Vehicle Certification Agency

THE UNITED KINGDOM VEHICLE APPROVAL AUTHORITY

COMMUNICATION CONCERNING APPROVAL EXTENDED OF A REPLACEMENT BRAKE DISC OR A REPLACEMENT BRAKE DRUM PURSUANT TO UN REGULATION NO. 90.02

E11 Approval No: 90R-02C01203/26133 Ext 01

Reason(s) for extension: To cover:

1) Addition of a new code: 09.C547.75
2) Update of vehicle list for discs: 09.7629.75 – 09.9159.76 – 09.9167.75
3) Update of supplement level
4) Removal of Assembly Plant of Argentina

1. Applicant's name and address:

BREMBO S.p.A
Via Brembo, 25
24035, Curno (BG)
Italy

2. Manufacturer's name and address:

BREMBO S.p.A Divisione Dischi Freno Via G.Maria Scotti, 66 24030 Mapello (BG) Italy	BREMBO POLAND SP. Z O.O. Ul.Rozdzienskiego, 13 Dąbrowa Górnicza, Poland, 41-308
Brembo do Brasil LTDA Av. Fausto Ribeiro Da Silva, 1265 Distrito Industrial De Bandeirinhas 5 32.654-805 Betim-MG Brazil	Brembo North America Inc. 29991 E M60, Homer, MI 49245
Brembo Mexico, SA de CV Platón 100, Parque Industrial Kalos Apodaca, Nuevo León, 66600 Mexico	Brembo (Nanjing) Brake System Co., Ltd. No.28 Xijing Road, Jiangning Economic & Technology Zone, Nanjing, P.R. China

UK Approval Authority Vehicle Certification Agency
09-Feb-22

3. Make and type of brake disc/drum:

Type of disc	Related codes
BREMBO MAX	**AP MAX**
09.7629.75	X 24739
09.8655.75	X 24220
09.9159.76	X 27601
09.9167.75	X 24853
09.C547.75	X 25631

Interchangeable Disc Front (POT TYPE, VENTED, INTERNAL)
GL H 05

4. Vehicles/axles for which the replacement brake disc or a replacement brake drum is approved:
See manufacturer's documentation

5. Submitted for approval on: As before (07 August 2019) and 15 December 2021

6. Technical service responsible for approval tests: VCA Europe S.r.l.

6.1. Date of test report: As before (25 September 2019) and 21 December 2021

6.2. Number of test report: As before (MSR355629) and XSW001271

7. Approval EXTENDED

8. Place: BRISTOL

9. Date: 09 FEBRUARY 2022

10. Signature:

C McCABE
Chief Technical and Statutory Operations Officer

11. Annexed to this communication is a list of documents in the approval file deposited at the administrative services having delivered the approval and which can be obtained upon request.

UK Approval Authority | Vehicle Certification Agency
09-Feb-22

Any remarks:

Issued to Supplement 05

Any component that corresponds to the approved type is accorded to use the approval mark as designated.

The approval mark reads as follows:

90R-02C01203/26133

Vehicle Certification Agency

THE UNITED KINGDOM VEHICLE APPROVAL AUTHORITY

APPROVAL NUMBER: 90R-02C01203/26133 Ext 01

INFORMATION PACKAGE CONTENTS

INDEX REVISION NUMBER: Not applicable

Conformity of Production (COP) Declaration	**COP Confirmed**
Assessment Method	**COP Audit**
Date of Initial Clearance	**November 2014**
Date of Last Clearance	**November 2021**

Total number of sheets: 53 (Fifty-three)

Reasons for Revision: Not applicable

Application for Approval of a replacement brake Disc According to Reg 90.02 Consolidated to Supplement 5	
Existing approval number (if applicable)	E11 90R-02C01203/26133

VCA Job Number	XSW001271

Reasons for extension (if applicable)	1. Addition of a new code: 09.C547.75 2. Update of vehicle list for discs: 09.7629.75 – 09.9159.76 – 09.9167.75 3. Update of supplement level 4. Removal of Assembly Plant of Argentina

Attachments	Document reference	No of pages
Annex 1	Component Drawings	5
Annex 2	Control plan	30
Annex 3	Production specification	1
Annex 4	List of disc and application	10
Annex 5	Marking specification	2

Notes

Annex 1 Drawings must contain the following:

- Disc/drum diameter, including friction surface diameters (in the case of a disc brake with an integrated parking brake drum, both diameters have to be checked);
- Disc thickness (original dimensions and the minimum permissible wear indication) – mounting face to external friction surface;
- Mounting flange thickness;
- Pitch circle diameter of fixing holes / studs;
- Number of fixing holes / studs;
- Mounting flange diameter;
- Type of centering (e.g. central spigot or mounting bolts /studs);
- In the case of brake discs with integrated parking brake drums the width of the friction surface area and any heat compensation groove(s);
- Additionally, in the case of ventilated brake discs:
- The type of ventilation (internal/external);
- The number of ribs and pillars ;
- The dimensions of the ventilation duct.

Annex 3 production specification must contain:

- Chemical composition and its permitted range, or where appropriate, maximum value, for each element;
- Microstructure as per paragraph 2.2.;
- Mechanical properties as per paragraph 2.3. and their permitted range, or where appropriate, minimum value.

Applicant Name and address	BREMBO S.p.A. Via Brembo, 25 - 24035 Curno (BG) Italy
Manufacturer's name and address	BREMBO S.p.A. Divisione Dischi Freno Via G.Maria Scotti, 66 – 24030 Mapello (BG) – Italy BREMBO POLAND SP. Z O.O. Ul.Rozdzienskiego, 13 DĄBROWA GÓRNICZA, POLAND, 41-308 Brembo do Brasil LTDA Av. Fausto Ribeiro Da Silva, 1265 - Distrito Industrial De Bandeirinhas, 5 32.654-805 Betim-MG Brazil Brembo North America Inc. 29991 E M60, Homer, MI 49245 Brembo Mexico, SA de CV Platón 100, Parque Industrial Kalos, Apodaca, Nuevo León, 66600, Mexico Brembo (Nanjing) Brake System Co., Ltd. No.28 Xijing Road, Jiangning Economic & Technology Zone, Nanjing, P.R. China

Make of disc/~~drum~~	Type of disc/~~drum~~	Vehicle application
INTERCHANGEABLE_CAR_426_GROOVED_GROUP_2- internal vent vanes mat 2 no drum grooved		
See Annex 4	See Annex 4	See Annex 4

Geometric Specifications (Attach drawings of all discs/drums as annex 1)

