



VCA Headquarters

1 The Eastgate Office Centre
Eastgate Road
Bristol, BS5 6XX
United Kingdom

Switchboard: +44 (0) 117 951 5151
Direct line: +44 (0) 117 952⁴¹⁷¹
Main Fax: +44 (0) 117 952 4103
Email: enquiries@vca.gov.uk
Web: www.vca.gov.uk

THE UNITED KINGDOM VEHICLE APPROVAL AUTHORITY

Rev 1/03



COMMUNICATION CONCERNING THE APPROVAL GRANTED OF
A REPLACEMENT BRAKE LINING ASSEMBLY OR REPLACEMENT
DRUM LINING PURSUANT TO ECE REGULATION NO: 90.01

Approval No: 90R-01184/ 3790

1. Applicant's name and address:

Juratek Ltd. Unit 16, Carcroft Enterprise Park, Station Road, Doncaster DN6 8DD

2. Manufacturer's name and address:

3. Make and type of brake lining assembly: DP11131, DP7722, DP11492.

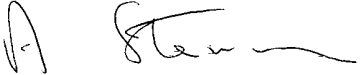
4. Make and type of brake lining: LE TD3 GG

5. Vehicles/axles/brakes for which the brake lining assembly/drum brake lining type qualifies as original brake lining assembly: Not applicable

6. Vehicles for which the brake lining assembly qualifies as replacement brake lining assembly:

An executive agency of the Department for Transport



7. Submitted for approval on: 18 May 2007
8. Technical Service responsible for approval tests: Vehicle Certification Agency
- 8.1 Date of test report: 14/08/06, 20/11/06, 15/08/06, 20/11/06, 23/11/06.
- 8.2 Number of test reports : VSG076369, VSG078081, VSG078079, VSG076364, VSG078099.
9. Approval GRANTED
10. Place: BRISTOL
11. Date: 7 JUNE 2007
12. Signature:  A. W. STENNING
Head of Product Certification
13. 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.

VSH178487



18/05/07	VCA Job No	VSH178487
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Dear Claire,

Please find enclosed the necessary documentation for you to submit applications for approval for various brake lining assemblies DP11131, DP7722, DP11492 in LE TD3 GG material pursuant to ECE Regulation No. 90/1. This application is on behalf of Juratek Ltd and cross-references to our DP LE TD3 GG application details.

We would like the application made to the VCA; I have addressed the formal letter of application accordingly.

The documents contained are: -

1. Formal letter of application
2. Manufacturers declarations
3. Lab test results :-
 - Friction test results
 - Shear test results
 - Compressibility test results
4. Vehicle fitment details
5. Disc pad assembly drawings
6. General disc pad marking drawing

**Please note: Allocated with E11 90R-01184/3790 as a provisional number.
This approval is based on VSG076369, VSG078081, VSG078082 and VSG078079
plus additional OE Materials testing on VSG076364 and VSG078099**

Yours sincerely,



Susan Owens
Q.B.T.



18/05/07	VCA Job No	VSH178487
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For vehicles / axles / brakes for which the lining assembly qualifies as replacement brake lining assembly, see following application list.

Assembly Number	Equivalent to	Also supplied as Assembly Number
DP11131 LE TD3 GG	Equivalent to	
DP7722 LE TD3 GG	Equivalent to	
DP11492 LE TD3 GG	Equivalent to	
	Equivalent to	

Yours faithfully



Susan Owens
Q.B.T.



18/05/07	VCA Job No	VSH178487
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Manufacturer's Declaration

for granting of Approval for replacement brake lining according to ECE Regulation No. 90/1.

We, the company

declare herewith that

Replacement pad assemblies DP11131 LE TD3 GG, DP7722 LE TD3 GG,
DP11492 LE TD3 GG

are produced in our factory

We certify that no application has been made regarding this permission/approval by us or by companies appointed by us in countries which as contract parties would also be entitled to grant permission/approval.

We are aware of the following: -

A type marking of vehicles/vehicle components of the above mentioned type with the officially assigned approval mark can only be granted if the products have been manufactured in the above mentioned factory or at one of our listed and approved manufacturing sites, and if they comply with the official approval documents.

