YOUR AIRCRAFT **OUR POWER**

GROUND SUPPORT EQUIPMENT

WCBKT

PGZ

GPU 7/90 TAURUS devices providing power to Air Force One during visit President of the United States in Poland

ABOUT US

WCBKT S.A. – Central Military Bureau of Design & Technology emerged from the Experimental Production Works of the Military University of Technology in 1968. Currently the company, as a part of Polish Armaments Group - one of the largest in Central Europe, is focused on designing and manufacturing the most technologically advanced equipment for the Polish Armed Forces. WCBKT S.A. is the only company in Poland and one of the few in the world that provides military airfields with a comprehensive range of ground support equipment (GSE).

The company also operates at the civilian markets, providing GSE, such as:

- ground power units
- diagnostic devices
- passenger steps
- maintenance stairs
- luggage trailers
- trailers for containers and palettes
- ULDs and palette racks
- air cargo terminal equipment

Quality Management System in accordance with:

- ISO 9001:2015
- AQAP 2110:2016
- Internal Control System
- Standards for production and safety of airport equipment

GROUND POWER UNIT
GPU 7/90 TAURUS

GPU 7/90 TAURUS is designed for a.c. and d.c. powering of aircraft.
It is driven by a multi-fuel engine and fit for towing.
The unit is equipped with the following systems:

- auto diagnostics
- remote online diagnostics
- keyless start
- winter quick start
- protection against towing with unwound outgoing cables
- turbocharger protection against overheating
- tire protection against punctures

The unit is adapted for air transport.

DIESEL ENGINE	
Type	DEUTZ TCD 2013 L04 2V
Engine speed	2000 rpm
Engine electrics	24V d.c.
Diesel engine operation	4-stroke in-line engine, common rail system
Emission level	EU COM IIIA
Engine protection	Low oil pressure shutdown High coolant temperature shutdown Intake air restriction indication
OUTPUT a.c.	
Nominal output voltage	3x200V/400Hz + N
Nominal output power	90kVA
Current	260A
Overload Current (4 sec)	290A
Voltage regulation	112-118V
Voltage stabilization	±1% with any power factor and speed variations between -5% and +30%
Efficiency	86% @ 25% load 89% @ 50% load 92% @ full load
Waveform Distors.(THD) at full load	1,6%
Individual harmonic max. at full load	1%
Safety features	Over/Under-voltage Over/Under-frequency Overload
OUTPUT d.c.	
Nominal output voltage	28V
Current	800A (configurable output current limit for ATR)
Voltage regulation	Adjustable from 26 to 28V for test purposes
Overload current 30 sec	1800A
Overload current 5 sec	2500A
Voltage ripple	<1%
Safety features	Over/Under voltage Output overloads Input electrical failures
DIMENSIONS AND WEIGHT	
Weight	2260 kg
Dimensions (L x W x H)	3400 x 1500 x 1720 mm
Outgoing a.c. and d.c. cables length	10 m
ENVIRONMENT	
Operating temperature	from -30 to +55 °C
Humidity	< 98 % @ 35°C
Altitude	1000 m
STANDARDS	
Safty	EN 62040-1-1
Emissions	EN 61000-6-4
Immunity	EN 61000-6-2
Aircraft ground support electric supplies	ISO 6858:2017
FEATURES	
Ease of use operating color LCD touchpanel	
Fully automated control system	
Remote diagnostic system	
Protection against pulling the plug from aircraft	
Anti-towing safety	
Performance and efficiency under extreme conditions - 40 / + 50ºC	
Extreme cold kit for start-up at low temperatures < -30°C	
Automatic idling for further fuel savings	
220 liters fuel tank allowing over 24 hours of continuous work	

GROUND POWER UNIT
GPU 2/90 TAURUS eco

GPU 2/90 TAURUS eco is designed for a.c. powering of all types of aircraft. Mounting options for free standing at the airport apron, in hangars and under passanger boarding bridges.

Equipment options

- auto diagnostics
- automatic cable retriever
- remote control system (tablet as control panel)
- remote monitoring by Ethernet, CAN or Modbus

INPUT	
Nominal input voltage	3x400V/PE-50Hz
Maximum input voltage variations	+ 15% to -15%
Power factor	> 0.99 @ 50% - 100% load
Current distortion	<7% @ 100% load
Efficiency	> 90% @ 100% load
Idle losses	< 2kW
OUTPUT	
Nominal output voltage	3x200V/400Hz + N + PE
Nominal output power	90kVA
Voltage regulation	112-118V
Maximum output/phase voltage on supply terminals	131V
Voltage stability on device terminals	<1% @ symmetrical load and 30% @ asymmetrical load
Voltage dynamics at device output	ΔU <8% in <5 ms @ 100% load changes
Output voltage phase symmetry	120°+1° @ symmetrical load 120°+2° @ asymmetrical load
Output voltage higher harmonics	= <3% (typical <2%)
600-second overload	125%
60-second overload	150%
30-second overload	200%
10-second overload	300%
1-second overload	400%
Outgoing cables length	20 m
STANDARDS	
Safty	EN 62040-1-1
Emissions	EN 61000-6-4
Immunity	EN 61000-6-2
Aircraft ground support electric supplies	ISO 6858:2017
COMMUNICATION AND CONTROL	
Communication protocols	TCP/IP, MODBUS , SAE-J1939
Communication connector	Ethernet, CAN
On/Off	Ethernet, CAN, Digital input
Voltage controlling	Ethernet, CAN, Analog
Alarm monitoring	Ethernet, CAN, Digital outputs
HOUSING	
Protection Level	IP55
Dimensions (L x W x H)	600 x 600 x 1200 mm
Cooling	Forced: 1 fan
Weight	308 kg
Cable input	From the bottom
ENVIRONMENT	
Operating temperature	from -30°C to +55°C
Storage temperature	from -10°C to +50°C
Humidity	< 98 % @ 35°C
Altitude	1000 m

