

OPERATING INSTRUCTIONS

Le Chatelier Mould, Extensibility of Mould Apparatus (BS 6463), (EN 196), and Le Chatelier Water Bath

38-3005, 38-3200, 38-3205, 38-3420

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<i>In the interests of improving and updating its equipment, ELE reserves the right to alter specifications to equipment at any time</i> ELE International 2007 ©		

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1 Le Chatelier Mould 38-3005

- 1.1 Comprising of a split cylinder fitted with two indicator stems. The mould is supplied complete with two glass plates and a weight of $100\text{g} \pm 10\text{g}$.

Note: Le Chatelier moulds should be verified periodically with the applicable Extensibility of Mould Apparatus to check the state of the split cylinder.

2 Extensibility of Mould Apparatus 38-3200 (BS 6463-4)

- 2.1 This unit comprises a metal sleeve with a hook and set screw to fit over one of the mould pointers, and a clamp to fit onto the other pointer of the mould. Supplied complete with one weight of $100\text{g} \pm 1\text{g}$.

3 Extensibility of Mould Apparatus 38-3205 (EN 196-3)

- 3.1 Comprises a hook to fit over one pointer of the Le Chatelier mould and one weight of $300\text{g} \pm 1\text{g}$.

4 Le Chatelier Water Bath 38-3420

- 4.1 Electrical Safety

This equipment has been tested 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 electrical covers removed.

Refer to Installation section before installing machine.

Do not operate machine with wet hands.

Important Note : 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.

Key to Hazard Information

DANGER : Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION : Indicates a potentially hazardous situation that may result in minor or moderate injury.

Important Note : Information that requires special emphasis.

Note : Information that supplements points in the main text.

DANGER : 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.

DANGER : 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.

It is recommended that this machine be connected via a residual current device (not supplied), and it should operate if earth leakage current exceeds 0.03 amps.

The power cable is coded as follows:

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

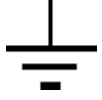
Portable Appliance Tests (PAT)

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

DANGER : 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.

NOTE : DO NOT FLASH TEST ELECTRONIC EQUIPMENT.

Safety Symbols

	Green or Black	PROTECTIVE CONDUCTOR TERMINAL Equipment safety earthing point
	Green or Black	Earth (ground) TERMINAL Not for safety earthing purposes but provides an earth reference point.
	Background Yellow; symbol and outline – Black	<i>Danger - risk of electric shock</i>
	Background Yellow; symbol and outline – Black	<i>Caution - refer to accompanying documents</i>
	Black	Equipment conforms to the requirements of European CE Directives, as stated on the Declaration of Conformity

4.2 Introduction

- 4.2.1 The Le Chatelier water bath is used to condition cement specimens to EN196-3 for the determination of soundness of cement materials.
- 4.2.2 The water bath has a stainless steel bath section for easy cleaning and a matching lid. The bath can also hold up to 12 samples at one time on the rack provided.
- 4.2.3 The water bath uses two heating elements and will bring the bath water to boiling in 30 +/- 5 minutes as prescribed in the EN 196-3 Standard.
- 4.2.4 By switching to one element the bath will then keep the water boiling for the 3 hours +/- 5 minutes as required in the EN Standard.
- 4.2.5 The bath is supplied complete with a lid to minimise evaporation and to assist in limiting heat loss. A small vent in the lid is used to allow excess steam pressure to escape during the boiling process.

4.3 Specifications

Maximum amp rating	See rating label on bath
Ambient working temperature	5 to 40 Deg C
Ambient working humidity	30 to 95 %
Gross weight	5 kg
Size - L, W, H	264, 403, 196 mm

4.4 Installation

4.4.1 After carefully unpacking, report any broken or missing items to ELE as soon as possible.

4.4.2 Place the bath at a suitable height on a flat and stable bench area next to a suitable electrical power supply.

4.4.3 The overall time duration to the water reaching boiling could be increased where the mains power supply is reduced.

DANGER : It is recommended that the bath is placed in an area where it cannot be accidentally knocked causing spillage during operation, as this could cause serious scalding to the operator.

DANGER : Before applying power to the bath make sure the local power supply matches correctly the electrical information label on the bath.

Packaging material must be disposed of in a way to satisfy local requirements.

Parts identification key

1	Main power switch
2	Timer
3	Removable mould rack
4	Samples
5	Elements
6	Lid
7	Bath body
8	Steam pressure vent

4.5 Operation

4.5.1 Fill the bath half way with water. **Note:** the water level could drop during the allotted test time period due to evaporation of the water.

4.5.2 Carefully place the Le Chatelier moulds (4) complete with cement samples on to the rack (3) as shown in Fig. 2 and carefully lower the rack into the bath.