Companies manufacturing products for our company or under license may not use the officially assigned approval mark for vehicles/vehicle components produced at their factories unless they are listed as an approved manufacturing site, and fully comply with our quality procedures.

A marking of vehicles/vehicle components of the above mentioned type with different factory or trade marks but the same approval mark is only permissible if written consent has been obtained from the Vehicle Certification Agency.



Susan Owens
Q.B.T.



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Friction test results

Conducted in accordance with Annex 8, of ECE Regulation No. 90 Rev1 including supplement 2 to the 01 series of amendments. (TRANS/SC1/WP29/GRRF/R90 Rev 1).

Type of assembly: Part Number DP11094 in material LE TD3 GG
(Previously agreed single test reference)

Type of test:	Constant torque (para. 2.2.2.2)
$\mu_{op}: 1$	0.354
$\mu_{op}: 2$	0.361
μ_{min} :	0.278
μ_{max} :	0.422

Test dates: 02/06/2006



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Bench tests

Manufacturer:			
Type of brake lining assy:	DP11094 LE TD3 GG	Page	1/2

1. Shear strength test¹
(5.3.2.1 of ECE Regulation No. 90 Rev 1)

- Sample

Type of assembly: DP11094 LE TD3 GG
Shear area [cm²]: 43.46

- Shear strength measured

Mean value [N/cm²]: 630
Required [N/cm²]: 250

Test date: 03/06/2006

1) Test procedure according to ISO Standard 6312 (2001)



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Manufacturer:			
Type of brake lining assy:	DP11094 LE TD3 GG	Page	2/2

2. Compressibility test²
(5.3.2.2 of ECE Regulation No. 90 Rev 1)

- Sample

Type: III
Type of assembly: DP11094 LE TD3 GG
Thickness, d_0 (nominal value) [mm]: 18.5
Pad area [cm²]: 43.464
Ram dia (corresponding to caliper piston dia) [mm]: 54

- Compressibility at specific surface pressure of 8000 kPa

Measured at ambient temperature

Mean value: $\frac{d_4 - d'_3}{d_0} = 0.16 \%$

Required: $\leq 2\%$

Measured at 400°C

Mean value: $\frac{d_4 - d'_3}{d_0} = 0.65\%$

Required: $\leq 5\%$

Test dates: 03/06/2006

2) Test procedure according to ISO Standard 6310 (2001)



