

OPERATING INSTRUCTIONS

CBR-Test 50

24-9150

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<p><i>In the interests of improving and updating its equipment, ELE reserves the right to alter specifications to equipment at any time.</i></p> <p>ELE International 2015 ©</p>		

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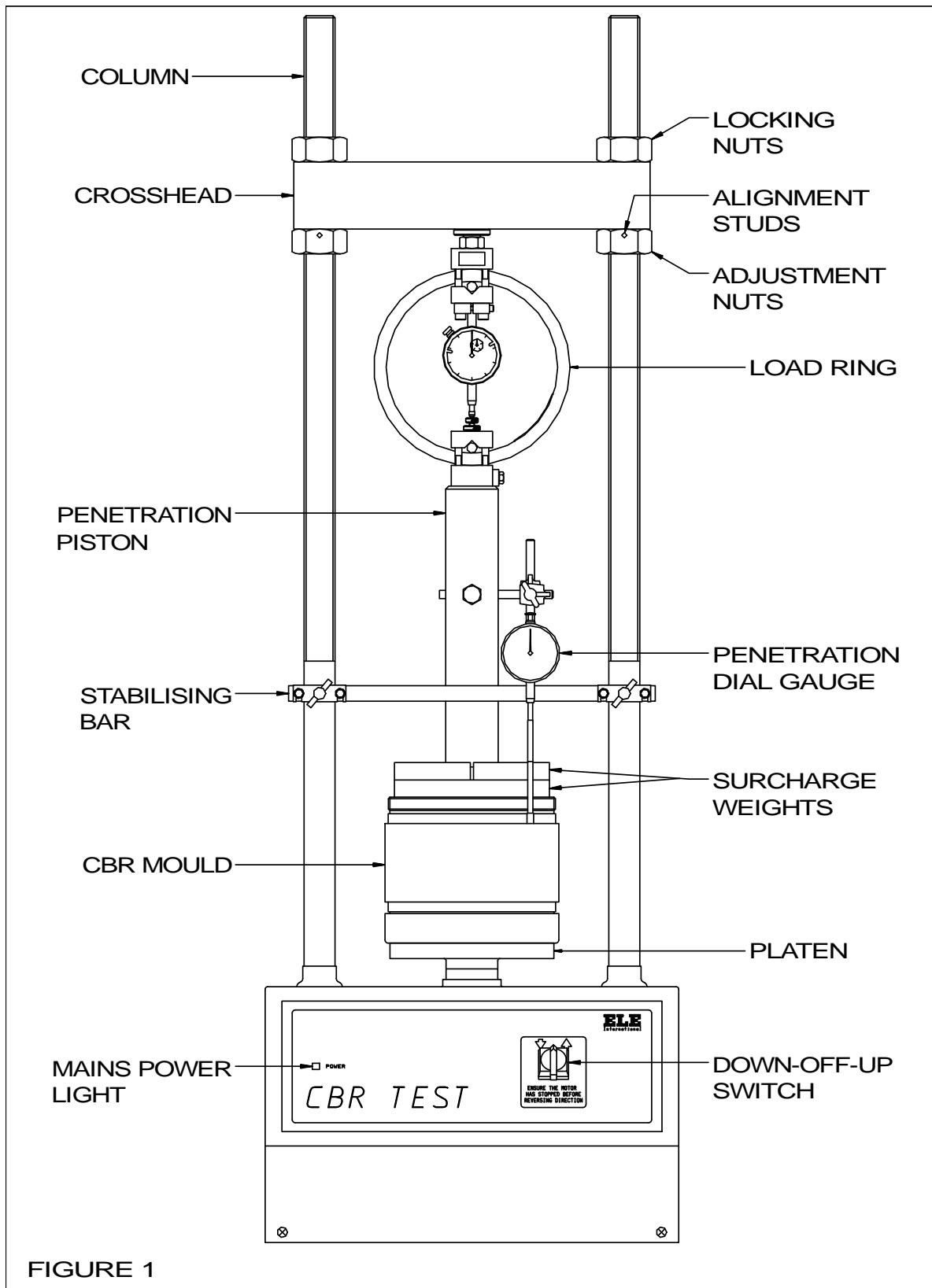


FIGURE 1



Figure 2

1 Safety

This equipment has been tested by ELE International and is safe to use providing that the proper safety precautions are observed:

Do not use this equipment in any manner, other than as specified in this user manual; misuse may result in serious injury to personnel.


