



TECHNICAL REPORT

No.: LCTR 1423 001 19

Inspection concerning

Reference axle

performed according to

**ECE-Regulation No. 13
series of amendments: 11
Including supplement: 13**

Annex 11, Appendix 3

Type: MCS-3320-12T-DT

Manufacturer name and address:

**MUSTAFA CEYLAN ENDÜSTRİ ANONİM ŞİRKETİ
3. Organize Sanayi 3. Sokak No:7
SELÇUKLU/KONYA/TURKEY**

Type approval previously granted: **not applicable**

Contents:

1. General
2. Test details
Index

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1.

General

Manufacturer:

**MUSTAFA CEYLAN ENDÜSTRİ
ANONİM ŞİRKETİ**

3. Organize Sanayi 3. Sokak No: 7

SELÇUKLU/KONYA/TURKEY

Vehicle Type

MCS-3320-12T-DT

~~Or component or ESA or STU~~

Type:

2.

Test details

	Inspector	Location of test:	Date of receipt of test item:	Date of test:
Main report	Erdal Çınarcı	Selçuklu/Konya/Turkey	22-26.02.2019	22-26.02.2019

2.1.

Remarks

2.1.1.

Main report:

Not applicable.





3. Statement of compliance

The inspections items and measurements carried out have shown the compliance of the type described in this technical report and the attached Annexes with the requirements of the standard as stated on page 1.

Esch-sur-Alzette, February 27, 2019

Luxcontrol s.a.
Service Homologation-automobile

Erdal Çınarcı
Ingénieur-Inspecteur

Benedikt Leukart
Ingénieur-Inspecteur

Annexes





Details to the information package, including a summary in chronological order, concerning extensions and/or amendments

Type-approval previously granted: **not applicable**

Main Report

Technical Report No.:	LCTR 1423 001 19	3 Pages
	Index	1 Page

List of Annexes:

A: Test results	6 Pages
B: Information folder	6 Pages

Content of the information folder:


- manufacturer's information document no. MCY-JUMBO-12-R13 dated 20/02/2019 acc. to ECE R13.11 (page 1 to 6)
-





1. Test results:

Note: Test report as prescribed in section 3.9 of Appendix 2 to Annex 11.

- 1.1. Axle manufacturer name and address:
MUSTAFA CEYLAN ENDÜSTRİ ANONİM ŞİRKETİ
3. Organize Sanayi 3. Sokak No:7
SELÇUKLU/KONYA/TURKEY
- 1.1.1. Make of axle manufacturer:

- 1.2. Brake manufacturer name and address:
See item 1.1.
- 1.2.1. Brake identifier ID2-: MCS 3320
- 1.2.2. Automatic brake adjustment device:
- ~~Integrated*~~
- Non-integrated*
**Strikethrough, as appropriate.*
- 1.3. Manufacturer's information document: MCY-JUMBO-12-R13

2. Test Record

The following data is recorded for each test:

- 2.1. Test code: LCTR 1423 001 19
- 2.2. Test specimen: Axle with drum brake
Test variant: S-cam brake
- 2.2.1. Axle code: See below
- 2.2.1.1. Axle identifier: ID1- MCH-1210S-ST/DT
- 2.2.1.2. Identification of tested axle: MCH-1210S-ST/DT
- 2.2.1.3. Test axle load (Fe identifier): 12220 daN
- 2.2.2. Brake: See below





- 2.2.2.1. Brake identifier: ID2- MCS 3320
- 2.2.2.2. Identification of tested brake: MCS 3320
- 2.2.2.3. Maximum stroke capability of the brake: NA mm
Note: Applies to disc brakes only.
- 2.2.2.4. Effective length of the cam shaft: 645 mm
Note: Applies to drum brakes only.
- 2.2.2.5. Material variation: NA
Note: As per paragraph 3.8 (m) of Appendix 2 to this annex.
- 2.2.2.6. Brake:
- Drum*
- ~~Dise~~*
**Strikethrough, as appropriate.*
- 2.2.2.6.1. Actual test mass of drum/~~dise~~: 42,5 kg
**Strikethrough, as appropriate.*
- 2.2.2.6.2. Nominal external diameter of disc: NA mm
Note: Applies to disc brakes only.
- 2.2.2.6.3. Type of cooling of the disc:
- ~~Ventilated~~*
- ~~Non-ventilated~~*
**Strikethrough, as appropriate.*
- 2.2.2.6.4. Integrated hub:
- ~~With~~*
- ~~Without~~*
**Strikethrough, as appropriate.*
- 2.2.2.6.5. Disc with integrated drum:
- ~~With parking brake function~~*
- ~~Without parking brake function~~*
**Strikethrough, as appropriate.*
Note: Applies to disc brakes only.
- 2.2.2.6.6. Geometric relationship between disc friction surfaces and disc mounting:
NA
Examples: One piece, casted, connection on action side.
- 2.2.2.6.7. Base material: Grey Cast Iron