4.5.3 Switch on the main switch (1) to the [I] position (Fig. 1).

4.5.4 Set the timer (2) to 30 minutes (Fig. 1). (**Note:** it is recommended to test the setting on the timer depending on local conditions to make sure that the water temperature reaches boiling in the required 30 minutes prescribed in the Standard EN 196-3.)

4.5.5 The two elements will now bring the water to boiling in the 30 minutes allocated and the timer will then automatically shut down one of the elements and the bath will continue to keep the water boiling for the next 3 hours.

4.5.6 **NOTE:** In an emergency if it is necessary to stop the test, return the main switch (1) to the off position [0] and allow the water to cool with the lid in place.

4.5.7 During the test process, due to evaporation of the water it is important from time to time to monitor the water level and, if required, top up the bath with boiling water to the original level from a different source.

DANGER : Remove the lid very carefully as steam will be rising from the hot water which can cause serious scalds. Use suitable protection for this operation, for example a pair of thick gauge waterproof gauntlets.

4.5.8 Once the test is completed after the 3 hours, switch the main switch (1) to the [0] position and remove the lid and sample rack from the hot water.

DANGER : Remove the lid and rack very carefully as steam will be rising from the hot water which can cause serious scalds. Use suitable protection for this operation, for example a pair of thick gauge waterproof gauntlets.

4.5.9 The moulds can now be analysed as required in the EN 196-3.

4.6 Routine Maintenance

4.6.1 **DANGER :** The electrical power must be removed from the bath before any cleaning or repair work is started, and all maintenance must be carried out by a competent person.

4.6.2 It is recommended that on a regular basis the sample cradle is removed and the inside of the bath cleaned, making sure to remove build up of calcium scale from the bath sides and elements. This will minimise early failure of the elements.

4.6.3 The outside of the bath can be cleaned with a damp cloth.

4.6.4 If it is proposed to scrap the bath, the appropriate restrictions apply relating to the correct disposal of electrical goods.

4.6.5 When work with the bath is completed allow the water to completely cool. It is recommended that the mould/sample rack is removed, the bath emptied of water and then the inside of the bath dried. Replace the mould/sample rack for storage.

4.7 Troubleshooting

4.7.1 If the bath fails to heat up carry out the following:-

a) Check that the correct mains power is available at the electrical supply connection.

b) Check that the bath fuse is not blown. If it is then replace it with a fuse of the same size and value as the original fuse fitted.

c) Check the integrity of the two elements for signs of damage. If either of the elements are found to be damaged then the correct replacement parts must be fitted by a competent person.

d) If failure is not due to the elements then contact the ELE Service Department for further assistance.

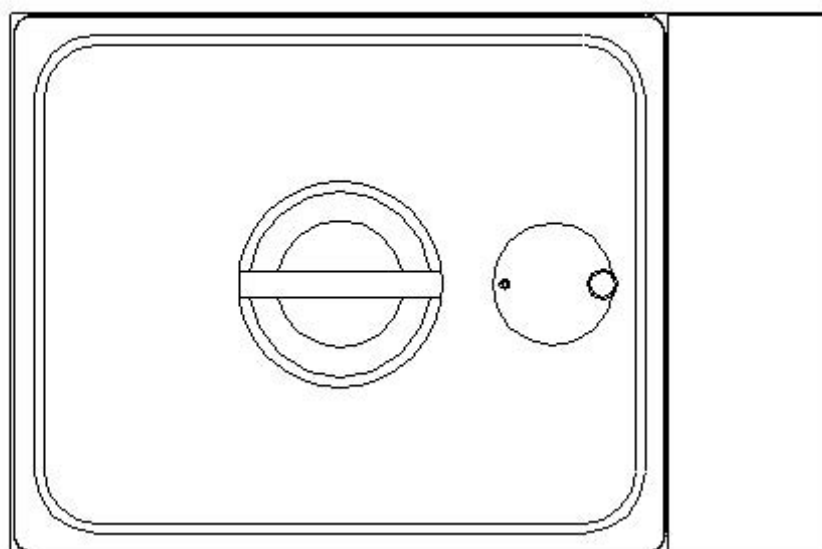
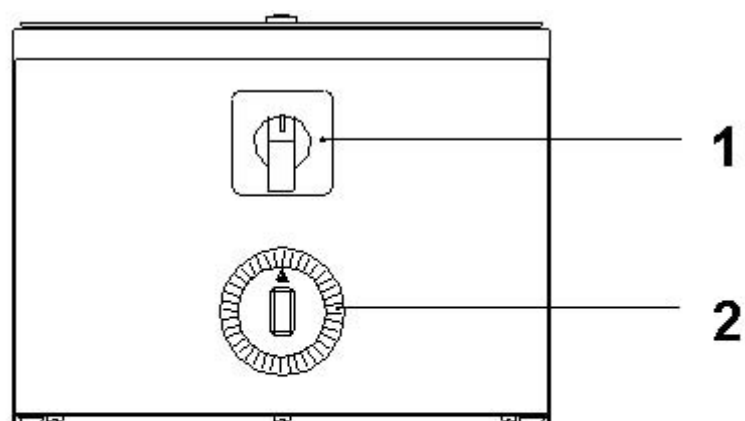