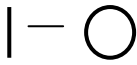





Do not attempt to operate the equipment with covers removed. Only connect to the correct electrical supply.

Refer to Installation section before installing machine.

Do not operate machine with wet hands.

Please read this entire manual before unpacking, setting up, or operating this equipment. Pay particular attention to all **DANGER** and **CAUTION** statements. Failure to do so could result in serious injury to the operator, or other personnel, or damage to the equipment. Ensure all moving parts are thoroughly secured before attempting any maintenance.

1.1 Symbols

	Green or Black	PROTECTIVE CONDUCTOR TERMINAL Equipment safety earthing point
	Any contrasting Color	“ I ” = SUPPLY SWITCHED “ON” “ O ” = SUPPLY SWITCHED “OFF”
	Any contrasting Color	FUSE, FOR SAFE OPERATION OF THE EQUIPMENT, USE ONLY FUSES WITH RATINGS SPECIFIED
	Green or Black	Earth (ground) TERMINAL Not for safety earthing purposes but provide an earth reference point.
	Background Yellow; symbol and outline - Black	Caution, risk of electric shock
	Background Yellow; symbol and outline - Black	Caution - refer to accompanying documents
	Any contrasting Color	Equipment conforms to the requirements of European CE Directives, as stated on the Declaration of Conformity

2 Introduction

This machine has been designed to perform CBR tests which conform to BS 1377 and 1924, ASTM 1883 and to AASHTO T192.

The forces applied are generated by a screw jack via a worm reduction unit driven by a motor/gear unit. It provides one speed of 1.27 mm/min which satisfies ASTM/AASHTO Standard and the 1.2 mm ± 0.2 mm/min of the BS Standard. The worm reduction unit and motor/gear unit is grease packed on assembly and should not normally require further lubrication.

Rapid adjustment of height of the loading platen is achieved by rotating the platen anti-clockwise to raise and clockwise to lower.

Limit switches are fitted to prevent over travel on the up and down stroke of the platen.

A ball seated screw fitting located on the crosshead accepts ELE load rings and load transducers up to and including 50 kN.

A socket at the rear of the machine provides a connection for the Electronic Control and read-out Unit (DSU) for use when transducers to record load and displacement are required.

3 Specification

Dimensions (approximate)	550 x 400 x 1230 mm (length x width x height)
Maximum vertical clearance	795 mm (platen down, crosshead up)
Minimum vertical clearance	200 mm (platen up, crosshead down)
Horizontal clearance	265 mm
Platen travel (total)	100 mm
under power	30 mm
by hand (rapid adjustment)	70 mm maximum
Speed range	1.27 mm/min
Weight	57 kg
Voltage	230VAC \pm 10%
Frequency	50 or 60Hz, model dependent
Rated Power	250VA

4 Installation

4.1 Mechanical

DANGER: The CBR 50 is very heavy; it weighs more than 60 kg (132 lbs.). Do not attempt to unpack, carry or move without proper equipment and sufficient people to do so safely. Remember, always lift with your legs, not with your back. If you have a history of back or cardiovascular problems, do not attempt to unpack or lift the CBR 50.

The machine should be installed on a level bench capable of supporting CBR 50's gross weight, and with sufficient space for safe operation of the equipment. The machine is provided with adjustable feet to compensate for any out of level, or unevenness, of the bench surface.

4.2 Power Supply

Electrical safety

Warning: Before removing any covers or performing maintenance repair and service, isolate from electrical supply by removing mains plug. Where mains supply is required during these activities, only competent persons should perform the work.

Warning: Only use the power cable provided or an alternative that is suitably rated for voltage, current and environment.

Check that the power supply is compatible with the requirements stated on the label and connect in accordance with IEE regulations or to local requirements.

The power cable is coded as follows: -

Brown wire	L	Live or Power
Blue wire	N	Neutral
Green/Yellow wire	E	Earth or Ground

Note: exercise extreme caution when using the machine with wet hands. Dry hands before operating machine.

Portable Appliance Tests (PAT)

All ELE designed products are tested for electrical safety prior to sale.

An electrical safety test label is fitted (usually adjacent to the mains input socket).

