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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-01184/3382

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: DP11542.

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: See manufacturers documents

An executive agency of the Department for Transport



7. Submitted for approval on: 6 December 2006
8. Technical Service responsible for approval tests: Vehicle Certification Agency
- 8.1 Date of test report: 14/08/06, 20/11/06, 20/11/06, 15/08/06
- 8.2 Number of test report: VSG 076369, VSG078081, VSG078082, VSG078079.
9. Approval GRANTED
10. Place: BRISTOL
11. Date: 27 MARCH 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.

VSG173051



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Dear Ted,

Please find enclosed the necessary documentation for you to submit applications for approval for various brake lining assemblies DP11542 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-01184/3382 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.



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Vehicle Certification Agency  
 1 Eastgate Office Centre  
 Eastgate Road  
 Bristol  
 BS5 6XX

**Letter of application for an approval pursuant to ECE Regulation No. 90/1**

Dear Sirs,

Herewith we apply for an approval for our brake lining assembly pursuant to ECE Regulation No. 90/1.

Applicants name and address:

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

Manufacturers name and address:

Make and type of brake lining	LE TD3 GG
Make and type of brake lining assembly	as listed below

Assembly Number	Assembly Contains...(see enclosed drawings)	Material Code
DP11542	4 identical pads	LE TD3 GG



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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
DP11542 LE TD3 GG	Equivalent to	SLB1538 leca-TD3 GG
	Equivalent to	

Yours faithfully



Susan Owens  
Q.B.T.



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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 DP11542 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
$\mu_{min:}$	0.278
$\mu_{max:}$	0.422

Test dates: 02/06/2006



Susan Owens  
Q.B.T.



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### Bench tests

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

1. Shear strength test<sup>1</sup>  
(5.3.2.1 of ECE Regulation No. 90 Rev 1)

- Sample

Type of assembly: DP11094 LE TD3  
GG

Shear area [cm<sup>2</sup>]: 43.46

- Shear strength measured

Mean value [N/cm<sup>2</sup>]: 630

Required [N/cm<sup>2</sup>]: 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 test<sup>2</sup>  
(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 [cm<sup>2</sup>]: 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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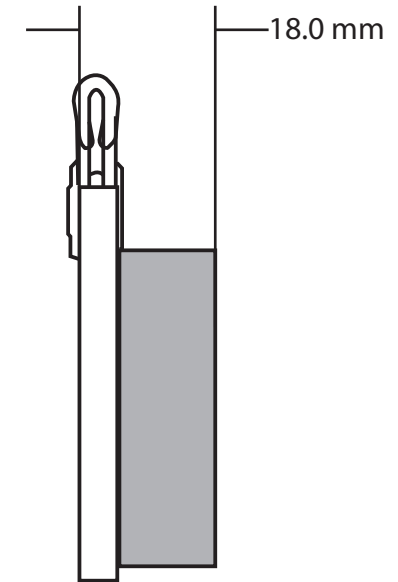
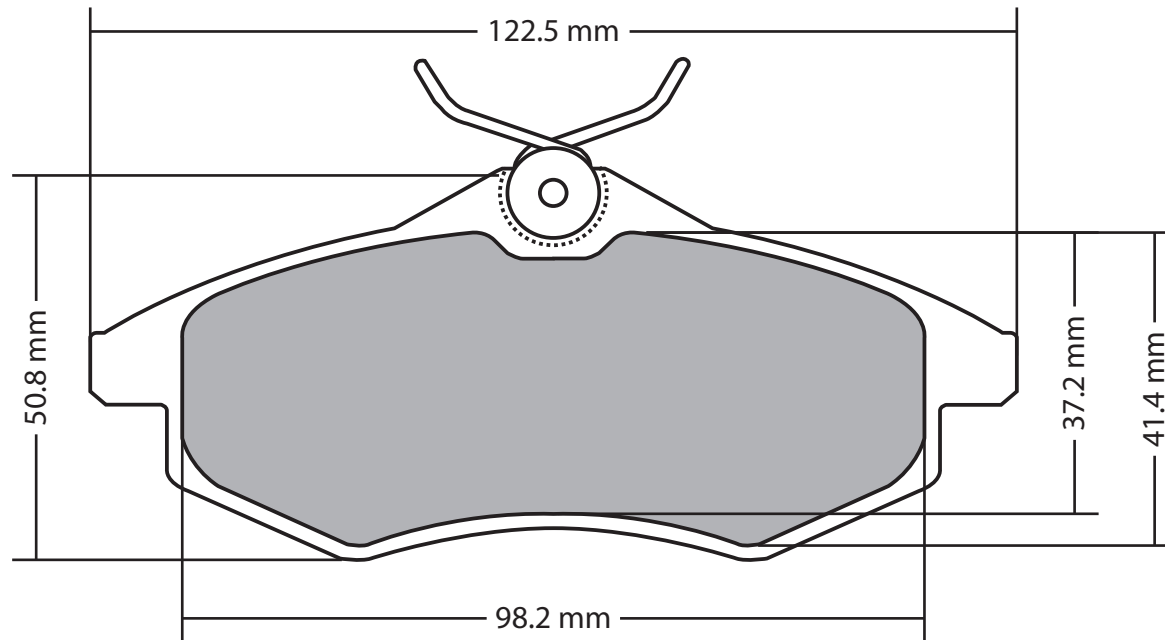



