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Whenever the operation calls for an extended installation (accessory), the text will be shown in *Italics*, preceded by an asterix (*).

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Introduction.

This manual describes the operation of an updated roller brake tester for HGV.

The 630-2RLC is a standard brake testing system without the possibility of extending the facilities for example to include the analysis programme. It does however provide the facility of a printout of the test results.

The brake tester can be operated from the remote control as well as from the keyboard on the console. It can be operated manually (used for example MOT procedures) and automatically which provide a fast accurate test but without a printout.

NOTE. The weight of the vehicle is the operational weight at the time of the test.

Description

General description

The 630-2RLC is an up-to-date, precise, reliable, high quality, electronic update kit for HGV brake tester, offering all the operational facilities and results demanded by today's modern test stations and workshops:

Automatic operation (start/stop).

Separate start/stop of right or left wheel.

Result remains on display after the wheels have locked.

Tests braking force, imbalance, ovality and brake pedal force.

Choice of manual or automatic operation.

Keyboard for recording date and weight of vehicle.

The following facilities are available as accessories:

- * *Printout of report with all results.*
- * *Automatic comparison of results with legal requirements.*
- * *Remote controlled manual operation of all functions.*

The brake tester consists of:

Roller unit.

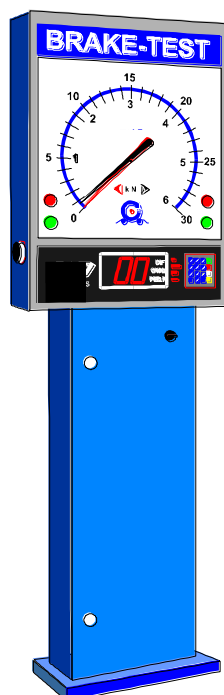
Cabinet with a dial and analogue double pointers , digital LED display and keyboard.

Accessories:

- * *Infrared remote control with brake pedal force gauge.*
- * *Colour printer for printout of test results.*
- * *Infrared remote control.*

The brake tester generates a bib-sound when pressing a key as well as when it acknowledges having received data by a short flash of an amber light on the display.

The remote control also acknowledges the pressing of a key by a bib and a flash of a red light. See section 2.4 for more information about the remote control.



The Console.

Warning: The cabinet contains high voltage components and must therefore only be opened by authorised persons or persons instructed by the supplier.

Contactors with overload fuses, transformers and fuses for the control of the electronics are placed in the cabinet.

A dial with double pointers and a digital display is placed on the front of the cabinet.

Placed at the bottom of the cabinet are plugs for printer, and cable-operated brake pedal force gauge as well as cable connections for the motors and electronics in the roller units and for connection to the power supply.

The cabinet must be fused with 63 amp. standard fuse at the power supplies. The installation must be performed by an authorised electrician in accordance with local regulations.

A main switch is placed on the side of the cabinet. The switch has two positions: 0 (off) and 1 (on).

Dial and digital display.

The display cabinet, with the dial and digital display, can be mounted on the floor on a pedestal, or suspended on a bracket, on a wall or on the ceiling.



The analogue pointers (2) on the dial (1) show the measured brake force in kgf. The range is 0 to 600 kgf and 0 to 3000 kgf.

1 The 2 digit LED display (9) shows the measured values.

2 A number of indicator lights show the actual operational status: A green (4) and a red light (3) are placed on both sides of the dial representing the left and right wheel. The green lights indicate that the brake tester is operational and the wheels are placed on the roller unit and that the test can start. The red lights indicate when a wheel has locked.

3 The amber light (5) indicates that the automatic zero adjustment of the pointers is in progress. This starts as soon as the tester is turned on. The light will remain on for approximately one minute, during which time the roller units must be left inactivated (no wheel must be placed on them). * The same amber light is used as an indicator for received signal when using the remote control.

The white light (10) Indicates, which scale is used: **Off**, the 0 to 600 scale. **On**, the 0 to 3000 scale.

The light indicators on the LED display have the following function:

3 red lights (8) indicate the type of information shown on the LED display, these are from the top:

- Imbalance as percentage.
- Ovality as percentage.
- * Brake pedal force in kg.

4 red light indicators (7). The top two show the functions of the keyboard: Date and Weight. The bottom two show, in manual operation mode, which motor (of the two) has to be started. Manual operation is described in section 5 and 6.