2.2.2.7.	Brake: - Lining* - Pad* <i>*Strikethrough, as appropriate.</i>	
2.2.2.7.1.	Manufacturer:	EREN BALATACILIK SANAYİ VE TİCARET AŞ.
2.2.2.7.2.	Make:	EREN
2.2.2.7.3.	Type:	M76 GG
2.2.2.7.4.	Method of attachment: - Lining* - Pad on the brake shoe* - Back plate* <i>*Strikethrough, as appropriate.</i>	Riveted
2.2.2.7.5.	Thickness of back plate: Weight of shoes: <i>*Strikethrough, as appropriate.</i>	-- mm* 5 kg*
2.2.2.7.6.	Base material: - Back plate* - Brake shoe* <i>*Strikethrough, as appropriate.</i>	Steel (St 37)
2.2.3.	Automatic brake adjustment device: <i>*Not applicable in the case of integrated automatic brake adjustment device.</i>	See below
2.2.3.1.	Manufacturer name and address:	Turbotek Otomotiv İnşaat Mak. San. Ve Tic. Ltd. Şti. 3. Organize Sanayi Bölgesi, Büyük Kayacık Mah., 15. Sokak No: 17 SELÇUKLU / KONYA / TURKEY
2.2.3.2.	Make:	GTS
2.2.3.3.	Type:	78772 (5964) S-ABA
2.2.3.4.	Version:	0



2.2.4. Wheel(s): 285/70 R19,5

Note: For dimensions, see Figures 1A and 1B in Appendix 5 to this annex.

2.2.4.1. Reference tyre rolling radius (R_e) at test axle load (F_e): 434 mm

2.2.4.2. Data of the fitted wheel during testing:

Tyre Size	Rim Size	X_e (mm)	D_e (mm)	E_e (mm)	G_e (mm)
285/70 R19,5	19,5x8,25	265	247,65	27	+5

2.2.5. Lever length l_e : 155 mm

2.2.6. Brake Actuator: See below

2.2.6.1. Manufacturer: ARFESAN A.Ş.

2.2.6.2. Make: ARFESAN

2.2.6.3. Type: 24/30"

2.2.6.4. (Test) identification number: BC 0081.0

2.3. Test results: See below

Note: Corrected to take account of rolling resistance of $0.01 \cdot F_e$.

2.3.1. In the case of vehicles of categories O₂ and O₃ where the O₃ trailer has been subject to the Type I test:

Test Type	0	I	
Annex 11, Appendix 2, paragraph:	3.5.1.2	3.5.2.2/3	3.5.2.4
Test speed (km/h)	40	40	40
Brake actuator pressure p_e (kPa)	650	100	650
Braking time (mins)	-	2,33	-
Braking force developed T_e (daN)	6843	855	6286
Brake efficiency T_e/F_e	0,56	0,07	0,51
Actuator stroke s_e (mm)	30	-	30
Brake input torque C_e (Nm)	1440	-	1440
Brake input threshold torque $C_{0,e}$ (Nm)	30	-	30



2.3.2.

In the case of vehicles of categories O₃ and O₄ where the O₃ trailer has been subject to the Type III test:

Test Type	0	III	
Annex 11, Appendix 2, paragraph:	3.5.1.2.	3.5.3.1.	3.5.3.2.
Initial test speed (km/h)	60	60	60
Final test speed (km/h)	-	44	-
Brake actuator pressure p _e (kPa)	650	410	650
Number of brake applications	-	20	-
Duration of brake cycle(mins)	-	60	-
Braking force developed T _e (daN)	6721	3666	6531
Brake efficiency T _e /F _e	0,55	0,30	0,53
Actuator stroke s _e (mm)	30	-	30
Brake input torque C _e (Nm)	1440	-	1440
Brake input threshold torque C _{0,e} (Nm)	30	-	30

2.3.3.

This item is to be completed only when the brake has been subject to the test procedure defined in paragraph 4 of Annex 19 to this regulation, to verify the cold performance characteristics of the brake by means of the brake factor (BF).

2.3.3.1.

Brake factor B_F:

11,4

2.3.3.2.

Declared threshold torque C_{0,dec}:

30

Nm

2.3.4

Performance of the automatic brake adjustment device, if applicable.

