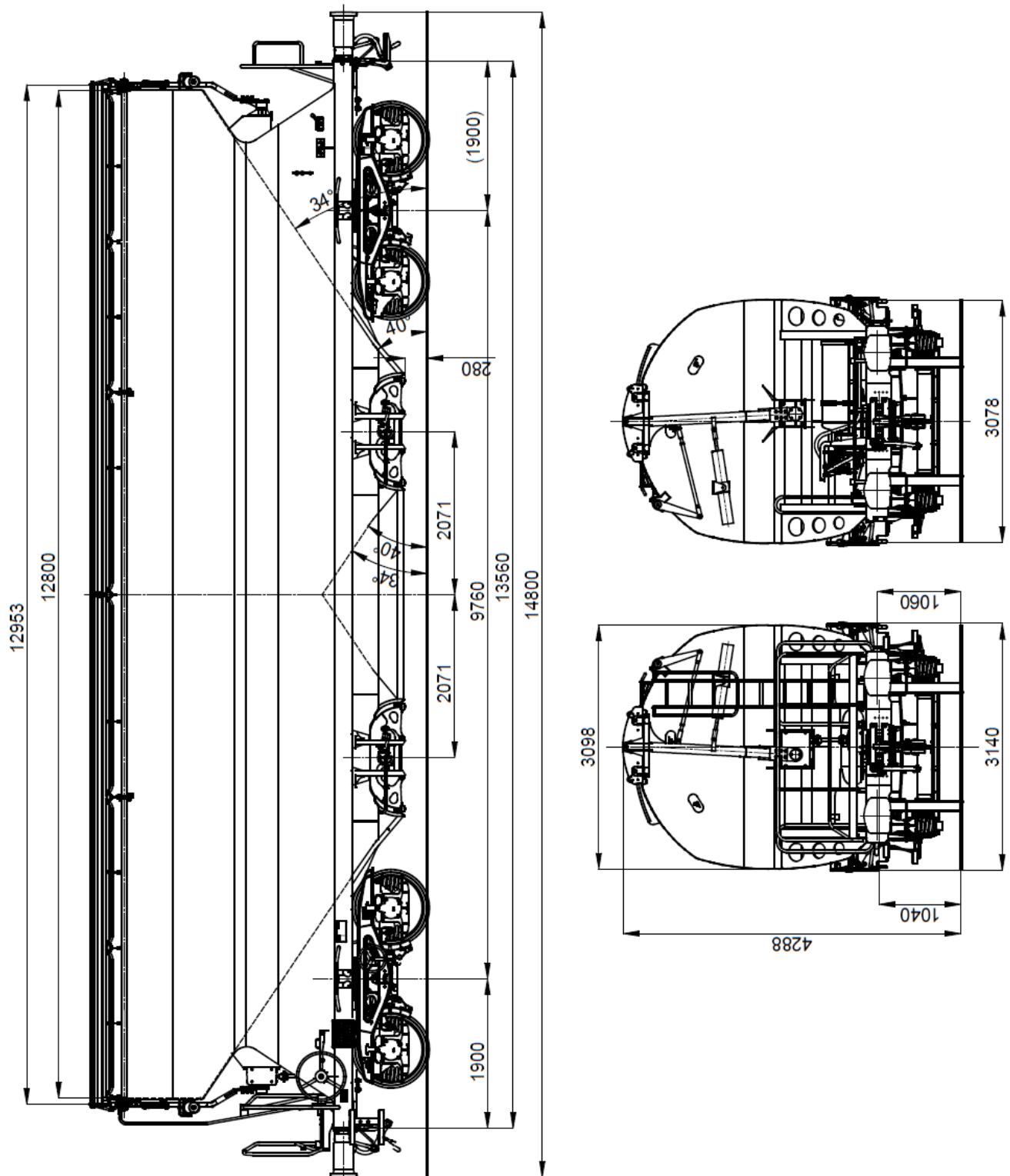
	TECHNICAL SPECIFICATION		No.: 1978.16.G.TS	
	Product: Tagnpps-95 m³	Revision: 01	Date: 11.02.2022	

Basic product characteristic:

**4-axle wagon, 2- bogies, with central unloading between tracks, axle load
22,5 t, series Tagnpps**



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NOT IN THE SCALE! The drawing is for information purposes only!

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1. General

The wagon can be used without restrictions in international traffic on all tracks regulated by member states–OTIF. The wagon complies with requirements of TSI WAG, TSI Noise, 4th railway package 2016, European standards and UIC, DIN and BN sheets. VPI-Components will be as per this requests.