The keyboard

The keys have the following functions:

START: In manual mode: The test is started, by pressing START.

In automatic mode, this key is used to re-start a test, which has been interrupted by pressing STOP.

STOP: This key interrupts the test both in manual and automatic operational mode. The tester is re-started by pressing START. In automatic mode the tester is re-started by driving a set of wheels onto the roller units.

AUT/MAN: You can toggle between automatic and manual operation by pressing this key.

Note that for safety reasons this key does not function when wheels are placed on the rollers, so the change from one mode to the other must be done when the rollers are vacant. The L-START and the R-START lights are lit in manual mode but are turned off when operating in automatic mode.

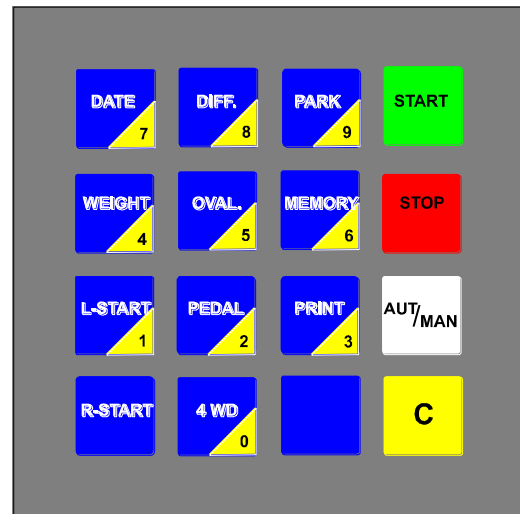
L-START, R-START: With these keys you choose which wheel you want to test when you operate in manual mode. As a rule you start both wheels. By pressing L-START you choose to test the left wheel, (R-START for right wheel). The choice can be changed by pressing the appropriate key. The L-START/R-START lights indicate the chosen wheel. When the wheel has been chosen, the test is started by pressing START. If only one wheel has been started first, the other wheel will start by pressing the appropriate L-START/R-START key. This facility is used when only one wheel has to be tested, i.e. testing a vehicle that has been involved and damaged in an accident.

DATE: * *Only when a printer is connected.* Key in the date when a print of the test results is wanted. The date is written as year-month-date. "yy" will appear when you press DATE. Key in the year with two digits (for example 96), then press "C". Now "m" appears. Key in two digits for the month (for example 09). Press "C". Then key in the date (for example 29). Finish by pressing "C". You have now recorded the date, 29 Sept. 1996.

WEIGHT: * *Only when a printer is connected.* Key in the curb weight of the vehicle in kg./100 to be included in the printed report. The curb weight is recorded omitting the last two digits. i.e. if the weight is 12000 kg, key in 120. Only the last two keyed in digits will finally show on the display (in this case: 20). The brake tester is fitted with an integral computer, which automatically calculates the retardation. The total weight and retardation is included in the print out.

DIFF: By pressing DIFF, the imbalance, in percentage, of the braking effect between the two wheels on the same axle is shown on the display. The imbalance is the percentage of the values between the two wheels on the rollers.

PEDAL: * *Only when a pedal brake force gauge is connected, either by cable or a wireless gauge connected to the remote control.*
The display shows the force asserted on the brake pedal in kilos. If a printer is connected, the result is included in the printed report.



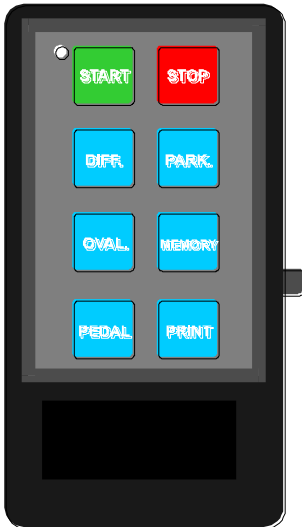
PARK: * *Only if a printer is connected.* Press to test the parking brake. The result will be included in printed report as a separate entry.

MEMORY: * *Only if a printer is connected.* Press to store the results in the memory of the computer to be used for the printed report.

PRINT: * *Only if a printer is connected.* Press to start the printing of the report on the colour printer. After the test has been completed, you start to print the test report by pressing PRINT. "PP" appears on the display during the printing process.

