
The range of container use temperatures	from -30°C to +55°C
The range of storage container temperatures	from -40°C to +65°C



SPECIALIZED CONTAINERS - COMMAND POST AND LEISURE CONTAINERS

COMMAND AND LEISURE CONTAINER KDS.SC-03

Command and leisure container KDS.SC-03 secures adequate working and rest conditions for the operators-crews of air surveillance posts.

The container is built based on the construction of the basic 20-foot 1C container according to a number of dimensional series and ISO classification. The container is unified with a container system of swap bodies and transport chassis used in the Armed Forces.

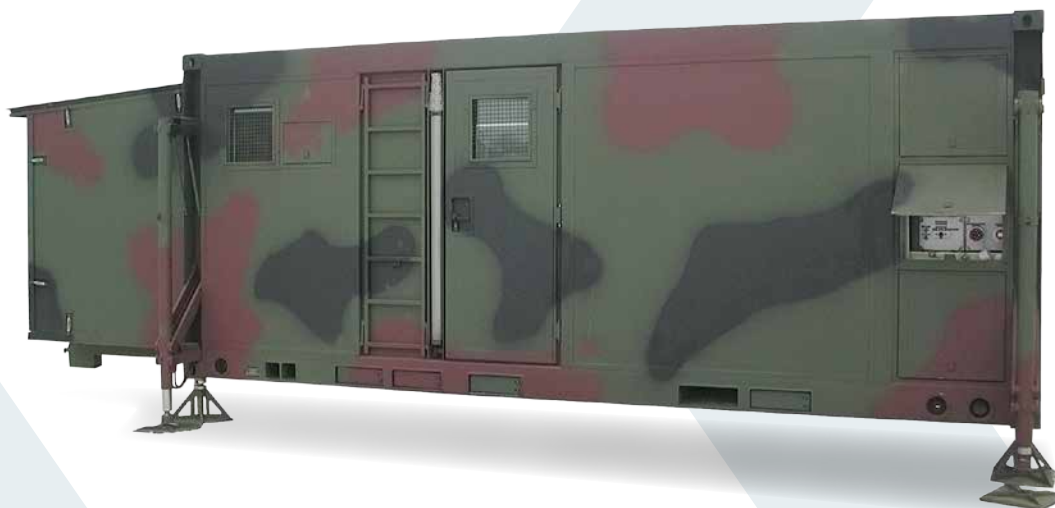
The housing of the container is structurally divided inside into two compartments: technical - in front of the container, and utility. The basic equipment - built in the technical compartment, includes the following: air conditioning system (cooling and heating), ventilation and air filtering system, dynamic drying system, power supply system, and hydraulic system. These systems provide a comfortable working environment for the post operators-crews, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Utility compartment (together with additional floor area obtained by expanding of the rear part of the container) is divided by additional insulating partition wall into operational and leisure parts.

Container KDS.SC-03 is highly mobile, easy to fold and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports ZPH.20-02,w.SC type, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport

TECHNICAL AND OPERATION PARAMETERS

Container type	KDS.SC-03
Container documentation	KDS.SC.03-00.00.00.00.00
Empty weight of the container	from 7 500 kg (depending on equipment)
Maximum gross weight of the container (with equipment)	12 000 kg
External dimensions of the folded container (length x width x height)	6,058 x 2,438 x 2,438 m
External dimensions of the expanded container (length x width x height)	8,080 x 2,438 x 2,438 m
Basic loading space (for equipment transport)	10,5 m ²
The total floor area of the container (after expanding)	14,5 m ²
Time of container unloading from the means of transport	to 10 min (using supports)
Time of container expansion and preparation for work	to 30 min (depending on conditions)
Time of container assembly on the means of transport	to 15 min (using supports)
Time of container folding and preparation for transport	to 30 min (depending on conditions)
Height of container lifting (using supports ZPH.20-02,w.SC)	max. 1 800 mm
The recommended number of personnel	driver + 2. persons
The range of container use temperatures	from -30°C to +55°C
The range of storage container temperatures	from -40°C to +65°C



SPECIALIZED CONTAINERS - COMMAND POST AND LEISURE CONTAINERS

COMMAND AND LEISURE CONTAINER KDS.ŁC-03

Command and leisure container KDS.ŁC-03 secures adequate working and rest conditions for two independent teams on posts controlling troops movements in field conditions.

The container is built based on the construction of the basic 20-foot 1C container according to a number of dimensional series and ISO classification, manufactured in compliance with the PN-ISO 668 and PN-ISO 1161 standards. The container is unified with a container system of swap bodies and transport chassis used in the Armed Forces.

The housing of the container is structurally divided inside into two compartments: technical - in front of the container, and utility. The basic equipment - built in the technical compartment, includes the following: air conditioning system (cooling and heating), ventilation and air filtering system, dynamic drying system, power supply system, and hydraulic system. These systems provide a comfortable working environment for the post personnel, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Utility compartment (together with additional floor area obtained by expanding of the rear part of the container) is divided by additional insulating partition wall into two independent operation parts, meant to ensure work conditions for the post personnel.

Container KDS.ŁC-03 is highly mobile, easy to fold and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports ZPH.20-02,w.ŁC type, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport.

Specialized containers created on the basis of the basic container KDS.ŁC-03 can be used as command and leisure containers for various kinds of observation posts and traffic control on field troop camps.



TECHNICAL AND OPERATION PARAMETERS

Container type	KDS.ŁC-03
Container documentation	KDS.ŁC.03-00.00.00.00.00
Empty weight of the container	from 7 500 kg (depending on equipment)
Maximum gross weight of the container (with equipment)	12 000 kg
External dimensions of the folded container (length x width x height)	6,058 x 2,438 x 2,438 m
External dimensions of the expanded container (length x width x height)	8,080 x 2,438 x 2,438 m
Basic loading space (for equipment transport)	10,5 m ²
The total floor area of the container (after expanding)	14,5 m ²
Time of container unloading from the means of transport	to 10 min (using supports)
Time of container expansion and preparation for work	to 30 min (depending on conditions)
Time of container assembly on the means of transport	to 15 min (using supports)
Time of container folding and preparation for transport	to 30 min (depending on conditions)
Height of container lifting (using supports ZPH.20-02,w.ŁC)	max. 1 800 mm
The recommended number of personnel	driver + 2. persons
The range of container use temperatures	from -30°C to +55°C
The range of storage container temperatures	from -40°C to +65°C



SPECIALIZED CONTAINERS - STORAGE AND POWER SUPPLY CONTAINERS

STORAGE AND POWER SUPPLY CONTAINER KDS.ME-02

Storage and power supply container KDS.ME-02 is designed to supply power of various kinds to field command posts.

The container is built based on the construction of the basic 20-foot 1C container according to a number of dimensional series and ISO classification. The container is unified with a container system of swap bodies and transport chassis used in the Armed Forces.

Housing of the container is divided structurally by insulating partition wall into two compartments: power supply - at the front of the container and storage and leisure compartment.

The power supply compartment contains two generators with a rated power of 65.0 kVA and a control cabinet for the generators - allowing for parallel and alternating operation of the equipment.

Container KDS.ME-02 is highly mobile, and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports ZPH.20-02,w.ME type, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport.

Basic equipment of the container provides a comfortable working environment for staff operating power supply station round the clock, independent of atmospheric conditions present on the outside.

TECHNICAL AND OPERATION PARAMETERS

Container type	KDS.ME-02
Container documentation	KDS.ME.02-00.00.00.00.00
Empty weight of the container	from 9 300 kg (depending on equipment)
Maximum gross weight of the container	12 000 kg (with equipment)
Type of generator sets	2 sets ZPO 65 TDEZ
Power of single generator	65,0 kVA
Power of two generators working parallel	130,0 kVA
External dimensions of the container	6,058 x 2,438 x 2,438 m (length x width x height)
The total floor area of the container	12,5 m ²
Time of container unloading from the means of transport	to 10 min (using supports)
Time of container expansion and preparation for work	to 30 min (depending on conditions)
Time of container assembly on the means of transport	to 15 min (using supports)
Time of container folding and preparation for transport	to 30 min (depending on conditions)
Height of container lifting	max. 1 800 mm (using supports ZPH.20-02,w.ME)
The recommended number of personnel	driver + 2. persons
The range of container use temperatures	from -30°C to +55°C
The range of storage container temperatures	from -40°C to +65°C



SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

CONTAINER WEAPONS WORKSHOP KWU.20-01

Container weapons workshop KWU.20-01 is designed for complex maintenance and repair of weapons in fixed and field conditions.

The workshop container is built based on the construction of the basic 20-foot BKW.20-01 container 1C according to a number of dimensional series and ISO standards classification. The container is unified with a container system of swap bodies and transport chassis used in the Armed Forces.

The workshop container is structurally divided by partition wall into two compartments: technical - in front of the container, and workshop - at the back. The technical compartment has a modular structure of basic equipment, which includes the following: air conditioning system (cooling and heating), ventilation and air filtering system, dynamic drying system, power supply system, and hydraulic system. These systems provide a comfortable working environment for the workshop, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Workshop compartment design also allows for modular structure, and use of modular equipment allows to perform basic maintenance operations, and ensures transportation and storage of needed tool kits, consumables and repair kits.

Container KWU.20-01 is highly mobile, and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports ZPH.20-02.w.KW type, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport.



