

# OPERATING INSTRUCTIONS

## Automatic Soil Compactor

### 24-9090, 24-9095

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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> <b>ELE International 2005 ©</b>		

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## **1 Introduction**

### **1.1 Automatic compaction**

This machine is designed to automatically compact specimens for Proctor and CBR tests, eliminating the laborious hand compaction method. Two versions of the machine are available to satisfy British Standards and ASTM. With each of the machines, the height of the rammer drop is adjustable from 300 mm to 450 mm (305 mm and 457 mm on ASTM machine) by means of a simple lever. The weight of the rammer can be altered from 2.5 kg to 4.5 kg to suit test requirements (5 lb to 10 lb on ASTM machine).

- 1.1.1 An automatic blow pattern ensures optimum compaction for each layer of soil. The rammer itself travels across the mould and the table rotates the mould in equal steps on a base that is extremely stable. The number of blows per layer can be set at the beginning of the test by means of a resettable counter.
- 1.1.2 The energy involved to produce repeated compacted specimens for measurement of soil properties are considerable and can result in inconsistencies by operators using the hand compaction technique.
- 1.1.3 To avoid this, ELE have introduced their 24-9090 series of Automatic Soil Compactors, that are designed to compact soil specimens in moulds 100/101 and 150/152 mm diameter with a high degree of consistency.
- 1.1.4 Due to the slight specification differences between British and American techniques, it was found necessary to introduce two models. No known work has been conducted to indicate the expected variations in results to be obtained on the same soil type and conditions when compacted by the two machines.
- 1.1.5 The principle of the design is to allow the hammer to drop the required height into the soil in the mould which rotates circa 40 degrees between each blow. When compacting 100/101 mm diameter specimens the unit operates on a single radius and when compacting 150/152 mm diameter specimens the unit operates on inner and outer radius to obtain even compaction.

## 2 Safety

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






**DANGER – misuse of this equipment may result in serious injury to personnel.**  
**Only use the equipment for its intended purpose, as described in this manual.**  
**Do not attempt to operate the equipment with covers removed.**  
**Only connect to the correct electrical supply, as stated on the rating plate.**  
**Refer to Installation section before installing machine.**  
**Do not operate machine with wet hands.**

**Important Note:** Only the 115V model of the Automatic Soil Compactor (24-909x/02) is certified to North American CSA and UL safety standards by ETL.

Please read this entire manual before unpacking, setting up or operating this equipment. Pay 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.

**CAUTION – This equipment generates moderate levels of audible noise when in use.**  
**Ensure that it is installed in a location where operating noise will not cause disturbance. Ear protection is required while in use (see noise certificate below).**

### 2.1 Symbols

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

### 2.2 Use of 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

### 3 Specification

<b>General Dimensions</b>	<b>(Height x width x depth)</b> 1400 x 250 x 430 mm
Weight	95 kg (210 lbs.)
Designed mould rotation per blow	43.7°
Blow pattern 150mm moulds	
Outer radius	17 blows
Inner radius	8 blows

#### **British Standard model 24-9090**

Rammer diameter	50 mm
Rammer drop	300 or 450 mm
Rammer weight (inner + outer)	4.5 kg
Rammer weight (outer only)	2.5 kg

#### **ASTM model 24-9095**

Rammer diameter	50.8 mm (2 inch)
Rammer drop	305 mm (12 inch) or 457 mm (18 inch)
Rammer weight (inner + outer)	10 lb
Rammer weight (outer only)	5.5 lb

#### **Environmental**

Temperature	5°C – 40°C
Relative Humidity	Up to 80% for temperatures up to 31°C, decreasing linearly to 50% RH at 40°C.
Power requirements	24-909x/01 CE model: 230V, 50Hz, 3.5A 24-909x/02 cETLus model: 115V, 60Hz, 5A
Pollution category	II
Installation category	II
Certifications	See section 8

## 4 Installation

(See figure 1 & text below)