Remote control

* *The remote control is an accessory available with or without integrated brake pedal force gauge.*



The remote control is wireless and communicates with infrared light.

The following keys are placed on the face of the remote control: START, STOP, DIFF/ , PARK/WEIGHT, OVAL/ , MEMORY, PEDAL, and PRINT. These keys have the same functions as the keys of the keyboard on the cabinet. See page 7. However when keying in weight, use the PARK/WEIGHT to activate the mode and the DIFF/ to increase the number and the DIFF/ to decrease it.

If the red light on the remote control does not light up, when pressing the keys, check the battery and change it if necessary.

* *If a brake pedal force gauge is connected to the remote control, the PEDAL key will have a dual function. When pressing PEDAL, the integrated gauge will automatically adjust itself to zero.*

Do not assert any pressure on the pedal sensor during this process.

The remote control generates a bib sound for the duration of the zero adjustment process. Thereafter the remote control starts to transmit the pedal pressure force to the brake tester; whilst the red light on the remote control is flashing. Even though signals are being transmitted, the other keys can be activated as normal.

If the "Pedal" indicator, on the brake tester, starts to flash during the test, it indicates that the signals from the remote control are not being recorded by the brake tester. The reason for this can be that the infrared light is prevented from reaching the receiver on the brake tester, or that the brake pedal force test has been interrupted.

The remote control is automatically turned off if it, or the integrated brake pedal force gauge, has not been active for more than two minutes. The remote control has a build-in battery control. If it turns itself off in less than two minutes, the battery is likely to be flat and must be changed.

The integrated brake pedal force gauge can be turned off by holding down the PEDAL key and pressing STOP. The remote control will answer with flashes and bips. The brake tester responds with flashes and bips and the display will show imbalance.

If the plug from the brake pedal force sensor is pulled out of the remote control during testing, the remote control will be turned off. It will warn you with flashes and bips.

Brake pedal force gauge.

** The brake pedal force gauge is available as an accessory.*

This brake pedal force gauge must be connected to the brake tester before turning the tester on. The brake pedal force gauge is automatically adjusted to zero when the brake tester is turned on. During this process the brake pedal force gauge must not be used.

The brake pedal force gauge measures the brake pedal force in kilos. The result is displayed on the digital display on the brake tester cabinet, when the indicator light "Pedal" is lit up.

Roller unit

The 630-2RLC update kit can be fitted on various roller unit types, which can be fitted with the appropriate sensors provided with the kit.

Warning: The roller unit contains high voltage components and must therefore only be opened by authorised persons or persons instructed by the supplier. The roller unit should only be opened for maintenance and calibration. When calibrating, the instructions must be strictly observed.

The roller unit consists of rollers, end stop rollers and motors with a reduction gear box, electronic strain gauges for measuring the braking effect, proximity sensors for detecting when a wheel locks and sensors detecting the presence of a wheel on the rollers.

The installation must be carried out by an authorised technician and in accordance with local regulations.

Starting the brake tester.

Start the brake tester by turning the main switch, on the front of the cabinet, to position 1.

Immediately after the tester has been turned on, the automatic zero adjustment takes place. The process is indicated by the amber light being lit. The zeroing process will last approximately one minute, during which the pointers will be positioned at the zero mark and the digital display will show "00".

No attempt to activate or to place a vehicle on the rollers must be made during the zeroing process. If a vehicle is placed on the rollers during the zeroing process the brake tester will warn you with a bib sound and the digital display will show "UU". As soon as the vehicle is removed from the rollers, the zero adjustment will be re-started automatically.

If a brake pedal force gauge (cable type) is connected to the brake tester, make sure that it is left unloaded during the zero adjustment process. Failing that may cause faulty results.

The automatic zero adjustment is completed when the amber light has gone out. That signals that the brake tester is ready for use.