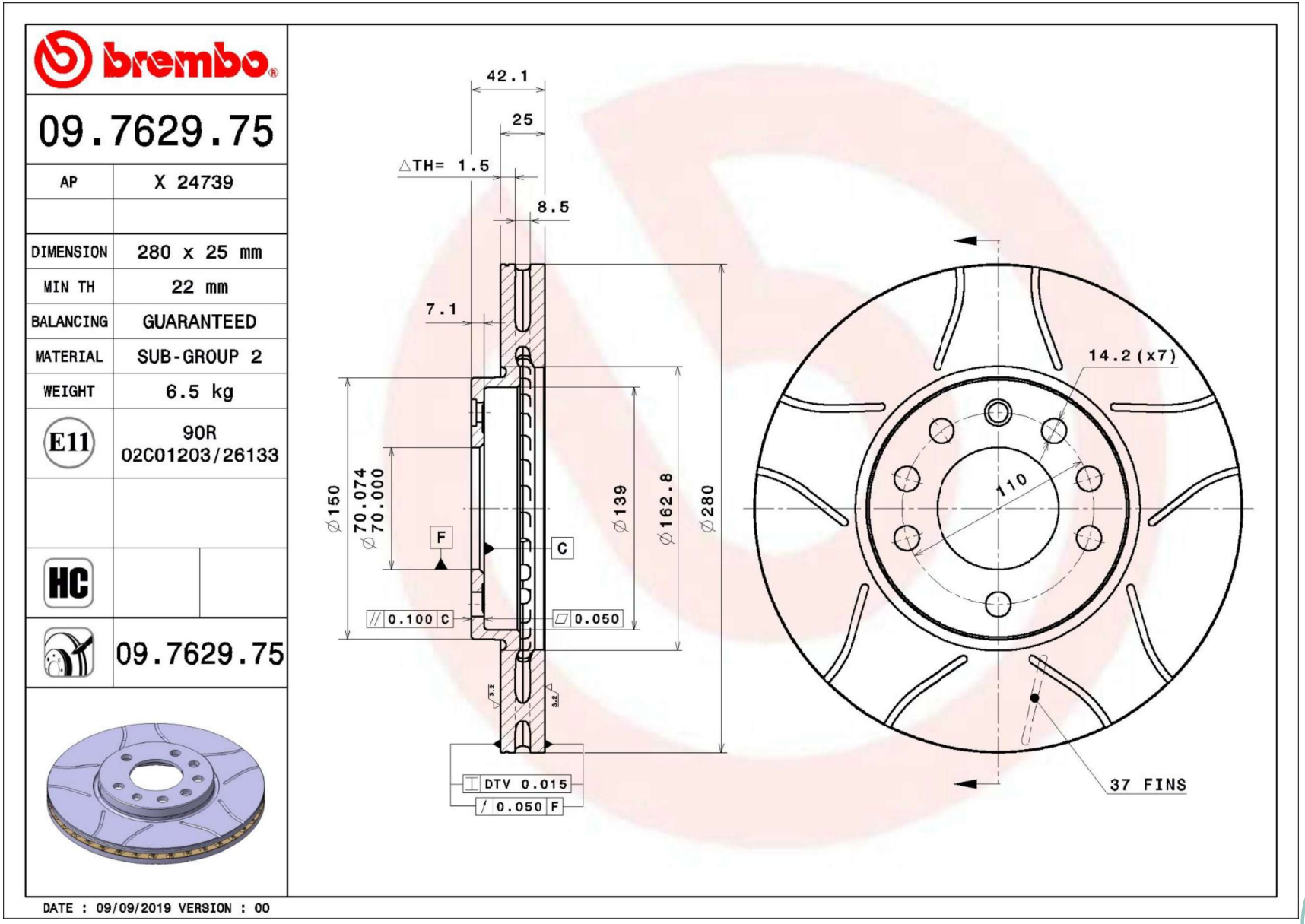
	OE Disc/~~Drum~~	Replacement Disc/~~Drum~~
Location and dimensions of statutory information • The approval number; • Part number • An indication which provides traceability of the production process (e.g. date, batch number, source code); • The minimum thickness of the brake disc or the maximum permissible inside diameter of the brake drum.	• See drawings • See drawings • See annex 5 • See drawings	• See drawings • See drawings • See annex 5 • See drawings
Material	GL H 05 (Sub Group 2)	GL H 05 (Sub Group 2)
Weight in grams	Range from 5300 gr to 6600 gr	Range from 5300 gr to 6600 gr
Disc/~~Drum~~ Diameter	Range from 276 mm to 280 mm	Range from 276 mm to 280 mm
Disc Thickness	Range from 22 mm to 25 mm	Range from 22 mm to 25 mm
Mounting Flange Thickness	See drawings	See drawings
Pitch Circle Diameter of fixing holes/studs	See drawings	See drawings
Number of fixing holes/studs	See drawings	See drawings
Mounting Flange Diameter	See drawings	See drawings
Type of centering (e.g. central spigot or mounting bolts /studs)	See drawings	See drawings
In the case of brake discs with integrated parking brake drums the width of the friction surface area and any heat compensation groove(s)	See drawings	See drawings

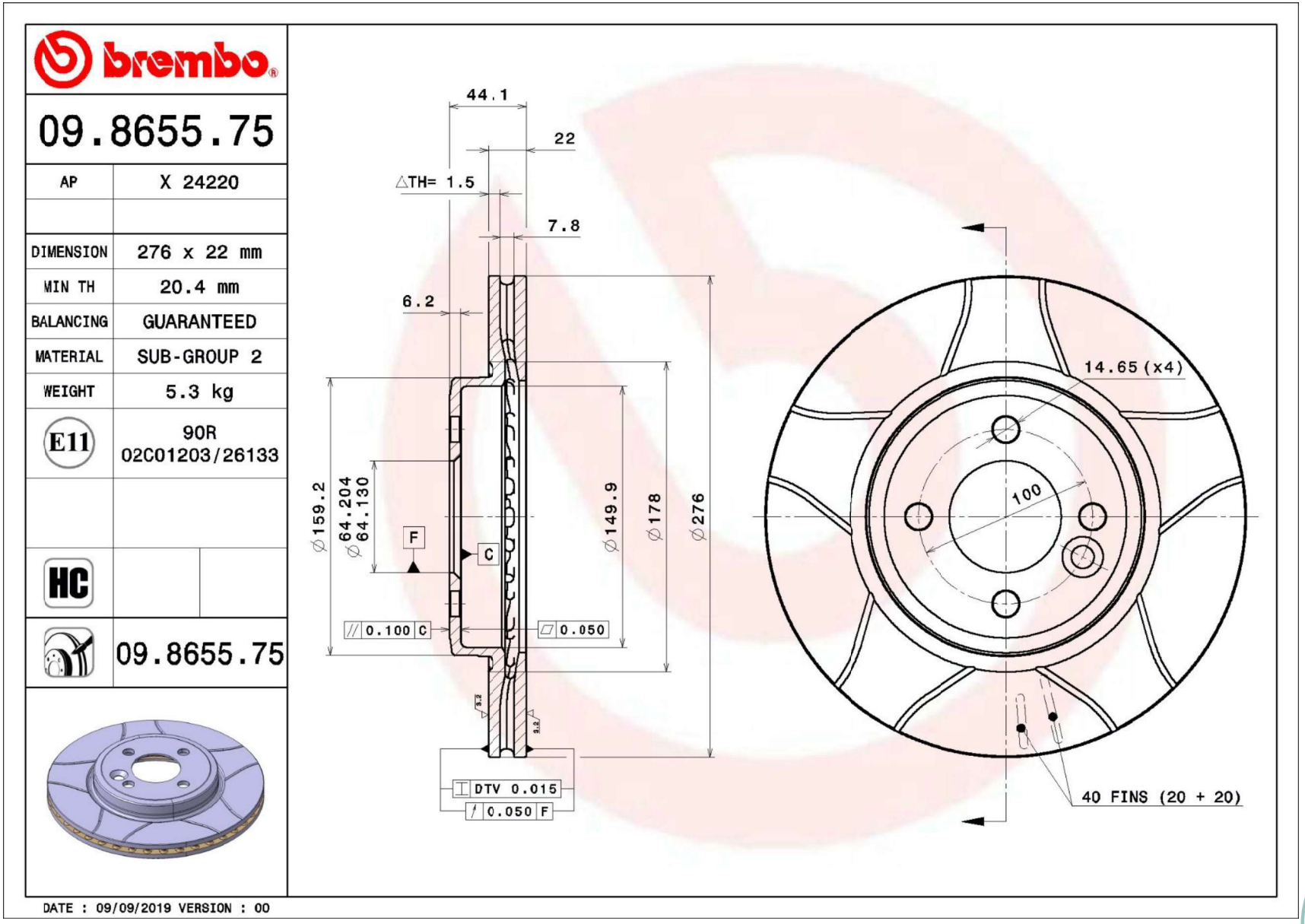
In the case of ventilated brake discs: (i) The type of ventilation (internal/external); (ii) The number of ribs and pillars ; (iii) The dimensions of the ventilation duct.	See drawings	See drawings