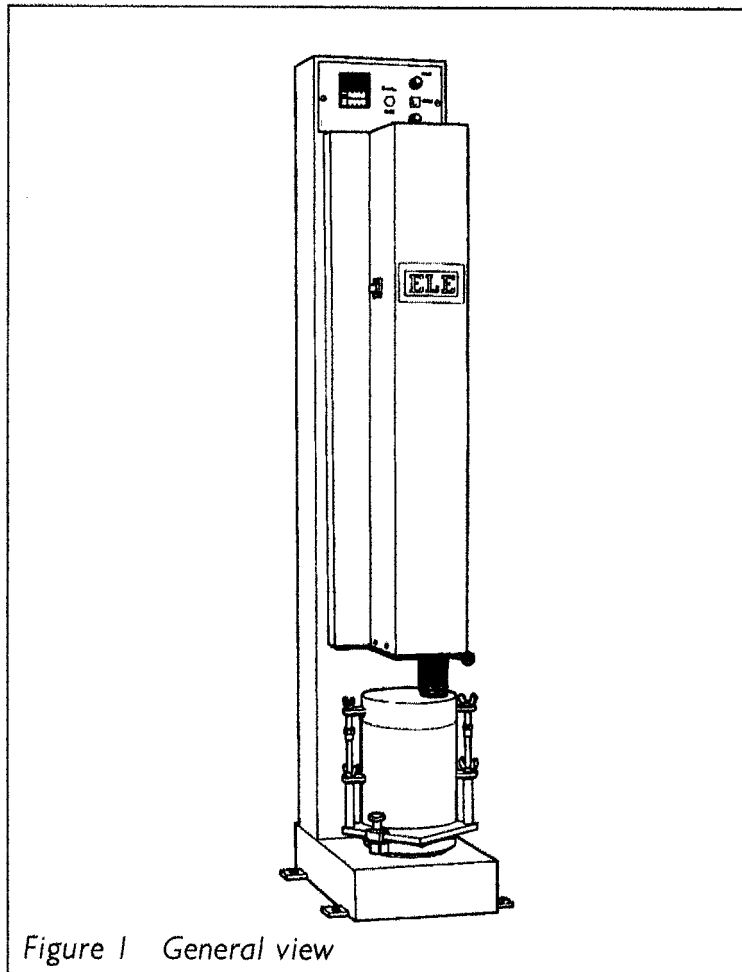


Figure 1 General view

***DANGER: The soil compactor machine is very heavy; it weighs more than 95 kg (210 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 problems or cardiovascular problems, do not attempt to unpack or lift the Soil Compactor machine.***

### 4.1 Floor support

- 4.1.1 To ensure the maximum absorption of energy by the soil specimen, it is essential that the machine is mounted on a solid concrete floor in a location allowing for adequate ventilation and sufficient space for safe operation.
- 4.1.2 If a solid base is not available, it is recommended that the machine is mounted on a concrete block measuring 400 mm wide x 500 mm deep x 200 mm thick. The block should have flat parallel upper and lower faces.
- 4.1.3 The machine is provided with 4 x 12 mm bolt holes set at centres of 295 mm wide x 340 mm deep, for securing the unit to the floor.

## 4.2 Levelling

- 4.2.1 The rammer weight is free falling and the machine therefore must be level after installation.
- 4.2.2 It is important that the machine turntable is level to provide a perpendicular drop for the rammer.

## 4.3 Electrical supply

***DANGER: Servicing of this equipment must be performed by a qualified ELE service technician. Before removing any covers or performing maintenance repair and service, isolate from electrical supply by removing mains plug. Where mains supply connection is required during these activities, only fully trained technicians should perform the work.***

***DANGER: This equipment is only fused for single phase power. Only connect this equipment to SINGLE PHASE POWER electrical outlets with good protective earth grounds.***

Check that the power supply is compatible with the requirements stated on the rating label and connected in accordance with local regulations.

North American machines are provided with an attached power cord with a plug suitable for the power specifications stated on the ratings (mains) label and may be connected to a standard mains socket outlet.

The attached power cord is not user replaceable, except by ELE service technicians.

A means of isolating the machine is required.

### **Portable Appliance Tests (PAT) & Hipot Tests**

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

An electrical safety test label is fitted, usually near the power cord entry point.

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 or Hipot testing is one means of ensuring equipment continues to be electrically safe. The Hipot test can be done on site by a suitably qualified person.

If in doubt as to the most suitable earth connection point for the Hipot test, contact ELE Service Department for assistance.

**DO NOT FLASH TEST ELECTRONIC EQUIPMENT (ie. electronic counter).**

## 5 Controls

- 5.1 Main controls (figure 2)
  - 5.1.1 Mains supply warning light (31).
  - 5.1.2 Compaction 'START' button (4) starts the main motor drive for a compaction sequence.
  - 5.1.3 Manual "STOP" button (30) to override the automatic blow counter system to stop the machine.