DIAGNOSTIC DEVICES
LO-28/2500 and LO-115/260

The load bank provides comfort and functionality for everyday and scheduled maintenance of the power unit. Its small weight and size allow easy loading and fixing in the service vehicle's luggage compartment, significantly increasing the safety during transport.

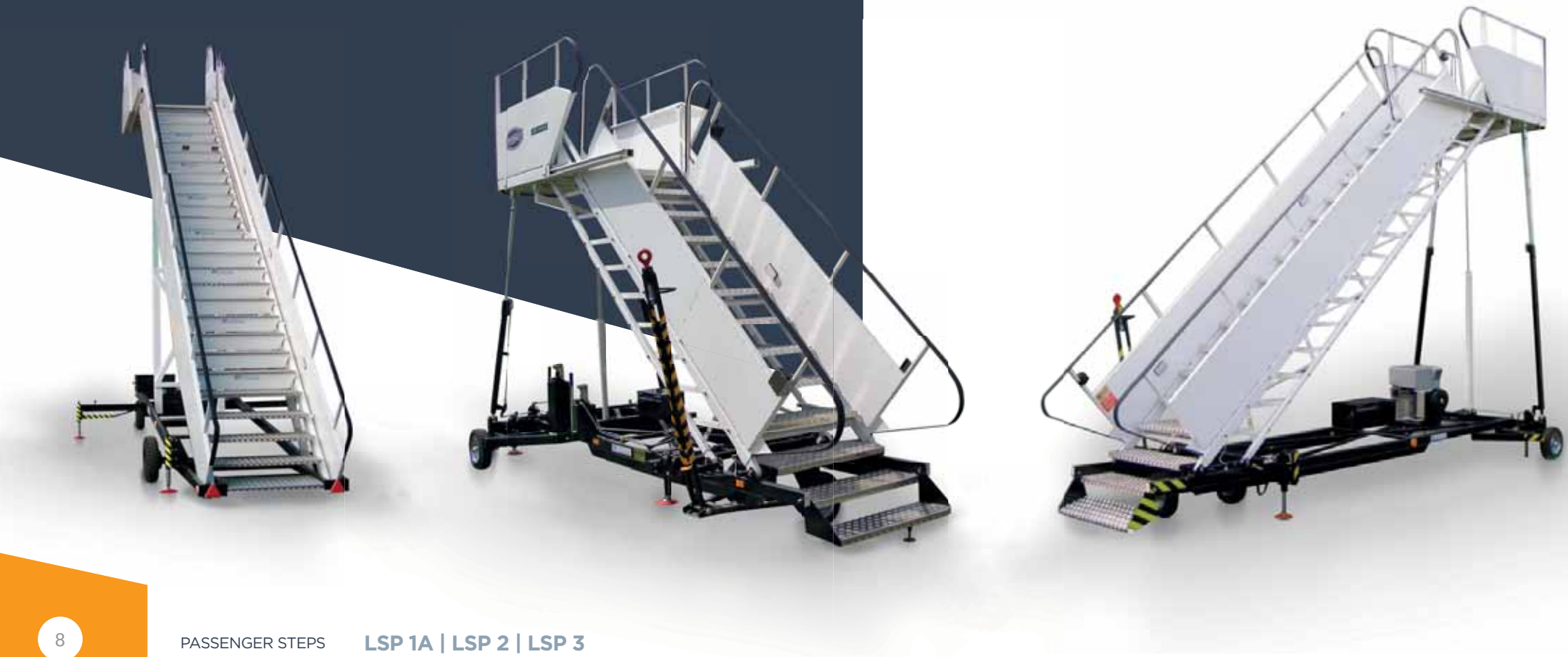
TECHNICAL SPECIFICATION	LO-28/2500	LO-115/260
Voltage	28V d.c. ± 20%	115/200V a.c. ± 10%
Frequency	–	400Hz ± 10%
Load current	2500A ± 20%	260A
Voltmeter	analogue, class 1,5	digital
Ammeter	analogue, class 1,5	digital
Power adjustment	300A - 30 min, 600A -20 min, Test - 6 exposures 2500A - 0A (35 sec +/- 10%)	15 steps of 6 kW
Load current measuring range	class 1,5	0-300A a.c., accuracy grade 1,5
Loaded voltage freqency measuring range	–	360/440Hz, accuracy grade 1,5
Voltage measuring range	class 1,5	0-250V a.c. accuracy grade1,5
GPU testing programme	–	Load power increase 0-100% [30 sec] Load power 100% [5 min] Load power decrease 100-0% [10 min]
GPU Diesel engine decarboni-sation programme	–	Load power increase 0-100% [30 sec] Load power 100% [45 min] Load power decrease 100-0% [15 min]
Standards	ISO 6858, PN-ISO 461, DSF 400, ARP 5015	ISO 6858, PN-ISO 461, DSF 400, ARP 5015
Operating temperature range	-20°C ÷ +50°C	-20°C ÷ +50°C
Ambient air relative humidity	up to 85%	up to 85%
Protection rating	IP21	IP21
Dimensions (L x W x H)	621 x 234 x 400 mm	621 x 234 x 400 mm
Weight	26 kg	37 kg