TECHNICAL AND OPERATION PARAMETERS

Type of workshop container	KWU.20-01
Document marking of workshop container	KWU.20.01-00.00.00.00.00
Empty weight of workshop container	from 8 000 kg (depending on equipment)
Maximum load of workshop container	12 000 kg
External dimensions of the workshop container (length x width x height)	6,058 x 2,438 x 2,438 m
Utility compartment floor area in workshop container	10,5 m ²
Time of disassembly of workshop container from means of transport	to 10 min (using supports)
Time of assembly of workshop container and preparation for work	to 20 min (depending on conditions)
Time of placement of workshop container on means of transport	to 15 min (using supports)
Time of preparation of workshop container for transport	to 30 min (depending on conditions)
Lifting height of workshop container (using supports ZPH.20-02.w.KW)	max. 1 800 mm
The recommended number of personnel workshop container	driver + 3 persons
Range of use temperature of workshop container	from -30°C to +55°C
Range of storage temperature of workshop container	from -40°C to +65°C

SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

CONTAINER WEAPONS STORAGE KMU.20-01

Container weapons storage KMU.20-01 is designed for temporary storage of weapons in field conditions. The storage container is built based on the construction of the basic 20-foot BKW.20-01 container 1C according to a number of dimensional series and ISO standards classification. The container is unified with a container system of swap bodies and transport chassis used in the Armed Forces.

The storage container is structurally divided by partition wall into two compartments: technical - in front of the container, and storage. The technical compartment has a modular structure of basic equipment, which includes the following: air conditioning system (cooling and heating), ventilation and air filtering system, dynamic drying system, power supply system, and hydraulic system. These systems provide a comfortable working environment for the storage compartment, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Storage compartment design allows for storage of spare parts, repair kits, and subassemblies for the weapons in bulk, or in boxes.

Container KMU.20-01 is highly mobile, and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports ZPH.20-02,w.KM type, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport.



TECHNICAL AND OPERATION PARAMETERS

Type of storage container	KMU.20-01
Document marking of storage container	KMU.20.01-00.00.00.00.00
Empty weight storage container	from 8 000 kg (depending on equipment)
Maximum load of storage container	12 000 kg
External dimensions of the storage container (length x width x height)	6,058 x 2,438 x 2,438 m
Utility compartment floor area of the storage container	10,5 m ²
Time of disassembly of storage container from means of transport	to 10 min (using supports)
Time of assembly of storage container and preparation for work	to 20 min (depending on conditions)
Time of placement of storage container on means of transport	to 15 min (using supports)
Time of preparation of storage container for transport	to 30 min (depending on conditions)
Lifting height of storage container (using supports ZPH.20-02,w.KM)	max. 1 800 mm
The recommended number of personnel of storage container	driver + 2. persons
Range of use temperature of storage container	from -30°C to +55°C
Range of storage temperature of storage container	from -40°C to +65°C



SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

CONTAINER WORKSHOP BODY WNK.20-01

Container workshop body WNK.20-01 is versatile and provides a base for building mobile maintenance and repair workshops of required larger floor area and extended equipment.

The container workshop body is built based on the construction of the basic 20-foot container 1C according to a number of dimensional series and ISO standards classification. The container is unified with a container system of swap bodies and transport chassis used in the Armed Forces.

The container workshop body is structurally divided by partition wall into two compartments: technical - in front of the container, and workshop. The technical compartment has structure allowing for assembly of 6 modules of basic equipment, which include the following: air conditioning system (cooling and heating), ventilation and air filtering system, dynamic drying system, and power supply system. These systems provide a comfortable working environment for the workshop compartment, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Workshop compartment design also allows for modular structure, and use of modular equipment allows to perform basic maintenance operations, and ensures transportation and storage of needed tool kits, consumables and repair kits.

Container workshop body WNK.20-01 has limited mobility, related to the need to use external reloading equipment (cranes, forklifts) for unloading and loading of the container on means of transport.

TECHNICAL AND OPERATION PARAMETERS

Type of container body	WNK.20-01
Document marking of container body	WNK.20.01-00.00.00.00.00
Empty weight of the container body	from 5 500 kg (depending on equipment)
Maximum load of the container body	12 000 kg
External dimensions of the container body	6,058 x 2,438 x 2,438 m (length x width x height)
Utility compartment floor area of the	10,5 m ² container body
Time of disassembly of container body	to 15 min (using crane) from means of transport
Time of assembly of container body	to 20 min (depending on preparation for work conditions)
Time of placement of container body	to 15 min (using crane) on means of transport
Time of preparation of container body	to 30 min (depending on for transport conditions)
Recommended number of personnel	driver + 2. persons of container body
Range of use temperature of container body	from -30°C to +55°C
Range of storage temperature of container body	from -40°C to +65°C



SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

CONTAINER WORKSHOP OF TANK AND TRUCK SERVICE KWS.CS-03

Container workshop of Tank and Truck Service type KWS.CS-03 is designed for rapid and efficient preparation, in the field or stationary position, of maintenance and repair of high-mobility trucks and cars operated by Armed Forces Container workshop KWS.CS-03 is suitable for use in various climatic conditions (temperate - cold climate) and a variety of external lighting conditions.

Container workshop set KWS.CS-03, covers the following components:

- workshop container KWS.CS-W3, documentation marking KWS.CS.W3-00.00.00.00.00;
- storage container KWS.CS-M3, documentation marking KWS.CS.M3-00.00.00.00.00;
- container workshop tent KWS.CS-N3, documentation marking KWS.CS.N3-00.00.00.00.00.

Power supply of container workshop KWS.CS-03 is from the external source - power supply line 3x400V- or the on-board generator sets of workshop and warehouse containers, of total power equal 2 x 65,0 kW.

Filtering and air-conditioning systems of container workshop provide the staff with thermal comfort in the foreseeable conditions of operation, including in dusty conditions and contamination.

Modular structure of utility compartments (workshop and storage) of the containers ensures adjustment of the equipment to the needs and the planned maintenance and repair tasks. The whole container workshop equipment is housed in a container workshop KWS.CS-W3 and container storage KWS.CS-M3 - transported by truck with the trailer. Preparing container workshop KWS.CS-03 for operation is carried out after removing the containers from transport means - using autonomous hydraulic supports and setting the container directly on the ground. Lighting of the work stations and the area around the container workshop KWS.CS-

03 is provided by lighting masts of the containers. Container workshop KWS.CS-03 is unified with the container transport chassis and swap bodies systems, existing in the Armed Forces.

TECHNICAL AND OPERATION PARAMETERS

Type of container workshop	KWS.CS-03
Document marking of container workshop	KWS.CS.03-00.00.00.00.00
Empty weight of workshop container basic	about 22 000 kg
version	
Total weight of container workshop	up to 32 000 kg
with full equipment	(depending on equipment)
Floor area of container workshop	6,440 x 13,260 m
(length x width)	
Dimensions of the container tent	6,440 x 6,430 x 4,000 m
(length x width x height)	
Time of disassembly of workshop container	total of up to 15 min
from means of transport	
Preparation time of container workshop	up to 120 min (depending
for operation	on conditions)
Range of use temperature of workshop container...	from -30°C to +55°C
Range of storage temperature of workshop	from -40°C to +65°C
container	



SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

WORKSHOP CONTAINER KWS.CS-W3

Workshop container type KWS.CS-W3 is designed for rapid and efficient preparation, in the field or stationary position, of maintenance and repair of high-mobility trucks and cars operated by Armed Forces. Container KWS.CS-W3 is suitable for use in various climatic conditions (temperate - cold climate) and a variety of external lighting conditions.

Container is built based on the construction of the basic 20-foot BKP.20-W3 container according to ISO standards. The container is structurally divided into two compartments: technical - at the back of the container, and workshop. The compartments are separated by partition wall. Technical compartment has basic container equipment including systems: power supply, filtering and air conditioning system, dynamic drying system, and hydraulic system. These systems provide a comfortable working environment for the workshop, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Power supply of the container is from the external source - power supply line 3x400V- or the on-board generator set located in the technical compartment of total power equal 2 x 65,0 kW. Modular structure of the workshop provides allows for compartment adaptation to the needs and the planned tasks of maintenance and repair.

Lighting of the work stations and the area around the container is provided by lighting masts. Container KWS.CS-W3 is highly mobile and easy to fold and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports ZPH.20 type-A2, w.W3, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport.

Workshop container KWS.CS-W3 can be prepared for operation the chassis base adapted transport of 20-foot containers as well as directly on the ground.

Workshop container KWS.CS-W3 is provided for use and cooperation (container workshop KWS.CS-03) with container workshop tent KWS.CS-N3 and container storage KWS.CS-M3.

TECHNICAL AND OPERATION PARAMETERS

Type of workshop container	KWS.CS-W3
Document marking of workshop container	KWS.CS.W3-00.00.00.00.00
Empty weight of the basic version	10 800 kg
of workshop container	
Total weight of workshop container	up to 16 000 kg
with equipment	(depending on equipment)
External dimensions of folded container	6,058 x 2,438 x 2,438 m
(length x width x height)	
Utility area of workshop container	9,9 m ²
Floor area of the technical compartment	2,5 m ²
Time of disassembly of workshop container	up to 10 min (using
from means of transport	supports)
Preparation time of workshop container	up to 20 min (depending
for operation	on conditions)
Time of assembly of workshop container	up to 15 min (using
to means of transport	supports)
Preparation time of workshop container	up to 30 min (depending
for transport	on conditions)
Lifting height of workshop container	max. 1 800 mm
(using supports ZPH.20-A2,w.W3)	
Recommended number of operation personnel ...	driver + 3 persons
of workshop container	
Range of use temperature of workshop container...	from -30°C up to +55°C
Range of storage temperature of workshop	from -40°C up to +65°C
container	



SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

STORAGE CONTAINER KWS.CS-M3

Storage container type KWS.CS-M3 is designed for rapid and efficient preparation, in the field or stationary position, of maintenance and repair dla of high-mobility trucks and cars operated by Armed Forces. Container KWS.CS-M3 is suitable for use in various climatic conditions (temperate - cold climate) and a variety of external lighting conditions.