- 
- 5.1.4 Proctor/CBR (100/150 mm) switch (8) when set to Proctor allows the rammer to operate on a single radius to the mould of approximately 25 mm. When set to CBR allows the rammer to operate on two radii to the mould diameter of approximately 25 mm and 50 mm in a manner to achieve even compaction of the soil.
  - 5.1.5 Blow counter/automatic stop set switch (3) is used to set the number of blows required for a particular compaction, and to stop the machine when the set number of blows is complete. It also incorporates a reset device for repeated compaction sequences (see *Operation*).
  - 5.2 Circuit breaker (figure 3)
    - 5.2.1 In the event of the swinging head device becoming jammed and to avoid damage, a circuit breaker is fitted at the rear of the machine to cut off the electrical supply to the solenoids operating the head.
    - 5.2.2 The normal switch position is with the switch lever up.
  - 5.3 Rammer safety stop (figure 6)
    - 5.3.1 **CAUTION:** *To avoid accidental dropping of the rammer when the operator is positioning a mould, use the safety lever (6) located at the base of the rammer safety guide assembly.*
    - 5.3.2 Different conditions of compaction call for different weight rammers to fall through different heights.
    - 5.3.3 The slider button (10) is set up for 450 mm drop and down for 300 mm drop.  
**Note:** ASTM version incorporates 457 mm or 305 mm drop. The height of the drop setting is not automatic on either machine.
  - 5.4 Rammer weight (figure 6)
    - 5.4.1 Different conditions of compaction call for different weights of rammer.
    - 5.4.2 The rammer is manufactured into two concentric parts. The outer part (1) is used for 'light' compactions, and the combined inner (7) and outer (1) parts are screwed together for heavy compaction.
  - 5.5 Rotating base platen (figure 6)
    - 5.5.1 The rotation of the base is predetermined to give the best possible blow pattern for all moulds.
    - 5.5.2 Just after the rammer leaves the sample, the lever (11) is operated by rollers on the chain (15). This rotates the base (9) through the cable (12) operating against a ratchet, which is spring returned.



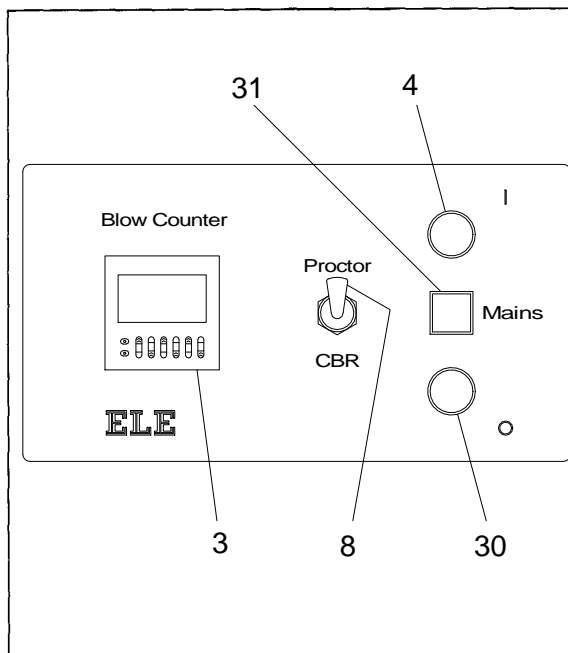


Figure 2 Controls

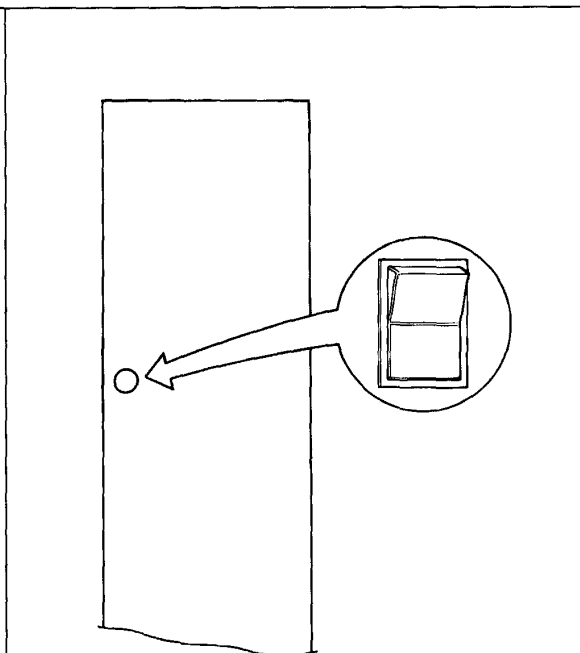


Figure 3 Circuit breaker (rear view)

