



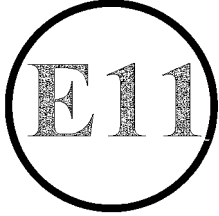
VCA Headquarters

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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 / 3269

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: DP11636.

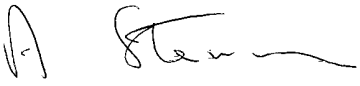
4. Make and type of brake lining: TD3

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: 30 October 2006
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.
- 8.2 Number of test report: VSG076369, VSG078081, VSG078079.
9. Approval: GRANTED
10. Place: BRISTOL
11. Date: 24 SEPTEMBER 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.

VSG078071



30/10/06	VCA Job No	VSG078071
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Dear Ted,

Please find enclosed the necessary documentation for you to submit applications for approval for various brake lining assemblies DP11636 in TD3 material pursuant to ECE Regulation No. 90/1. This application is on behalf of Juratek Ltd and cross-references to our DP TD3 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-01184/3269 as a provisional number. This approval is based on VSG076369, VSG078081 and VSG078079 plus additional OE Materials testing on VSG076364.

Yours sincerely,



Susan Owens
Q.B.T.



30/10/06	VCA Job No	VSG078071
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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 TD3
 Make and type of brake lining assembly as listed below

Assembly Number	Assembly Contains...(see enclosed drawings)	Material Code
DP11636	4 identical pads	TD3



30/10/06	VCA Job No	VSG078071
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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
DP11636 TD3	Equivalent to	SLB1660 Ieca-TD3
	Equivalent to	

Yours faithfully



Susan Owens
Q.B.T.



30/10/06	VCA Job No	VSG078071
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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 DP11636 TD3

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 TD3
(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 TD3	Page	1/2

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

- Sample

Type of assembly: DP11094 TD3

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)



Susan Owens
Q.B.T.



30/10/06	VCA Job No	VSG078071	
Manufacturer:			
Type of brake lining assy:	DP11094 TD3	Page	2/2

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

- Sample

Type: III
Type of assembly: DP11094 TD3
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)



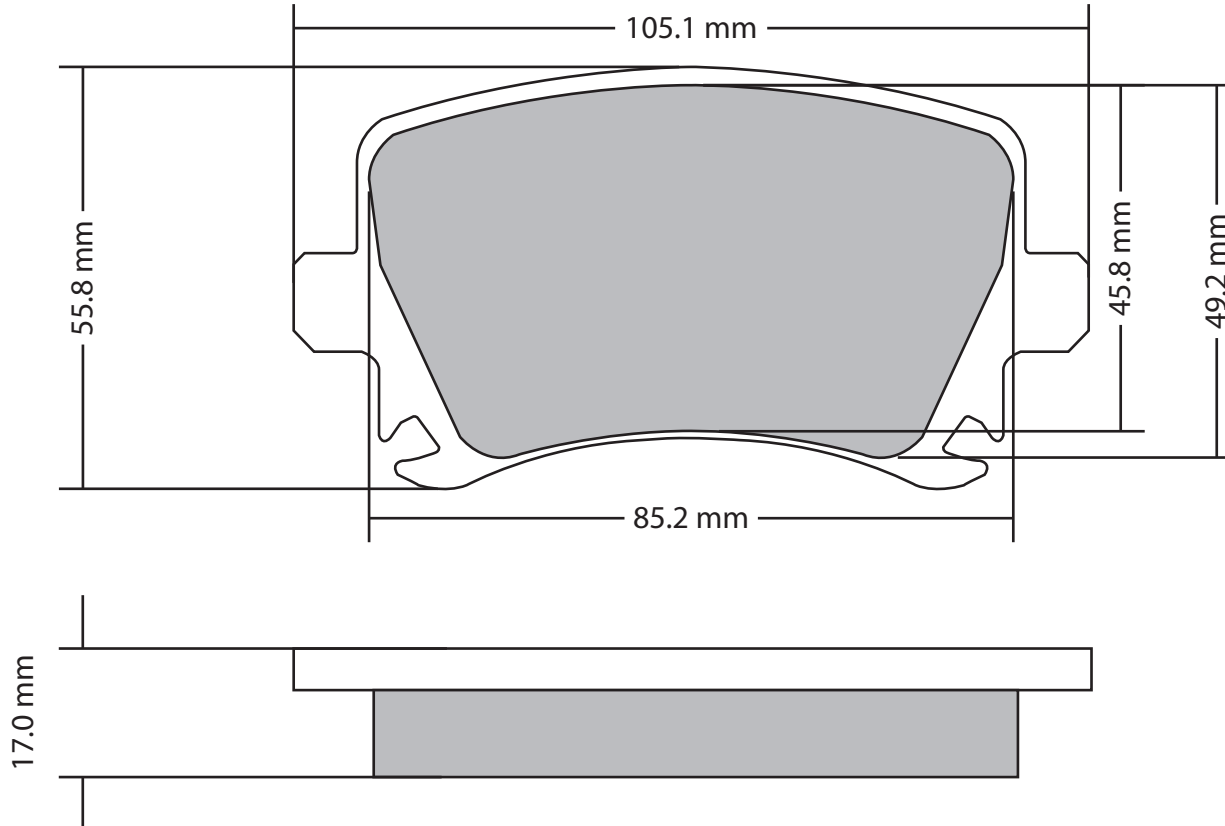
Susan Owens
Q.B.T.




MAKE	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	F/R	D	A	T	E	OE Caliper Manufacturer	S/V Dr	Disc / Dia	Max Th Disc / Shoe Width
DP11636	AUDI	A3 (03-->)	1.6i 16V			R	03	03			Lucas	S	260	12
DP11636	AUDI	A3 (03-->)	1.9 TDi			R	03	03			Lucas	S	260	12
DP11636	AUDI	A3 (03-->)	2.0 FSi 16V			R	03	03			Lucas	S	260	12
DP11636	AUDI	A3 (03-->)	2.0 FSi 16V Quattro			R	03	03			Lucas	S	260	12
DP11636	AUDI	A3 (03-->)	2.0i TDi			R	03	03			Lucas	S	260	12
DP11636	AUDI	A3 (03-->)	3.2i V6 Quattro			R	07	03			Lucas	V		
DP11636	AUDI	A4 (11/04-->)	1.8 20V Turbo			R	11	04			Lucas	S		
DP11636	AUDI	A4 (11/04-->)	1.8 20V Quattro Turbo			R	11	04			Lucas	S		
DP11636	AUDI	A4 (11/04-->)	2.0 TFSi 16V			R	11	04			Lucas	S		
DP11636	AUDI	A4 (11/04-->)	2.0i Quattro Turbo			R	11	04			Lucas	S		
DP11636	AUDI	A4 (11/04-->)	2.0 TDi			R	11	04			Lucas	S		
DP11636	AUDI	A4 (11/04-->)	2.5 TDi			R	11	04			Lucas	S		
DP11636	AUDI	A4 (11/04-->)	3.0 TDi Quattro			R	11	04			Lucas	S		
DP11636	AUDI	A4 (11/04-->)	3.2i			R	11	04			Lucas	V		
DP11636	AUDI	A4 Cabriolet (11/04-->)	1.8 20V Turbo			R	11	04			Lucas	S		
DP11636	AUDI	A4 Cabriolet (11/04-->)	1.8 20V Quattro Turbo			R	11	04			Lucas	S		
DP11636	AUDI	A4 Cabriolet (11/04-->)	2.0 TFSi 16V			R	11	04			Lucas	S		
DP11636	AUDI	A4 Cabriolet (11/04-->)	2.0 TDi			R	11	04			Lucas	S		
DP11636	AUDI	A4 Cabriolet (11/04-->)	2.5 TDi			R	11	04			Lucas	S		
DP11636	AUDI	A4 Cabriolet (11/04-->)	3.0 TDi Quattro			R	11	04			Lucas	S		
DP11636	AUDI	A4 Cabriolet (11/04-->)	3.2i			R	11	04			Lucas	V		
DP11636	AUDI	A6 (05/04-->)	2.0 TFSi 16V			R	05	04			Lucas	S	302	12
DP11636	AUDI	A6 (05/04-->)	2.0 TDi			R	05	04			Lucas	S	302	12
DP11636	AUDI	A6 (05/04-->)	2.4i 30V			R	05	04			Lucas	S	302	12
DP11636	AUDI	A6 (05/04-->)	2.4 30V Quattro			R	05	04			Lucas	S	302	12
DP11636	AUDI	A6 (05/04-->)	2.7 TDi			R	05	04			Lucas	S	302	12
DP11636	AUDI	A6 (05/04-->)	2.7 TDi Quattro			R	05	04			Lucas	S	302	12
DP11636	AUDI	A6 (05/04-->)	3.0 TDi Quattro			R	05	04			Lucas	S	302	12
DP11636	AUDI	A6 (05/04-->)	3.2i			R	05	04			Lucas	S	302	12
DP11636	SKODA	Octavia (05/04-->)	1.6i 16V			R	05	04			Lucas	S		
DP11636	SKODA	Octavia (05/04-->)	1.9 TDi			R	05	04			Lucas	S		
DP11636	SKODA	Octavia (05/04-->)	2.0i 16V			R	05	04			Lucas	S		
DP11636	SKODA	Octavia (05/04-->)	2.0 TDi			R	05	04			Lucas	S		
DP11636	VOLKSWAGEN	Golf Mk V	3.2i V6 Quattro			R	07	03			Lucas	V	256	22
DP11636	VOLKSWAGEN	Jetta III	1.6i 16V			R	08	05			Lucas	S	260	12
DP11636	VOLKSWAGEN	Jetta III	1.9 TDi			R	08	05			Lucas	S	260	12
DP11636	VOLKSWAGEN	Jetta III	2.0 FSi 16V			R	08	05			Lucas	S	260	12
DP11636	VOLKSWAGEN	Jetta III	2.0i TDi			R	08	05			Lucas	S	260	12
DP11636	VOLKSWAGEN	Jetta III	2.0 TFSi 16V			R	08	05			Lucas	S	260	12
DP11636	VOLKSWAGEN	Passat Mk VII	1.6i			R	03	05			Lucas	S		
DP11636	VOLKSWAGEN	Passat Mk VII	1.9 TDi			R	03	05			Lucas	S		
DP11636	VOLKSWAGEN	Passat Mk VII	2.0 FSi 16V			R	03	05			Lucas	S		
DP11636	VOLKSWAGEN	Passat Mk VII	2.0 TDi			R	03	05			Lucas	S		
DP11636	VOLKSWAGEN	Passat Mk VII	2.0 TFSi 16V			R	03	05			Lucas	S		
DP11636	VOLKSWAGEN	Passat Mk VII	3.2i Quattro			R	03	05			Lucas	S		
DP11636	VOLKSWAGEN	Touran	1.6i 16V			R	05	03			Lucas	S	257	12
DP11636	VOLKSWAGEN	Touran	1.9 TDi			R	05	03			Lucas	S	257	12
DP11636	VOLKSWAGEN	Touran	2.0i 16V			R	05	03			Lucas	S	257	12
DP11636	VOLKSWAGEN	Touran	2.0 TDi			R	05	03			Lucas	S	257	12
DP11636	VOLKSWAGEN	Caddy III	1.4i 16V			R	03	04			Lucas	S	260	12
DP11636	VOLKSWAGEN	Caddy III	1.6i 16V			R	03	04			Lucas	S	260	12
DP11636	VOLKSWAGEN	Caddy III	1.9 TDi			R	03	04			Lucas	S	260	12
DP11636	VOLKSWAGEN	Caddy III	2.0 FSi 16V			R	03	04			Lucas	S	260	12
DP11636	VOLKSWAGEN	Caddy III	2.0i TDi			R	03	04			Lucas	S	260	12