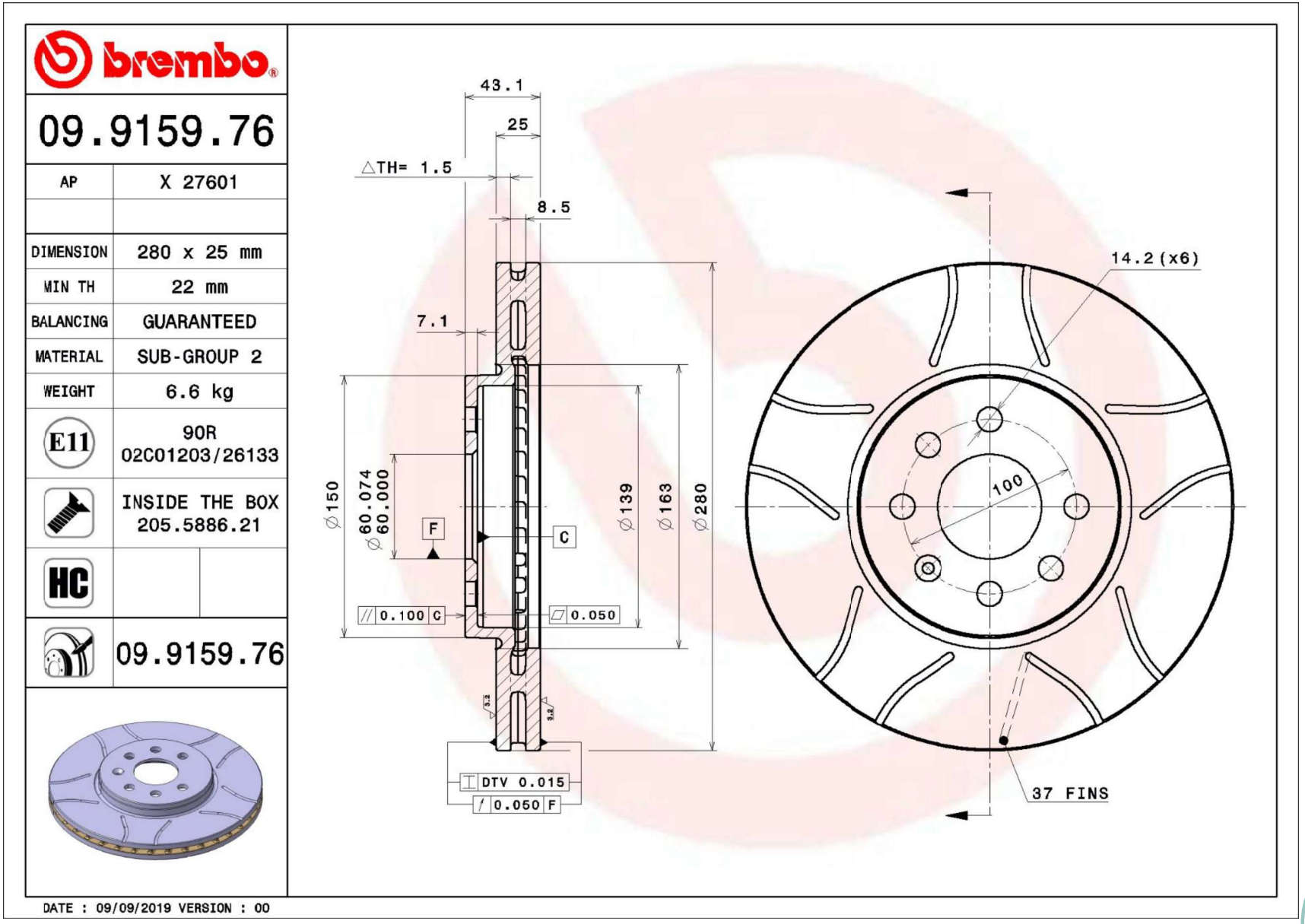
Component Description

Manufacturer of the un-machined part	BREMBO S.p.A. Divisione Dischi Freno Via G.Maria Scotti, 66 – 24030 Mapello (BG) – Italy BREMBO POLAND SP. Z O.O. Ul.Rozdzienskiego, 13 DĄBROWA GÓRNICZA, POLAND, 41-308 Brembo North America Inc. 29991 E M60, Homer, MI 49245 Brembo Mexico, SA de CV Platón 100, Parque Industrial Kalos, Apodaca, Nuevo León, 66600, Mexico Brembo (Nanjing) Brake System Co., Ltd. No.28 Xijing Road, Jiangning Economic & Technology Zone, Nanjing, P.R. China
A description of the process of manufacture of the un-machined part;	Casting Production
Proof of the reliability of the process (e.g. freedom from cracks and cavities, dimensions) attach as annex 2	COP VCA Control Plan

Material Composition	Chemical composition	See Annex 3
	Microstructure	See Annex 3
	Mechanical properties (brinel Hardness to ISO 6506-1:2005	See Annex 3
	Tensile strength to ISO 6892:1998	See Annex 3
Corrosion or surface protection	Oil or Painting	
Description of balancing methods (including maximum error)	See Drawings; The balance value is 20 Nmm and Brembo check disks with a machine and if the value is bigger to 20 the machine works discs	
Amount of wear allowed (minimum thickness in the case of brake discs or the maximum internal diameter in the case of brake drums).	See drawings	