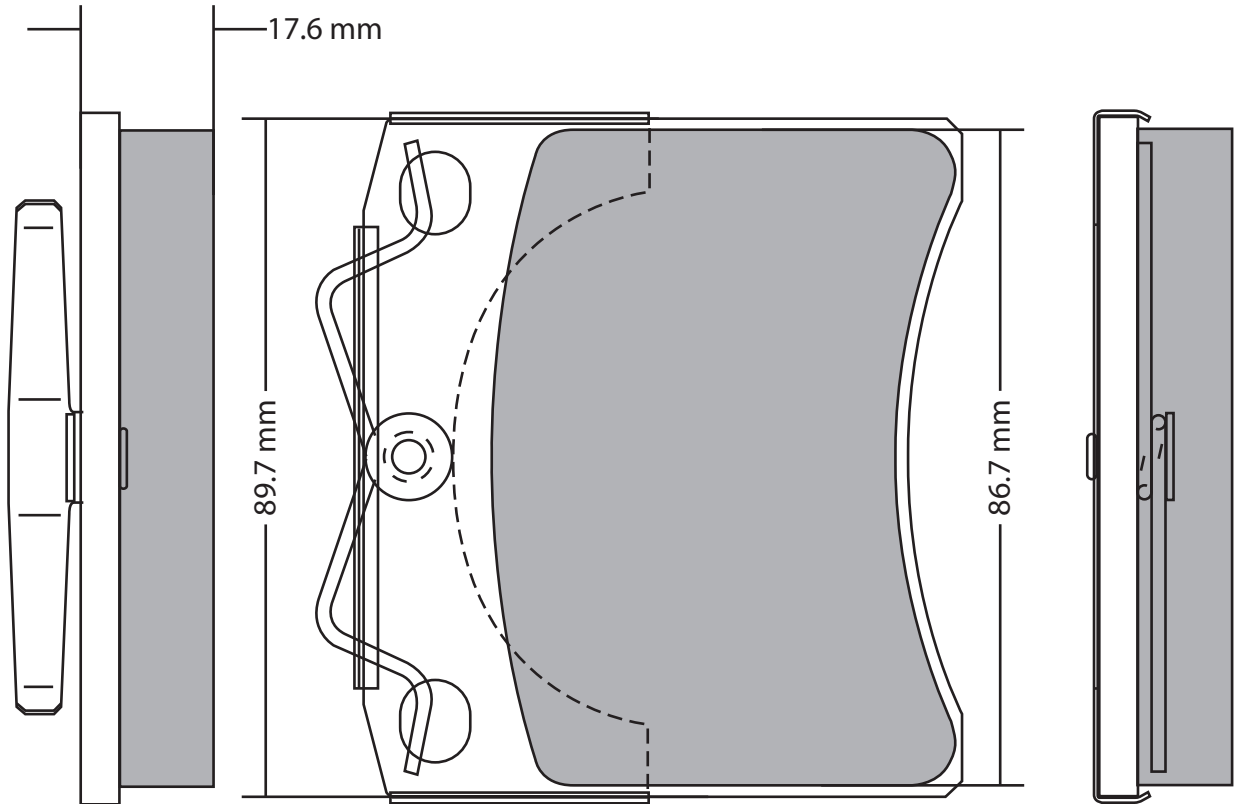
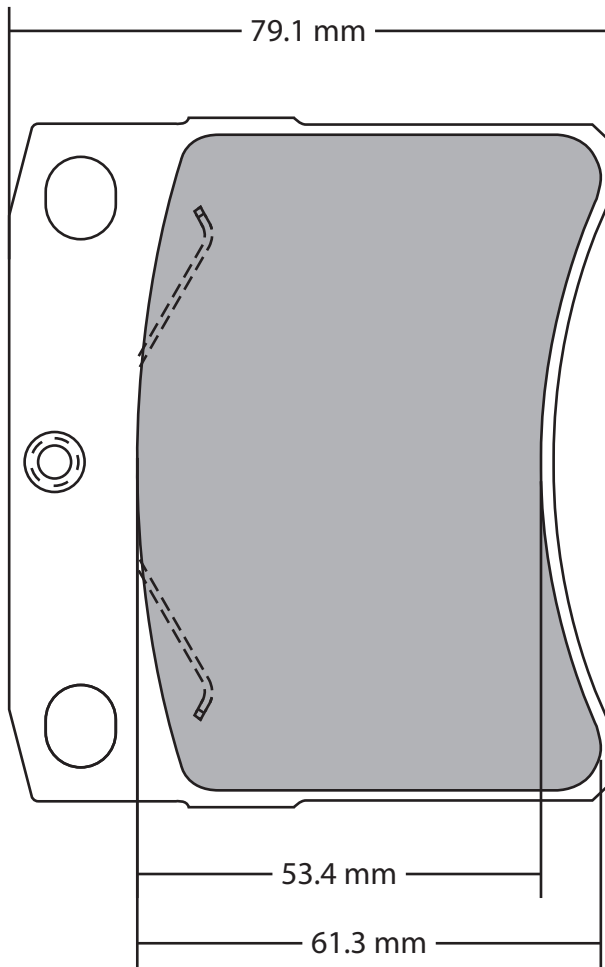
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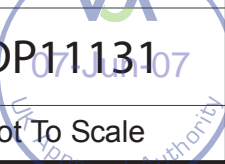