Container is built based on the construction of the basic 20-foot reloading container BKP.20-M3, according to ISO standards. The container is structurally divided into two compartments: technical - at the back of the container, and workshop. The compartments are separated by partition wall. Technical compartment has basic container equipment including: power supply, filtering and air conditioning systems, dynamic drying system, and hydraulic system. These systems provide a comfortable working environment for the personnel operating the storage - independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Power supply of the container is from the external source - power supply line 3x400V- or the on-board generator set located in the technical compartment of total power equal 65,0 kW. Modular structure of the storage provides allows for compartment adaptation to the needs and the planned tasks of maintenance and repair. Lighting of the work stations and the area around the container is provided by lighting masts. Container is highly mobile and easy to fold and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports ZPH.20-A2,w.M3, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport. Storage container KWS.CS-M3 can be prepared for operation the chassis base adapted transport of 20-foot containers as well as directly on the ground.

Storage container KWS.CS-M3 is provided for use and cooperation (as a part of container workshop KWS.CS-O3) with container workshop tent KWS.CS-N3 and workshop container KWS.CS-W3.

TECHNICAL AND OPERATION PARAMETERS

Type of storage container	KWS.CS-M3
Document marking of storage container	KWS.CS.M3-00.00.00.00.00
Empty weight of the basic version of storage container	10 800 kg
Total weight of storage container with equipment	up to 16 000 kg (depending on equipment)
External dimensions of folded storage container (length x width x height)	6,058 x 2,438 x 2,438 m
Utility area of storage container	9,9 m ²
Floor area of the technical compartment	2,5 m ²
Time of disassembly of storage container from means of transport	up to 10 min (using supports)
Preparation time of storage container for operation	up to 20 min (depending on conditions)
Time of assembly of storage container to means of transport	up to 15 min (using supports)
Preparation time of storage container for transport	up to 30 min (depending on conditions)
Lifting height of storage container (using supports ZPH.20-A2,w.M3)	max. 1 800 mm
Recommended number of operation personnel of storage container	driver + 2. persons
Range of use temperature of storage container	from -30°C up to +55°C
Range of storage temperature of storage container	from -40°C up to +65°C



SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

SET CONTAINER AVIATION WORKSHOPS KWL.SX-02

Set of container aviation workshops type KWL.SX-02 is designed for the rapid and efficient preparation in stationary and field conditions of maintenance and repair position for airplanes and helicopters in service in the Armed Forces. Set of container aviation workshops KWL.SX-02 covers:

- S.1 - container for overhaul of airframe of aircraft and helicopters, type KRP-01,w.02;
- S.2 - container for overhaul of aircraft and helicopter engines, type KRS-01,w.02;
- S.3 - container for overhaul of aircraft and helicopter weapons, type KRU-01,w.02;
- S.4 - container for overhaul of aircraft and helicopter electric devices, type KROE-01,w.02;
- S.5 - container for overhaul of aircraft and helicopter on-board equipment, type KROP-01,w.02;
- S.6 - container for overhaul of aircraft and helicopter radio and electronic equipment, type KRUR-01,w.02.

Container workshops in the set are constructed based on structure of 20-foot basic container 1C according to ISO standards. The housing of the container is structurally divided inside into two compartments: technical and utility. Technical compartment is equipped with the following modules: hydraulics and battery, power supply and storage tank, ventilation and filtering and heating, air conditioning, dehumidification and heating, air compressor and tank, or 12.5 kVA generator set, water tank and storage tank.

Utility compartments form surfaces suitable for the specialist modular construction - depending on the destination.

Set container aviation workshops KWL.SX-02 is highly mobile and easy to prepare for operation, which is ensured by the autonomous set of hydraulic supports type ZPH.20-02,w.WL, enabling quick and simple

semi-automatic unloading and loading of the container on the means of transport. Preparation of container workshops for operation is performed after the containers are removed from the means of transport - using autonomous hydraulic supports and setting the container directly on the ground.

Container workshops KWL.SX-02 provide a comfortable working environment for the workshop operating personnel - independent of weather conditions, keeping the required temperature inside utility compartments, and air quality free from dust and any contamination. Container workshops KWL.SX-02 are unified with the existing system of the container chassis transport and swap bodies systems used by Armed Forces.

TECHNICAL AND OPERATION PARAMETERS

Type of container workshop	KWL.SX-02
Document marking of container workshop	KWL.SX.02-00.00.00.00.00
Average empty weight of container workshop	7 500 kg
Acceptable total weight of container workshop	12 000 kg
Dimensions of container workshop	6,058 x 2,438 x 2,438 m (length x width x height)
Total utility area of container workshop	10,7 m ²
Time of disassembly of container workshop	up to 10 min (using from means of transport supports)
Time of assembly of container workshop	up to 20 min (depending and preparation for operation on conditions)
Time of assembly of container workshop	up to 15 min (using to means of transport supports)
Preparation time of container workshop	up to 30 min (depending for transport on conditions)
Lifting height of container workshop	max. 1 800 mm (using supports ZPH.20-02,w.WL)
Recommended number of operation personnel ...	driver + 2. persons of container workshop
Range of use temperature of container workshop...	from -30°C up to + 55°C
Range of storage temperature of container	from -40°C up to + 65°C workshop



SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

MAINTENANCE AND STORAGE CONTAINER WORKSHOP KWS.WZ-S2

Maintenance and storage container workshop type KWS.WZ-S2 is designed for rapid and efficient preparation, in the field or stationary position, of maintenance and repair for armored and high mobility vehicles in service in the Armed Forces.

Container workshop KWS.WZ-S2 is suitable for use in various climatic conditions (temperate - cold climate) and a variety of external lighting conditions.

Container workshop KWS.WZ-S2 includes:

- workshop container KWS.KW-S2, documentation marking KWS.KW.S2-00.00.00.00.00;
- storage container KWS.KM-S2, documentation marking KWS.KM.S2-00.00.00.00.00;
- container workshop tent KWS.NW-S2, documentation marking KWS.NW.S2-00.00.00.00.00

The container workshop equipment is housed in a container workshop KWS.KW-S2 and container storage KWS.KM-S2 - transported by truck with the trailer.

Power supply container workshop KWS.WZ-S2 is from the external source - power supply line 3x400v - or the on-board generator sets of workshop and warehouse containers, of total power equal 2 x 12.5 kVA.

Filtering and ventilation equipment and air-conditioning of the workshop provides the crew with thermal comfort in the foreseeable conditions of use, including dusty and contamination conditions.

Modular structure of the utility compartments (workshop and storage) of the container ensures adaptation of the equipment up to the needs and the planned maintenance and repair tasks.

Additional foldable side tents of the container allow for performance of other works, also outside the container.

Preparation of container workshop KWS.WZ-S2 for operation is performed after the containers are removed from the means of transport - using autonomous hydraulic supports and setting the container directly on the ground.

Container workshops KWS.WZ-S2 are unified with the existing system of the container chassis transport and swap bodies systems used by Armed Forces.

Container workshop KWS.WZ-S2 is planned to be used at the repair battalion level and in Polish Military Contingents.

TECHNICAL AND OPERATION PARAMETERS

Type of container workshop	KWS.WZ-S2
Document marking of container workshop	KWS.WZ.S2-00.00.00.00.00
Empty weight of workshop container basic	about 22 000 kg version
Total weight of workshop with maximum	up to 32 000 kg (depending on equipment)
Floor area of the workshop (length x width)	17,6 x 16,0 m (280 m ²)
Dimensions of the container tent	10,000 x 16,200 x 8,100 m (length x width x height)
Time of disassembly of workshop container	total up to 15 min from means of transport
Preparation time of container workshop	up to 120 min (depending on conditions)
Range of use temperature of container workshop	from -30°C up to + 55°C
Range of storage temperature of container	workshop from -40°C up to +65°C



SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

WORKSHOP CONTAINER KWS.KW-S2

Workshop container type KWS.KW-S2 is designed for rapid and efficient preparation, in the field or stationary position, of maintenance and repair for armored and cargo-terrain high mobility vehicles in service in the Armed Forces

Container KWS.KW-S2 is suitable for use in various climatic conditions (temperate - cold climate) and a variety of external lighting conditions. Container is built based on the construction of the basic 20-foot BKP.20-W3 container according to ISO standards. The container is structurally divided into two compartments: technical - at the back of the container, and workshop. The compartments are separated by partition wall. Technical compartment is equipped with the modular basic equipment of the container, including the following: power supply, filtering and ventilation, air-conditioning, dynamic drying, and hydraulics. These systems provide a comfortable working environment for the workshop, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Power supply of the container is from the external source - power supply line 3x400V- or the on-board generator set located in the technical compartment of total power equal 12,5 kVA. Modular workshop structure allows for workshop compartment adjustment to the needs and the planned maintenance and repair tasks. Container KWS.KW-S2 is highly mobile and easy to assemble and prepare for operation, which is ensured by the autonomous set of hydraulic supports type ZPH.20-A2,w.W2, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport. Workshop container KWS.KW-S2 can be prepared for operation the chassis base adapted transport of 20-foot containers as well as directly on the ground. Workshop container KWS.KW-S2 is provided for use and cooperation (container workshop KWS.WZ-S2) with container workshop tent KWS.NW-S2 and container workshop KWS.KM-S2.



TECHNICAL AND OPERATION PARAMETERS

Type of workshop container	KWS.KW-S2
Document marking of workshop container	KWS.KW.S2-00.00.00.00.00
Empty weight of the basic version of workshop container	10 500 kg
Total weight of workshop container with equipment	up to 16 000 kg (depending on equipment)
External dimensions of workshop folded container (length x width x height)	6,058 x 2,438 x 2,438 m
External dimensions of assembled container (length x width x height)	6,215 x 4,400 x 2,700 m
Utility area of workshop container	9,9 m ²
Floor area of the technical compartment	2,5 m ²
Time of disassembly of workshop container from means of transport	up to 10 min (using supports)
Preparation time of workshop container for operation	up to 20 min (depending on conditions)
Time of assembly of workshop container to means of transport	up to 15 min (using supports)
Preparation time of workshop container for transport	up to 30 min (depending on conditions)
Lifting height of workshop container (using supports ZPH.20-A2,w.W2)	max. 1 800 mm
Recommended number of operation personnel of workshop container	driver + 3 persons
Range of use temperature of workshop container	from -30°C up to +55°C
Range of storage temperature of workshop container	from -40°C up to +65°C

SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

STORAGE CONTAINER KWS.KM-S2

Storage container type KWS.KM-S2 is designed for rapid and efficient preparation, in the field or stationary position, of maintenance and repair for armored and cargo-terrain high mobility vehicles in service in the Armed Forces.