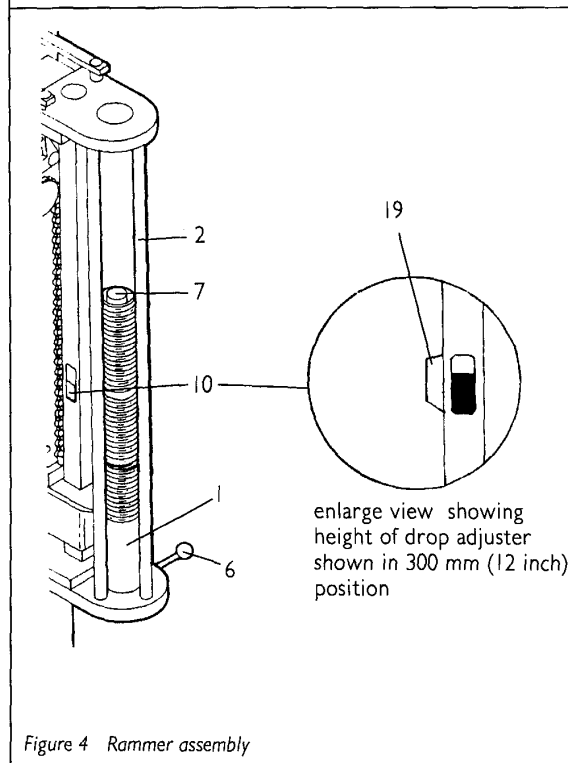


Figure 4 Rammer assembly

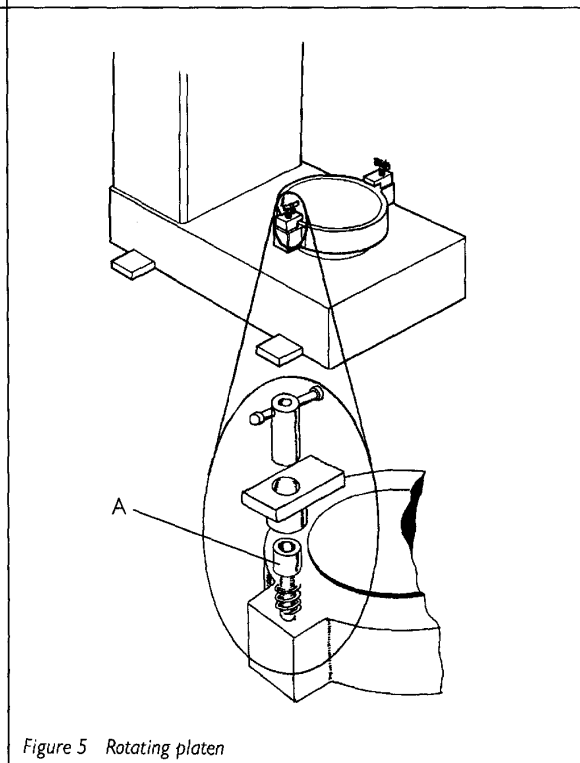


Figure 5 Rotating platen

## 6 Operation

**CAUTION – This equipment generates moderate levels of audible noise when in use. Ensure that it is installed in a location where operating noise will not cause disturbance. Ear protection is required while in use (see noise certificate below).**

### 6.1 Mains supply (figure 2)

6.1.1 Having followed the instructions in section 4, switch on the machine.

6.1.2 The mains warning light (31) will illuminate.

### 6.2 Assembly of the 'light' rammer (figure 4).

6.2.1 Open the rammer guide safety cover.

6.2.2 Position the rammer safety stop (6) to prevent the rammer dropping below the guide.

6.2.3 Introduce the outer rammer (1) through the hole (32) at the top of the guide and lower it down to rest on the stop (6).

6.2.4 Close the safety cover.

### 6.3 Assembly of the 'heavy' rammer (figure 4).

6.3.1 Assemble the outer rammer as detailed 6.2 above.

6.3.2 The inner rammer rod (7) incorporates a threaded portion at one end that will engage a thread in the base of the outer rammer.

6.3.3 Screw the inner rammer rod (7) into the outer rammer until it is as tight as possible.

**Note:** occasionally check the tightness of this assembly to avoid damage to the threads.

### 6.4 Positioning moulds (figure 5).

6.4.1 The rotating platen (9) incorporates a raised portion 159 mm diameter to positively centre the ELE moulds.

6.4.2 ELE International compaction moulds designed for use with this machine incorporate a recess in the base to fit the platen.

6.4.3 Ensure that the mould assembly is registered correctly and use the two clamps to tightly lock the mould on the platen, to avoid rotational slippage.

6.4.4 The mould clamping spacer ('A') is used only with standard BS screwed type CBR moulds.

**Note:** Later ASTM machines will have a circular rotating platen and will be supplied with a location pin and clamping screws to suit ELE International Soiltest Product Division moulds. This pin fits into the central hole in the rotating platen to locate the mould which is then clamped down using the wing screws provided. It may be necessary to remove the other clamps from the machine to facilitate placing the moulds.

### 6.5 Counter

#### 6.5.1 Omron H7CX

The preset value (Green display) is set by pressing the up keys (numbered 1 – 6).

The reset key (RST) returns the count value (Red display) to Zero.

### 6.5.2 Omron H7CL

The counter provides nine push-keys for programming and operating. Eight of the keys on the right hand side are marked with either up or down arrows for incrementing the set value. The ninth key on the extreme left, labelled RST, is used for resetting the preset value.

Each of the eight digit-increment keys is associated with the digit immediately above it in the four-digit subsidiary display.



#### **Digit increment keys**



This push-key allows the user to set the value of the digit immediately above it in the subsidiary display. When the top push-key is operated repetitively the digit being set will step upwards in value from 0 – 9. The lower key will step downwards in value from 9 – 0.



#### **Reset**



This push-key allows the user to reset the instrument's main display and output relay.

### 6.5.3 Autonics CT6S

Counting down from the number displayed at the start of a test, the counter will automatically monitor the number of blows applied to the sample and will stop the machine at the number set by the user.

After the test has finished, press the (RST) key to reset the counter to the required number of blows for the next test.

To change the number of blows first press the ( \ ) key then, using the same key, move the flashing cursor along to the digit to be changed.

Then use the ( √ ∨ ) keys to adjust the digits to the required number of blows.

When the number of blows showing is correct, press the (MD) key to set the counter ready for use. Press (RST) key to install number of blows.