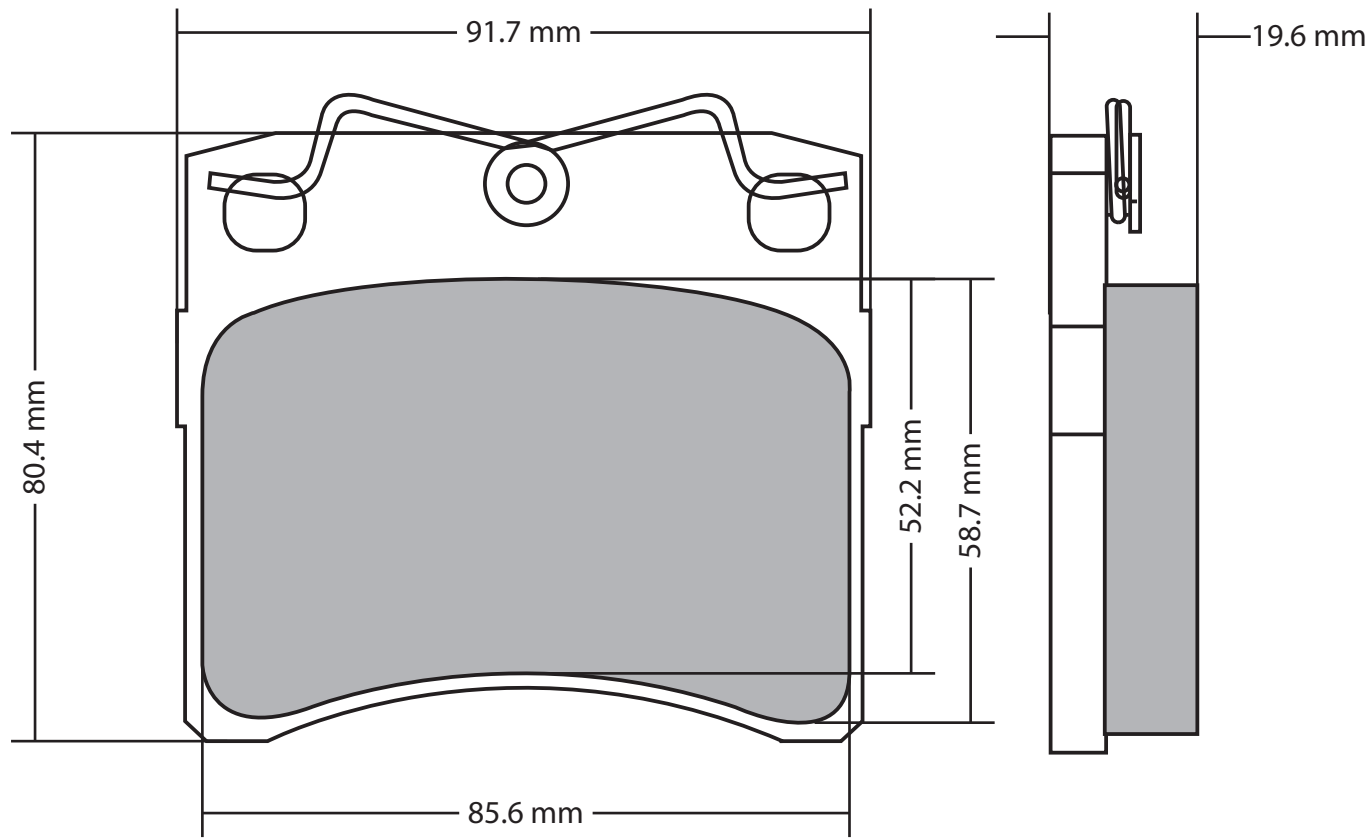
MAKE	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	F/R	D	A	T	E	OE Caliper Manufacturer	S/V Dr	Disc / Drum / Dia	Max Th Disc / Shoe Width
DP11131	VOLKSWAGEN	Caravelle (T4 96--> 06/00)	2.4 D			F	05	96	06	00	Lucas	V	280	24
DP11131	VOLKSWAGEN	Caravelle (T4 96--> 06/00)	2.5i			F	05	96	06	00	Lucas	V	280	24
DP11131	VOLKSWAGEN	Transporter (T4 96-->03)	2.4 D			F	05	96	11	03	Lucas	V	280	24
DP11131	VOLKSWAGEN	Transporter (T4 96-->03)	2.5i			F	05	96	11	03	Lucas	V	280	24
DP11131	VOLKSWAGEN	Transporter Van (T4 96-->)	2.4 D			F	05	96			Lucas	V	280	24
DP11131	VOLKSWAGEN	Transporter Van (T4 96-->)	2.5i			F	05	96			Lucas	V	280	24
DP11492	VOLKSWAGEN	Caravelle (T4 96--> 06/00)	2.4 D			F	05	96	06	00	Lucas	V	280	24
DP11492	VOLKSWAGEN	Caravelle (T4 96--> 06/00)	2.5i			F	05	96	06	00	Lucas	V	280	24
DP11492	VOLKSWAGEN	Caravelle (06/00-->03)	2.5i Syncro			F	06	00	11	03	Lucas	V	280	24
DP11492	VOLKSWAGEN	Transporter (T4 96-->03)	2.4 D			F	05	96	11	03	Lucas	V	280	24
DP11492	VOLKSWAGEN	Transporter (T4 96-->03)	2.5i			F	05	96	11	03	Lucas	V	280	24
DP11492	VOLKSWAGEN	Transporter Van (T4 96-->)	2.4 D			F	05	96			Lucas	V	280	24
DP11492	VOLKSWAGEN	Transporter Van (T4 96-->)	2.5i			F	05	96			Lucas	V	280	24
DP7722	VOLKSWAGEN	Caravelle (T4 -->96)	1.9D	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Caravelle (T4 -->96)	2.0	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Caravelle (T4 -->96)	2.4	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Caravelle (T4 -->96)	2.5	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Caravelle (T4 -->96)	2.5D	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter (T4 -->96)	1.9D	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter (T4 -->96)	2.0	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter (T4 -->96)	2.4	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter (T4 -->96)	2.5	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter (T4 -->96)	2.5D	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter Van (T4)	1.9D	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter Van (T4)	2.0	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter Van (T4)	2.4	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter Van (T4)	2.5	15" wheels		F	01	90	05	96	Lucas	V	280	24
DP7722	VOLKSWAGEN	Transporter Van (T4)	2.5D	15" wheels		F	01	90	05	96	Lucas	V	280	24