The wagon is designed for cereal transportation. The filling degree is circa 95-97%, function of the density of the product and specific slope angle. The following bulk products may be transported, with characteristics:

Product type	Density [t/m ³]	Slope angle [°]	Maximum transported weight - estimated [t]
Corn	0,730	27	67.3
Wheat	0,780	30	70.05*
Barley	0,650	28	59.9
Rice corn	0,790	-	70.05*
Rape	0,650	-	59.9
Sunflower	0,400	-	36.9
Rye	0,770	26	70.05*
Oat	0,560	28-32	51.6
Soy	0,770	30	70.05*

Rmk.: Values of load weight marked with * are restricted to required values to avoid wagon overloading.

2. Conditions of operation and use

International traffic	OTIF/TEN GE
Braking mode	S - mode
Max. speed– tare wagon and loaded up to 14,5t/axle	120 km/h
Max. speed– loaded from 14.5t/axle up to 22,5t/axle	100 km/h
Max. axle load	22,5 t
Min. curve radius (as single wagon in any loading case)	75 m
Curve radius (for wagon connected in train set)	150 m
Ferry boat angle /curve diameter	2°30' / R = 120m
Hump	TSI WAG / Appendix -C UIC 522
Loading gauge	TSI WAG / Appendix -C G1
Environmental operation conditions	T1 temperature -25 / +45 °C Humidity 0 -100%

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3. Main characteristics

Loading volume	~95±1% m ³
Length over buffers	14800 mm
Underframe length	13560 mm
Width of loading opening	800 mm
Length of loading opening	12800 mm
Number of discharge openings	2 double
Dimension of discharge opening	2x320x1350 mm
Bogie centers	9760 mm
Height of buffer axis from top of rail (new tare wagon)	1060 mm
Height of connection gear from top of rail (new tare wagon)	1040 mm
Track gauge	1435 mm
Brake type – single pipe system	KE-GP-A-K
Bogie type	Y25 Lsdi(f)-KC1
Wheelbase	1800 mm
Wheel diameter	920 mm
Hand brake	20% of wagons
Buffer type	Class A
Screw coupling	1350 kN
Draw hook	1500 kN
Draw gear	1500 kN
Automatic coupling	Prepared for fit up of AC, Alt 2, as per UIC 530-1

Remark: * at the customer's request wagons without handbrake can be delivered, provided that min. 20% of the total number of wagons be with handbrake.

4. Weights

Provided tare wagon weight (with RI028)* - With upper platform and ladder - Without upper platform and ladder	~20.05 t ±2% ~19.95 t ±2%
Maximum weight of laden wagon	90.0 t
Maximum loading weight (according to equipment)	~69.95-70.05 t
Maximum axle load	22.5 t
Maximum weight on 1 m of wagon length (for axle load of 22,5 t)	~6.081 t/m

Remark: * the tare will be adjusted accordingly for wheelsets mounted on wagon.

5. Underframe

The wagon underframe is welded of steel consisting of two sills joined with saddles, crossbeams and headstocks.

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Plates, steel bars and bent or rolled profiles are used for load carrying parts are made of S355J2+N or S355J2C+N, and the other parts are made of S235 steel.

The underframe is prepared for further fit up of the automatic coupling. The space for the draw bar is built with free space as per requirements of UIC 530-1 sheet.

6. Wagon superstructure

The wagon body, with 2 hoppers, is welded. The body, roof and discharge valves are completed of S355J2+N, S355J2C+N or S235J2 steel. End walls and lower part of side walls, as well as hopper saddles are made of plate with thickness 4mm, and the upper side of side walls is made of 3mm plate. The loading opening is provided with transverse reinforcements.

Unloading between tracks shall be completed by means of two cylinder doors on each hopper operated from the ground, from both sides, individually for each hopper. Doors can be blocked in intermediary positions

The roof is operated from sides, from the ground level, on one wagon end, on both wagon sides, by operating a hand wheel. The mechanism can be blocked in closed position, from one side of wagon. Roof has guiding rail and roller at middle of the box.

7. Draw, buffing and connection gears

The wagon is fitted with the following components of the draw-buffing gear (according to TSI WAG and relevant UIC standards, if required):

- Non-continuous draw gear with draw hook 1500 kN;
- Screw coupling 1350 kN
- Buffer type A, shock absorbing capacity min. 40 kJ, stroke 105 mm, plate 340x450mm, hardened min. 450HV30, as per EN 15551.