### 6.6 Setting height of drop (figure 4).

#### 6.6.1 Open the rammer safety guard.

#### 6.6.2 The thumb slider (10) sets the height of drop.

#### 6.6.3 'Slider down' sets the trip (19) to release the rammer for a 300 mm drop (305 mm ASTM).

#### 6.6.4 'Slider up' retracts the trip (19) to allow release of the rammer for a 450 mm drop (457 mm ASTM).

### 6.7 Setting Proctor/CBR switch (figure 2)

#### 6.7.1 When compacting in a 150 mm/152 mm mould, set to CBR.

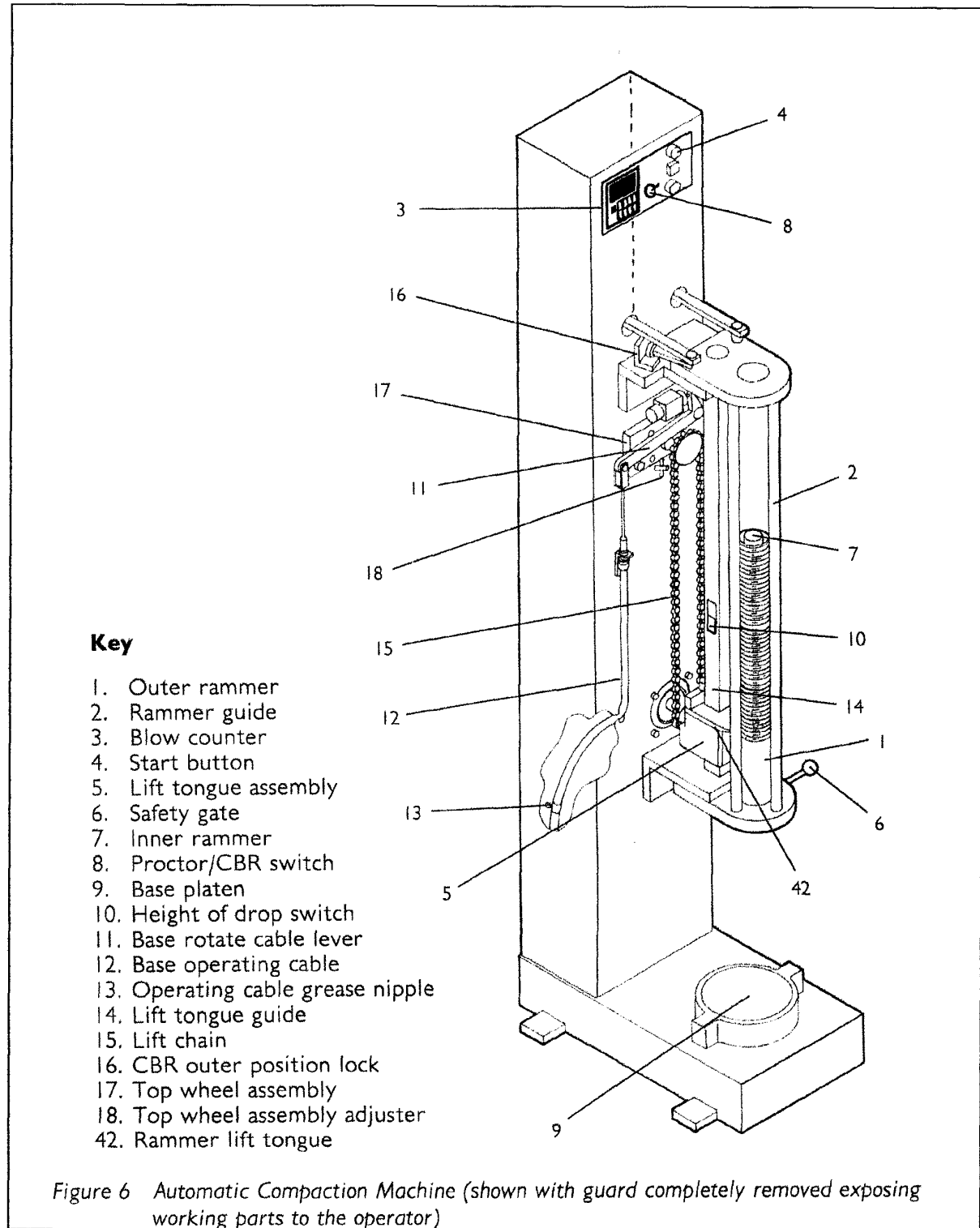
#### 6.7.2 When compacting a 100 mm/102 mm mould, set to Proctor.

### 6.8 Pre-run checks

- 6.8.1
  1. Rammer weight correct
  2. Rammer drop height correct
  3. Rammer guides are free from soil which could prevent rammer free fall
  4. Proctor/CBR switch set
  5. Blow counter set

- 
- 6. Mould registered and locked on the platen
  - 7. Rammer safety stop (6) withdrawn
  - 8. Rammer guide cover closed
- 6.9    Compaction (figures 2 and 4)
- 6.9.1    When satisfied that all preparations are complete, press the start button (4).
- Important:** no attempt should be made to adjust the mould or rammer during compaction. **If any problem arises during compaction, immediately press the stop button (30).**
- 6.9.2    The sequence will automatically stop on completion of the set number of blows.
- 6.9.3    Press the counter reset for a repeat sequence.
- 6.9.4    When compaction is complete, replace the safety stop (6) to prevent accidental fall of the rammer while removing and replacing the mould.

- 6.9.5 If there is excessive dust in the area where the machine is situated then it is recommended that a cover be fitted over the top of the machine to prevent the ingress of dust into the machine.



## 7 Routine Maintenance

**DANGER:** Before conducting any maintenance, isolate the machine from the mains electric supply by disconnecting the machine's power cord from it's electrical outlet.

**DANGER:** Do not remove any covers or attempt to adjust any part of the machine without proper training.

**CAUTION:** Ensure all moving parts are thoroughly secured before attempting any maintenance.

### **Weekly:-**

#### 7.1 Lubrication – rammer lift mechanism (figure 6)

##### 7.1.1 Open the safety cover to the rammer mechanism.

##### 7.1.2 Using a good quality light oil, lubricating all moving parts with particular reference to:

1. Slider post (14)
2. Pick up mechanism (5)
3. Thumb switch (10)
4. Chain and sprockets (15)
5. Solenoid bearings (16)
6. Base operating mechanism (11)

##### 7.1.3 Brush away excess dust and dirt from around the blow counter mechanism.

**Note:** if the machine shows signs of excessive dirt collecting in parts which would need removing, it is suggested that you contact ELE Service Department.

#### 7.2 Adjustment – CBR Outer Position Lock (Item 16, figure 6).

It is essential that the stop on the CBR Outer Position Lock is adjusted so that the locking lever just clears the stop. Adjust for minimal play, consistent with the lever locking fully.

**Important Note:** Any significant gap between the stop and the lever may result in damage to the solenoids due to over-heating.

#### 7.3 Cooling – Ensure fan opening on rear of machine is free from obstructions, dust and debris.

#### 7.4 Fuses

**Important Note:** This machine is suitable for only single phase electrical power and is therefore only single pole fused.

To replace or check a fuse, open the fuse holder cap located on the right side of the machine near the power cord entry point. If fuse replacement is necessary, **always replace fuse with a fuse of the same type and rating.**

Model:	220-240V	110-120V
Main Fuse	T, 2.5A, 250V	T, 5A, 250V

**Important Note:** Fuse failures generally indicate an electrical problem with the equipment. If problems persist, contact ELE for machine servicing.

#### 7.5 Clean the outside of the machine with a damp cloth, and a little non-scouring detergent when necessary.

**8 Certifications**

- 8.1 UL 61010-1 safety standard (ETL Listed) (*24-9095/02, 115V model*)  
CSA C22.2 No. 61010-1 safety standard (ETL Certified) (*24-9095/02, 115V model*)
- 8.2 CE – see Declaration of Conformity below (All other models)

# Declaration of Conformity

**ELE**  
International

Issued By: **ELE International**

Date of Issue: 30 September 2000 ELE doc ref: 9901X0042

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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:

73/23/EEC Electrical Equipment Directive implemented in the UK by S1728/1989 amended by 93/68/EEC 1/1/1997.

Electrical Safety tested to BS EN 60204-1.

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

89/336/EEC, 91/263/EEC, 92/31/EEC (the EMC Directive) amended by 93/68/EEC and implemented in the UK by SI/2372/1992 and SI/3080/1994.

Emissions tested to BS EN 50081-1 Domestic/Light Industrial.  
Immunity tested to prEN 50082-2 Industrial.

Product Description	Serial No.
24-9090 and 24-9095 series Automatic Soil Compactors	(See details on product identification plate)



BS EN ISO9001: 1994 approved  
Certificate number 860461

Responsible person's/approved signatory  
M Green, Managing Director

This Declaration of Conformity complies with BS 7514  
(EN 45014), General Criteria for suppliers' Declaration  
of Conformity

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# Noise Test Certificate

Issued By: **ELE International**

Date of Issue: 30 September 2000 ELE doc ref: 9901X0042

Date of Test: 1 January 1997

**ELE**  
International

Page 1 of 1

Approved  
Signatory

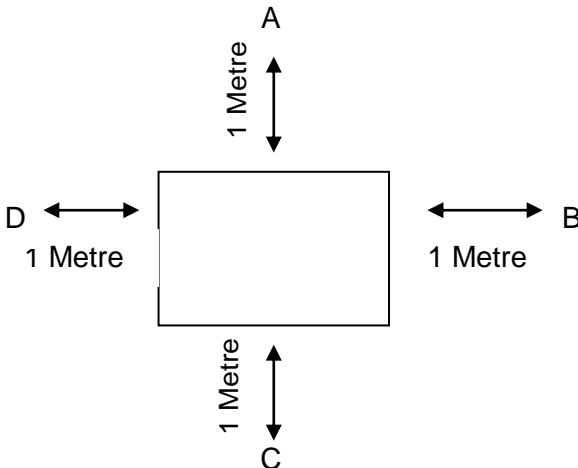


## Noise Test Certificate

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 UK by S13073/1992 and S12063/1994.

Product Description	Serial No.
4-9090 and 24-9095 series    Automatic Soil Compactors	(See details on product identification plate)



**Measurements/recorded noise level**

Position A	84	dB
Position B	81	dB
Position C	78	dB
Position D	82	dB
Position E	89	dB
(Normal operator position)		
Background Noise level	46	dB

Notes: Test carried out using shore 70 rubber in the mould. Machine standing on a concrete floor.



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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## 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 utrangerad 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 bortscaffas 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.**