CALIPER ACTUATION	BRAKING SPLIT F/R, DIAG or H / I	CALIPER PAD		HERST NUMBER	TYP / SCHL NUMBER	MAX SPEED Km/h	80% V MAX Km/h	VEHICLE /		ENERGY FACTOR 5 MV 2	MAXIMUM ROLLING RADIUS	INERTIA UNLADEN	VEHICLE INERTIA LADEN
		PISTON DIA	FRICTION AREA mm^2					AXLE WEIGHT UN-LADEN	VEHICLE WEIGHT LADEN				
Hyd	Diag	54		0603	301, 314	137	110	1937	2800	16817024	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	304, 307, 312, 315,	164	131	1937	2800	24098816	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	301, 314	137	110	1937	2800	16817024	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	304, 307, 312, 315,	164	131	1937	2800	24098816	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	301, 314	137	110	1937	2800	16817024	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	304, 307, 312, 315,	164	131	1937	2800	24098816	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	301, 314	137	110	1937	2800	16817024	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	304, 307, 312, 315,	164	131	1937	2800	24098816	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	301, 314	137	110	1937	2800	16817024	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	304, 307, 312, 315,	164	131	1937	2800	24098816	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	301, 314	137	110	1937	2800	16817024	0.33	81.2116305	117.3942
Hyd	Diag	54		0603	304, 307, 312, 315,	164	131	1937	2800	24098816	0.33	81.2116305	117.3942
Hyd	Diag	57		0600, 0603	881, 930		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	833, 875, 932		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	873, 917, 934		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	293, 876, 922, 933, 336		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	293, 876, 922, 933, 336		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	881, 930	132	106	1580	2500	13939200	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	833, 875, 932	144	115	1580	2500	16588800	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	873, 917, 934	164	131	1580	2500	21516800	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	293, 876, 922, 933, 336		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	293, 876, 922, 933, 336	155	124	1580	2500	19220000	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	881, 930		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	833, 875, 932		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	873, 917, 934		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	293, 876, 922, 933, 336		0	1580	2500	0	0.33	66.24387	104.81625
Hyd	Diag	57		0600, 0603	293, 876, 922, 933, 336		0	1580	2500	0	0.33	66.24387	104.81625