Fig 1

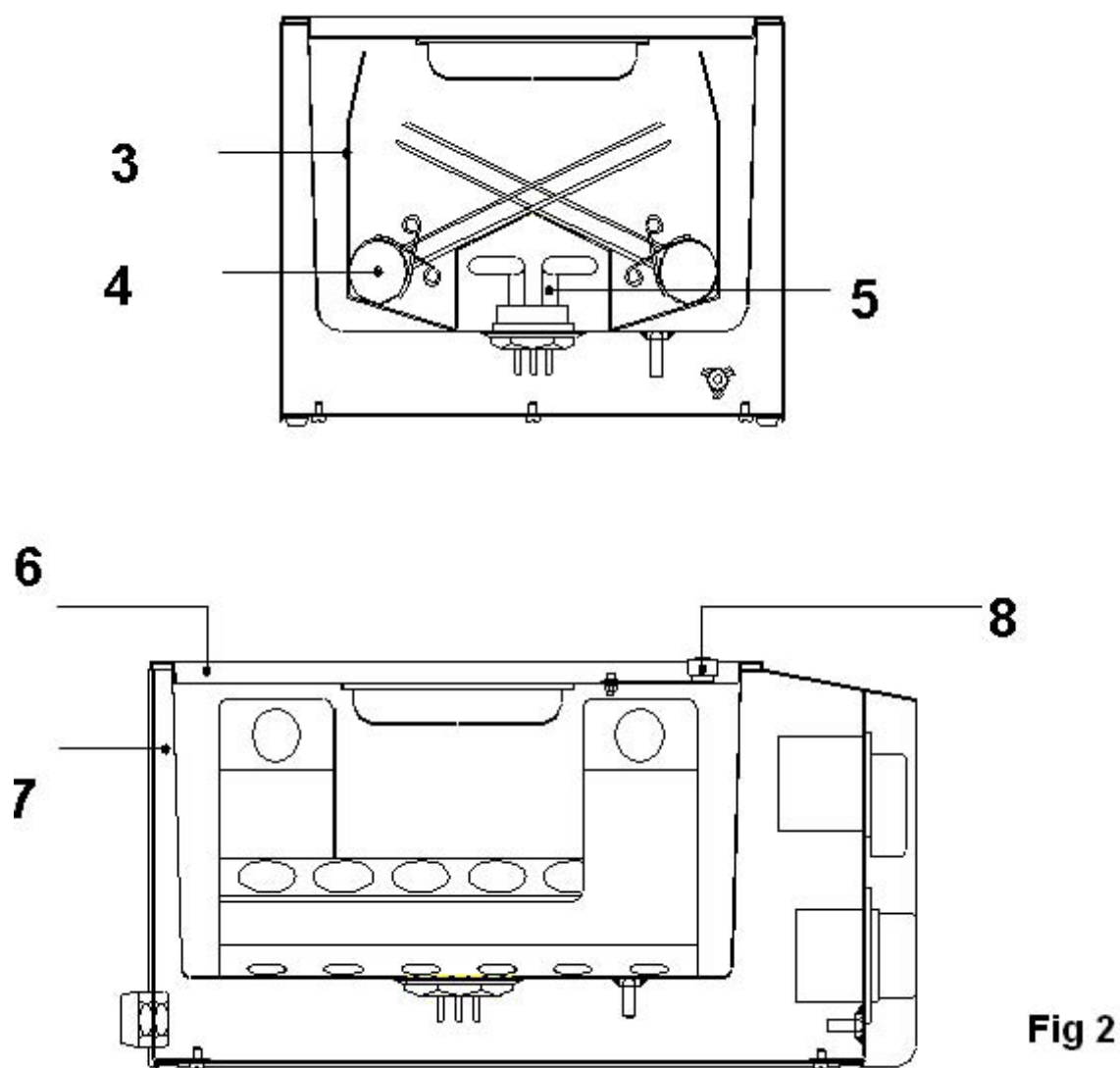


Fig 2

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 sopstationer 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.