MAKE	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	F/R	D	A	T	E	OE Caliper Manufacturer	S/V Dr	Disc / Drum / Dia	Max Th
														Disc / Shoe Width
DP11542	CITROEN	C2	1.1i			F	04	02				S	266	13
DP11542	CITROEN	C2	1.4i			F	04	02				S	266	13
DP11542	CITROEN	C2	1.4 HDi			F	04	02				S	266	13
DP11542	CITROEN	C3	1.1i			F	04	02				S	266	13
DP11542	CITROEN	C3	1.4i			F	04	02				S	266	13
DP11542	CITROEN	C3	1.4 HDi			F	04	02				S	266	13
DP11542	CITROEN	C3	1.6i 16V			F	04	02				S	266	13
DP11542	CITROEN	Pluriel	1.1i			F	04	02				S	266	13
DP11542	CITROEN	Pluriel	1.4i			F	04	02				S	266	13
DP11542	CITROEN	Pluriel	1.4 HDi			F	04	02				S	266	13
DP11542	CITROEN	Pluriel	1.6i 16V			F	04	02				S	266	13

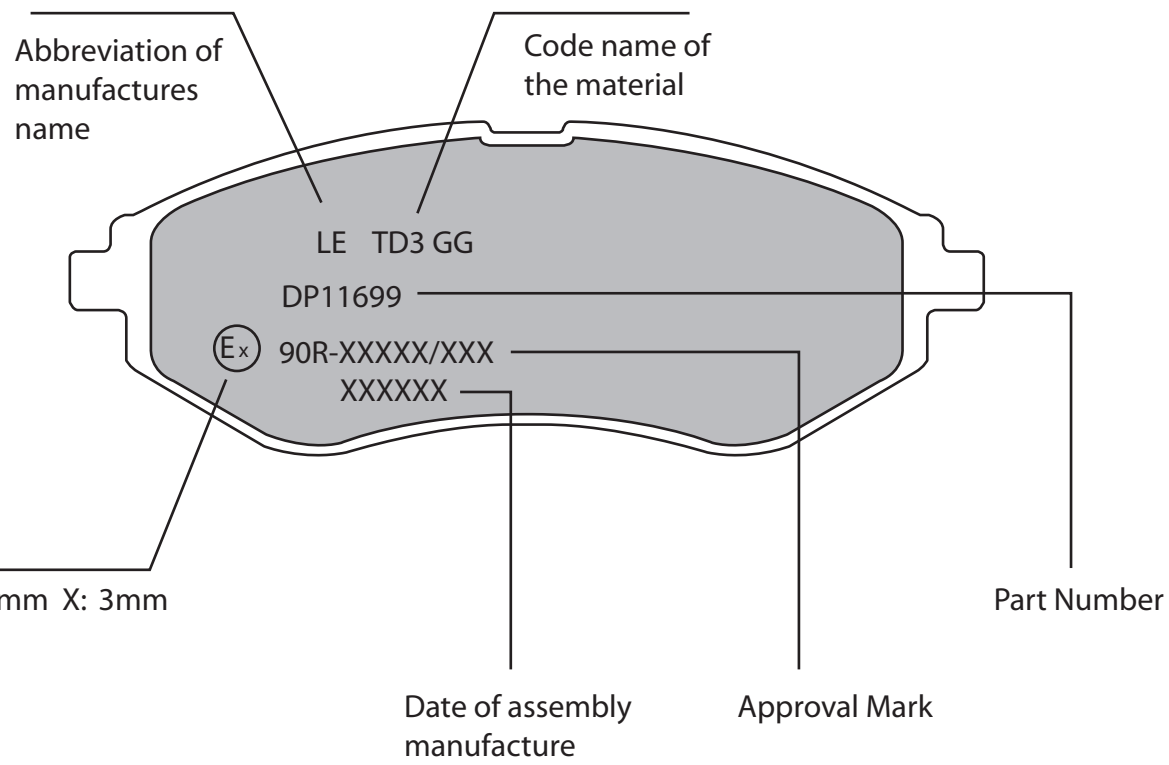


CALIPER ACTUATION	BRAKING SPLIT F/R, DIAG or H / I	CALIPER PISTON DIA	HERST NUMBER	TYP / SCHL NUMBER	MAX SPEED Km/h	80% V MAX Km/h	VEHICLE /		ENERGY FACTOR .5 MV 2	MAXIMUM ROLLING RADIUS	INERTIA UNLADEN	VEHICLE INERTIA LADEN
							AXLE WEIGHT UN-LADEN	VEHICLE WEIGHT LADEN				
Hyd	Diag	48	3001	788	156	125	1053	1463	11393142	0.33	44.1486045	61.3384695
Hyd	Diag	48	3001	787	168	134	1080	1507	13610742	0.33	45.28062	63.1832355