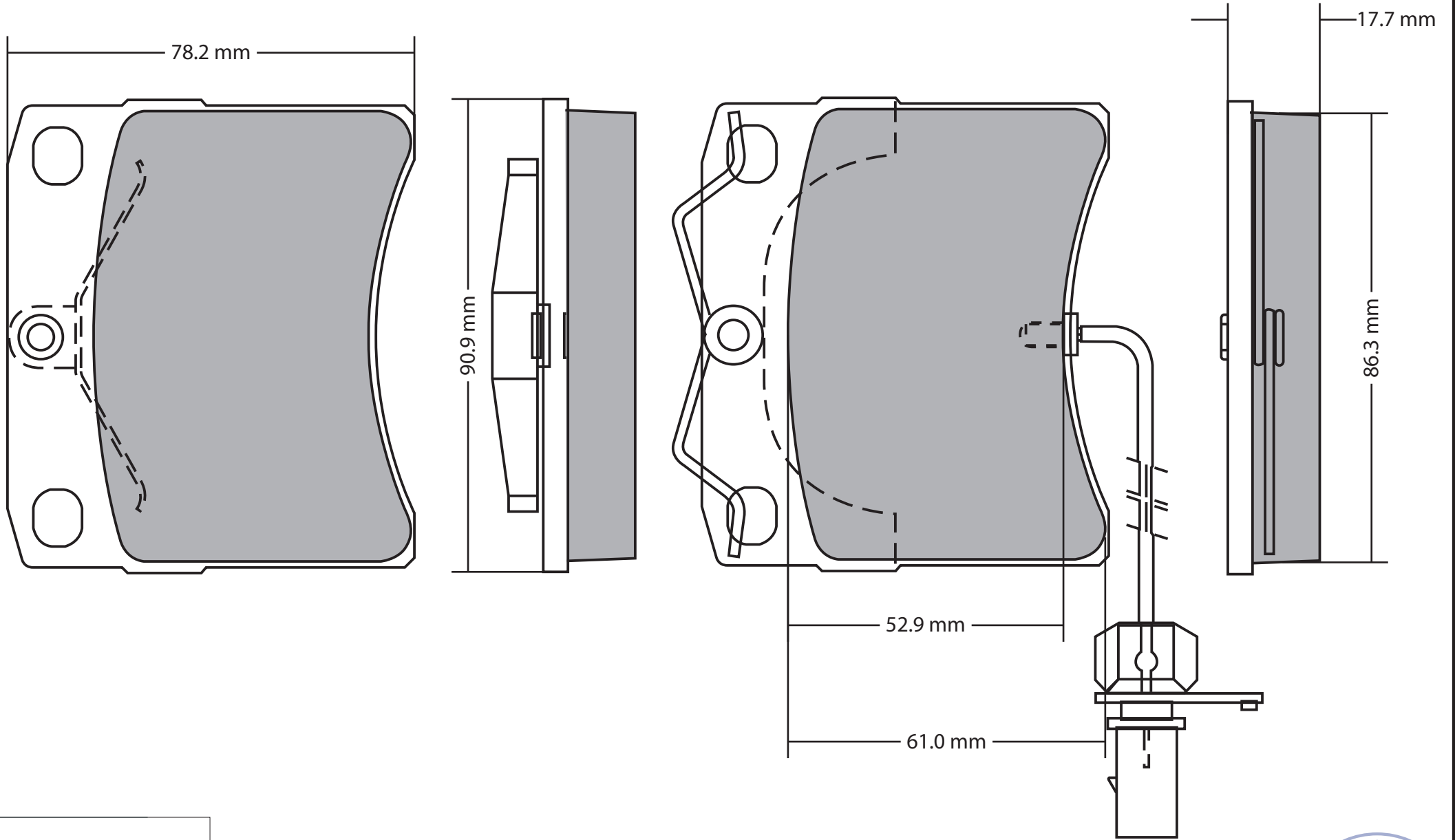


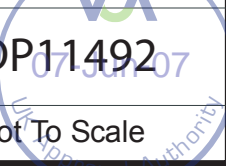
Material Area		Drawn By	Description	Issue No.	Part No.	 DP11131
4716.7 mm			Disc Pad Assembly	1		
Modification	Initial Date	Date	General Tolerance	± 0.25mm	Not To Scale	