2.3.4.1.

Free running according to paragraph 3.6.3 of Annex 11, Appendix 2:

- Yes*

- ~~No~~*

*Strikethrough, as appropriate.



3. Application Range

Application range specifies the axle/brake variants that are covered in this test report, by showing which variables are covered by the individual test codes.

NA

4. Test has been carried out and the results reported, in accordance with Appendix 2 to Annex 11 and, where appropriate, paragraph 4 of Annex 19 – Part 1 to Regulation No. 13, as last amended by the 11 series of amendments.

Yes

At the end of the test defined in paragraph 3.6 of Annex 11, Appendix 2, the requirements of paragraph 5.2.2.8.1 of Regulation No. 13 are deemed to be fulfilled.

Yes

Note: Only to be completed when an automatic brake wear adjustment device is installed.

5. Remarks


The inspection results are only applicable to items which have been tested.

6. Test facilities

Calibration of measuring and test equipment used to carry out the inspections is in accordance with the standard stated on page 1 of this report and with ISO 17025.

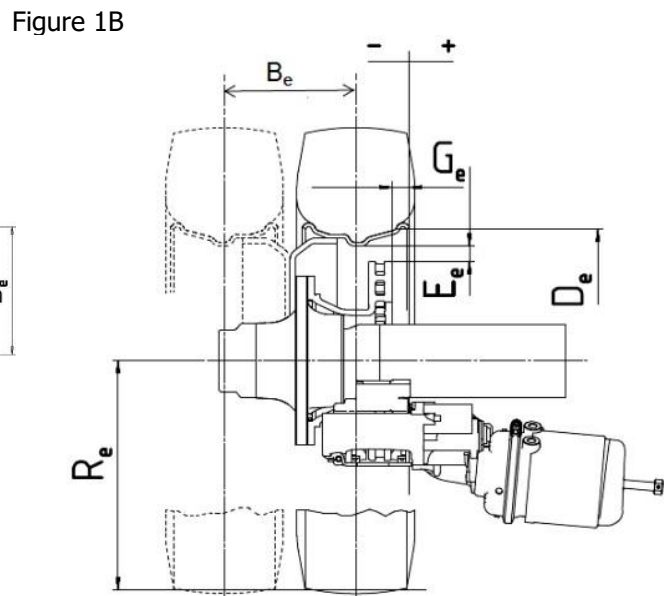
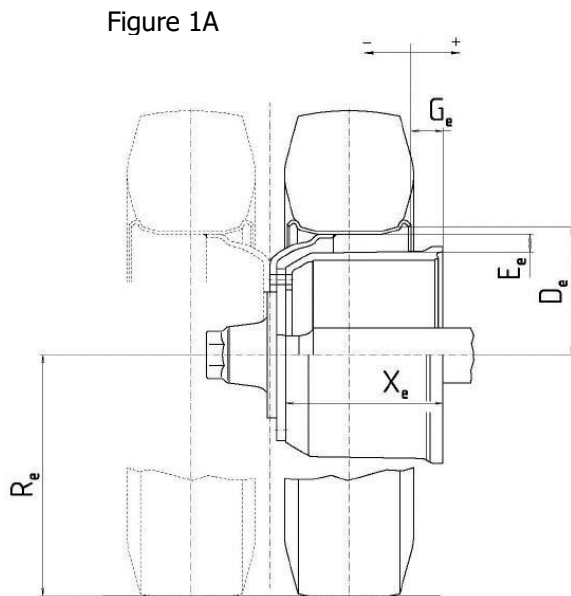





	TRAILER AXLE & BRAKE INFORMATION DOCUMENT	Date	20.02.2019	
		Document Nr.	MCY-JUMBO-12-R13	
	According to ECE R13.11, Annex 11, Appendix 5 ANNEX I		Revision Nr.	00
			Page	1 / 6

1. GENERAL

- Name and address of axle or vehicle manufacturer **MUSTAFA CEYLAN ENDÜSTRİ ANONİM ŞİRKETİ**
3. Organize Sanayi 3. Sokak No:7
SELÇUKLU/KONYA/TURKEY
- 1.1. Commercial Description 12 Ton 10 Stud Trailer Axle
1.2. Category 03&04
- 2. AXLE DATA**
- 2.1. Manufacturer (name and address) **MUSTAFA CEYLAN ENDÜSTRİ ANONİM ŞİRKETİ**
3. Organize Sanayi 3. Sokak No:7
SELÇUKLU/KONYA/TURKEY
- 2.1.1. Make of axle manufacturer
- 2.2. Type / variant **MCS-3320-12T-DT**
- 2.3. Axle identifier ID1- **MCH-1210S-ST/DT**
- 2.4. Test axle load (F_e) **12220 daN**
- 2.5. Wheel and brake data according to the following Figures 1A and 1B





