



Test Report



Report No	289/8783740 Issue 2	This Report consists of 11 pages
Client	Dewhurst UK Limited Unit 9 Hampton Business Park Hampton Road West Feltham, Middlesex TW13 6DB United Kingdom	
Authority & date	Quotation Acceptance BSI 0000841190 signed Mr Richard Dewhurst dated 10 th July 2017	
Items tested	Landing door locking devices models VL10, VL20, VL30, FL16	
Specification	BS EN 81-20:2014 - Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods Part 20: Passenger and goods passenger lifts - Clause 5.3.9.1 Landing door locking devices and BS EN 81-50:2014 - Safety rules for the construction and installation of lifts - Examinations and tests Part 50: Design rules, calculations, examinations and tests of lift components – Clause 5.2 Type examination of landing and car door locking devices only.	
Results	See text.	
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Authorized by	J Dhesi 	Certification Technical Expert
Issue Date	18 September 2018	
Conditions of issue	This Test Report is issued subject to the conditions stated in current issue of PS082 'General conditions relating to acceptance of testing'. The results contained herein apply only to the particular sample/s tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of the Director, BSI Group, who reserves the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.	

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Section 1- Introduction

This Report details update of Type Examination conducted on Landing door locking devices Models VL10, VL20, VL30, FL16 in accordance with BS EN 81-20:2014 - Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods Part 20: Passenger and goods passenger lifts - Clause 5.3.9.1 Landing door locking devices and BS EN 81-50:2014 - Safety rules for the construction and installation of lifts - Examinations and tests Part 50: Design rules, calculations, examinations and tests of lift components – Clause 5.2 Type examination of landing and car door locking devices only.

Due to previous testing covered in BSI Test Report as detailed below being undertaken to the requirements of BS EN 81-1/2:1985 and 1998 Annex F.1 Landing door locking devices. The extension covers additional requirements of BS EN 81-20:2014 – Clause – 5.3.9.1 and BS EN 81-50:2014 – Clause 5.2 as the update in the standards did not affect previous testing requirements therefore this report must be read in conjunction with those issued previously.

Client's Name:	Dewhurst UK Limited Unit 9 Hampton Business Park Hampton Road West Feltham, Middlesex TW13 6DB United Kingdom
Manufacturer's Name:	Dewhurst Hungry Kft Sóskút, Hrsz., 3518/8, 2038 Hungary

Section 2 - Manufacturer's Designation for landing and car door locking devices				
Model:	VL10		VL20	
Maximum rated voltage:	240V	240V	240V	240V
Maximum rated current:	2 amps	1amp	2 amps	1amp
AC/DC:	AC	DC	AC	DC
Minimum engagement: (mm)	18.87		18.87	
Mechanical checking device incorporated:	N/A		N/A	
Material types for insulators:	940A or 943A LEXAN		940A or 943A LEXAN	
Centre/ Side/ Hinged opening doors:	Side Opening		Side Opening	
Multi-panel/single panel doors:	Multi-panel/single panel		Multi-panel/single panel	
Previous Test Reports:	BSI Report 135856 Dated 14/01/1988 BSI Report 000046 Dated 06/11/1998		BSI Report 135856 Dated 14/01/1988 BSI Report 000046 Dated 06/11/1998	

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Model:	VL30		FL16	
Maximum rated voltage:	240V	240V	300V	230V
Maximum rated current:	2 amps	1amp	2amps	0.6amps
AC/DC:	AC	DC	AC	DC
Minimum engagement: (mm)	18.87		8.38	
Mechanical checking device incorporated:	N/A		N/A	
Material types for insulators:	940A or 943A LEXAN		940A or 943A LEXAN	
Centre/ Side/ Hinged opening doors:	Hinged		Side Opening	
Multi-panel/single panel doors:	Single panel		Multi-panel/single panel	
Previous Test Reports:	BSI Report 135856 Dated 14/01/1988 BSI Report 000046 Dated 06/11/1998		BSI Report 7985564 Dated 16/01/2014	

Section 3 - Summary

The above mentioned landing / car door locking devices met the requirements to which it was subjected. Please refer to pages within this Report for actual values achieved and summary of results in Section 4 and 5.