Hyd	Diag	48	3001	790, 791	183	146	1147	1539	16492663	0.33	48.0896955	64.5248835
Hyd	Diag	48	3001	788	156	125	1053	1463	11393142	0.33	44.1486045	61.3384695
Hyd	Diag	48	3001	787	168	134	1080	1507	13610742	0.33	45.28062	63.1832355
Hyd	Diag	48	3001	790, 791	183	146	1147	1539	16492663	0.33	48.0896955	64.5248835
Hyd	Diag	48	3001	789	193	154	1133	1525	18177512	0.33	47.5027245	63.9379125
Hyd	Diag	48	3001		156	125	1053	1463	11393142	0.33	44.1486045	61.3384695
Hyd	Diag	48	3001		168	134	1080	1507	13610742	0.33	45.28062	63.1832355
Hyd	Diag	48	3001		183	146	1147	1539	16492663	0.33	48.0896955	64.5248835
Hyd	Diag	48	3001		193	154	1133	1525	18177512	0.33	47.5027245	63.9379125





Material Area		Drawn By	Description	Issue No.	Part No.	 <b>DP11542</b> <small>27/10/2007</small> <small>Quality Approval Authority</small>
3326.6 mm			<b>Disc Pad Assembly</b>	1		
Modification	Initial Date	Date	General Tolerance	$\pm 0.25\text{mm}$		Not To Scale




Material Area			Drawn By	Description	Issue No.	Part No.
				<b>Disc Pad Assembly</b>	<b>1</b>	
Modification	Initial Date	Date		General Tolerance	<b>± 0.25mm</b>	