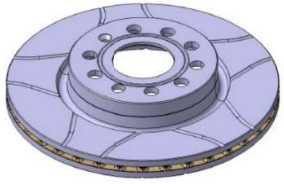


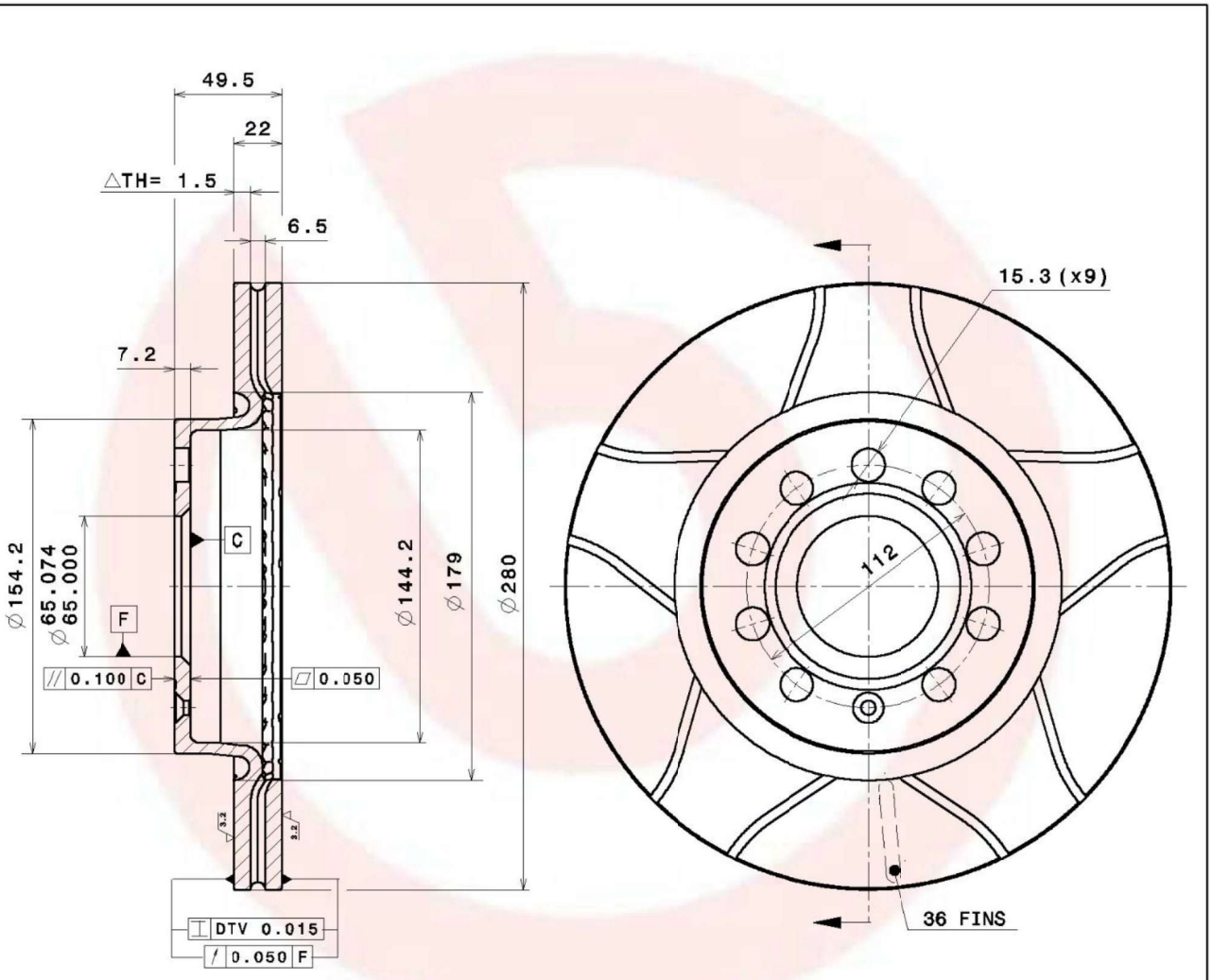


brembo

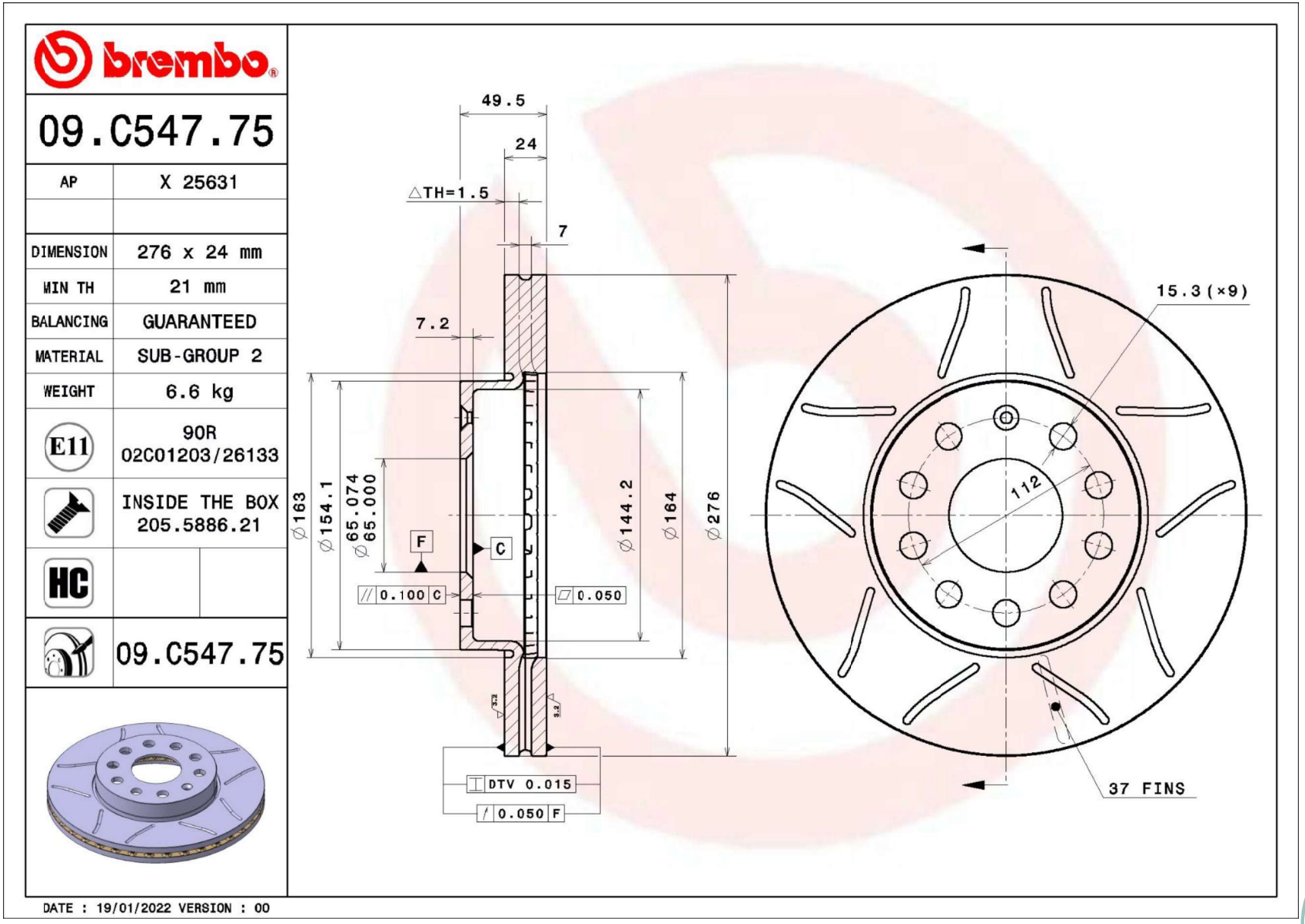
09.9167.75

AP	X 24853
DIMENSION	280 x 22 mm
MIN TH	19 mm
BALANCING	GUARANTEED
MATERIAL	SUB-GROUP 2
WEIGHT	5.9 kg
E11	90R 02C01203/26133
	INSIDE THE BOX 205.5886.21
HC	
	09.9167.75





DATE : 09/09/2019 VERSION : 00



GL H 05 (Sub Group 2)		
Chemical composition	% Carbon contenent	3.60 ÷ 3.90
	% Silicon contenent	1.60 ÷ 2.20
	% Manganese contenent	0.40 MIN
	% Chromium contenent	0.35 MAX
	% Copper contenent	0.30 ÷ 0.70
Microstructure	Matrix	Pearlitic; fine lamellar
Mechanical proprieties	Hardeness ISO 6506-1:2005 HBW	160 – 210
	Tensile strength to ISO 6892:1998 N/mm²	160 MIN

BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	CHEVROLET	ZAFIRA (F75)	02/99	12/06	FRONT	220	2115
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA G Convertible (F67)	03/01	10/05	FRONT	216	1865
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA G Coupe (F07_)	03/00	05/05	FRONT	218	1745
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA G Estate (F35_)	02/98	12/09	FRONT	208	1875
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA G Hatchback (F48_, F08_)	02/98	12/09	FRONT	214	1805
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA G Saloon (F69_)	09/98	12/09	FRONT	214	1805
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA H (L48)	03/04	-	FRONT	210	1885
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA H Box (L70)	02/04	-	FRONT	195	1965

BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA H Estate (L35)	08/04	-	FRONT	207	1965
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA H GTC (L08)	03/05	-	FRONT	210	1875
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA H Saloon (L69)	02/07	-	FRONT	208	1830
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ASTRA H TwinTop (L67)	09/05	-	FRONT	209	1895
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	COMBO Box Body / Estate	10/01	-	FRONT	170	2055
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	COMBO Tour	10/01	-	FRONT	170	1900
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	CORSA C (F08, F68)	09/00	12/09	FRONT	188	1630
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	CORSA C Box (F08, W5L)	09/00	-	FRONT	188	1630

BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	MERIVA	05/03	05/10	FRONT	195	1940
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	MERIVA B	06/10	-	FRONT	196	2070
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ZAFIRA A (F75_)	04/99	06/05	FRONT	200	2115
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ZAFIRA B (A05)	07/05	-	FRONT	197	2130
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	OPEL	ZAFIRA B Van	07/05	-	FRONT	197	2130
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRA Mk IV (G) Convertible	03/01	10/05	FRONT	216	1805
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRA Mk IV (G) Coupe (F67)	03/00	08/05	FRONT	218	1760
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRA Mk IV (G) Estate	02/98	05/05	FRONT	208	1875

BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRA Mk IV (G) Hatchback	02/98	05/05	FRONT	214	1805
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRA Mk IV (G) Saloon	02/98	05/05	FRONT	208	1865
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRA Mk V (H) Estate	08/04	10/10	FRONT	208	1975
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRA Mk V (H) Hatchback	01/04	09/09	FRONT	210	1875
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRA Mk V (H) Sport Hatch	02/05	11/10	FRONT	200	1885
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRA TwinTop Mk V (H)	09/05	11/10	FRONT	209	1895
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ASTRAVAN Mk V (H)	03/05	-	FRONT	195	1965
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	COMBO Mk II (C) Box Body / Estate (F25)	09/01	02/12	FRONT	170	2055

BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	COMBO TOUR Mk II (C) (F25)	09/01	02/12	FRONT	170	1900
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	CORSA Mk II (C) (W5L, F08)	08/00	10/06	FRONT	188	1630
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	MERIVA Mk I (A)	01/03	06/10	FRONT	195	1940
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	MERIVA Mk II (B)	06/10	-	FRONT	196	2070
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ZAFIRA Mk I (A) (F75)	11/98	08/05	FRONT	200	2115
09.7629.75	X 24739	569060 569066 90539466 9117678 93197592	6,5	VAUXHALL	ZAFIRA Mk II (B) (M75)	04/05	11/14	FRONT	200	2305
09.7629.75	**X 24739**	**569060 569066 90539466 9117678 93197592**	**6,5**	**OPEL**	**ASTRA Estate**	**09/94**	**12/11**	**Front**	**190**	**1590**
09.7629.75	**X 24739**	**569060 569066 90539466 9117678 93197592**	**6,5**	**OPEL**	**ASTRA CLASSIC Estate (A04)**	**12/06**	**-**	**Front**	**190**	**1590**
09.7629.75	**X 24739**	**569060 569066 90539466 9117678 93197592**	**6,5**	**OPEL**	**ASTRA CLASSIC Hatchback (A04)**	**01/09**	**-**	**Front**	**190**	**1590**
09.8655.75	X 24220	34111502891	5,3	MINI	MINI (R50, R53)	06/01	09/06	FRONT	215	1660
09.8655.75	X 24220	34111502891	5,3	MINI	MINI Convertible (R52)	07/04	11/07	FRONT	215	1660