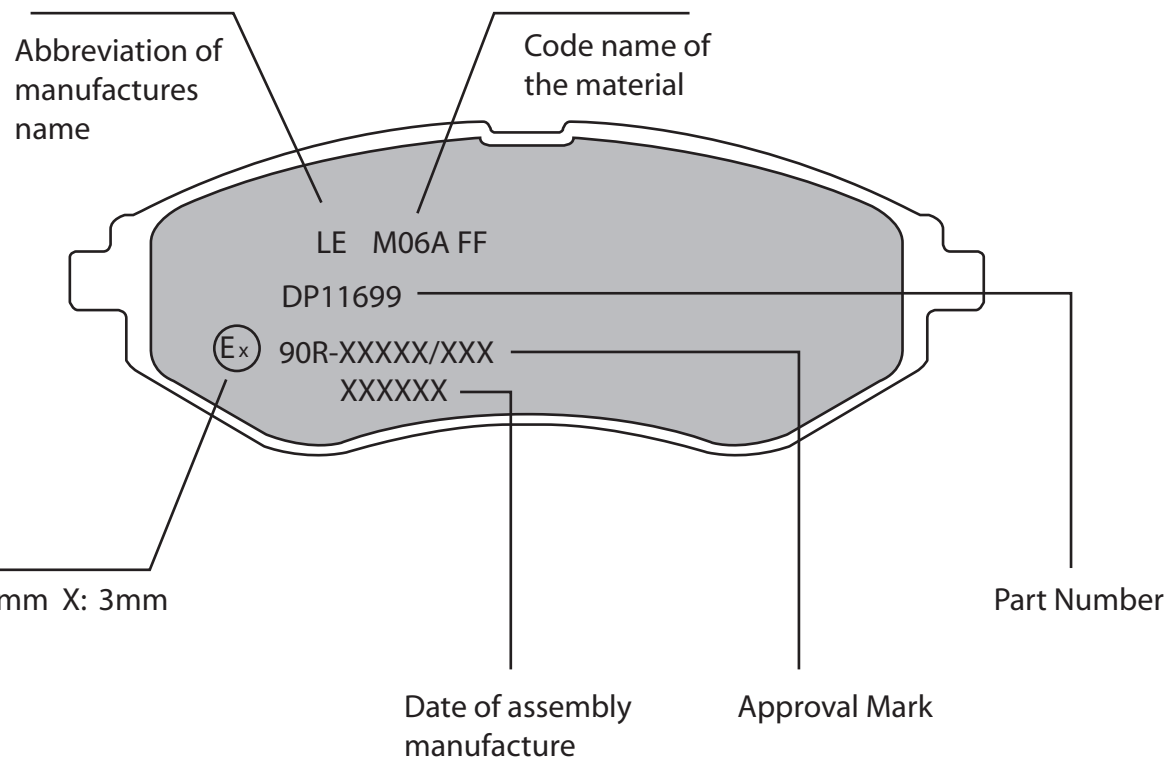
CALIPER ACTUATION	BRAKING SPLIT F/R, DIAG or H / I	CALIPER PISTON DIA	HERST NUMBER	TYP / SCHL NUMBER	MAX SPEED Km/h	80% V MAX Km/h	VEHICLE /		ENERGY FACTOR .5 MV 2	MAXIMUM ROLLING RADIUS	INERTIA UNLADEN	VEHICLE INERTIA LADEN
							AXLE WEIGHT UN-LADEN	VEHICLE WEIGHT LADEN				
Hyd	Diag		0588		192	154	1359	1770	20879770	0.33	23.679216	30.84048
Hyd	Diag		0588		187	150	1425	1850	20701648	0.33	24.8292	32.2344
Hyd	Diag		0588		235	188	1392	1860	32869920	0.33	24.254208	32.40864
Hyd	Diag		0588		235	188			0	0.33	0	0
Hyd	Diag		0588		203	162	1427	1870	24659466	0.33	24.864048	32.58288
Hyd	Diag		0588	842	248	198				0.33	0	0
Hyd	Diag		0588	808, 809	228	182	1455	2040	33935155	0.33	25.35192	35.54496
Hyd	Diag		0588	810, 811	226	181	1535	2075	33914464	0.33	26.74584	36.1548
Hyd	Diag		0588	863, 865	241	193	1500	2060	38286995	0.33	26.136	35.89344
Hyd	Diag		0588	864, 866	238	190	1560	2135	38699181	0.33	27.18144	37.20024
Hyd	Diag		0588	838, 861, 862	212	170	1505	2080	29914726	0.33	26.22312	36.24192
Hyd	Diag		0588	804, 805	227	182	1580	2140	35287059	0.33	27.52992	37.28736
Hyd	Diag		0588	867, 868	235	188	1685	2255	39850360	0.33	29.35944	39.29112
Hyd	Diag		0588	869, 871	250	200	1565	2100	42000000	0.33	27.26856	36.5904
Hyd	Diag		0588	808, 809	228	182	1455	2040	33935155	0.33	25.35192	35.54496
Hyd	Diag		0588	810, 811	226	181	1535	2075	33914464	0.33	26.74584	36.1548
Hyd	Diag		0588	863, 865	241	193	1500	2060	38286995	0.33	26.136	35.89344
Hyd	Diag		0588	838, 861, 862	212	170	1505	2080	29914726	0.33	26.22312	36.24192
Hyd	Diag		0588	804, 805	227	182	1580	2140	35287059	0.33	27.52992	37.28736
Hyd	Diag		0588	867, 868	235	188	1685	2255	39850360	0.33	29.35944	39.29112
Hyd	Diag		0588	869, 871	250	200	1565	2100	42000000	0.33	27.26856	36.5904
Hyd	Diag		0588	901, 902	227	182	1595	2260	37265773	0.33	27.79128	39.37824
Hyd	Diag		0588	856, 887	210	168	1615	2265	31963680	0.33	28.13976	39.46536
Hyd	Diag		0588	851, 885	231	185	1600	2255	38505298	0.33	27.8784	39.29112
Hyd	Diag		0588	875, 886	230	184	1700	2315	39188320	0.33	29.6208	40.33656
Hyd	Diag		0588	876, 889	230	184	1700	2325	39357600	0.33	29.6208	40.5108