Manual operation of standard brake tester in manual mode

- 1 **Turn the brake tester on** – see earlier.
The brake tester is ready for use when the zero adjustment is completed,.
- 2 **Key in the weight of the vehicle (if desired) by using the remote control:**
 - A. Press PARK/WEIGHT (before driving the first wheel set onto the rollers).
Two horizontal lines will appear on the LED display "--" .
(Let's use 12000 kg as an example) The last two digits will not be displayed.
 - B. Press DIFF/ to increase the number and OVAL/ to decrease the number
The first digit shown is the weight in tonnes x10 (press DIFF/ and OVAL/ until "1" appears on the LED display.
 - C. Press MEM.
 - D. Press DIFF/ or OVAL/ DIFF or OVAL until "2" appears.
 - E. Press MEM.
 - F. Press DIFF/ or OVAL/ DIFF or OVAL until "0" appears.
 - G. Press MEM "20" is shown on the display (the last two digits are not keyed in).
- 3 **Drive the vehicle onto the rollers.**
The digital display will change from "OO" to "UU" when the wheels are in place on the rollers. The indicator light for LEFT is lit showing that the left wheel will be tested.

Test the left front wheel.

- 4 **Press START** to start the left hand rollers. When the left lights have change from red to green, the actual test can begin.

The red pointer shows the actual brake force for the left wheel.

With increasing pressure on the brake pedal, the wheel will eventually lock and the motor is automatically turned off , and the lights will change from green to red. The pointer will remain in the position of the brake force at the time of locking.

If locking of the wheel cannot be achieved, the test can be terminated by pressing STOP. The test is likewise terminated if the wheel leaves the roller unit.

- 5 **Press MEM** to store the result for the left wheel.

Test the right front wheel.

The indicator light for RIGHT is lit showing that the left wheel will be tested.

- 6 **Press START.** This will now start the right hand rollers. When the right lights have change from red to green, the actual test can begin.

The black pointer shows the actual brake force for the right wheel.

With increasing pressure on the brake pedal, the wheel will eventually lock and the motor is automatically turned off, and the lights will change from green to red. The pointer will remain in the position of the brake force at the time of locking.

If locking of the wheel cannot be achieved, the test can be terminated by pressing STOP. The test is likewise terminated if the wheel leaves the roller unit.

- 7 **Press MEM** to store the result for the right wheel.

Test both wheels simultaneously.

The indicator lights for RIGHT and LEFT are lit showing that both wheels will be tested.

- 8 **Press START.** This will now start the rollers on both sides. When the lights on both sides have change from red to green, the actual test can begin.

Ovality

- 9 **Measure ovality (optional)** This is a good time to measure ovality, - if desired.
If testing ovality is not wanted omit the points 9, 9a and 9b.

9a **Press the brake pedal down** in a controlled movement until the pointers show Approximately 500 kgf (or at the force stipulated by regulations).

9b **Press OVAL** on the remote control and keep the pressure on the brake pedal Steady.

The test takes around three seconds during which the indicator light for ovality is lit and the green lights are flashing.

The test is over when the green lights stop flashing. The display shows now the highest ovality measured as a percentage for 3 seconds.

During the test the highest ovality measured is displayed on the LED display. When the test is over the display goes back to show imbalance.

The ovality for each wheel will appear on the printed report.

Measure imbalance.

- 10 **Press the brake pedal down** in a controlled movement until both wheels have locked.
(At the moment a wheel locks, the relevant motor will be turned off automatically)
(If ovality has been tested, this test can be performed in extension of the ovality test).

The indicator light for imbalance is normally lit during the brake test and the digital display shows the imbalance as a percentage of the highest braking force. After the locking of the wheels, the largest imbalance, measured during the test, is shown on the display for a few seconds. Imbalance is not recorded if the braking force is less than 50 kgf

If the measured imbalance exceeds 30% (depending upon local regulations), the red lights will flash after the termination of the test. This warns the operator that the imbalance exceeds the legal maximum.

After both motors have stopped, the pointers will remain in the positions, for a couple of seconds. The digital display shows the imbalance measure during the test.

- 11 **Press MEM** to store the results.

On the axle with parking brake.

On the 630-2RLC brake tester only the parking brake on one axle will be included in the report.

- 12 **Press START.**
 - 13 **Press Park.** The light for the left wheel is on, showing the left wheel will be tested.
 - 14 **Apply the parking brake** in a controlled motion until the wheels lock. If locking is not achieved, terminate the test at the highest attainable brake force by pressing STOP.
 - 15 **Press MEM** to store the result. Now the light for the right wheel is on, showing that the right wheel will be tested.
- Repeat the procedure 13 to 15.**
- 16 **Drive the axle out** of the rollers.