VIP version of **LSP 3** passenger steps for Boeing 737-800

PASSENGER STEPS
LSP 1A | LSP 2 | LSP 3

The stairs designed for passenger traffic are built on a high resistance steel frame of rectangular profiles /S 355/. Corrosion protected. Height of the stairs from 1,40 to 5,75 m – for the individual customer's needs.

TECHNICAL SPECIFICATION	LSP 1A	LSP 2	LSP 3
Overall length with lowered platform	10500 mm	5500 mm	6900 mm
Staircase width	1100 mm	1050 mm	1050 mm
Minimum working height	2430 mm	1700 mm	2200 mm
Maximum working height	5750 mm	2800 mm	3800 mm
Platform dimensions (L x W)	1800 x 1400 mm	1450 x 1250 mm	1450 x 1250 mm
Number of steps	25	12	17
Options	Self – propelled	–	Self – propelled



Maintenance stairs for Airbus 320

MAINTENANCE STAIRS
MAU | A320 | B737-800

The stairs are intended for maintenance and repair works at a height of over 2 m. The structure is made of high-strength metallurgical profiles. Stairs are made according to the individual customer's needs.

TECHNICAL SPECIFICATION	MAU	A320	B737-800
Adjustable height	2370 – 3700 mm	Made on the basis of Airbus guidelines in accordance with PN-EN 12312-8	Made on the basis of Boeing guidelines in accordance with PN-EN 12312-8
Platform dimensions (L x W)	970 x 1070 mm		
Weight	800 kg		
Capacity	250 kg		

LUGGAGE TRAILERS
WB1 | WB-P | WB7

Luggage trailers are designed for transporting passengers' luggage.
Other versions available according to the individual customer's needs.
The trailer can be equipped with rolled tarp or sliding canvas on the sides, protecting the loading surface against weather conditions.

TECHNICAL SPECIFICATION	WB1	WB-P	WB7
Dimensions (L x W x H)	3500 x 1500 x 1845 mm	3500 x 1500 x 2062 mm	3500 x 1100 x 1400 mm
Max. dimensions of the cargo space (L x W)	2220 x 1500 mm	2240 x 1420 mm	2200 x 1100 mm
Max. trailer load	1500 kg	1500 kg	1500 kg

TRAILERS FOR CONTAINERS AND PALLETS
PO11S | PT01 | PT02

Trailers are designed for the transport of pallets and aviation containers. Other versions available according to the individual customer's needs. Corrosion resistant due to hot-dip galvanizing. For the purposes of handling companies and the Polish Air Force can be made with a built-in electronic scale.

TECHNICAL SPECIFICATION	PO11S	PT01	PT02
Dimensions (L x W)	3600 x 1618 mm	3395 x 2570 mm	3280 x 2780 mm
Max. trailer load	1600 kg	7000 kg	7000 kg
Towing speed	20 km/h	20 km/h	20 km/h

ULDs AND PALLET RACKS
PR01 | PR07 | RACK WITH STATIONARY SCALE

Unit load device (known as ULDs) and pallet racks are specially designed cargo pallets and containers that are used to secure freight, luggage and mail in air transport. Other versions available according to the individual customer's needs.

TECHNICAL SPECIFICATION	PR01	PR07	RACK WITH STATIONARY SCALE
Dimensions (L x W x H)	3325 x 2673 x 575 mm	3364 x 2569 x 300 mm	2950 x 2450 x 510 mm
Max. rack load	7000 kg	7000 kg	8000 kg
Weight	–	900 kg	7000 kg

AIR CARGO

AIR CARGO SOLUTIONS

Production of ULDs and pallet racks systems for cargo terminals, according to the individual customer's needs

FRAME FOR CONTAINER STORAGE

- modular construction
- roofing option
- according to the individual customer's needs.

SCISSOR LIFT WITH ROLLERS

Scope of lifting from 850 to 2000 mm
Capacity from 7000 to 8000 kg
Dimensions according to the individual customer's needs. Unit meets requirements of the Office of Technical Inspection

MAU - maintenance stairs manufactured for Boeing 737-800

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