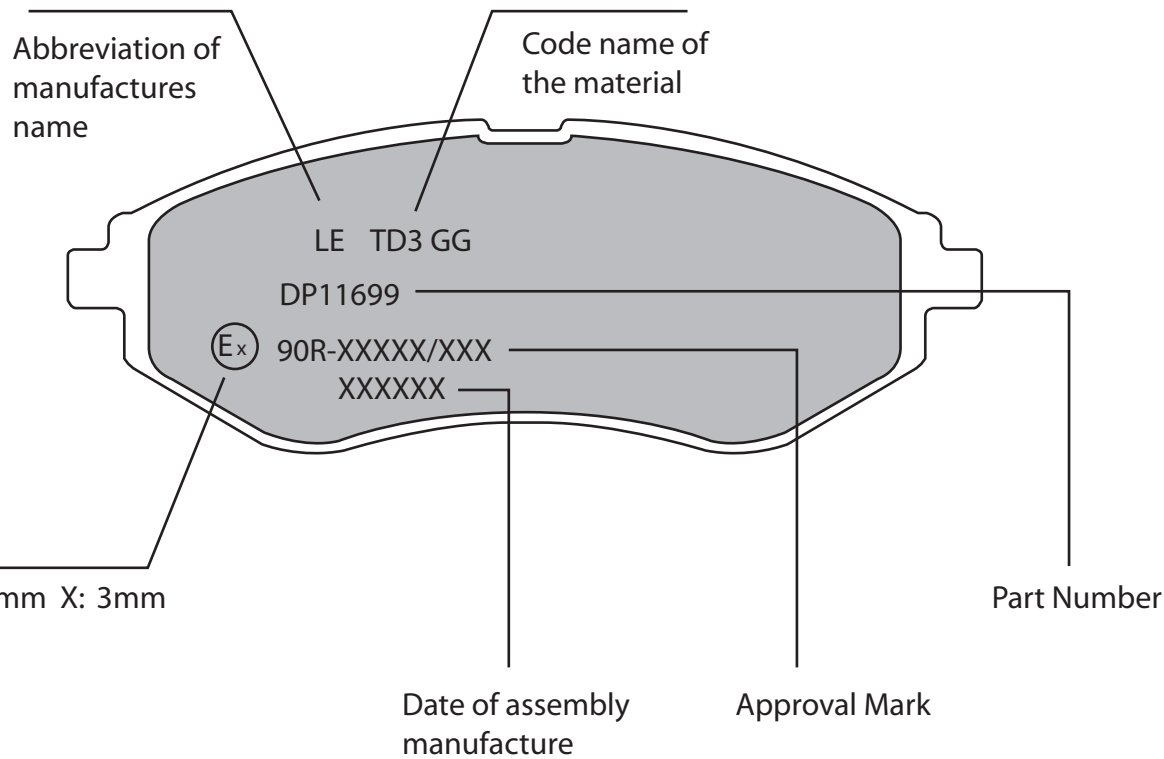


Material Area			Drawn By	Description	Issue No.	Part No.
4497.0 mm				Disc Pad Assembly	1	
Modification	Initial Date	Date		General Tolerance	± 0.25mm	Not To Scale





Material Area			Drawn By	Description	Issue No.	Part No.	 DP11492 07-30-07 Approval Authority
4690.3 mm				Disc Pad Assembly	1		
Modification	Initial Date	Date		General Tolerance	$\pm 0.25\text{mm}$		Not To Scale



Material Area			Drawn By	Description	Issue No.	Part No.
				Disc Pad Assembly	1	
Modification	Initial Date	Date		General Tolerance	± 0.25mm	Not To Scale