Testing the following axles:

Drive the next wheel set onto the rollers (Point 3) and repeat the points 4 to 11 (16)

NOTE: After testing the drive wheels, it is advisable to start the rollers before driving out of the roller unit. Failing that, you risk to bring the rollers to rotate at a very high rate. This could damage the car's tires and/or steering system, when the wheels eventually get out of the roller unit.

Termination of a test.

A test can be stopped in one of three ways:

- By pressing STOP on the cabinet or on the remote control.
- By locking the wheels.
- By driving the vehicle out of the rollers.

To re-start press START

Printing the report.

- 17 **Printing the test report.**

With a printer connected, a report can be printed showing the name and address of the garage/test station and all the results from the test of the vehicle. The name and address of the garage/test station is entered into the program by the manufacturer.

The brake tester makes automatically an evaluation of the braking force of the vehicle and compares it to the requirements of the authorities. whether or not the requirements are met is indicated with colours. See below.

To print: when all axles have been tested, a report is printed by pressing **PRINT**. "PP" appears on the digital display during the printing process. More copies can be generated by pressing PRINT again when the printer has stopped.

On the report you will find all the measured and keyed in data together with the automatic generated calculations.

NOTE if the weight has not been keyed in it can be done before printing by following the instruction under point 2 (page 12).

For every tested axle you will have the following results on print:

- Braking force at the point of locking (left and right) in kgf.

- Imbalance as percentage.

- Rolling resistance in kgf.

- Ovality both in kgf and as percentage

- Braking force during ovality test.

- The brake pedal pressure at the moment when the first wheel locked.

The results of the test of the parking brake:

- The maximum brake force in kgf.

- Imbalance in kgf.

Automatic operation.

Automatic start/stop provides a simple and efficient procedure for testing the most important parameters of the braking system of vehicles.

Turn the brake tester on as described on page 11.

Wait until the zero adjustment is completed. Then drive the wheel set onto the rollers. The digital display changes from showing "OO" (when the roller unit is "empty") to "UU" when the wheels are in place on the rollers.

Choose automatic operation by pressing AUT/MAN on the keyboard. The indicators LEFT and RIGHT will light up. For safety reasons, the AUT/MAN key can only be activated if there is no vehicle on the rollers.

When the wheels are driven onto the rollers, the end stop roller is pressed down and trips the switch, which starts the brake testing procedure. A short delay makes sure that the wheels are in place on the rollers. Then the motors start with a short interval between the start of the left rollers and the right ones.

The brake pedal must not be activated until the red lights are out and the green lights come on indicating that the actual brake test can commence.

The digital display shows imbalance during the whole duration of the test unless another function has been chosen.

Press the brake pedal down in a controlled movement until both wheels have locked. The motor will stop at the moment when the wheel locks and the light will change from green to red at the relevant side of the display.

If locking of the wheels cannot be achieved, the test can be terminated by pressing STOP. The test is likewise terminated if the wheels leave the roller unit.

After both motors have stopped (the wheels have locked), the pointers will remain in the positions, for three seconds, at which they were, when the relevant wheel locked. The digital display shows the largest imbalance measured up until the first wheel locked.

If the wheels remain on the rollers, the pointers will go back to zero and the motors will start again.

As mentioned, the test can be stopped in three ways:

- By pressing STOP on the cabinet or on the remote control.
- By locking the wheels.
- By driving the vehicle out of the rollers.

Measuring imbalance.

The indicator light for imbalance is normally lit during the brake test and the digital display shows the imbalance as a percentage of the highest braking force. After the locking of the wheels, the largest imbalance, obtained during the test, is shown on the display for a few seconds. Imbalance is not recorded if the braking force is less than 50 kgf

If the measured imbalance exceeds 30% (depending upon local regulations), the red lights will flash after the termination of the test. This warns the operator that the imbalance exceeds the legal maximum.

Measuring ovality

The ovality is measured during the brake test.

Apply the brakes until the desired force has been reached and keep a constant pressure on the brake pedal. Regulations demand that the ovality be measured at a braking force of 500 kgf. (depending upon local regulations).

Press the key OVAL. The indicator for ovality lights up and the green lights flash. The lights keep flashing throughout the test, and the display shows the ovality as a percentage.

The duration of the ovality test is 3 seconds. The green lights stop flashing and are on constantly when the test has ended. The display shows now the highest ovality measured as a percentage for 3 seconds, whereafter the imbalance as a percentage is shown on the display again.