Should no label be found, please contact ELE Service Department quoting the serial number of the equipment.

Organisations have an obligation to ensure equipment is maintained and is safe for use. Regular PAT testing is one means of ensuring equipment continues to be electrically safe.

Important: do not connect PAT leads to sensitive components such as PCBs, control switches and the like.

DO NOT FLASH TEST ELECTRONIC EQUIPMENT.

If in doubt as to the most suitable connection point (which will usually be an earth stud or an external earth connection) contact ELE Service Department for assistance.

5 Controls (refer to figure 1)

5.1 Mains ON/OFF thermal trip switch (at the rear of the machine).

The thermal trip will fail repeatedly if an electrical fault occurs within the machine. The fault must be located and rectified before commencing work with the machine.

5.2 Mains POWER light.

This illuminates to indicate that there is mains power to the machine and the Mains ON/OFF switch is switched to ON.

5.3 DOWN-OFF-UP switch

This controls the platen movement. In the central position the drive motor is OFF. When the machine is switched to run either up or down, the corresponding direction indicator light will illuminate.

Important: ensure that the motor has stopped before reversing platen direction. This may take approximately 5 seconds. Failure to allow the motor to stop when changing platen direction may cause severe damage to the machine.

6 Operation

6.1 A typical analogue set up is shown in figure 1.

6.2 It is suggested that any test should be started with the platen set approximately 10 mm from the bottom of its travel.

6.3 Wind the platen clockwise to the bottom of its travel and then back anticlockwise for approximately 3 or four turns. This will then set the platen at approximately the suggested height.

6.4 Fit an ELE load ring (or load transducer if using in conjunction with the DSU) of the desired capacity to the crosshead.

6.5 Position the crosshead at the height required by firstly slackening the nuts on either side above the crosshead and then adjust the crosshead to the required height by using the adjustment nuts below the crosshead. To ensure that the crosshead is level, the alignment studs on the lower nuts should be located centrally and at the front of the machine. Tighten the locking nuts using a spanner.

- 6.6 To ensure stability and central location of the penetration piston, the stability bar must always be used. When using the maximum number of surcharge weights, it may be necessary to clamp the stabilising bar to the threaded part of the columns. In this case it is recommended that packing pieces (i.e. aluminium strips) be placed between the stabilising bar clamp screws and the column threads to prevent damage to the column threads.
- 6.7 Do not use the machine with the platen unscrewed by more than 70 mm (rapid adjustment).
- 6.8 Switch the machine on using the ON/OFF switch at the rear of the machine (POWER light illuminated).
- 6.9 Switch the machine to UP (Up arrow illuminated).
- 6.10 At the end of the test, switch to central OFF position and allow the motor to stop.
- 6.11 **Important: ensure that the motor has stopped before reversing platen direction. This may take approximately 5 seconds. Failure to allow the motor to stop when changing platen direction may cause severe damage to the machine.**
- 6.12 When the motor has stopped, switch the machine to down (Down arrow illuminated).

7 Maintenance

- 7.1 **Warning:** always disconnect the machine from the power supply before carrying out maintenance work or making any adjustment.
- 7.2 Each month lightly oil the column threads and apply a small amount of oil to the jackscrew. Access can be obtained by unscrewing the platen from the machine.

EC DECLARATION OF CONFORMITY

Name : **ELE International**
Address: Chartmoor Road
Chartwell Business Park
Leighton Buzzard
Bedfordshire LU7 4WG
UK

We hereby declare that the following product is in conformity with the requirements of the following EC Directives:

Title and No. of Directive : Machinery Directive, 2006/42/EC

Product : CBR 50
Catalogue Number : 24-9150
Description : Test equipment designed to test soil strength

The product is designed and manufactured in accordance with the following standards:

EN61010-1:2010 Safety requirements for electrical equipment for measurement, control and laboratory use.

The year in which the CE marking was affixed : 2015

Date : 27/03/2015

Signed :



Prakash Iyengar
Managing Director

Noise Test Certificate



Issued By: **ELE International**

Date of Issue: 1 November 2001 ELE doc ref: 9901X0237

Date of Test: 1 November 2001

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Approved
Signatory

We, ELE International, Chartmoor Road, Chartwell Business Park, Leighton Buzzard, Beds, LU7 4WG, England declare under sole responsibility that the following product(s) to which this declaration relates is (are) in conformity with the provisions of:

89/392/EEC, 91/368/EEC, 93/44/EEC and 93/68/EEC Machinery Directive implemented in the U.K. by S13073/1992 and S12063/1994.