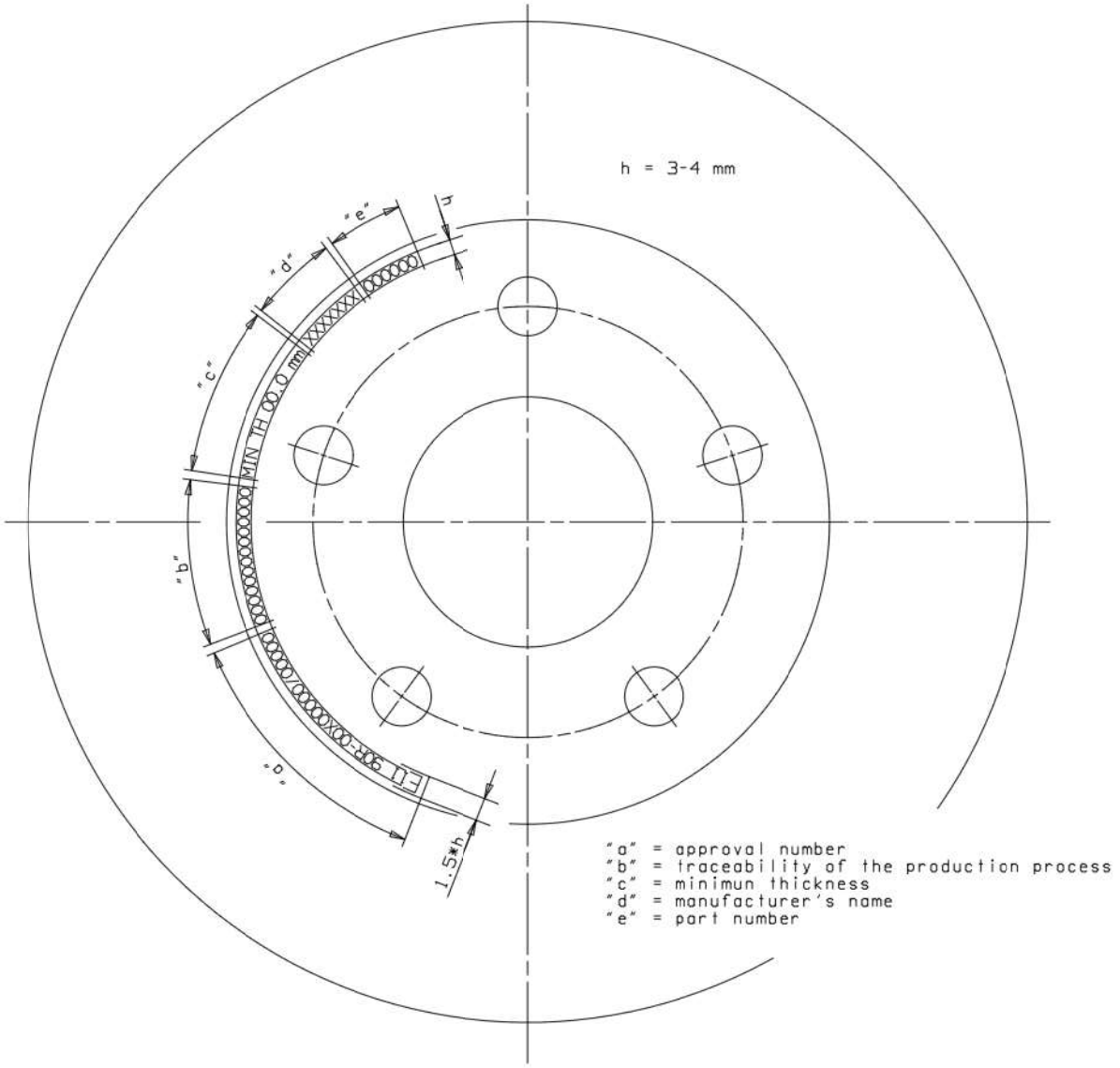
BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	OPEL	ASTRA H (L48)	03/04	-	FRONT	210	1885
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	OPEL	ASTRA H Estate (L35)	08/04	-	FRONT	207	1975
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	OPEL	ASTRA H GTC (L08)	03/05	-	FRONT	200	1885
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	OPEL	ASTRA H Saloon (L69)	02/07	-	FRONT	208	1830
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	OPEL	ASTRA H TwinTop (L67)	09/05	-	FRONT	209	1895
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	VAUXHALL	ASTRA Mk V (H) Estate	08/04	10/10	FRONT	208	1975
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	VAUXHALL	ASTRA Mk V (H) Hatchback	01/04	09/09	FRONT	210	1875
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	VAUXHALL	ASTRA Mk V (H) Sport Hatch	02/05	11/10	FRONT	200	1885
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	VAUXHALL	ASTRA TwinTop Mk V (H)	09/05	11/10	FRONT	209	1895
09.9159.76	X 27601	569007 569067 93181113 93197712	6,6	VAUXHALL	ASTRAVAN Mk V (H)	03/05	-	FRONT	172	1920
09.9159.76	**X 27601**	**569007 569067 93181113 93197712**	**6,6**	**OPEL**	**ASTRA CLASSIC Estate (A04)**	**12/06**	**-**	**Front**	**190**	**1.590**

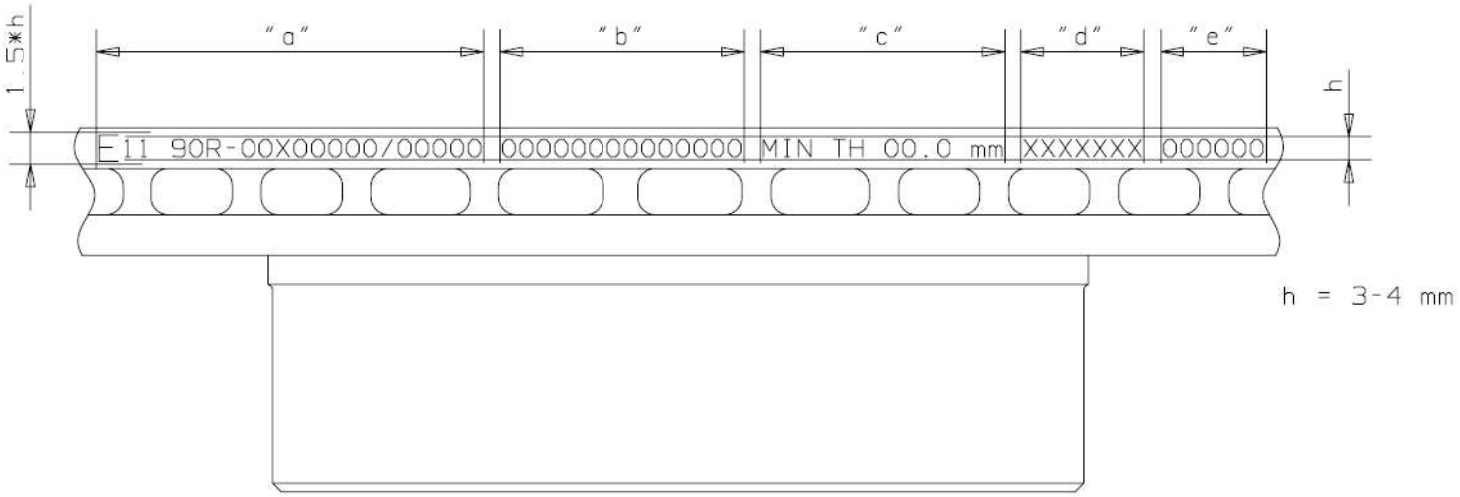
BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.9159.76	**X 27601**	**569007 569067 93181113 93197712**	**6,6**	**OPEL**	**ASTRA CLASSIC Hatchback (A04)**	**01/09**	**-**	**Front**	**190**	**1.590**
09.9159.76	**X 27601**	**569007 569067 93181113 93197712**	**6,6**	**OPEL**	**ASTRA CLASSIC Saloon (A04)**	**02/07**	**-**	**Front**	**185**	**1.680**
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	AUDI	A3 (8P1)	05/03	08/12	FRONT	203	1920
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	AUDI	A3 Convertible (8P7)	04/08	05/13	FRONT	190	1930
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	AUDI	A3 Sportback (8PA)	09/04	03/13	FRONT	203	1920
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	SEAT	ALTEA (5P1)	03/04	-	FRONT	185	2128
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	SEAT	ALTEA XL (5P5, 5P8)	10/06	-	FRONT	185	2128
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	SEAT	LEON (1P1)	05/05	12/12	FRONT	190	1890

BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	SEAT	TOLEDO III (5P2)	04/04	05/09	FRONT	183	2059
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	SKODA	OCTAVIA (1Z3)	02/04	06/13	FRONT	205	2020
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	SKODA	OCTAVIA Combi (1Z5)	02/04	06/13	FRONT	218	2130
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	SKODA	YETI (5L)	05/09	-	FRONT	185	2125
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	BEETLE (5C1)	04/11	-	FRONT	233	1900
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	BEETLE Convertible (5C7)	12/11	-	FRONT	230	1920
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	CADDY III Box (2KA, 2KH, 2CA, 2CH)	03/04	-	FRONT	196	2415

BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	CADDY III Estate (2KB, 2KJ, 2CB, 2CJ)	03/04	-	FRONT	196	2415
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	GOLF PLUS (5M1, 521)	01/05	12/13	FRONT	190	2030
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	GOLF V (1K1)	10/03	02/09	FRONT	210	2000
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	GOLF V Variant (1K5)	06/07	07/09	FRONT	189	2100
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	GOLF VI (5K1)	10/08	11/13	FRONT	210	2020
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	GOLF VI Variant (AJ5)	07/09	07/13	FRONT	201	2100
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	JETTA III (1K2)	08/05	10/10	FRONT	222	2020

BREMBO MAX	AP MAX	OE REFERENCE	WEIGHT DISC [kg]	APPLICATION	MODEL	YEAR FROM	YEAR TO	FRONT - REAR	VEHICLE MAX SPEED [km/h]	PAY LOAD [kg]
09.9167.75	X 24853	1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ **L1KD615301C**	5,9	VW	JETTA IV (162, 163)	04/10	-	FRONT	220	1960
09.9167.75	**X 24853**	**1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ L1KD615301C**	**5,9**	**SKODA (SVW)**	**OCTAVIA**	**06/07**	**-**	**Front**	**150**	**2730**
09.9167.75	**X 24853**	**1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ L1KD615301C**	**5,9**	**SKODA (SVW)**	**YETI**	**11/13**	**-**	**Front**	**170**	**1620**
09.9167.75	**X 24853**	**1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ L1KD615301C**	**5,9**	**VW (FAW)**	**CADDY Box**	**04/04**	**12/07**	**Front**	**180**	**2400**
09.9167.75	**X 24853**	**1K0615301AC 1K0615301AK 1K0615301S 5C0615301 1K0615301AQ L1KD615301C**	**5,9**	**VW (FAW)**	**GOLF VI**	**10/09**	**12/14**	**Front**	**200**	**1900**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**AUDI**	**A3 Convertible (8V7, 8VE)**	**10/13**	**-**	**FRONT**	**203**	**1875**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**AUDI**	**A3 Limousine (8VS, 8VM)**	**05/13**	**-**	**FRONT**	**202**	**1940**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**AUDI**	**A3 Sportback (8VA, 8VF)**	**09/12**	**-**	**FRONT**	**193**	**1940**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**SEAT**	**LEON (5F1)**	**09/12**	**-**	**FRONT**	**215**	**1870**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**SEAT**	**LEON SC (5F5)**	**01/13**	**-**	**FRONT**	**215**	**1820**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**SEAT**	**LEON ST (5F8)**	**08/13**	**-**	**FRONT**	**200**	**2030**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**SKODA**	**OCTAVIA III (5E3)**	**11/12**	**-**	**FRONT**	**200**	**1976**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**SKODA**	**OCTAVIA III Combi (5E5)**	**11/12**	**-**	**FRONT**	**200**	**2075**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**VW**	**GOLF ALLTRACK (BA5)**	**12/14**	**-**	**FRONT**	**192**	**2040**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**VW**	**GOLF SPORTSVAN (AM1)**	**02/14**	**-**	**FRONT**	**212**	**1940**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**VW**	**GOLF VII (5G1, BQ1, BE1, BE2)**	**08/12**	**-**	**FRONT**	**210**	**2000**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**VW**	**GOLF VII Estate (BA5, BV5)**	**04/13**	**-**	**FRONT**	**200**	**2040**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**SKODA (SVW)**	**OCTAVIA**	**01/14**	**-**	**Front**	**170**	**2.730**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**VW (FAW)**	**GOLF SPORTSVAN**	**05/16**	**-**	**Front**	**192**	**1420**
09.C547.75	**X 25631**	**5Q0 615 301 A**	**6,6**	**VW (FAW)**	**GOLF VII**	**12/13**	**-**	**Front**	**210**	**2.000**





"a" = approval number
"b" = traceability of the production process
"c" = minimun thickness
"d" = manufacturer's name
"e" = part number

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

Report Number: XSW001271 Issue: 0

Inspection/Test Report: Replacement Brake Discs and Drums for Power-Driven Vehicles Category M1 and N1 Only

Legislation

UNECE Regulation 90.02 Supplement 5

Inspection/Test Details

Location of Inspection/Test:	Via Torino 43 - 10067 Vigone (TO) - (Italy)
Date of Inspection/Test:	From 15/12/2021 to 21/12/2021
VCA Representative(s):	MARCO RAMAGLIA
Inspectors office location:	~~VCA HQ/VCA MC~~/VCA Europe/~~VCA USA/VCA SA/VCA East Asia/VCA Australia/VCA India/VCA China~~
Manufacturer's Representative(s):	GABRIELE COLOMBI
Reason for Test Report:	Extension of approval Addition of a new code: 09.C547.75 Update of vehicle list for discs: 09.7629.75 – 09.9159.76 – 09.9167.75 Update of supplement level Removal of Assembly Plant of Argentina

Manufacturer Details

Manufacturer's Representative	GABRIELE COLOMBI
Manufacturer's Name and Address:	BREMBO S.p.A Via Brembo, 25 24035, Curno (BG) Italy
Trade Name	BREMBO
Lining Material reference	BREMBO BRMXL01
Category:	Interchangeable
Type:	Disc

Conclusion

The above mentioned component was tested in accordance with the above mentioned legislation and was found to comply in all respects for M1and N1. This report relates only to the items tested.

Witness Engineer Signature:	
Name:	MARCO RAMAGLIA
Position:	Type Approval Engineer
Date:	21/12/2021

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

Report Number: XSW001271 Issue: 0

List of Annexes

Annex	No of Pages	Subject
I		

Issue Record

Issue 0 is original report

Worst Case Rationale

See worst case rationale from the spread sheet. Vehicle test is not applicable, unused sections removed for clarity. Reason for extension: addition of a new code: 09.C547.75; update of vehicle list for discs: 09.7629.75 – 09.9159.76 – 09.9167.75; update of supplement level and removal of Assembly Plant of Argentina

Note: Include information on variants and versions this report covers, as applicable. Supporting documents may be annexed to this report.

Significant Interpretations, Alternative Test Methods, New Technologies.