Hyd	Diag		0588	903, 904	228	182	1830	2455	40838630	0.33	31.88592	42.77592
Hyd	Diag		0588	852, 888	245	196	1820	2455	47155640	0.33	31.71168	42.77592
Hyd	Diag		0588	848, 882	250	200	1615	2270	45400000	0.33	28.13976	39.55248
Hyd	Diag		8004		186	149	1423	2090	23137805	0.33	24.794352	36.41616
Hyd	Diag		8004		177	142	1498	2160	21654605	0.33	26.101152	37.63584
Hyd	Diag		8004		201	161	1509	2170	28054454	0.33	26.292816	37.81008
Hyd	Diag		8004		197	158	1561	2210	27445725	0.33	27.198864	38.50704
Hyd	Diag		0588	842	248	198	1576	1980	38968934	0.33	27.460224	34.49952
Hyd	Diag		0603		189	151	1498	1960	22404211	0.33	26.101152	34.15104
Hyd	Diag		0603		181	145	1572	2030	21281546	0.33	27.390528	35.37072
Hyd	Diag		0603		205	164	1531	2010	27030480	0.33	26.676144	35.02224
Hyd	Diag		0603		202	162	1603	2050	26767424	0.33	27.930672	35.7192
Hyd	Diag		0603		205	164	1531	2010	27030480	0.33	26.676144	35.02224
Hyd	Diag		0603	772, 801	200	160	1423	2075	26560000	0.33	24.794352	36.1548
Hyd	Diag		0603	771, 800	188	150	1497	2135	24147021	0.33	26.083728	37.20024
Hyd	Diag		0603	773, 802	213	170	1464	2145	31141282	0.33	25.508736	37.37448
Hyd	Diag		0603	770, 799	209	167	1529	2205	30821314	0.33	26.641296	38.41992
Hyd	Diag		0603		241	193	1464	2145	39866798	0.33	25.508736	37.37448
Hyd	Diag		0603		250	200	1807	2350	47000000	0.33	31.485168	40.9464
Hyd	Diag		0603		186	149	1423	2090	23137805	0.33	24.794352	36.41616
Hyd	Diag		0603		177	142	1498	2160	21654605	0.33	26.101152	37.63584
Hyd	Diag		0603		201	161	1509	2170	28054454	0.33	26.292816	37.81008
Hyd	Diag		0603		197	158	1561	2210	27445725	0.33	27.198864	38.50704
Hyd	Diag		0603		171	137	1468	1900	17778528	0.33	25.578432	33.1056
Hyd	Diag		0603		189	151	1498	1960	22404211	0.33	26.101152	34.15104
Hyd	Diag		0603		181	145	1572	2030	21281546	0.33	27.390528	35.37072
Hyd	Diag		0603		205	164	1531	2010	27030480	0.33	26.676144	35.02224
Hyd	Diag		0603		202	162	1603	2050	26767424	0.33	27.930672	35.7192





Material Area			Drawn By	Description	Issue No.	Part No.	 DP11636 <small>24 Sep 07</small>
3452.3 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.
				Disc Pad Assembly	1	
Modification	Initial Date	Date		General Tolerance	± 0.25mm	



Not To Scale