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Section 4 - TEST RESULTS - BS EN 81-20:2014

5.3.9 Locking and emergency unlocking of landing and car doors

5.3.9.1 Landing door locking device

5.3.9.1.1 General

Each landing door shall be provided with a locking device satisfying the conditions of 5.3.8.1. This device shall be protected against deliberate misuse.

With the exception of 5.12.1.4 and 5.12.1.8 the effective locking of the landing door in the closed position shall precede the movement of the car. The locking shall be proved by an electric safety device in conformity with 5.11.2.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.3.9.1.2 The electric safety device shall not be activated unless the locking elements are engaged by at least 7 mm (see Figure 12).

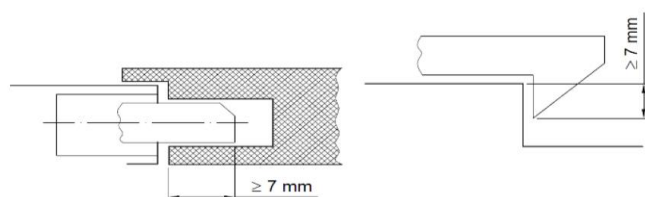


Figure 12 — Examples of locking elements

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.3.9.1.3 The element of the electric safety device proving the locked condition of the door panel(s) shall be positively operated without any intermediate mechanism by the locking element.
Specific case: In the case of locking devices used in installations requiring special protection against risks of humidity or explosion the connection may be only positive, provided the link between the mechanical lock and the element of the electric safety device proving the locked condition, can only be interrupted by destroying deliberately the locking device.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.3.9.1.4 For hinged doors, locking shall be effected as near as possible to the vertical closing edge(s) of the doors, and maintained even in the case of panels sagging.

Comments: Pass - In regards VL30 only. See previous test reports mentioned on pages 2 and 3 of this report.

5.3.9.1.5 The locking elements and their fixings shall be resistant to shock, and be made of durable material that maintains the strength property over their intended lifetime under the environmental conditions.

NOTE Shock requirements can be found in EN 81-50:2014, 5.2.

Comments: Pass - See previous test reports as stated on pages 2 and 3 of this report. Fixing to the complete door system will be addressed by the manufacturer.

5.3.9.1.6 The engagement of the locking elements shall be achieved in such a way that a force of 300 N in the opening direction of the door does not diminish the effectiveness of locking.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

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Section 4 - TEST RESULTS - BS EN 81-20:2014

5.3.9.1.7 The lock shall resist, without permanent deformation or breakage which could adversely affect safety during the test laid down in EN 81-50:2014, 5.2, a minimum force at the level of the lock and in the direction of opening of the door of:

- a) 1000 N in the case of sliding doors;
- b) 3000 N on the locking pin, in the case of hinged doors.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.3.9.1.8 The locking action shall be effected and maintained by the action of gravity, permanent magnets, or springs. The springs shall act by compression, be guided and of such dimensions that, at the moment of unlocking, the coils are not compressed solid.

In the event of the permanent magnet (or spring) no longer fulfilling its function, gravity shall not cause unlocking.

If the locking element is maintained in position by the action of a permanent magnet, it shall not be possible to neutralize its effect by simple means (e.g. heat or shock).

Comments: Pass.

5.3.9.1.9 The locking device shall be protected against the risk of an accumulation of dust, which could hinder its proper functioning.

Comments: Pass.

5.3.9.1.10 Inspection of the working parts shall be easy, as, for example, by use of a transparent cover.

Comments: Pass.

5.3.9.1.11 In the case where the lock contacts are in a box, the fixing screws for the cover shall be of the captive type, so that they remain in the holes in the cover or box when opening the cover.

Comments: Pass

5.3.9.1.12 The locking device is regarded as a safety component and shall be verified according to the requirements in EN 81-50:2014, 5.2.

Comments: Pass. See section 5 of this report and previous test reports as stated on pages 2 and 3 of this report.

5.3.9.1.13 On locking devices a data plate shall be fixed indicating:

- a) the name of the manufacturer of the locking device;
- b) the type examination certificate number;
- c) the type of locking device.

Comments: Pass

5.3.9.2 Car door locking devices

If the car door needs to be locked (see 5.2.5.3.1 c), the locking device shall be designed to meet the requirements given in 5.3.9.1.