	TRAILER AXLE & BRAKE INFORMATION DOCUMENT	Date	20.02.2019	
		Document Nr.	MCY-JUMBO-12-R13	
	According to ECE R13.11, Annex 11, Appendix 5 ANNEX I		Revision Nr.	00
			Page	2 / 6

Tyre	Rim	D _e (mm)	E _e (mm)	G _e (mm)	R _e (mm)	B _e (mm)
205/75 R 17,5	17,5	222	7	+53	366	240
215/75 R 17,5	17,5	222	7	+53	373	245
225/75 R 17,5	17,5	222	7	+53	380	254
235/75 R 17,5	17,5	222	7	+25	387	290
245/70 R 17,5	17,5	222	7	+25	383	285
245/75 R 17,5	17,5	222	7	+25	395	285
245/70 R 19,5	19,5	247,65	27	+5	407	302
265/70 R 19,5	19,5	247,65	27	+5	421	320
285/70 R 19,5	19,5	247,65	27	+5	434	320

3. BRAKE

3.1. General Information

- 3.1.1. Name CEYLAN
- 3.1.2. Manufacturer (Name and address) **See Item 1.**
- 3.1.3. Type of brake Drum Brake
- 3.1.3.1. Variant **S-Cam Brake**
- 3.1.4. Brake identifier ID2- MCS 3320
- 3.1.5. Brake data according to the following Figures 2A and 2B
- 3.1.6. Brake Factor (B_f) 11,4






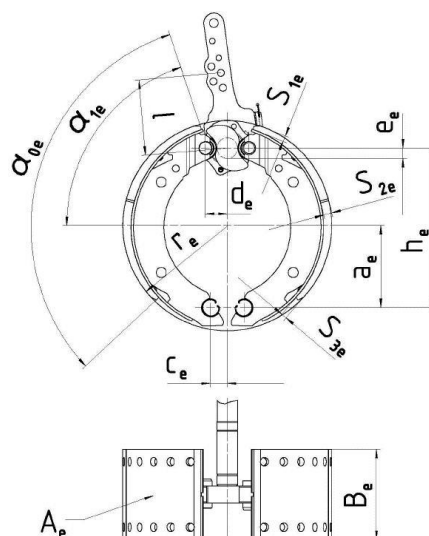
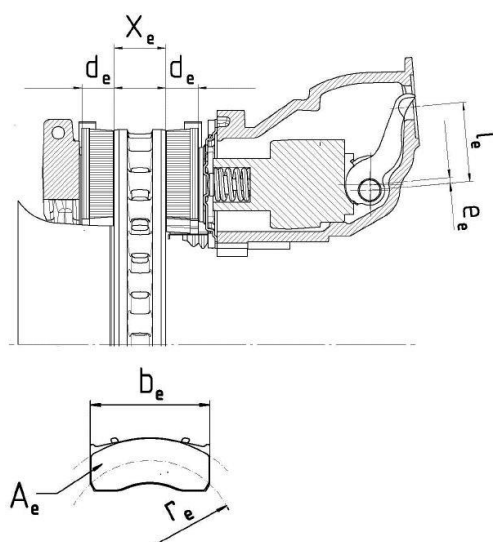
	TRAILER AXLE & BRAKE INFORMATION DOCUMENT	Date	20.02.2019	
		Document Nr.	MCY-JUMBO-12-R13	
	According to ECE R13.11, Annex 11, Appendix 5 ANNEX I		Revision Nr.	00
			Page	3 / 6

Figure 2A




a_e (mm)	h_e (mm)	c_e (mm)	d_e (mm)	e_e (mm)	a_{0e} (°)	a_{1e} (°)	B_e (mm)	r_e (mm)	A_e (cm ²)	S_{1e} (mm)	S_{2e} (mm)	S_{3e} (mm)
127	250,20	28	35	13	117	58	200	163	1178	15,2	17	8,0

Figure 2B



X_e (mm)	d_e (mm)	e_e (mm)	l_e (mm)	b_e (mm)	A_e (cm ²)	r_e (mm)
--	--	--	--	--	--	--



	TRAILER AXLE & BRAKE INFORMATION DOCUMENT	Date	20.02.2019	
		Document Nr.	MCY-JUMBO-12-R13	
	According to ECE R13.11, Annex 11, Appendix 5 ANNEX I		Revision Nr.	00
			Page	4 / 6