Container KWS.KM-S2 is suitable for use in various climatic conditions (temperate - cold climate) and a variety of external lighting conditions. Container is built based on the construction of the basic 20-foot reloading container BKP.20-M3, according to ISO standards. The container is structurally divided into two compartments: technical - at the back of the container, and workshop. The compartments are separated by partition wall. Technical compartment is equipped with the modular basic equipment of the container, including the following: power supply, filtering and ventilation, air-conditioning, dynamic drying, and hydraulics. These systems provide a comfortable working environment for the personnel operating the storage - independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Power supply of the container is from the external source - power supply line 3x400V- or the on-board generator set located in the technical compartment of total power equal 12,5 kVA. Modular storage structure allows for storage compartment adjustment to the needs and the planned maintenance and repair tasks.

Container KWS.KM-S2 is highly mobile and easy to assemble and prepare for operation, which is ensured by the autonomous set of hydraulic supports type ZPH.20-A2,w.M2, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport. Storage container KWS.KM-S2 can be prepared for operation the chassis base adapted transport of 20-foot containers as well as directly on the ground.

Storage container KWS.KM-S2 is provided for use and cooperation (container workshop KWS.WZ-S2) with container workshop tent KWS.NW-S2 and workshop container KWS.KW-S2



TECHNICAL AND OPERATION PARAMETERS

Type of storage container	KWS.KM-S2
Document marking of storage container	KWS.KM.S2-00.00.00.00.00
Empty weight of the basic version of storage container	10 500 kg
Total weight of storage container with equipment	up to 16 000 kg (depending on equipment)
External dimensions of folded container (length x width x height)	6,058 x 2,438 x 2,438 m
External dimensions of assembled container (length x width x height)	6,215 x 4,400 x 2,700 m
Utility area of storage container	9,9 m ²
Floor area of the technical compartment	2,5 m ²
Time of disassembly of storage container from means of transport	up to 10 min (using supports)
Preparation time of storage container for operation	up to 20 min (depending on conditions)
Time of assembly of storage container to means of transport	up to 15 min (using supports)
Preparation time of storage container for transport	up to 30 min (depending on conditions)
Lifting height of storage container (using supports ZPH.20-A2,w.M2)	max. 1 800 mm
Recommended number of operation personnel of storage container.	driver + 2. persons
Range of use temperature of storage container	from -30°C up to +55°C
Range of storage temperature of storage container	from -40°C up to +65°C

SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

WORKSHOP CONTAINER KWU.20-W1

Weapons workshop container type KWU.20-W1 is designed for rapid and efficient preparation, in the field or stationary position, of maintenance and repair for weapons.

Container KWU.20-W1 is suitable for use in various climatic conditions (temperate - cold climate) and a variety of external lighting conditions. Container is built based on the construction of the basic 20-foot reloading container BKW.20-W1, according to ISO standards. The container is structurally divided into two compartments: technical - at the back of the container, and utility. The compartments are separated by partition wall. Technical compartment has basic container equipment, including systems: power supply, filtering and air conditioning system, dynamic drying system, and hydraulic system. These systems provide a comfortable working environment for the workshop, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination. Power supply of the container is from the external source - power supply line 3x400V- or the on-board generator set located in the technical compartment of total power equal 60,0 kW.



Modular workshop structure allows for utility compartment adjustment to the needs and the planned maintenance and repair tasks. Lighting of the work stations and the area around the container is provided by lighting masts. Workshop container KWU.20-W1 is highly mobile and easy to assemble and prepare for operation, which is ensured by the autonomous set of hydraulic supports type ZPH.20-A2,w.W1, enabling quick and simple semi-automatic unloading and loading of the container on the means of transport.

Workshop container KWU.20-W1 can be prepared for operation the chassis base adapted transport of 20-foot containers as well as directly on the ground.

TECHNICAL AND OPERATION PARAMETERS

Type of workshop container	KWU.20-W1
Document marking of workshop container	KWU.20.W1-00.00.00.00.00
Empty weight of the basic version of workshop container	10 500 kg
Total weight of workshop container with equipment	up to 16 000 kg (depending on equipment)
External dimensions of workshop folded container (length x width x height)	6,058 x 2,438 x 2,438 m
External dimensions of assembled workshop container (length x width x height)	6,058 x 4,400 x 2,700 m
Utility area of workshop container	9,3 m ²
Floor area of the technical compartment	2,5 m ²
Time of disassembly of workshop container from means of transport	up to 10 min (using supports)
Preparation time of workshop container for operation	up to 20 min (depending on conditions)
Time of assembly of workshop container to transport means	up to 15 min (using supports)
Preparation time of workshop container for transport	up to 30 min (depending on conditions)
Lifting height of workshop container (using supports ZPH.20-02,w.W1)	max. 1 800 mm
Recommended number of operation personnel of workshop container	driver + 3 persons
Range of use temperature of workshop container	from -30°C up to +55°C
Range of storage temperature of workshop container	from -40°C up to +65°C

SPECIALIZED CONTAINERS - CONTAINER MAINTENANCE AND REPAIR WORKSHOPS

CONTAINER WORKSHOP BODY KNW.15-01

Container workshop body type KNW.15-01 is versatile meant for complex operation and repair of weaponry equipment in stationary and field conditions.

The container workshop body KNW.15-01 is built based on the steel structure of the basic 15-foot container, according to ISO standards. The walls of the body are built with laminated sandwich panels with high thermal and sound insulation and required mechanical strength. On the wall of the front body there are four modules of basic equipment mounted – meant for securing the functioning of the workshop, i.e.: air conditioning module, the filtering and ventilation module, combustion heating module, and fuel tank.

Inside the utility compartment of the body there are hydraulic module and power supply module mounted. On the rear wall of the body the stairs are mounted, the screw supports and the crane with electric or manual winch (with a capacity of up to 1000 kg).

Workshop body is mobile according to the needs, the supporting structure is stable, and it is possible to reload it in all conditions - with the use of autonomous docking system ZPH.15-02, w.WR.

Workshop body provides comfortable working environment for the workshop personnel, independent of atmospheric conditions, maintaining the required temperature inside the utility compartment, and the quality of air free from dust and possible contamination.

Depending on the specialist equipment used – mounted in the utility compartment, the workshop body KNW.15-01 can be used for maintenance and repair of e.g.: tracked vehicles, armored personnel carriers, cars, helicopters, sapper equipment, firing artillery weapons, electrical, optical, and night vision equipment. Workshop body KNW.15-01 workshop is intended to be transported by container transport set KZT.15-01 - based on all-terrain vehicle STAR 266K (6x6) - including off-road trailer PTJ.04-01.

TECHNICAL AND OPERATION PARAMETERS

Type of workshop body	KNW.15-01
Document marking of workshop body	KNW.15.01-00.00.00.00.00
Empty weight of the basic version of workshop body	4 400 kg
Acceptable total weight of workshop body with equipment	up to 5 000 kg (depending on equipment)
Dimensions of container workshop body (length x width x height)	4,522 x 2,438 x 2,438 m
Utility area of workshop body	8,5 m ²
Utility area of side tent	4,0 m ²
Time of disassembly of workshop body from transport means	up to 10 min (using supports)
Preparation time of workshop body for operation	up to 30 min (depending on conditions)
Time of assembly of workshop body to transport means	up to 15 min (using supports)
Preparation time of workshop body for transport	up to 30 min (depending on conditions)
Lifting height of workshop body (using supports ZPH.15-02,w.WR)	max. 1 800 mm
Recommended number of operation personnel of workshop body	driver + 3 persons
Range of use temperature of workshop body	from -30°C up to +55°C
Range of storage temperature of workshop body	from -40°C up to +65°C



SPECIALIZED CONTAINERS - MODULAR EQUIPMENT OF THE CONTAINERS

MODULES OF CONTAINER BASIC EQUIPMENT

Modules of container basic equipment type KWU.WP-02, KWS.WP-02, KDS.WP-02, MSD.WP-02 and others, are meant to secure the functioning of the specialized containers in the field, in the expected climatic conditions. These modules are housed in separate technical compartments of the containers designed to allow the installation of 6 standard modules. Modular basic equipment of the containers (depending on destination of a specialized container and the user's requirements) may include the following:

- air-conditioning unit;
- the power supply and storage module;
- filtering and combustion heating and module;
- power generator set module;
- hydraulics and accumulators module;
- air compressor and air tank module;
- dynamic drying and heating equipment module;
- water tank and storage tank module;
- equipment storage module.

Dimensions of the standard equipment modules (length x width x height) amount to 900 x 660 x 600 mm. Total weight of the modules is from 60 up to 280 kg. Operating temperature of equipment modules is from -30°C up to + 55°C. Range of storage temperature of the modules is from -40°C up to + 65°C. Air-conditioning units provide the cooled air temperature in the utility compartment of the container from + 15°C up to + 35°C in the range of elevated ambient temperatures up to + 55°C.

Power supply modules provide electric power supply voltages to container installations of 3x400v ~ 230 VAC, 24V- and other required voltages, as well as control and protection of the basic operation of electrical equipment, specialist and additional containers and safety of the personnel operation.

In the utility compartments of the containers, filtering and combustion heating modules provide min. 10 air changes per hour - at a positive pressure of 250 Pa and the temperature of the heated air in the utility compartment from + 15°C up to + 25°C, in the range of reduced ambient temperatures up to -30°C.