This device shall be protected against deliberate misuse.

The locking device is regarded as a safety component and shall be verified according to the requirements in EN 81-50:2014, 5.2.

Comments: Pass. See section 5 of this report and previous test reports as stated on pages 2 and 3 of this report.

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Section 5 - TEST RESULTS - BS EN 81-50:2014

5.2 Type examination of landing and car door locking devices

5.2.1 General provisions

5.2.1.1 Field of application

These procedures are applicable to locking devices for landing and car doors. It is understood that each component taking part in the locking of doors and in the checking of the locking forms part of the locking device

5.2.1.2 Documents to be submitted

5.2.1.2.1 Schematic arrangement drawing with description of operation

This drawing shall show clearly all the details relating to the operation and the safety of the locking device, including:

- a) the operation of the device in normal service showing the effective engagement of the locking elements and the point at which the electrical safety device operates;
- b) the operation of the device for mechanical checking of the locking position if this device exists;
- c) the control and operation of the emergency unlocking device;
- d) the type (A.C. and/or D.C.) and the rated voltage and rated current.

5.2.1.2.2 Assembly drawing with key

This drawing shall show all parts, which are important to the operation of the locking device, in particular those required to conform to requirements of this standard. A key shall indicate the list of principal parts, the type of materials used, and the characteristics of the fixing elements.

5.2.1.3 Test samples

One door locking device shall be submitted to the laboratory.

If the test is carried out on a prototype, it shall be repeated later on a production model.

If the test of the locking device is only possible when the device is mounted in the corresponding door the device shall be mounted on a complete door in working order. However, the door dimensions may be reduced by comparison with a production model, on condition that this does not falsify the test results.

5.2.2 Examination and tests

5.2.2.1 Examination of operation

This examination has the aim of verifying that the mechanical and electrical components of the locking device are operating correctly with respect to safety, and in conformity with the requirements of this standard, and the standard calling for this locking device and that the device is in conformity with the particulars provided in the application.

In particular it shall be verified that:

- a) there is at least 7 mm engagement of the locking elements before the electric safety device operates;
- b) it is not possible from positions normally accessible to persons to operate the lift with a door open or unlocked, after one single action, not forming part of the normal operation.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.2 Mechanical tests

5.2.2.2.1 General

These tests have the purpose of verifying the strength of the mechanical locking components and the electrical components.

The sample of the locking device in its normal operating position is controlled by the devices normally used to operate it.

The sample shall be lubricated in accordance with the requirements of the manufacturer of the locking device.

When there are several possible means of control and positions of operation, the endurance test shall be made in the arrangement which is regarded as the most unfavourable from the point of view of the forces on the components.

The number of complete cycles of operation and the travel of the locking components shall be registered by mechanical or electrical counters.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

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Section 5 - TEST RESULTS - BS EN 81-50:2014

5.2.2.2.2 Endurance test

The locking device shall be submitted to 1 000 000 (± 1 %) complete cycles; one cycle comprises one forward and return movement over the full travel possible in both directions.

The driving of the device shall be smooth, without shocks, and at a rate of 60 (± 10 %) cycles per minute.

During the endurance test the electrical contact of the lock shall close a resistive circuit under the rated voltage and at a current value double that of the rated current.

If the locking device is provided with a mechanical checking device for the locking pin or the position of the locking element, this device shall be submitted to an endurance test of 100 000 (± 1 %) cycles.

The driving of the device shall be smooth, without shocks, and at a rate of 60 (± 10 %) cycles per minute.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.2.3 Static test

For locking devices intended for hinged doors, a test shall be made consisting of the application over a total period of 300 s of a static force increasing progressively to a value of 3000 N.

This force shall be applied in the opening direction of the door and in a position corresponding as far as possible to that which may be applied when a user attempts to open the door. The force applied shall be 1 000 N in the case of a locking device intended for sliding doors.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.2.4 Dynamic test

The locking device, in the locked position, shall be submitted to a shock test in the opening direction of the door.