3.2. *Drum brake data*

3.2.1. Brake adjustment device (external/internal)

External

3.2.1.1. Manufacturer (Name and address)

Turbotek Otomotiv İnşaat Mak. San. Ve Tic. Ltd. Şti.
3. Organize Sanayi Bölgesi, Büyük Kayacak Mah.,
15. Sokak No: 17
SELÇUKLU / KONYA /TURKEY
GTS

3.2.1.2. Make

3.2.1.3. Type

78772 (5964)
S-ABA

3.2.1.4. Version

0

3.2.2. Declared maximum brake input torque (C_{max})

2800 Nm

3.2.3. Mechanical efficiency (η)

0,85

3.2.4. Declared brake input threshold torque ($C_{0,dec}$)

30 Nm

3.2.5. Efficiency length of the cam shaft

645 mm

3.3. *Brake drum*

3.3.1. Max. diameter of friction surface (wear limit)

330 mm

3.3.2. Base material

Grey Cast Iron (GG25)

3.3.3. Declared mass

42,5 kg

3.3.4. Nominal mass

42,5 kg

3.3.5. Permitted range of the brake drum mass

42-46 kg

3.4. *Brake Lining*

3.4.1. Manufacturer (Name and address)

EREN BALATACILIK SAN.VE TİC A.Ş 13 SOKAK
NO:6 KEMALPAŞA ORGANİZE SANAYİ BÖLGESİ
KEMALPAŞA/ İZMİR

3.4.2. Make

EREN

3.4.3. Type

M76 GG

3.4.4. Identification (type identification on lining)

433020

3.4.5. Minimum thickness (wear limit)


5 mm

3.4.6. Method of attaching friction material to brake shoe

Riveted






	TRAILER AXLE & BRAKE INFORMATION DOCUMENT	Date	20.02.2019	
		Document Nr.	MCY-JUMBO-12-R13	
	According to ECE R13.11, Annex 11, Appendix 5 ANNEX I		Revision Nr.	00
			Page	5 / 6

3.4.6.1.	Worst case of attachment (in the case of more than one)	N/A
3.4.6.2.	Base material of the brake shoe	Steel (St 37)
3.4.6.3.	Range of the weight of the brake shoes (without brake lining)	5 kg
3.5.	<i>Disk brake data</i>	
3.5.1.	Connection type to the axle (axial, radial, integrated etc.)	N/A
3.5.2.	Brake adjustment device (external / integrated)	N/A
3.5.3.	Max. actuation stroke	N/A
3.5.4.	Declared maximum input force (Th_{Amax})	N/A
3.5.4.1.	Declared maximum brake input torque (C_{max}) $C_{max} = Th_{Amax} * l_e$	N/A
3.5.5.	Friction radius (r_e)	N/A
3.5.6.	Lever length (l_e)	N/A
3.5.7.	Input/output ratio (i) (l_e/e_e)	N/A
3.5.8.	Mechanical efficiency (η)	N/A
3.5.9.	Declared brake input threshold force ($Th_{A0,dec}$)	N/A
3.5.9.1.	$C_{0,dec} = Th_{A0,dec} * l_e$	N/A
3.5.10.	Minimum rotor thickness (wear limit)	N/A
3.6.	<i>Brake disc data</i>	
3.6.1.	Disc type description	N/A
3.6.2.	Connection/mounting to the hub	N/A
3.6.3.	Ventilation (yes/no)	N/A
3.6.4.	Declared mass	N/A
3.6.5.	Nominal mass	N/A



	TRAILER AXLE & BRAKE INFORMATION DOCUMENT	Date	20.02.2019	
		Document Nr.	MCY-JUMBO-12-R13	
	According to ECE R13.11, Annex 11, Appendix 5 ANNEX I		Revision Nr.	00
			Page	6 / 6

3.6.6.	Declared external diameter	N/A
3.6.7.	Minimum external diameter	N/A
3.6.8.	Inner diameter of friction ring	N/A
3.6.9.	Width of ventilation channel (if appl.)	N/A
3.6.10.	Base material	N/A
3.7.	<i>Brake pad data</i>	
3.7.1.	Manufacturer and address	N/A
3.7.2.	Make	N/A
3.7.3.	Type	N/A
3.7.4.	Identification (type identification on pad back plate)	N/A
3.7.5.	Minimum thickness (wear limit)	N/A
3.7.6.	Method of attaching friction material to pad back plate	N/A
3.7.6.1.	Worst case of attachment (in case of more than one)	N/A