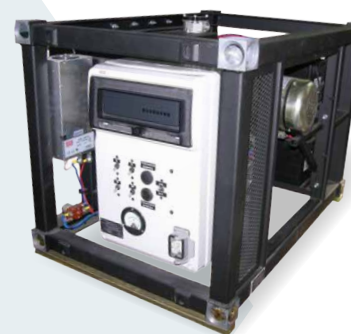
Power generator modules provide autonomous electrical power supply to the containers from 2.5 up to 15.0 kVA at voltages 3x400v ~ and 230V ~.

Dynamic drying and electric heating modules ensure dry conditions inside the utility compartments of the containers at 40-50% humidity and their electric heating of up to 6.0 kW in storage conditions.

Each module of the basic equipment creates a compact and closed structure - built inside a technical compartment of the container, prone to operation and repair.

The basic modules of the basic equipment for containers are capable of operation at a standstill, the container placement on the chassis of a transport vehicle, or setting it to the ground.

Using the module as intended and complying with the rigors of technical support is a guarantee of long-term and reliable operation.



AUTONOMOUS RELOADING SETS

SET OF HYDRAULIC SUPPORTS ZPH.15-02

Set of hydraulic supports type ZPH.15-02 is a reusable device, designed to self-reloading (self-loading or self-unloading) of special containers 15-and 20-foot of total weight up to 8,0 t.

Set of hydraulic supports ZPH.15-02 is a stand-alone system of the container, fully integrated structurally and functionally with the container. This set consists of four hydraulic servomotors - pivotally mounted on supporting pillars in the corners of the container, the hydraulic system, and the hydraulic control unit - built in the electric power module of the container. Each of the functional units forming a part of the set is a compact and closed structure - built-up inside the container, susceptible to operation and repair. While operating, the set gets electricity from the container installation. Folding and unfolding of the hydraulic servomotors is done manually by one member of container staff - with the assistance of gas springs. The set is controlled remotely, semi-automatically, at a safe distance from the container - using remote control desktop, there is

a possibility of using additional manual control - with the use of the control board in the niche of the container.

The applied solution of set of hydraulic supports allows for its use in self-reloading of the container in the area, where the difficult terrain does not allow for use of external handling equipment (cranes, forklifts, etc.) or they are currently not available. This solution also allows for enhanced containers' mobility without involving additional means of transport and manpower, as well as in case of rapid evacuation in emergency situations.

Set of hydraulic supports ZPH.15-02 is capable for operation when the vehicle is stationary with the transported container.

Using the set as intended and complying with the rigors of technical support is a guarantee of its long-term and reliable operation.



TECHNICAL AND OPERATION PARAMETERS

Type of supports' set	ZPH.15-02
Marking of type/version of supports' set	ZPH.15-02,w.WR; ZPH.15-02,w.AS
Document marking of supports' set	ZPH.15.02-0.00.00.00.00.00
Total weight of supports' set	440 kg
Acceptable total weight of lifted container	8 000 kg
Acceptable load on one support	4 000 kg
Total unloading time from the vehicle	up to 10 min
Lifting height of container	max. 1 800 mm
Leveling the container on the slope	automatic
Possibility of container leveling on the slope	up to 3° .
Accuracy of container leveling	1°
Time of full lifting or lowering of the container	about 5 min
Total time of container unloading	up to 10 min
from the vehicle	
Total time of container loading	up to 15 min
on the vehicle	
Possible to load on vehicle chassis	on the slope up to 3°
Recommended number of operation	operator + 1 person
personnel of	
Maximum uninterrupted operation time	max. 15 min
of hydraulic system and supports	
Hydraulics and control systems supply voltage	24 V (27,6 V)
Type of hydraulic oil/capacity power supply	UNIVIS HVI 26 ESCO/45 l
system	
Range of use temperature of supports' set	from -30°C up to +55°C
Range of storage temperature of supports' set	from -40°C up to +65°C

AUTONOMOUS RELOADING SETS

SET OF HYDRAULIC SUPPORTS ZPH.20-S2

Set of hydraulic supports type ZPH.20-S2 is a reusable device, designed for leveling and stabilizing of specialized 15-and 20-foot containers of total weight up to 8.0 t. Leveling and stabilization should be understood as elevation and blocking of specialized container - built and fitted to sub-container frame of vehicle chassis that provides the necessary conditions (in terms of the level and stability) for the use of its equipment.

Set of hydraulic supports ZPH.20-S2 is a stand-alone system of the container, fully integrated structurally and functionally with the container. This set consists of four hydraulic servomotors - pivotally mounted on supporting pillars in the corners of the container (arranged obliquely to the longitudinal axis of container), the hydraulic installation, the hydraulic system, and control unit - built in the electric power module of the container. Each of the functional units forming a part of the set is a compact and closed structure - built-up inside the container, susceptible to operation and repair. While operating, the set gets electricity from the container installation. Folding and unfolding of the hydraulic servomotors is done manually by one member of container staff - with the assistance of gas springs. The set is controlled remotely, semi-automatically, at a safe distance from the container - using remote control desktop, there is a possibility of using additional manual control - with the use of the control board in the niche of the container.

The applied solution allows for use of a set of hydraulic supports in leveling and stabilization of the container in the area, where the difficult terrain does not allow for use of external handling equipment (cranes, forklifts, etc.) or they are currently not available. This solution also allows for enhanced containers' mobility without involving additional means of transport and manpower, as well as rapid evacuation in emergency situations.



The self-reloading function of the container with the use of supports' set is in this case the auxiliary function - for use in stationary conditions, e.g. during operation of container special equipment.

Set of hydraulic supports ZPH.15-02 is capable for operation when the vehicle is stationary with the transported container.

Using the set as intended and complying with the rigors of technical support is a guarantee of its long-term and reliable operation.

TECHNICAL AND OPERATION PARAMETERS

Type of supports' set	ZPH.20-S2
Marking of type/version of supports' set	ZPH.20-S2,w.SR; ZPH.20-S2,w.KR
Document marking of supports' set	ZPH.20.S2-0.00.00.00.00.00
Total weight of supports' set	650 kg
Total weight of a single support	145 kg
Acceptable total weight of levelled container (with vehicle chassis)	15 000 kg
Acceptable total weight of container on reloading	12 000 kg
Acceptable load one support	6 000 kg
Total unloading time from the vehicle	up to 10 min
Lifting height of container	max. 1 800 mm
Leveling the container on the slope	automatic
Possibility of levelling of the container on the slope	up to 3°
Accuracy of container leveling	1°
Time of full lifting or lowering of the container	about 5 min
Total time of container unloading from the vehicle	up to 10 min
Total time of container loading on the vehicle	up to 15 min
Possible to load on vehicle chassis	on the slope up to 3°
Recommended number of operation personnel of	operator + 1 person
Maximum uninterrupted operation time of hydraulic system and supports	max. 15 min
Hydraulics and control systems supply voltage	24 V (27,6 V)
Type of hydraulic oil / capacity power supply system	UNIVIS HVI 26 ESCO/50 l
Range of use temperature of supports' set	from -30°C up to +55°C
Range of storage temperature of supports' set	from -40°C up to +65°C

AUTONOMOUS RELOADING SETS

SET OF HYDRAULIC SUPPORTS ZPH.20-A2

Set of hydraulic supports type ZPH.20-A2 is a reusable device, designed to self-reloading (self-loading or self-unloading) of special 20-foot containers of total weight up to 16,0 t.

Set of hydraulic supports ZPH.20-A2 is a stand-alone system of the container, fully integrated structurally and functionally with the container. This set consists of four hydraulic servomotors - pivotally mounted on supporting pillars in the corners of the container, the hydraulic installation, and the hydraulic system - built in the hydraulic module, and batteries and control unit - built in the electric power module of the container. Each of the functional units forming a part of the set is a compact and closed structure - built-up inside the container, susceptible to operation and repair. While operating, the set gets electricity from the container installation. Folding and unfolding of the hydraulic servomotors is done manually by two members of container staff - with the assistance of gas springs. The set is controlled remotely, semi-automatically, at a safe distance from the container - using remote control desktop, there is a possibility of using additional manual control - with the use of the control board in the hydraulics and battery module.

The applied solution of set of hydraulic supports allows for its use in self-reloading of the container in the area, where the difficult terrain does not allow for use of external handling equipment (cranes, forklifts, etc.) or they are currently not available. This solution also allows for enhanced containers' mobility without

involving additional means of transport and manpower, as well as in case of rapid evacuation in emergency situations.

Set of hydraulic supports ZPH.20-A2 is capable for operation when the vehicle is stationary with the transported container.

Using the set as intended and complying with the rigors of technical support is a guarantee of its long-term and reliable operation.

TECHNICAL AND OPERATION PARAMETERS

Type of supports' set	ZPH.20-A2
Marking of type/version of supports' set	ZPH.20-A2,w.W2; ZPH.20-A2,w.W3; ZPH.20-A2,w.M2; ZPH.20-A2,w.M3
Document marking of supports' set	ZPH.20.A2-00.00.00.00.00
Total weight of supports' set	950 kg
Acceptable Total weight of lifted container	16 000 kg
Acceptable load on one support	8 000 kg
Total unloading time from the vehicle	up to 10 min
Lifting height of container	max. 1 800 mm
Leveling the container on the slope	automatic
Possibility of container leveling on the slope	up to 3°
Accuracy of container leveling	1°
Time of full lifting or lowering of the container	about 5 min
Total time of container unloading	up to 10 min
from the vehicle	
Total time of container loading	up to 15 min
on the vehicle	
Possible to load on vehicle chassis	on the slope up to 3°
Recommended number of operation	operator + 1 person
personnel of	
Maximum uninterrupted operation time	max. 15 min
of hydraulic system and supports	
Hydraulics and control systems supply voltage	24 V (27,6 V)
Type of hydraulic oil / capacity power supply	UNIVIS HVI 26 ESCO/60 l
system	
Range of use temperature of supports' set	from -30°C up to +55°C
Range of storage temperature of supports' set	from -40°C up to +65°C



AUTONOMOUS RELOADING SETS

SET OF HYDRAULIC SUPPORTS ZPH.20-02

Set of hydraulic supports type ZPH.20-02 is a reusable device, designed to self-reloading (self-loading or self-unloading) of special containers 15-and 20-foot of total weight up to 12,0 t.