N/A

Inspection/Tests Required

	Yes, NA, See Report … / Approval … / Annex …
Geometric check	YES
Metallurgy check	YES – SEE INFORMATION DOCUMENT
Annex 11	
Type O, I, Dynamic Friction	YES
Parking brake	N/A
Thermal fatigue test	YES
High load test	YES

Component Specification

Component Identification Number	09.C547.75

Manufacturer's Documentation

Manufacturer's documentation is complete and reflects the agreed specification for the component tested and covers all variants and versions agreed in the worst case rationale. Information document uploaded to job folder and identified by job number.	YES

Facility and Equipment Checks

Calibration certificates checked and valid, recorded in the following table:	YES

UK Approval Authority | Vehicle Certification Agency
09-Feb-22

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

Vehicle Testing

Equipment	Serial / Certificate No.	Calibration due*
N/A	N/A	N/A
N/A	N/A	N/A

**Specify calibrated date + (interval) or calibration due date.*

Dynamometer Testing

Equipment	Serial / Certificate No.	Calibration due*
Digital manometer	ST02 - Digital manometer AEP	12/07/2022
Thermocouple simulator	ST01 - Simulator MicroCal	12/07/2022
Digital tachometer	ST05 - HT-5100 L9290040	12/07/2022
Certified weights	ST11 - Calibrated weights	12/07/2022

**Specify calibrated date + (interval) or calibration due date.*

Inspection/Test Requirements	Complies Yes / NA

Disc / Drum Information

1.6. Markings — YES

	Identification	Location of marking	Method of marking
Manufacturer name or trade name:	BREMBO	EXT. CIRC. SURFACE	PUNCHED
Approval number	-	EXT. CIRC. SURFACE	PUNCHED
Part No.	-	EXT. CIRC. SURFACE	PUNCHED
Indication for traceability	-	EXT. CIRC. SURFACE	PUNCHED
Minimum thickness (disc)	21	EXT. CIRC. SURFACE	PUNCHED
Maximum inside diameter (drum)	N/A	-	-

Material

1.7.1. Material Group — INTERCHANGEABLE_CAR_426_GROOVED_GROUP_2

1.7.2. Material Subgroup — Sub Group 2

Application Range

1.8 Part

Original Part		
Material:	Ref:	Part number:
GL H 05	FRONT	5Q0 615 301 A

Replacement Part		
Material:	Ref:	Part number:
GL H 05	FRONT	09.C547.75

UK Approval Authority — Vehicle Certification Agency
09-Feb-22

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

Motor Vehicle

Make	VW (FAW)
Type of vehicle	M1
Trade Name	GOLF VII
Max GVM	2000
Max speed	210
Year of manufacture	12/13

Brakes

Position	Front
Caliper	ATE
Dimension	57
Type of construction	Floating

Test Group

2.0	Disc Shape (Flat/Top Hat etc.)	Pot Type		
	Venting (Sold/Vented)	Vented		
	Type of venting	Internal		
2.1	Dimensions per test group:			
2.1.1	Outside (disc) / inside (drum) diameters: (mm)	276	to	280
2.1.2	Thickness (disc) / shoe width (drum) diameters: (mm)	22	to	25
	Disc / Drum Mass (kg)	5,3	to	6,6
2.2	Highest ratio of kinetic energy per test group:	117.807,41	to	259.680,40
2.3	Disc/drum material per test group:	GL H 05	to	GL H 05

Disc / Drum Tested

Part Number	09.C547.75
Outside (disc) / inside (drum) diameters: (mm)	276
Thickness (disc) / shoe width (drum) diameters: (mm)	24
Disc / Drum Mass (kg)	6,6
Highest ratio of kinetic energy per test group:	198.495,37

UK Approval Authority | Vehicle Certification Agency
09-Feb-22

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

Worst Case Rational Tested

Disc / Drum Mass (kg)	6,6
Vehicle Test Mass (kg)	2000
Vehicle Speed (km/h)	210
Highest ratio of kinetic energy per test group:	198.495,37

Additional information

1.9	see worst case rationale from the spread sheet

Technical data regarding the tests per test group

Vehicle Test: N/A

Dynamometer Test

Test Data

3.2.1.1	**Vehicle category Annex 11:**	M1
3.2.1.2	Dynamic rolling radius	0.3184
	Dynamic rolling radius RIner for calculating the inertia: (with respect to paragraph 3.2.1 of Annex 11)	0.3184
	Dynamic rolling radius Rveh: (with respect to paragraph 3.2.2 of Annex 11)	0.3172

Masses and Inertia

3.2.1.3	Maximum permissible mass of the vehicle:	2000
	X-Value (front axle):	0.77
	Y-Value (rear axle)	0.32
	Test mass m:	770
	Test inertia Annex 11	78.06
	Dynamic Stops and Friction Properties	78.06
	High Load/Thermal Fatigue Disc Inertia	78.06
	High Load/Thermal Fatigue Drum Inertia	N/A

Cooling

3.2.1.4.1.	Speed of cooling air during Type I	69.3 Km/h
3.2.1.4.1.2	Speed of cooling air in other cases:	69.3 Km/h
3.2.1.5	Maximum speed vmax	210

UK Approval Authority | Vehicle Certification Agency
09-Feb-22

Brakes

3.2.1.7.1	Test sample brake disc / brake drum 1:	Brake disc
	Identification code of the original replacement part:	5Q0 615 301 A
	Test group	INTERCHANGEABLE_CAR_426_GROOVED_GROUP_2
	Part number:	09.C547.75
	Mass of the replacement part: (kg)	6,6
	Outside disc diameter / Inside drum diameter: (mm)	276
	Radius re, effective:	109
	Friction surface width (mm)	56
	Disc thickness (nominal) / Outside drum width: (mm)	24

Brake caliper / brake drum mechanism

3.2.1.7.2	Manufacturer:	ATE
	Type:	Floating
	Variant	Oe component
	Part number:	5Q0615123
	Method of construction:	Floating
	Piston / wheel cylinder diameter (mm)	57
	Maximum technically permissible torque Cmax,e at the brake lever (pneumatic) / line pressure (pmax,e) (hydraulic):	200 bar
	Threshold torque C0,e (pneumatic) / line pressure (hydraulic) :	0.5 bar
	Ratio le / ee (pneumatic) / piston diameter (hydraulic) :	57 mm
	Maximum brake torque:	2381 Nm
	Identification-No.	24.3571-9735.5

Brake pad / brake lining

3.2.1.7.3	Manufacturer:	BREMBO
	Make:	BREMBO
	Type:	BRMXL01
	Approval number	5Q0698151C
	Identification (e.g. part number):	P85137X
	Width be:	146 mm
	Thickness de:	17 mm
	Surface, effective:	67.76 cm2
	Method of attachment:	Backplate

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

Record of Test results

			Complies Yes / NA
4.1	Geometric check:		YES
	Drawing No. and issue level:	09.C547.75	YES
4.2	Material Check:		YES
4.3	Material Check Reference:	SEE INFO.DOC. ANNEX 3	YES
4.4	Balancing provisions check:		YES

UK Approval Authority | Vehicle Certification Agency
09-Feb-22

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

Report Number: XSW001271 Issue: 0

Catergory	M1	**80 % Vmax**	168	km/h
Test Type	Inertia dynamometer test	**Brake pressure**	Bar	

4.5.1.1. Service brake performance in the case of categories M1, M2, N1 hydraulic braking systems

4.5.1.1.2. Inertia dynamometer test results: Yes

Test Type:		Type O Discon	Type O Connnected	Type O Connnected		IFade
Load Condition:		Laden	UnLaden	Laden		
No. of Sample		1		1		1
Initial Test speed Stop 1)	km/h	99,9		159,9		100,0
Stop 2)	km/h	99,9		159,9		
Stop 3)	km/h	99,9		159,9		
Average	km/h	99,9		159,9		
	Limit	100		160		100
Deceleration: Stop 1)	m/s2	6,92		6,45		6,19
Stop 2)	m/s2	6,55		6,27		
Stop 3)	m/s2	6,56		6,18		
Average	m/s2	6,68		6,30		5,01
	Limit	6,43		5,76		4,8
Brake chamber pressure (pe) Stop 1)	Bar	67,4		70,2		67,4
Stop 2)	Bar	67,4		70,1		
Stop 3)	Bar	67,4		70,1		
Average	Bar	67,4		70,1		
	Limit	300		300		67,4
Duration of one brake cycle Stop 1)	s	3,73		6,60		4,28
Stop 2)	s	3,80		6,82		
Stop 3)	s	3,79		6,90		
Average	s	3,77		6,77		
Number of applications						
Brake force	daN	N/A		N/A		N/A
Braking ratio		N/A		N/A		N/A
Brake chamber stroke se	mm	N/A		N/A		N/A
Threshold torque at the brake lever						
Co		N/A		N/A		N/A
Coe		N/A		N/A		N/A
Free Running		Yes		Yes		Yes
Pass / Fail		**PASS**		**PASS**		**PASS**

UK Approval Authority | Vehicle Certification Agency
09-Feb-22

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

4.5.1.1.1.
4.5.1.2.1.
4.5.1.3.1.