<p>Product Description</p> <p>24-9150 series CBR-Test 50</p>	<p>Serial No. (See details on product identification plate)</p>																					
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>1 Metre</p> <p>1 Metre</p> <p>1 Metre</p> <p>1 Metre</p> </div> <div style="text-align: right;"> <p>Measurements/recorded noise level</p> <table border="0"> <tr><td>Position A</td><td>51</td><td>dB</td></tr> <tr><td>Position B</td><td>55</td><td>dB</td></tr> <tr><td>Position C</td><td>54</td><td>dB</td></tr> <tr><td>Position D</td><td>51</td><td>dB</td></tr> <tr><td>Position E</td><td>54</td><td>dB</td></tr> <tr><td colspan="3">(Normal operator position)</td></tr> <tr><td>Background Noise level</td><td>38</td><td>dB</td></tr> </table> </div> </div>		Position A	51	dB	Position B	55	dB	Position C	54	dB	Position D	51	dB	Position E	54	dB	(Normal operator position)			Background Noise level	38	dB
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Position E	54	dB																				
(Normal operator position)																						
Background Noise level	38	dB																				



BS EN ISO9001: 1994 approved
Certificate number 860461

Noise tests were carried out using Test Meter, serial No.

N30863

which has been calibrated using calibrated standards traceable to national standards of measurement.

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http: //www.ele.co.uk

DIRECTIVE ON WASTE ELECTRICAL & ELECTRONIC EQUIPMENT (WEEE)



Electrical equipment marked with this symbol may not be disposed of in European public disposal systems after 12 August of 2005. In conformity with European local and national regulations (EU Directive 2002/96/EC), European electrical equipment users must now return old or end-of life equipment to the Producer for disposal at no charge to the user.

Note: For return for recycling, please contact the equipment producer or supplier for instructions on how to return end-of-life equipment for proper disposal.

Important document. Retain with product records.

GERMAN

Elektrogeräte, die mit diesem Symbol gekennzeichnet sind, dürfen in Europa nach dem 12. August 2005 nicht mehr über die öffentliche Abfallentsorgung entsorgt werden. In Übereinstimmung mit lokalen und nationalen europäischen Bestimmungen (EU-Richtlinie 2002/96/EC), müssen Benutzer von Elektrogeräten in Europa ab diesem Zeitpunkt alte bzw. zu verschrottende Geräte zur Entsorgung kostenfrei an den Hersteller zurückgeben.

Hinweis: Bitte wenden Sie sich an den Hersteller bzw. an den Händler, von dem Sie das Gerät bezogen haben, um Informationen zur Rückgabe des Altgeräts zur ordnungsgemäßen Entsorgung zu erhalten.

Wichtige Informationen. Bitte zusammen mit den Produktinformationen aufbewahren.

FRENCH

A partir du 12 août 2005, il est interdit de mettre au rebut le matériel électrique marqué de ce symbole par les voies habituelles de déchetterie publique. Conformément à la réglementation européenne (directive UE 2002/96/EC), les utilisateurs de matériel électrique en Europe doivent désormais retourner le matériel usé ou périmé au fabricant pour élimination, sans frais pour l'utilisateur.

Remarque : Veuillez vous adresser au fabricant ou au fournisseur du matériel pour les instructions de retour du matériel usé ou périmé aux fins d'élimination conforme.

Ce document est important. Conservez-le dans le dossier du produit.

ITALIAN

Le apparecchiature elettriche con apposto questo simbolo non possono essere smaltite nelle discariche pubbliche europee successivamente al 12 agosto 2005. In conformità alle normative europee locali e nazionali (Direttiva UE 2002/96/EC), gli utilizzatori europei di apparecchiature elettriche devono restituire al produttore le apparecchiature vecchie o a fine vita per lo smaltimento senza alcun costo a carico dell'utilizzatore.

Nota: Per conoscere le modalità di restituzione delle apparecchiature a fine vita da riciclare, contattare il produttore o il fornitore dell'apparecchiatura per un corretto smaltimento.

Documento importante. Conservare con la documentazione del prodotto.