The shock shall correspond to the impact of a rigid mass of 4 kg falling in free fall from a height of 0,50m.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.3 Criteria for the mechanical tests

After the endurance test (5.2.2.2.2), the static test (5.2.2.2.3) and the dynamic test (5.2.2.2.4), there shall not be any wear, deformation or breakage, which could adversely affect safety.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.4 Electrical test

5.2.2.4.1 Endurance test of contacts

This test is included in the endurance test laid down in 5.2.2.2.2.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.4.2 Test of ability to break circuit

5.2.2.4.2.1 General

This test shall be carried out after the endurance test. It shall check that the ability to break a live circuit is sufficient. This test shall be made in accordance with the procedure in EN 60947-4-1 and EN 60947-5-1, the values of current and rated voltage serving as a basis for the tests shall be those indicated by the manufacturer of the device.

If there is nothing specified, the rated values shall be as follows:

- a) Alternating current: 230 V, 2 A;
- b) Direct current: 200 V, 2 A.

In the absence of an indication to the contrary, the capacity to break circuit shall be examined for both A.C. and D.C. conditions.

The tests shall be carried out with the locking device in the working position. If several positions are possible, the test shall be made in the most unfavourable position.

The sample tested shall be provided with covers and electric wiring as used in normal service.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

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Section 5 - TEST RESULTS - BS EN 81-50:2014

5.2.2.4.2.2 A.C. locking devices shall open and close an electric circuit under a voltage equal to 110 % of the rated voltage 50 times, at normal speed, and at intervals of 5 s to 10 s. The contact shall remain closed for at least 0,5 s.

The circuit shall comprise a choke and a resistance in series. Its power factor shall be $0,7 \pm 0,05$ and the test current shall be 11 times the rated current indicated by the manufacturer of the device.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.4.2.3 D.C. locking devices shall open and close an electric circuit under a voltage equal to 110 % of the rated voltage 20 times, at normal speed, and at intervals of 5 s to 10 s. The contact shall remain closed for at least 0,5 s.

The circuit shall comprise a choke and a resistance in series having values such that the current reaches 95 % of the steady-state value of the test current in 300 ms.

The test current shall be 110 % of the rated current indicated by the manufacturer of the device.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.4.2.4 The tests are considered as satisfactory if no tracking or arcing is produced and if no deterioration occurs which could adversely affect safety.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.4.3 Test for resistance to leakage currents

This test shall be made in accordance with the procedure in EN 60112. The electrodes shall be connected to a source providing an A.C. voltage which is sinusoidal at 175 V, 50 Hz.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.2.4.4 Examination of clearances and creepage distances

The clearances in air and creepage distances shall be in accordance with the requirements laid down in the standards calling for the use of this standard (e.g. EN 81-20:2014, 5.11.2.2.4).

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report and see Section 5 Appendix 1.

5.2.2.4.5 Examination of the requirements appropriate to safety contacts and their accessibility

This examination shall be made taking account of the mounting position and the layout of the locking device, as appropriate.

Comments: Pass – See previous test reports as stated on pages 2 and 3 of this report.

5.2.3 Test particular to certain types of locking devices

5.2.3.1 Locking device for horizontally or vertically sliding doors with several panels

According to the requirements laid down in the standards calling for the use of this standard the devices providing direct mechanical linkage between panels (e.g. EN 81-20:2014, 5.3.14.1) or indirect mechanical linkage (e.g. EN 81-20:2014, 5.3.14.2) are considered as forming part of the locking device.

These devices shall be submitted to the tests mentioned in 5.2.2. The number of cycles per minute in such endurance tests shall be suited to the dimensions of the construction.

Comments: N/A.

5.2.3.2 Flap type locking device for hinged door

If this device is provided with an electric safety device required to check the possible deformation of the flap and if, after the static test envisaged in 5.2.2.2.3 there are any doubts on the strength of the device, the load shall be increased progressively until the safety device begins to open. No component of the locking device or of the door shall be damaged or permanently deformed by the load applied.

If, after the static test, the dimensions and construction leave no doubt as to its strength, it is not necessary to proceed to the endurance test on the flap.