8. Bogie

The running gear consists of two complete bogies, Y25Lsdi(f)-KC1 build type with double brake blocks K (Cosid 810 type S 517). Bogies are fitted for max. axle load of 22,5t and max. speed 120 km/h, with wheel sets RI028, axle boxes BA 182, WJ+WJP 130x240 bearings. Could be mounted other wheelsets of 22.5t/axle and 25t/axle (for ex. BA313 ESFA ligh) and axle boxes BA 386*. The bogie frame is made of S355J2+N welded steel. The bogie is fitted with CFCB brake unit. At 20% of wagons one of the bogies shall be fitted with hand brake, operated from both wagon sides.

Springs are made by 51CrV4 and will have 3.1/EN 10204 certificate.

All bogie components shall comply with VPI provisions.

9. Automatic and hand brake

The wagon is fitted with air brake KE-GP-A-K, in compliance with UIC 540 and UIC 543 requirements, build directive [V-BKS (K)] and TSI WAG, with automatic brake system as per load UIC 541-04. Air distributor is type KEf (variant KE2DV-SL-ALB11d142/1).

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One bogie is fitted with weighing valve WM 10. 1¼" brake pipes are used in the wagon, and air closing valves and brake coupling as per UIC 541-2 are fitted at the headstocks.

20% of wagons are fitted with holding brake operated from the bogie sides.

10. Wagon equipment

10.1 Wagon equipment

The outer wagon equipment includes the following components:

Components	Standard	Ea/wagon	Rmk.
Left corner step	UIC 535-2 TSI-WAG EN 16116-2	1	
Handle at the shunting step	UIC 536 TSI-WAG EN 16116-2	1	
End platform	UIC 535-2 EN 16116-2	1	Sliding class BG R12
End ladder at the end platform	EN 12561-7	1	
Upper platform with edge of 20 mm over the grid	EN 12561-7	1	Sliding class BG R12
Shunting hook	UIC 535-2 EN 16116-2	4	
Coupling handles	UIC 535-2 TSI WAG EN 16116-2	4	Under the buffers
Lamp holder	UIC 532 TSI WAG	4	
Label rack	UIC 575	2	
Telematic type X-RAYL SOLAR POINTER S3 / DOT	-	1	GATX Supply

10.2 Earth bonding

Earth bonding shall be completed as per TSI-WAG/UIC 533.

11. Painting and lettering

Painting is completed according to the customer's specification.

The complete wagon shall be blasted to SA 2 ½ degree as per EN ISO 12994-4. An environmental friendly primer coat shall be applied on all unprotected surfaces. Final layer of painting al system will be Poyiurethane, minimal thickness 130µm, or other system agreed with customer. The inside of body shall not be painted, neither with primer.

Bogie color black RAL9005, wagon limegreen Pantone 382C or ligh grey RAL 7035, at customer request. LOGO customer blue RAL 5019, 480x1328mm or other color and/or dimension, at customer request.

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Colors of individual build parts comply with UIC provisions or the customer specification.

Wagon lettering shall be in the language requested by the customer and according to the customer's model and in compliance with wagon lettering requirements and letterings as per TSI WAG. Wagon marking and lettering is completed with template or adhesive stencil.

12. Welding requirements

12.1 Main technical data of the welding process and weld quality

In order to comply with weld work quality, provisions of EN 15085 shall be met. All welding materials will be with 3.1/EN10204 certificate.

12.2 Welds inspection

Weld process control and inspection is checked by weld supervisors of the manufacturer. Quality of welds shall be certified by methods as visual inspection, die penetrant test or ultrasound test. Weld quality inspection and classification shall be according to EN 15085 and general manufacturer specification.

Inspection of manufacturing quality complies with the internal quality plan of manufacturing plants–ARI, in compliance with EN ISO 9001 and EN 10204 requirements.

13. Manufacturing, inspection, and acceptance

The wagon body is built for a load of 22,5t as per TSI WAG requirements and EN 12663.

The wagon shall be subjected to inspections agreed with the customer and NoBo. Minutes shall be enclosed to inspection results. They shall be enclosed to other documents required for wagon approval– operation approval.

Wagon registration shall comply with the customer's requirements.

14. Environmental conditions

The wagon described in this technical specification complies with the maximum allowed noise level as per requirements of TSI-Noise (for freight wagons).

The wagon does not carry hazardous products and does not release hazardous substances in the environment.

Other detailed characteristics will be provided on further request.

Greenbrier Europe reserves the right to change wagon parameters given in the design documentation while it is being developed or reviewed.

Admission for using the wagon in increased corrosion of environment should be consulted with the manufacturer of the car, in order to define methods to protect against corrosion.

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Arad
01.02.2022

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Revision	Date	Elaborated	Description of Revision
00	01.02.2022		
01	11.02.2022	Eng. Emil Siclovan	Add in TS in after discussion with customer.