Testing the parking brake.

The parking brake is tested in the same manner as the service brake.

Technical specification.

The cabinet:

Dimensions: 800 mm * 620 mm * 200 mm, Total height on pedestal 1750 mm.
Weight: 35 kg.
Power supply: 3 * 415 V with earth.
Display: Twin pointer dial display. Two digits LED display. Light indicators.
Range: 0 - 600 kgf. and 0 - 3000 kgf.
Dial diameter: 400 mm.
Printer: Star LC - 100 colour.
Facilities: Dependent upon choice of accessories.

Facilities:

Standard brake tester:

Shows actual braking force.
Measures maximum braking force.
Calculates and displays imbalance.
Measures and shows maximum imbalance.
Measures and shows ovality.

Fully extended brake tester.

Measures and shows of brake pedal force (cable or wireless system).
Printed report showing all the measured results: Brake force at point of locking, imbalance, ovality, pedal brake force, deceleration, distribution of braking force.

Remote Control:

Dimensions: H - W - L = 70 mm * 40 mm * 20 mm
Weight: 165 g including battery.
Functions: 8 keys, connector for sensor for build-in brake pedal force gauge.
Battery: 9 V, type "E - block" Lithium.
Battery life: Continuous use: 43 hrs. (Lithium Multiplex)
Normal use: approximately ½ yr.

Pedal brake force gauge:

Dimensions: H - W - L = 40 mm * 40 mm * 50 mm
Weight: 750 g.
Length of cable: For wireless version: 60 cm
For version connecting to the cabinet by cable: 10 m.
Measuring range: 0 - 99 kg.
Tolerance: < 0.5 kg.

TERMS AND CONDITIONS OF SALE

GUARANTEE

We guarantee our products as free from defects due to faulty material or bad workmanship for a period of 12 calendar months for all products. The period of the guarantee commences from the date of delivery to the Purchaser, either by us or by our distributor. Our liability is limited to the replacement of parts found defective and making good defects found within the prescribed period arising solely from faulty material or bad workmanship, in the products of our own manufacture, properly used solely for the purposes for which they were intended, and not due to wear and tear, misuse, neglect or improper adjustment.

Any product alleged to be defective shall be forwarded to us, carriage paid, immediately the alleged defect is discovered, for identification, examination and report or if not capable of being so forwarded, notice in writing shall be sent to us immediately. The Purchaser will be charged for engineers time and travelling expenses if a warranty repair is carried out on site, other than for fixed items of equipment such as brake testers. If we accept liability the repaired or new product, in replacement, will be delivered free from our works. We give no guarantee in respect of any proprietary electrical or other equipment made by other manufacturers, and supplied with our products, but will so far as possible, transfer the benefit of such guarantee, if any, given by such other manufacturers. We are in no circumstances liable for any consequential or other loss or damage arising through any defect in our product. In lieu of any express or implied statutory or other warranties, guarantees, conditions or liabilities (whether as to fitness, quality, standard of workmanship or otherwise) which are hereby excluded, the following provisions shall apply:

- (a) The Purchaser shall not be entitled to rescind the contract or to claim damages on the grounds of any statement whatsoever as to the suitability of the goods for any particular purpose, and the Purchaser assumes responsibility for the capacity and performance of the goods being sufficient and suitable for his purpose, and for his premises being suited to the installation and operation of the plant and machinery. The Purchaser agrees and confirms that apart from the express terms of the contract, no statement or representation has been made by the Company relating to the goods to be supplied under the contract or, if any has been made, he has not relied on it.
- (b) The Company's liability in respect of any defect whether quality, suitability or performance or otherwise in any goods supplied or for any loss, injury or consequential damage attributable thereto is limited to the terms of this guarantee and the Purchaser hereby acknowledges:
 - (i) that if purchased the goods in a competitive market and that the bargaining strength of the Company was in no way a relevant factor in the purchase of the goods from the Company.
 - (ii) that the Purchaser knows the extent of the meaning of this Condition and the limitations thereby imposed by it under Sections 13, 14 and 15 of the Sale of Goods Act 1979.

Our guarantee does not apply should equipment be operated or stored under adverse conditions e.g. outside installations or in areas used for steam cleaning or pressure washing, etc., unless otherwise specified in the relevant equipment manual.