Comments: N/A

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Section 5 - TEST RESULTS - BS EN 81-50:2014

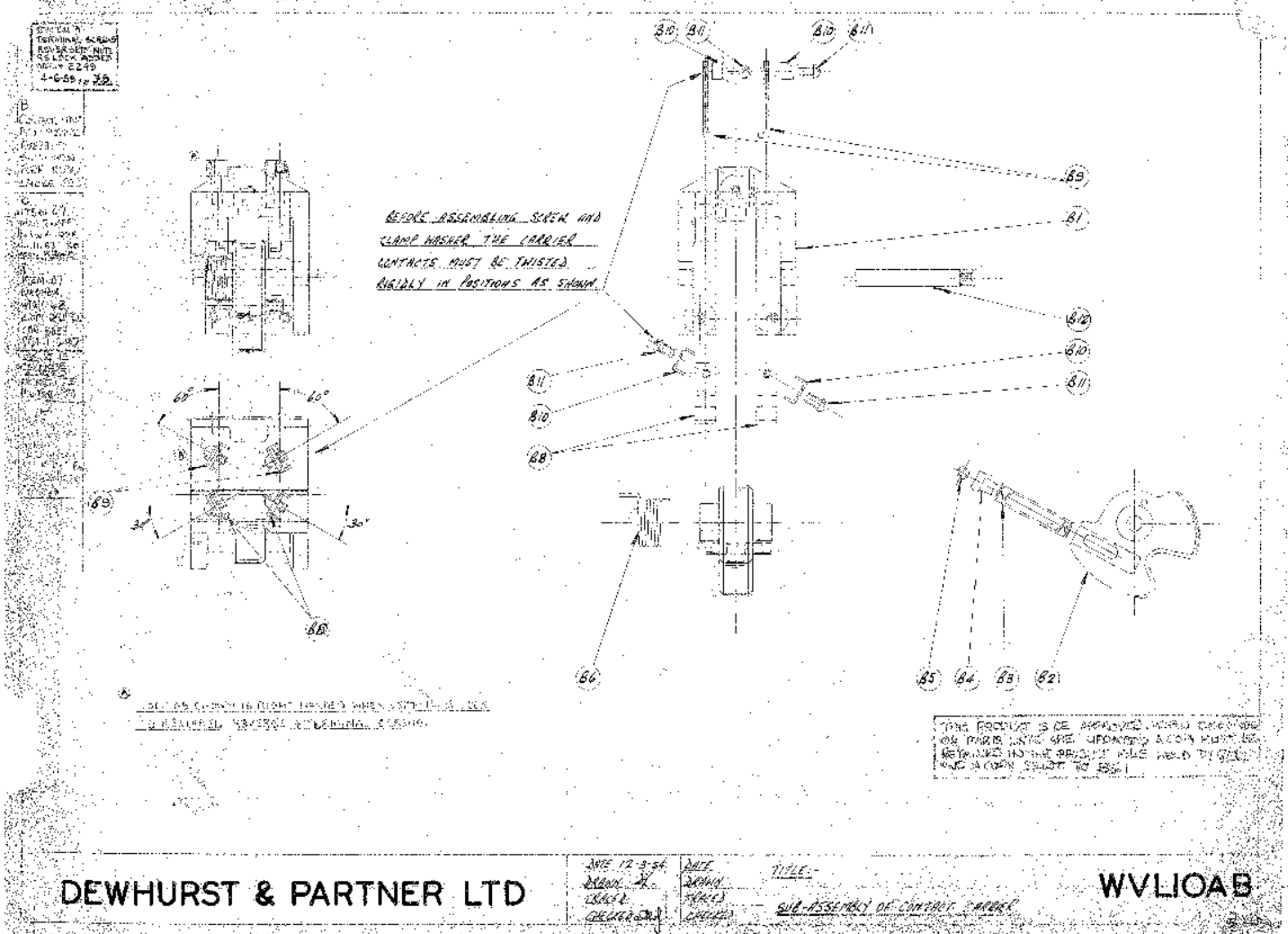
5.2.4 Type examination certificate

The certificate shall indicate the following:

- a) information according to Annex A;
- b) type and application of locking device;
- c) the type (A.C. and/or D.C.) and values of rated voltage and rated current;
- d) in the case of flap type door locking devices: the necessary force to actuate the electric safety device for checking the elastic deformation of the flap.

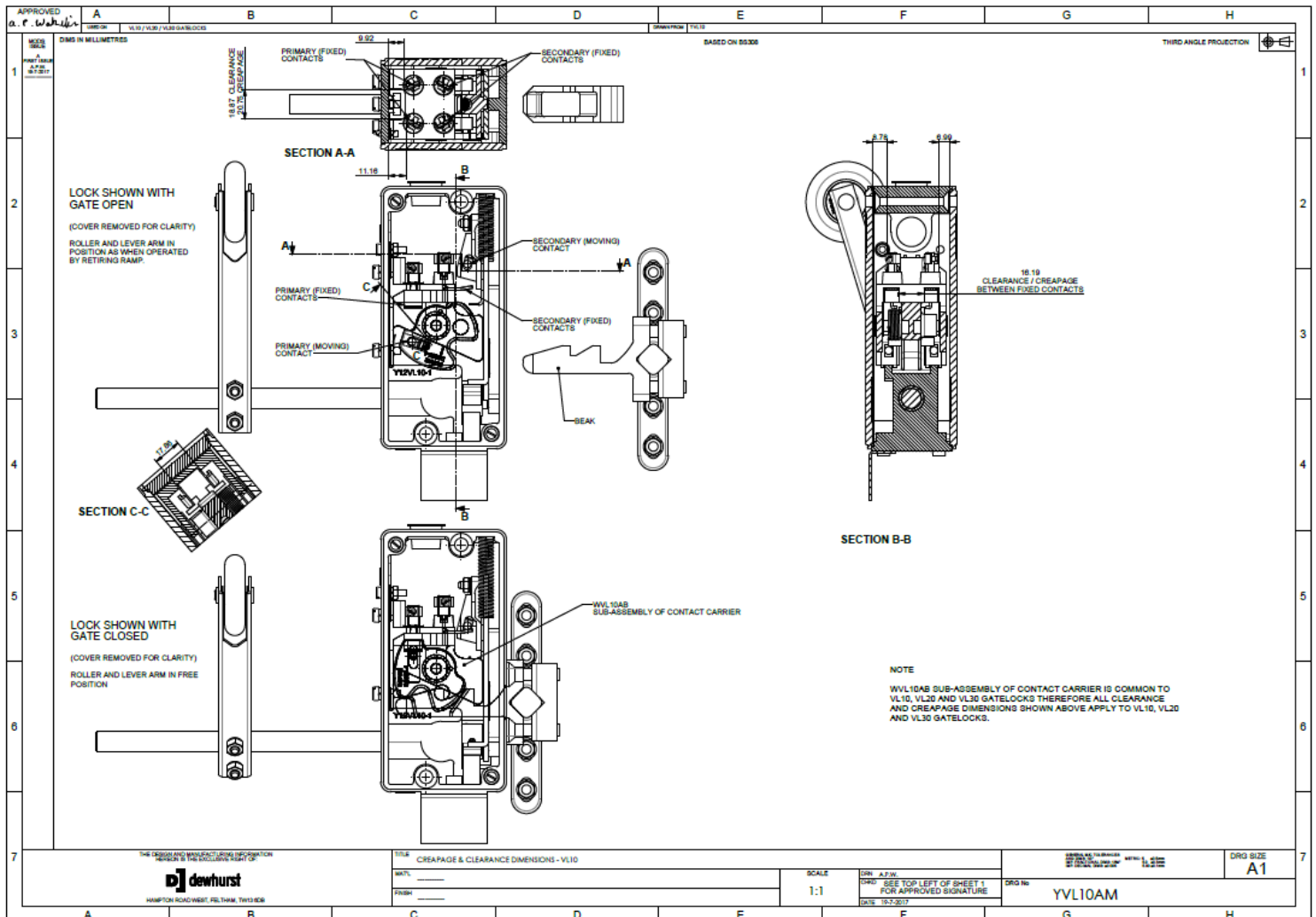
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**Section 5- Appendix (1) - TEST RESULTS - BS EN 81-50:2014 Clause 5.2.2.4.4
Examination of clearances and creepage distances.**



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**Section 5- Appendix (1) - TEST RESULTS - BS EN 81-50:2014 Clause 5.2.2.4.4
Examination of clearances and creepage distances.**



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