Parking Brake

N/A

Parking brake foot or hand?

	enter Y
Foot	
Hand	

Park Brake Requirements

Brake Brake Gradient Requirements

Only required of linings that are part of the park			M1, N1
No. of Sample			
		%	20
	Gradient	%	
ENTER "Max" for force if air system on lever	**Force**		
	Limit	daN	40
	Pass		NO
Down	**Gradient**	%	
	Force		
	Limit	daN	40
	Pass		NO

Dynamic stop		M1, N1
Test speed		30
Initial	**km/h**	
Final	**km/h**	0
Initial Temperature:	**deg C**	
MFDD	**m/s^2**	
Limit		1.5
Pedal/Hand Effort	**m/s^2**	
Limit	**daN**	40

Brake pressure	**kPa**	0
Number of applications	**-**	
Duration of one brake cycle	**s**	

UK Approval Authority | Vehicle Certification Agency
09-Feb-22

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

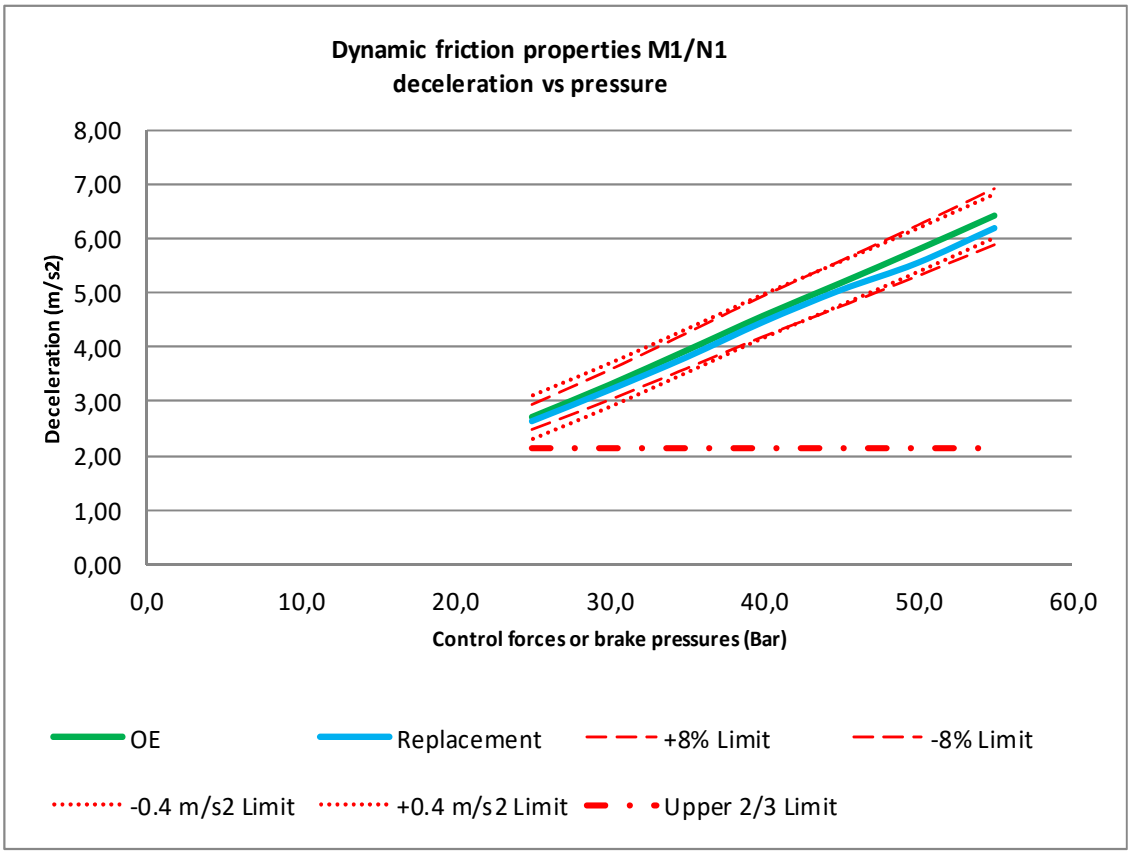
Report Number: XSW001271 Issue: 0

Dynamic friction properties Annex 11

Complies Yes / NA

Dynamic friction properties Diagram for M1, N1, M2, N2, M3, N3, : deceleration vs pressure — YES

OE							Replacement	
Control Forces or Brake Pressures	Deceleration						**Force**	**Decel**
	Result (m/s²)	-8%	+8%	-0.4 m/s²	+0.4 m/s²		Bar	m/s²
25,0	2,71	2,49	2,93	2,31	3,11		25,0	2,64
30,0	3,30	3,04	3,56	2,9	3,7		30,0	3,21
35,0	3,93	3,62	4,24	3,53	4,33		35,0	3,81
40,0	4,57	4,20	4,94	4,17	4,97		40,0	4,46
45,0	5,17	4,76	5,58	4,77	5,57		45,0	5,04
50,0	5,78	5,32	6,24	5,38	6,18		50,0	5,54
55,0	6,41	5,90	6,92	6,01	6,81		55,0	6,18



UK Approval Authority | Vehicle Certification Agency
09-Feb-22

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

Report Number: XSW001271 Issue: 0

Integrity tests: Annex 11		Complies Yes / NA
4.6.1	Thermal fatigue test:	YES
	Bedded (burnished) procedure completed	YES

Brake Type	Disc		
Vehicle Catergory	M1		
	Front		
Drum Lining Width (m)	N/A		
Drum Inner Diameter (m)	N/A		
Disc Outer Diameter (m)	276		
GVW	2000		
Axle Mass	770		
Rdyn	0,3184		
Vehicle Inertia	78,06	Test Inertia	78,06
Bedded (burnished) procedure completed	Yes	Inertia tested	78,06

Test No.	Sample No.	Disc temp.	Cycles without damage*	Min Req For Pass	Min Req. For Re test	Pass / Fail / Retest
1	1	680,9	106	150,00	100,00	Re-TEST
2	2	703,3	105	150,00	100,00	PASS
OEM				0,00		PASS

TestResult: PASS

UK Approval Authority | Vehicle Certification Agency
09-Feb-22

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

Report Number: XSW001271 Issue: 0

4.6.2	High load test:		YES
	Max Torque	238,1	YES
	90% Torque met for over brake applications		YES

Drum Lining Width (m)	N/A		
Drum Inner Diameter (m)	N/A		
Disc Outer Diameter (m)	276		
GVW	2000		
Axle Mass	770		
Rdyn	0,3184		
Vehicle Inertia	78,06	Test Inertia	78,06
Bedded (burnished) procedure completed	Yes	Inertia tested	78,06

Test No.	Max Torque	90% Torque met for over brake applications (Yes/No)*	Pass / Fail / Retest
1	238,1	YES	PASS
OEM**			Not Required

Test No.	Sample No.	Disc temp.	Cycles without damage*	Min Req For Pass	Min Req. For Re test	Pass / Fail / Retest
1	3	497,3	70	70,00		PASS
OEM				63,00		Not Required

TestResult: PASS

UK Approval Authority | Vehicle Certification Agency
09-Feb-22

VCA Europe S.r.l.
Point - Polo per l'Innovazione Tecnologica
Via Pasubio, 5
24044 Dalmine (BG)
Italy
enquiries@vca-europe.com |
europe.vehicle-certification-agency.gov.uk |
+39 035 622 4240

Vehicle Certification Agency Europe

*Annex 11: paragraphs 4.1.1.1.3. / 4.1.1.2.3. / 4.2.1.2.3.

**Annex 11: paragraphs 4.1.2.1.3. / 4.1.2.2.3. / 4.2.2.1.3. / 4.2.2.2.3.

Notes

5	Test Documents	See Approval Documents
6	Appendix	See Cover Sheet
7	Date of Test	21/12/2021
8	This test has been carried out and the results reported in accordance with Regulation No. 90 as last amended by the 02 series of amendments.	
	Technical Service conducting the test:	Vehicle Certification Agency Europe

Remarks

None

Note: VCA apply measurement uncertainty to calibrated items but not test results.

UK Approval Authority | Vehicle Certification Agency
09-Feb-22