The above guarantee is given in lieu of all other terms, conditions, warranties, guarantees, undertakings and representations, express or implied, statutory or otherwise, which, except to the extent that this provision is held to be void or unenforceable under or by virtue of any provision contained in the Sale of Goods Act 1979 or the Unfair Contract Terms Act 1977 or any statutory modification or re-enactment thereof for the time being in force, are hereby expressly excluded.

DESIGN We reserve the right to alter the design or construction of equipment at any time without notice.

LAW OF CONTRACT

All contracts for the sale of the Company's products shall be deemed to be made and executed in England, and the same shall be construed, performed and enforced in accordance with English Law and the parties submit to the jurisdiction of the English Courts. The application of the Uniform Laws of International Sales shall be excluded. This condition shall not prevent the Company instituting proceedings in the Courts of any other country to enforce such contract against the customer.

DELIVERY

Delivery dates, given in good faith, are approximate and reflect conditions prevailing at that time.

No liability can be accepted arising from delays in delivery, irrespective of the cause of any such delay.

CANCELLATION AND VARIATION

Orders once accepted by us are binding and cannot be cancelled or varied unless we at our discretion accept the cancellation or variation. We will make every effort to meet our Purchasers in this respect but

- (a) we cannot accept cancellation for non-standard products; and
- (b) we cannot accept cancellation changes in delivery dates or other variations notified to us later than the end of the penultimate month prior to the month fixed for delivery; and in such circumstances and any other cancellations or variations to which we have not agreed we shall enforce our contractual rights and/or impose an appropriate charge.

TERMS

Quotations given are open for acceptance within 14 days and are subject to revision should the state of the raw material market or other circumstances render this action necessary.

Orders, whether received as a result of a quotation or not, can only be accepted for execution at prices ruling at date of despatch.

Payment - except where otherwise stated in our invoice, or agreed in writing, our terms are nett cash and payment is due on presentation of invoice. Where we have agreed to open an account with the Purchaser invoices are due for payment by the 25th of the month following month of invoice and interest will be charged on overdue accounts at the prevailing County Court rate.

VALUE ADDED TAX

VAT is not included in our prices and will be shown separately on all invoices at the rate ruling at date of despatch and subject to current legislation.

CARRIAGE

Carriage is paid to destinations on the mainland of England, Scotland and Wales on all orders of £500 Nett or over, except accessories, spare parts and repairs. Where carriage is chargeable its cost is added to the invoice value at current rates.

PACKING AND UNLOADING

Damages or shortages must be signed for as such and claim made on the carriers, in writing, within three days of delivery. Where Company vehicles are used the driver must be notified at the time of unloading and the consignment note marked to indicate the damage or shortage. The practice of signing for the goods "not examined" does not absolve the Purchaser from this condition. The consignee is responsible for unloading. Packing cases and slings, when used, are charged extra but credited in full on return, carriage paid and in good condition.

LOSS IN TRANSIT

Public Transport Companies and the Post Office only accept claims for loss in transit made within a limited period. If goods are not received within 14 days of the date of our invoice, we must be advised immediately otherwise neither the carriers nor ourselves will be liable for any loss involved.

PASSING OF RISK

The risk in the goods shall remain in us until delivery to the Purchaser or his agent. In the absence of written notice from the Purchaser to us and the carriers, as prescribed above, the goods shall be deemed to have been delivered complete and in satisfactory condition.

PASSING OF PROPERTY

Until such time as all sums due to the Company from the Purchaser whether in respect of goods delivered by the Company to the Purchaser or otherwise have been paid the provisions of this Condition shall have effect:

- (a) All goods delivered by the Company to the Purchaser will remain the property of the Company to the intent that the whole legal and beneficial interest therein shall remain that of the Company.
- (b) If the Purchaser becomes or threatens to become insolvent or being a body corporate has a Receiver appointed or passes a resolution for winding up or if a Court makes an Order to that effect or being an individual or partnership makes any composition or arrangements with his or their creditors or has a receiving order made against him or them or if the Purchaser shall be in breach of these Conditions, then the Company shall be at liberty to forthwith remove and repossess all goods which remain the property of the Company in accordance with this Condition and enter upon any property to do so or to inspect goods to identify the Company's goods.
- (c) The Purchaser shall only be at liberty to resell the goods purchased from the Company prior to the passing of title on the understanding that if it does not resell the goods then it will hold on trust for the Company so much of the proceeds of sale received by it under contracts which include any of the goods hereby sold either in their original or altered state as are necessary to discharge payment in full to the Company.
- (d) No provision of this Condition shall be deemed to cause a Mortgage or Charge of the Property or undertaking of the Purchaser or any part thereof to have been created by the Purchaser in favour of the Company.