Set of hydraulic supports ZPH.20-02 is a stand-alone system of the container, fully integrated structurally and functionally with the container. This set consists of four hydraulic servomotors - pivotally mounted on supporting pillars in the corners of the container, the hydraulic installation, and the hydraulic system - built in the hydraulic module, and batteries and control unit - built in the electric power module of the container. Each of the functional units forming a part of the set is a compact and closed structure - built-up inside the container, susceptible to operation and repair. While operating, the set gets electricity from the container installation. Folding and unfolding of the hydraulic servomotors is done manually by one member of container staff - with the assistance of gas springs. The set is controlled remotely, semi-automatically, at a safe distance from the container - using remote control desktop, there is a possibility of using additional manual control - with the use of the control board in the hydraulics and battery module.

The applied solution of set of hydraulic supports allows for its use in self-reloading of the container in the area, where the difficult terrain does not allow for use of external handling equipment (cranes, forklifts, etc.) or they are currently not available. This solution also allows for enhanced containers' mobility without involving additional means of transport and manpower, as well as in case of rapid evacuation in emergency situations.

Set of hydraulic supports ZPH.20-02 is capable for operation when the vehicle is stationary with the transported container.

Using the set as intended and complying with the rigors of technical support is a guarantee of its long-term and reliable operation.



TECHNICAL AND OPERATION PARAMETERS

Type of supports' set	ZPH.20-02
Marking of type/version of supports' set	ZPH.20-02,w.WL; ZPH.20-02,w.ŁC; ZPH.20-02,w.KT; ZPH.20-02,w.SC
Document marking of supports' set	ZPH.20.02-0.00.00.00.00.00
Total weight of supports' set	650 kg
Acceptable Total weight of container	12 000 kg
Acceptable load one support	6 000 kg
Total unloading time from the vehicle	up to 10 min
Lifting height of container	max. 1 800 mm
Leveling the container on the slope	automatic
Possibility of levelling the container on the slope	up to 3°
Accuracy of container leveling	1°
Time of full lifting or lowering of the container	about 5 min
Total time of container unloading	up to 10 min from the vehicle
Total time of container loading	up to 15 min on the vehicle
Possible to load on vehicle chassis	on the slope up to 3°
Recommended number of operation	operator + 1 person personnel of
Maximum uninterrupted operation time	max. 15 min of hydraulic system and supports
Hydraulics and control systems supply voltage	24 V (27,6 V)
Type of hydraulic oil / capacity power supply	UNIVIS HVI 26 ESCO/50 l system
Range of use temperature of supports' set	from -30°C up to +55°C
Range of storage temperature of supports' set	from -40°C up to +65°C



TERRAIN CONTAINER TRANSPORT SET

TERRAIN CONTAINER TRANSPORT SET KZT.15-01

Rough Terrain Container Transport Set type KZT.15-01 is designed for a comprehensive systemic transport of military equipment built in containers and 15-foot container bodies, on hardened roads and in the field. Transport set KZT.15-01 is based on refurbished all-terrain vehicle STAR 266 (6x6), a modernized version to 266K STAR (6x6).

The transport set KZT.15-01 also comprises:

- sub-container frame RPK.15-01 (documentation marking RPK.15.01-00.00.00.00.00);
- container transport box KST.15-01 (documentation marking KST.15.01-00.00.00.00.00);
- off-road single axle trailer PTJ.04-01 (documentation marking PTJ.04.01-00.00.00.00.00) - manuf. by MONREX.

Alternatively - with container transport box KST.15-01, on container frame RPK.15-01 of STAR 266K vehicle the following can be built:

- container transport box KST.15-02 (documentation marking KST.15.02-00.00.00.00.00);
- container body workshop KNW.15-01 (documentation marking KNW.15.01-00.00.00.00.00);
- container command post MSD.PO-E1 (documentation marking MSD.PO.E1-00.00.00.00.00);
- container box body KNF.15-01 (documentation marking KNF.15.01-00.00.00.00.00);
- other container or specialized 15-foot container body built according to ISO standards.

TECHNICAL AND OPERATION PARAMETERS

Type of the transport set	KZT.15-01
Documentation marking of the transport set	KZT.15.01-00.00.00.00.00
Empty weight of the basic version of the set	9 400 kg (7 700 kg vehicle + 1 700 kg trailer)
Acceptable Total weight of the set	15 500 kg (11 500 kg vehicle + 4 000 kg trailer)
Acceptable weight of load	6 100 kg (3 800 kg vehicle + 2 300 kg trailer)
External dimensions of the set	11,400 x 2,500 x 3,450 m (length x width x height)
Acceptable set velocity	up to 100 km/h
Range of use temperature of the set	od -30°C do +55°C
Range of storage temperature of the set	od -40°C do +65°C



AIR FILTERING AND VENTILATION EQUIPMENT

VEHICLE AIR FILTERING AND VENTILATION EQUIPMENT UFS.B2.01-100FW/24V,w.02

Vehicle air filtering and ventilation equipment type UFS.BX-01 in its version UFS.B2.01-100FW/24V,w.02 provides protection of the indoor storage space from the effects of natural pollutants from the atmosphere, the use of weapons of mass destruction (WMD) and the contamination by selected industrial toxic substances. Air filtering and ventilation equipment provides a comprehensive solution for the protection of humans and equipment in the areas of utility facilities of an average cubature of 16 m³, stationary and meant for road transportation, including: cabins of wheeled vehicles, trailers, and van containers.

The device can be used in two basic operating regimes:

- Air filtering and ventilation - where the air supplied to usable space object is cleaned of warfare vapors and aerosols, toxic agents, toxic industrial substances, biological aerosols, and radioactive and neutral dust (contaminants present in the form of sand, dust, etc.).
- Clean ventilation - where the air supplied to usable space object is cleaned of neutral dust.



TECHNICAL AND OPERATION PARAMETERS

Type of the equipment	UFS.BX-01
Type/version marking of the equipment	UFS.B2.01-100FW/24V,w.02
Document marking of the equipment	UFS.B2.01-00.00.00.00.00-02
Weight of the equipment	65 kg
Overall dimensions of the equipment	1450 x 720 x 910 mm
(length x width x height)	
Nominal supply voltage	27,6 VDC ±0,5 V
Maximum supply voltage	from 22 to 30 VDC
Rated current	4 A
Rated power	110 W
Combined filter used	FPT-200M/P
Nominal air flow in air filtering and ventilation	100 m ³ /h ±10%
Nominal air flow in ventilation	120 m ³ /h ±10%
Adjustment of the air flow	from 20 m ³ /h to nominal flow rate
Maintenance of air overpressure in the facility	from 200 to 350 Pa
Static pressure reserve of the equipment	min. 500 Pa
Control	from remote control panel
Measuring range of overpressure in the	from 0 to 550 Pa
protected facility	
Registration of work time (in hours, every min.) ...	- complete work; - work in air filtering and ventilation regime
Noise intensity (inside the facility)	below 60 dB
Range of operation temperatures	from -30°C to +55°C
of the equipment	
Range of storage temperatures of the equipment ...	from -40°C to +65°C

AIR FILTERING AND VENTILATION EQUIPMENT

VEHICLE AIR FILTERING AND VENTILATION EQUIPMENT UFS.B2.01-75FW/24V,w.05

Vehicle air filtering and ventilation equipment type UFS.BX-01 in version UFS.B2.01-75FW/24V,w.05, provide protection of the indoor storage space of closed facilities from the effects of natural pollutants from the atmosphere, the use of weapons of mass destruction (WMD) and the contamination by selected industrial toxic substances.

Vehicle air filtering and ventilation equipment provides a comprehensive solution for the protection of humans and equipment in the areas of utility facilities of an average cubature of 12 m³, stationary and meant for road transportation, including: cabins of wheeled vehicles (e.g. cabs of specialized chassis TATRA), van and container chassis.

The device can be used in two basic operating regimes:

- Air filtering and ventilation - where the air supplied to usable space object is cleaned of warfare vapors and aerosols, toxic agents, toxic industrial substances, biological aerosols, and radioactive and neutral dust (contaminants present in the form of sand, dust, etc.).
- Clean ventilation - where the air supplied to usable space object is cleaned of neutral dust.



TECHNICAL AND OPERATION PARAMETERS

Type of the equipment	UFS.BX-01
Type/version marking of the equipment	UFS.B2.01-75FW/24V,w.05
Document marking of the equipment	UFS.B2.01-00.00.00.00.00-05
Weight of the equipment	50 kg
Overall dimensions of the equipment (length x width x height)	1450 x 720 x 910 mm
Nominal supply voltage	27,6 VDC ±0,5 V
Maximum supply voltage	from 22 to 30 VDC
Rated current	2 A
Rated power	60 W
Combined filter used	FPT-100M/P
Nominal air flow in air filtering and ventilation	75 m ³ /h ±10%
Nominal air flow in ventilation	80 m ³ /h ±10%
Adjustment of the air flow	from 20 m ³ /h to nominal flow rate
Maintenance of air overpressure in the facility	from 200 to 350 Pa
Static pressure reserve of the equipment	min. 500 Pa
Control	from remote control panel
Measuring range of overpressure in the protected facility	from 0 to 550 Pa
Registration of work time (in hours, every min.)	- complete work; - work in air filtering and ventilation regime
Noise intensity (inside the facility)	below 60 dB
Range of operation temperatures	from -30°C to +55°C
Range of storage temperatures of the equipment	from -40°C to +65°C

AIR FILTERING AND VENTILATION EQUIPMENT

PORTABLE AIR FILTERING AND VENTILATION EQUIPMENT UFP.B2.H1-200/500FW-D/230V ~

Portable air filtering and ventilation equipment type UFP.BX-H1 in version UFP.B2.H1-200/500FW-D/230V- provides protection of humans and equipment in the areas of closed facilities of an average cubature of 100 m³. The equipment provides highly effective protection of usable space of facilities against the effects of natural pollutants from the atmosphere, the use of weapons of mass destruction (WMD) and the contamination by selected industrial toxic substances.

The device can be used in two basic operating regimes:

- partial filtering - where the air provided to the premises is efficiently purified from radioactive dusts, biological aerosols, and neutral dust (impurities present in the form of sand, dust, etc.), and other impurities having a particle diameter > 3 μm - using high efficiency HEPA filter;
- full filtration - where air delivered to the premises is further purified from vapors and aerosols of warfare agents and toxic industrial substances - using the combined filter FPT-200M/P.

In each of the above regimes of operation, the device may ensure:

- creating an overpressure in the protected usable area of the facility, to prevent the entry of contaminated air from the environment (contaminated) by possible leaks;
- creating underpressure in the usable space of the facility, to prevent the exit of the contaminated air to the environment.

TECHNICAL AND OPERATION PARAMETERS

Type of the equipment	UFP.BX-H1
Type/version marking of the equipment	UFP.B2.H1-200/500FW-D/230V-
Document marking of the equipment	UFP.B2.H1-00.00.00.00.00
Total weight	to 22 kg
Overall dimensions of the equipment	1450 x 720 x 910 mm (length x width x height)
Rated current	230V- ±10%/50Hz
Power consumption	to 600 W
Preliminary filter	compact FC-8/50 - 2 szt.
Thorough filter	highly efficient HEPA FA14/80 - 2
Combined filter	FPT-200M/P - 1
Control	from control panel in the module
Use variants	- creation of overpressure in the facility - creation of underpressure in the facility
Operation regimes	- full filtration - partial filtration
Flow rate at partial filtration	500 ±10% m ³ /h
Flow rate at full filtration	200 ±10% m ³ /h
Noise intensity	below 70 dB (at a distance of 1 m from of the equipment)
Range of operation temperatures	from -30°C to +55°C of the equipment
Range of storage temperatures of the equipment ...	from -40°C to +65°C)



AIR-CONDITIONING EQUIPMENT

RAILWAY ROOF AIR-CONDITIONER UKW.KD.01-5200S/3000G/3x400V

Railway roof air-conditioner type UKW.KD.01-5200S/3000G/3x400V- is intended to achieve in the shortest possible time and automatically maintain temperature in the range from 17°C to 27°C inside the electric locomotive driver's compartment, at an ambient temperature from -30 to + 50°C (max. + 55°C), in order to ensure thermal comfort for the crew.

Air-conditioner can be used in two basic variants of operation:

- cooling - where the air supplied from the outside into the driver's compartment and internal circuit air is cooled;
- heating - where the air as above is heated.

Uniformity of temperature maintained in the driver's compartment is performed by air-conditioner by the exchange and recirculation of air in the driver's compartment. The temperature is registered on an ongoing basis by a temperature sensor connected to the electronic control unit mounted on the control panel in the driver's compartment.



TECHNICAL AND OPERATION PARAMETERS

Type/version of air-conditioner	UKW.KD.01-5200S/3000G/3x400V-
Document marking of air-conditioner	UKW.KD.01-00.00.00.00.00
Dimensions of air-conditioner	1200 x 850 x 310 mm
(length x width x height)	
Total weight of air-conditioner	100 kg
Assembly of air-conditioner	on the rail car roof
Power supply voltage	3x400 V- ±10%/ 50Hz; 24V DC
Nominal cooling capacity	5,2 kW
Nominal heating capacity	3,0 kW
Air flow	520 m ³ /h
Control	automatic - driver CPU 682-TF
Type of cooling agent	R134a
Operation noise of air-conditioner	from 50 to 70 dB (depending on air flow)
Range of operation temperatures	from -30°C to +55°C
of air-conditioner	
Range of storage temperatures of air-conditioner...	from -40°C to +65°C



AIR-CONDITIONING EQUIPMENT

RAIL CAR AIR-CONDITIONER UKW.KD.05-25000S/15000G/3x400V~

Rail car air-conditioner type UKW.KD.05-25000S/15000G/3x400V~ is intended to achieve in the shortest possible time and automatically maintain temperature in the range from 17°C to 27°C inside the rail car compartments, at an ambient temperature from -30 to + 50°C (max. + 55°C), in order to ensure thermal comfort for the passengers and the crew.

Air-conditioner can be used in two basic variants of operation:

- cooling - where the air supplied from the outside into the rail car compartments and internal circuit air is cooled;
- heating - where the air as above is heated.

Uniformity of temperature maintained in the rail car compartments is performed by air-conditioner by the exchange and recirculation of air in the rail car compartments. The temperature is registered on an ongoing basis by a temperature sensor connected to the electronic control unit mounted on the control panel of the rail car.

TECHNICAL AND OPERATION PARAMETERS

Type/version of air-conditioner	UKW.KD.05-25000S/15000G/3x400V~
Document marking of air-conditioner	UKW.KD.05-00.00.00.00.00
Dimensions of air-conditioner	3 300 x 1 190 x 490 mm (length x width x height)
Total weight of air-conditioner	410 kg
Assembly of air-conditioner	on the roof of rail car
Power supply voltage	3x400 V- ±10%/ 50Hz; 24V DC
Nominal cooling capacity	25,0 kW
Nominal heating capacity	15,0 kW
Air recirculation	over 2800 m ³ /h
Air flow fresh	1 200 m ³ /h
Air flow cool	over 4 000 m ³ /h
Control	automatic - driver CPU 682-TF
Type of cooling agent	R407C
Operation noise of air-conditioner	from 50 to 70 dB (depending on air flow)
Range of operation temperatures	of air-conditioner from -30°C to +55°C
Range of storage temperatures of air-conditioner ...	from -40°C to +65°C



AIR-CONDITIONING EQUIPMENT

RAIL CAR AIR-CONDITIONER UKW.KB.01-35000SGW/3X400V~

Rail car air-conditioner type UKW.KB.01-35000SGW/3x400V~ is intended to achieve in the shortest possible time and automatically maintain temperature in the range from 20°C to 27°C inside the rail car compartments, at an ambient temperature from -30 to + 50°C (max. + 55°C), and recirculation and exchange of the air, combined with its filtration, in order to ensure thermal comfort for the passengers and the crew.

Air conditioner is a reusable device, mounted under the rail car, connected to the ventilation system of the rail car and control unit.

Air-conditioner can be used in two basic variants of operation:

- cooling - where the air supplied from the outside into the rail car compartments and internal circuit air is cooled;
- heating - where the air as above is heated.

Uniformity of temperature maintained in the rail car compartments is performed by air-conditioner by the exchange and recirculation of air in the rail car compartments.

The temperature is regulated in each compartment individually by switching on or off of the heaters located at the windows. The outgoing temperature from the air conditioner and in each compartment individually is controlled on an ongoing basis by a temperature sensors.

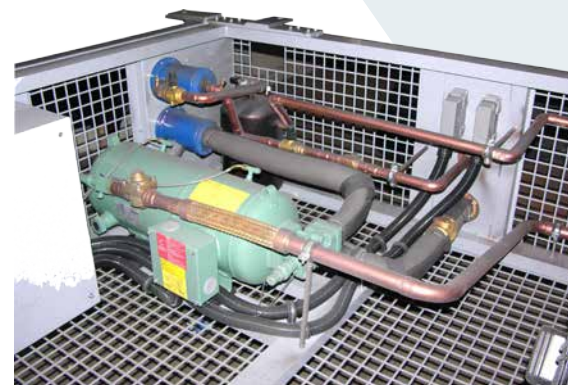
System runs in automatic cycle based on the parameters set by the user in the driver on the control panel of rail car. Air-conditioner is powered by 3x400V ~ of the electrical installation of rail car by the fuse box and relays.

Rail car air-conditioner is used in rail passenger rail cars e.g. Z2B and 144A.



TECHNICAL AND OPERATION PARAMETERS

Type/version of air-conditioner	UKW.KB.01-35000SGW/3x400V~
Document marking of air-conditioner	UKW.KB.01-00.00.00.00.00
Total weight of condenser	400 kg
Dimensions of condenser	2400 x 1690 x 605 mm (length x width x height)
Total weight of evaporator and heater	300 kg
Dimensions of evaporator and heater	2170 x 1165 x 661 mm (length x width x height)
Assembly of air-conditioner	under rail car
Power supply voltage	3x400 V~ ±10%/ 50Hz; 24V DC
Maximum power consumption (heating/cooling) ...	41,0/20,0 kW
Power of condenser	45,0 kW
Power of evaporator	35,0 kW
Power of compressor	35,0 kW
Type of compressor	screw
Nominal cooling capacity	35,0 kW
Nominal heating capacity (with heaters)	30,0 kW (39,6 kW)
Air flow chłodzącego (max.)	to 3200 m ³ /h
Control	from control panel in rail car
Type of cooling agent (quantity)	R134a (about 13 kg)
Operation noise of air-conditioner	from 50 to 70 dB (depending on air flow)
Range of operation temperatures	from -30°C to +55°C of air-conditioner
Range of storage temperatures of air-conditioner ...	from -40°C to +65°C



AIR FILTERING-VENTILATION AND AIR-CONDITIONING EQUIPMENT

AIR FILTERING-VENTILATION AND AIR-CONDITIONING EQUIPMENT UFK.B2.R4-10000SGW/24V

Air filtering-ventilation and air-conditioning equipment UFK.B2.R4-10000SGW/24V is a cooling-heating-ventilation device (SGW), designed for use in all types of command-staff vehicles, armored or unarmored, on tracked or wheeled chassis.

The primary function of the equipment is to improve the properties of air entering the utility compartment of the vehicle, which is achieved by filtering and ventilation or ventilation, and temperature changes (heating or cooling) - depending on the needs arising from the conditions of use of the vehicle.

As regards the functional part of the air filtering-ventilating-conditioning equipment, it comprises air filtering and conditioning systems, which are respectively designed to:

- air filtering and ventilation system - to protect the crew and equipment in the storage space of the vehicle against the effects of pollution and contamination of natural air;
- air conditioning system - to maintain the required temperature in the storage space of the vehicle.

Air filtering and ventilation equipment can be used in two basic operating regimes: air filtering and ventilation and pure ventilation.

The air conditioning equipment can be used in two basic operating regimes: cooling and heating.

When properly applied, the air filtering-ventilation and air-conditioning equipment provides the crew of the vehicle with the opportunity to safely and effectively perform the tasks in the contaminated areas, in extreme ambient temperatures.

The construction and operation of the equipment allows for meeting the required conditions of collective protection of the crew and equipment on-board the vehicle, with the capacity of protected storage space equal 16 m³.

The crew can control the device with control panels - located on the control board in the usable space of the vehicle.

The device is capable of operating at a standstill and while the vehicle is moving.

TECHNICAL AND OPERATION PARAMETERS

Type/version of the equipment	UFK.B2.R4-10000SGW/24V
Document marking of the equipment	UFK.B2.R4-00.00.00.00.0
Total weight of the equipment	240 kg
Rated supply voltage	27,6±1,0 V
Power consumption	from 20 to 55 A (depending on work type)
Nominal air flow in air filtering and ventilation	150 m ³ /h ±20%
Nominal air flow in ventilation	170 m ³ /h ±20%
Cooling power of the system	regulated from 1 000 to 10 000 W
Heating power of the system	regulated from 1 000 to 10 000 W
Combined filter used	FPT-200M/P
Adjustment of the air flow	from 20 m ³ /h to nominal flow rate
Maintenance of air overpressure	from 200 to 350 Pa in the compartment
Static pressure reserve of the equipment	min. 500 Pa
Control	from control panels
Measuring range of overpressure	from 0 to 550 Pa in the protected facility
Registration of work time (in hours, every min.) ...	- complete work; - work in air filtering and ventilation regime; - heating work variant
Operation noise intensity of the equipment	< 80 dB (at a distance of 7 m from the vehicle) < 70 dB (inside the vehicle)
Range of operation temperatures	from -30°C to +55°C of the equipment
Range of storage temperatures of the equipment ...	from -40°C to +65°C



POWER GENERATORS

ONBOARD POWER GENERATOR PZA.13.04-13,0kW/24V

Onboard power generator type PZA.13.R4-13,0kW/24V is designed for use in all types of command-staff vehicles, armored or unarmored, on tracked or wheeled chassis.

Power generator is a source of additional general power of 13.0 kW, activated when the main (traction) engine of the vehicle is not working. The task of the generator is to supply electrical current DC of 300 A with a nominal voltage of 27.6 V to the onboard equipment, and power the compressor drive of the air conditioning system of 4.0 kW.

The principal system of the onboard power generator is the generator of power amounting to 13.0 kW. The crew can control the generator and control its operation by desktop control panel - located in the driver's compartment of the vehicle, and directly from the control board.

Each of the components of the onboard generator forms a compact design - built-up inside the vehicle, easy to operate and repair.

The application of the generator set allows for full opportunity to use the onboard specialist equipment, and of the air filtering-ventilating-conditioning equipment of the vehicle in extreme ambient temperatures without the need to run the traction motor. Power generator is capable of operating at a standstill of the vehicle.



TECHNICAL AND OPERATION PARAMETERS

Type/version of the generator	PZA.13.R4-13,0kW/24V
Document marking of the generator	PZA.13.R4-00.00.00.00.00
Basic functional systems of the generator	- powering system of the vehicle installations by DC 24V/300A; - powering system of the vehicle air conditioning
Total weight of the generator	280 kg
Rated power total of the generator	13,0 kW
Rated power of generator drive	9,0 kW
Rated power of air-conditioner compressor drive...	4,0 kW
Rated supply voltage	27,6±1,0 V
Maximum supply voltage	from 22 to 30 V
Rated supply current	300 A
Type of combustion engine	RD 210 RUGGERINI
Rated power of combustion engine	16,0 kVA
Type of generator	E1X13SC/2 LINZ ELECTRIC
Maximum power of the generator	16,0 kW
Control	- from control panel; - from control board
Fuel tank capacity	as fuel tank of the vehicle
Possibility of generator overload	to 10 % of rated power
Operation noise intensity of the generator	< 95 dB (at a distance of 7 m from the vehicle) < 80 dB (inside the vehicle)
Amortization of monoblock of the generator	double, allowing for transport and work on the vehicle chassis
Range of operation temperatures	from -30°C to +55°C
of the generator	
Range of storage temperatures of the generator ...	from -40°C to +65°C



POWER GENERATORS

MOBILE POWER GENERATOR MZP.12.01-12,5KVA/3X400V~

Mobile power generator type MZP.12.01-12,5kVA/3x400V- is the source of three-phase alternating current of voltage 3x400v ~ / 50 Hz and power of 12.5 kVA.

Power generator is a device designed as a module adapted to work indoors, e.g. on specialized single-axle trailer or in the container. It is a compact structure, easy to upgrade, maintain and adapt according to the needs, of a favorable ratio of outer dimensions compared its power. It is powered by a durable, economical and reliable diesel engine with maintenance-free three-phase generator.

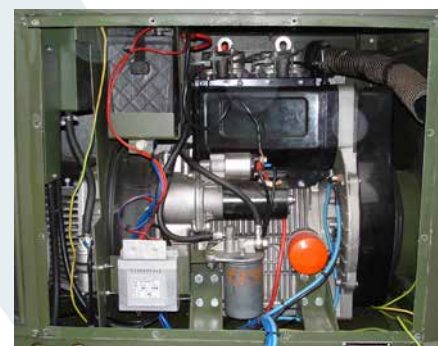
Using the power supply from the power generator is automatically executed in cases where there is a power failure of the container supported from external sources of electrical power (mains). The system is adapted to work in cold temperate climates. Powering of the generator by fuel is from the main fuel tank of the trailer or container.

The system control is automatic with manual control option and is implemented through a dedicated control system on the device.



TECHNICAL AND OPERATION PARAMETERS

Type/version of the generator	MZP.12.01-12,5kVA/3x400V-
Document marking of the generator	MZP.12.01-00.00.00.00.00
Mounting of the generator	assembly module
Overall dimensions of the generator (length x width x height)	1335 x 673 x 892 mm
Total weight of the generator (with fuel)	400 kg
Fuel tank capacity (reserve)	45 dm ³
Rated power of the generator	12,5 kVA
Rated supply current	3x400V-, 230 V-/50Hz
Combustion engine type	RD 290 RUGGERINI
Generator type	E1X13M LINZ ELECTRIC - 16,0kVA
Control	from control panel on the casing
Work time of the generator on fuel from the tank	24 h
Possibility of generator overload	to 20% over of rated power
Operation noise intensity of the generator	< 90 dB (5 m from the trailer)
Range of operation temperatures of the generator	from -30°C to +55°C
Range of storage temperatures of the generator	from -40°C to +65°C



POWER GENERATORS

MOBILE POWER GENERATOR MZP.20.L1-20,0KVA/3X400V~

Mobile power generator type MZP.20.L1-20,0kVA/3x400V~ is the source of three-phase alternating current of voltage 3x400v ~ / 50 Hz and power of 20.0 kVA.

Power generator is a device designed as a separate module adapted to work with and supply the equipment of specialized container with electricity.

It is a compact structure, built on the basis of unified spatial rectangular steel structure mounted outside the container, on its front wall. It is powered by a durable, economical and reliable diesel engine with maintenance-free three-phase generator.

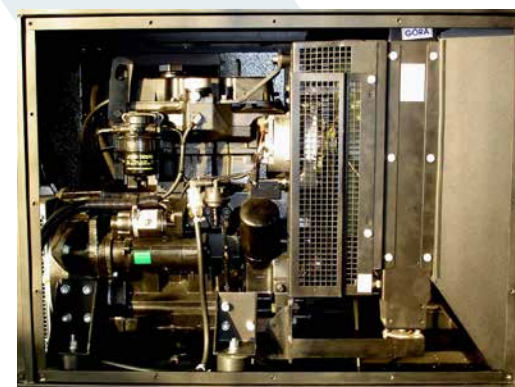
Using the power supply from the power generator is automatically executed in cases where there is a power failure of the container supported from external sources of electrical power (mains). The system is adapted to work in cold temperate climates.

Powering of the generator by fuel is from the main fuel tank of the trailer or container. The system control is automatic with manual control option and is implemented through a dedicated control system located in the technical compartment of the container.



TECHNICAL AND OPERATION PARAMETERS

Type/version of the generator	MZP.20.L1-20,0kVA/3x400V~
Document marking of the generator	MZP.20.L1-00.00.00.00.00
Mounting of the generator	mounting module
Overall dimensions of the generator (length x width x height)	2 040 x 720 x 960 mm
Total weight of the generator (without fuel)	840 kg
Fuel tank capacity	290 dm ³ (in tank capacity)
Rated power of the generator	20,0kVA/3 x 400V~
Rated supply current	3x400V~, 230 V~/50Hz
Combustion engine type	3029DF128 JOHN DEERE
Generator type	PRO18S C/4 LINZ ELECTRIC - 30,0kVA
Control	from control board in the container compartment
Work time of the generator on fuel from the tank	24 h
Possibility of generator overload	to 20% over of rated power
Operation noise of the generator	< 90 dB (outdoor at a distance of 5 m)
Range of operation temperatures of the generator	from -30°C to +55°C
Range of storage temperatures of the generator	from -40°C to +65°C





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