DANISH

Elektriske apparater, der er mærket med dette symbol, må ikke bortskaffes i europæiske offentlige affaldssystemer efter den 12. august 2005. I henhold til europæiske lokale og nationale regler (EU-direktiv 2002/96/EF) skal europæiske brugere af elektriske apparater nu returnere gamle eller udtjente apparater til producenten med henblik på bortskaffelse uden omkostninger for brugeren.

Bemærk: I forbindelse med returnering til genbrug skal du kontakte producenten eller leverandøren af apparatet for at få instruktioner om, hvordan udtjente apparater bortskaffes korrekt.

Vigtigt dokument. Opbevares sammen med produktdokumenterne.

SWEDISH

Elektronikutrustning som är märkt med denna symbol kanske inte kan lämnas in på europeiska offentliga sopsstationer efter 2005-08-12. Enligt europeiska lokala och nationella föreskrifter (EU-direktiv 2002/96/EC) måste användare av elektronikutrustning i Europa nu återlämna gammal eller uttrangerad utrustning till tillverkaren för kassering utan kostnad för användaren.

Obs! Om du ska återlämna utrustning för återvinning ska du kontakta tillverkaren av utrustningen eller återförsäljaren för att få anvisningar om hur du återlämnar kasserad utrustning för att den ska bortskaffas på rätt sätt.

Viktigt dokument. Spara tillsammans med dina produktbeskrivningar.

SPANISH

A partir del 12 de agosto de 2005, los equipos eléctricos que lleven este símbolo no deberán ser desechados en los puntos limpios europeos. De conformidad con las normativas europeas locales y nacionales (Directiva de la UE 2002/96/EC), a partir de esa fecha, los usuarios europeos de equipos eléctricos deberán devolver los equipos usados u obsoletos al fabricante de los mismos para su reciclado, sin coste alguno para el usuario.

Nota: *Sírvase ponerse en contacto con el fabricante o proveedor de los equipos para solicitar instrucciones sobre cómo devolver los equipos obsoletos para su correcto reciclado.*

Documento importante. Guardar junto con los registros de los equipos.

DUTCH

Elektrische apparatuur die is voorzien van dit symbool mag na 12 augustus 2005 niet meer worden afgevoerd naar Europese openbare afvalsystemen. Conform Europese lokale en nationale wetgeving (EU-richtlijn 2002/96/EC) dienen gebruikers van elektrische apparaten voortaan hun oude of afgedankte apparatuur kosteloos voor recycling of vernietiging naar de producent terug te brengen.

Nota: *Als u apparatuur voor recycling terugbrengt, moet u contact opnemen met de producent of leverancier voor instructies voor het terugbrengen van de afgedankte apparatuur voor een juiste verwerking.*

Belangrijk document. Bewaar het bij de productpapieren.

POLISH

Sprzęt elektryczny oznaczony takim symbolem nie może być likwidowany w europejskich systemach utylizacji po dniu 12 sierpnia 2005. Zgodnie z europejskimi, lokalnymi i państwowymi przepisami prawa (Dyrektywa Unii Europejskiej 2002/96/EC), użytkownicy sprzętu elektrycznego w Europie muszą obecnie przekazywać Producentowi stary sprzęt lub sprzęt po okresie użytkowania do bezpłatnej utylizacji.

Uwaga: *Aby przekazać sprzęt do recyklingu, należy zwrócić się do producenta lub dostawcy sprzętu w celu uzyskania instrukcji dotyczących procedur przekazywania do utylizacji sprzętu po okresie użytkowania.*

Ważny dokument. Zachować z dokumentacją produktu.

PORTUGUESE

Qualquer equipamento eléctrico que ostente este símbolo não poderá ser eliminado através dos sistemas públicos europeus de tratamento de resíduos sólidos a partir de 12 de Agosto de 2005. De acordo com as normas locais e europeias (Directiva Europeia 2002/96/EC), os utilizadores europeus de equipamentos eléctricos deverão agora devolver os seus equipamentos velhos ou em fim de vida ao produtor para o respectivo tratamento sem quaisquer custos para o utilizador.

Nota: *No que toca à devolução para reciclagem, por favor, contacte o produtor ou fornecedor do equipamento para instruções de devolução de equipamento em fim de vida para a sua correcta eliminação.*

Documento importante. Mantenha junto dos registos do produto.