SEPARABILITY

Any failure by us in respect of one delivery shall not entitle the Purchaser to treat the contract as repudiated, each delivery being, for such purpose, deemed a separate contract.

INSTALLATION

The Purchaser is responsible for the preparation of the site, where such a site is necessary, together with the provision of any supplies and services that may be required. The specifications and the responsibilities of agents, distributors and end-users are clearly set forth in separate leaflets, available on the various products concerned.

If failure to fulfil this responsibility extends the time taken to commission equipment or results in extra visits by engineers the Purchaser is fully liable for the extra cost. If installation of equipment is unduly delayed, the Company reserves the right to pass on cost inflation as a supplementary charge.

REFUSAL

Goods consigned to the order of end-users and/or distributors render them liable for all carriage and handling charges incurred, if delivery of the goods is refused on arrival at destination.

RETURNED EQUIPMENT

In exceptional conditions, subject to agreement in writing, and the equipment being of current standard design, new equipment in good condition will be accepted, carriage paid to factory, subject to a handling charge. Any costs incurred in making the equipment as new will be charged in addition to the handling charge.

SPARES AND AFTER SALES SERVICE

Spare parts and service are available through our service agent. Initial contact should be made via the Crypton Product Support Helpline on 01278 436225. All spare parts purchases are subject to minimum order values.

RIGHT TO TERMINATE

If the Purchaser breaks any of these conditions or becomes insolvent or subject to any law relating to bankrupts or being a corporation goes into liquidation, whether voluntary or compulsory or has a receiver appointed over its assets, we may suspend deliveries or, by notice to the Purchaser, terminate the contract and such termination shall be without prejudice to any other rights or remedies to which we may be entitled.

All quotations and tenders are given and contracts are made by the Company subject to the above terms and conditions and unless previously agreed in writing by an authorised officer of the Company:

- (i) no verbal, written or other addition hereto or variation hereof including (without prejudice to the generality of the foregoing) any representation or warranty relating to the goods or services to be provided by the Company shall be effective; and
- (ii) these terms and conditions supersede any other terms and conditions appearing elsewhere and shall prevail over and exclude any course of dealing established between the Company and the Purchaser and any other terms and conditions stipulated or incorporated or referred to by the Purchaser or his agent or any third party; and
- (iii) it shall be a pre-condition of the Company giving any quotation or tender or entering into any agreement for the supply of any goods or services that such agreement be made subject to these terms and conditions.

CRYPTON

Crypton Technology Business

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Tel: +44 (0) 1278 436200 Fax: +44 (0) 1278 450567 Email: sales@CryptonTechnology.com

Website: www.cryptontechnology.com

AFTER SALES SERVICE

Apart from the routine maintenance and adjustments stipulated in this manual the equipment must not be tampered with in any way. All further servicing must be carried out only by an engineer from Transervice or Authorised Agent (outside the UK). Failure to observe these conditions will invalidate the Guarantee.

On-Site Service / Overhaul / Spare Parts

If you require a Service Engineer to attend ON SITE, either due to an equipment fault, or for machine calibration, or if the equipment covered by this manual requires to be sent back for factory overhaul, or if you need spare parts, please contact our Product Support Helpline at the following number.

Tel: 01278 436225 Fax: 01278 436238

Overseas

Service abroad is provided by the agent from whom your equipment was purchased.

Fully Comprehensive After-Sales Service

Call Crypton Helpline for details of local service agents. 01278 436225

Crypton provide information and contracts covering:

Car Data, Fault Code Information, Diagnostic Information, Technical Topics, Software Support Contracts, Software Updates & Accessories

Helplines

Crypton run an Equipment Helpline during normal office hours.

Tel: 01278 436225 Fax: 01278 436238
email: support@CryptonTechnology.com

A fully comprehensive Product Support Contract is also available which provides additional assistance with equipment / technical support. Please contact Product Support on the above Helpline no. for further details.

Notes:

