

RIDSDALE

**RIDSDALE
DIETER**

FOUNDRY SAND TESTING EQUIPMENT



Catalogue No. 800



CERTIFICATE GB94/3993

INDEX

ITEM Ref. No	DESCRIPTION	PAGE No
No 42-CE	Calibration Equipment	29
No 44-CHT	Core Hardness Tester	31
No 28-CPT	Core Permeability Tube	21
No 14-DB	Digital Balance	10
No 27-EPM	Electric Permmeter	20
No 48-FHY	Foundry Hydrometer	32
No 31-GCSM	Green Compression Strength Machine	23
No 42-GHT(B)	Green Hardness Tester, 'B' Scale	30
No 43-GHT(C)	Green Hardness Tester, 'C' Scale	30
No 46-IPT	Impact Penetration Tester	31
No 25-LCO	Laboratory Core Baking Oven	19
No 9-LM	Laboratory Mill	6
No 10-LSM	Laboratory Sand Mixer	7
No 15-LSR (N)	Laboratory Sand Rammer, Type 'N' (LSR)	11
No 17-CMT	- Compactability Accessory for LSR	13
No 22-CGA	- CO ₂ Gassing Accessories for LSR	16
No 16-DEI	- Density Indicator for LSR	12
No 18-FLI	- Flowability Indicator for LSR	12
No 15-RB	- Ramming Block for LSR	11
No 21-SST	- Split Specimen Tube for LSR	15
No 19-TNRA	- Tensile Ramming Accessory for LSR	14
No 20-TRRA	- Transverse Ramming Accessory for LSR	14
No 12-MBL	Moistbalance	9
No 11-MTL	Moisture Teller	8
No 29-MPA	Mould Permeability Accessory	21
No 45-MST	Mould Strength Tester	32
No 26-MCB	Multigang Core Boxes (Tensile & Transverse)	18
No 4-RSW	Rapid Sand Washer	3
No 30-SIT	Shatter Index Tester	22
No 23-STNA	Shell Mould Tensile Accessory	17
No 24-STRA	Shell Mould Transverse Accessory	17
No 7-BMM	Sieve Shaker (Octagon 2000 Digital)	4
No 14-SWS	Sliding-Weight Scales	10
No 8-STS	Standard Test Sieves	5
No 32-USSM (ho)	Universal Sand Strength Machine (USSM – Hand Operated)	24
No 33-USSM (md)	Univeral Sand Strength Machine (USSM – Motor Driven)	25
No 35-HDS	- High Dry Strength Accessory for USSM	26
No 34-SSA	- Shear Strength Accessory for USSM	26
No 40-SPA	- Splitting Strength Accessory for USSM	27
No 36-TNCA	- Tensile Core Strength Accessory for USSM	27
No 37-TRCA	- Transverse Core Strength Accessory for USSM	28
No 38-TRSA	- Transverse Shell Strength Accessory for USSM	28

INTRODUCTION

Stringent control of the properties of moulding material is imperative for the consistent production of high quality castings at the minimum cost, particularly when using automated moulding lines.

This catalogue describes and illustrates a comprehensive range of equipment which will meet the requirements of the modern foundry for testing and controlling moulding and coremaking materials.

Most of this equipment is manufactured under licence to the design of the H.W. Dietert Co., USA, who are one of the leading suppliers of sand testing equipment to foundries throughout the world. Several items have been developed by us in the UK.

Please note that all equipment included in this catalogue can be produced to prepare and test either AFS (imperial) or DIN (metric) specimens. The dimensions of the AFS and DIN specimens which can be prepared and the capacities of the testing equipment in the relevant imperial or metric units are given in the description of the relevant items. When enquiring about or ordering this equipment, please state whether AFS or DIN models are required.

A complete repair and overhaul service for most items of equipment is available at our works, and an 'on-site' calibration service can also be provided.

Our policy is one of continuous improvement and hence the illustrations in this catalogue may not include detailed modifications.

PURCHASE PROCEDURE

When ordering, please give the description of the Sand Testing Equipment required and ensure we have your full delivery and invoice addresses. In the case of EU customers we ask you also to provide your VAT number.

Please also advise, where appropriate :-

- (a) The voltage and cycle specifications for electrical equipment.
- (b) Whether the equipment is required to prepare and/or test AFS (imperial) or DIN (metric) specimens.

For prices see separate price list. Prices are stated in £ Sterling and are subject to revision without notice. They exclude packing, despatch and VAT where applicable.

The following terms apply :-

- (i) United Kingdom Net monthly account (subject to approved bank and trade references). Insurance and freight are charged extra, and Value Added Tax at the standard rate is charged on the net invoice value.
- (ii) Overseas Packing, documentation, insurance and carriage are charged extra at cost. We shall be pleased to forward a quotation detailing these costs upon request. Prepayment is required on all orders. If it is not possible to prepay, and the value of the order is in excess of £20,000, payment may be made by means of a confirmed irrevocable Letter of Credit placed at our disposal on a British Bank (all charges, both in the opener's country and in UK, for the account of the opener). A Pro-forma Invoice together with guidance notes for the establishment of Letters of Credit will be supplied if required.

Payment may be made by cheque or Banker's Draft, made payable to "Ridsdale & Co Ltd" at the address below or by BACS or inter-bank transfer to Account No 70752118 at Barclays Bank Plc, Albert Road, Middlesbrough, England, TS1 1QE, Sort Code 20-56-74, SWIFT Code BARC GB22, IBAN No GB83BARC20567470752118.

Please send all orders, enquiries and correspondence to :-

RIDSDALE & CO. LTD.,
Newham Hall, Newby,
Middlesbrough
ENGLAND, TS8 9EA

Telephone: +44 (0) 1642 300500
Fax: +44 (0) 1642 315209
Website: www.basrid.co.uk
email: enquiries@basrid.co.uk

RAPID SAND WASHER

**Ridsdale
DieterT**

For the determination of the clay content of a moulding sand



Comprises motor stirrer unit, two glass beakers, metal stand, syphon tube, cleaning brush and separate control box with time switch and audible alarm.

The determination of the clay content of a moulding sand is made by agitating a sample of the sand in a weak tetrasodium pyrophosphate solution in a glass beaker, then syphoning off the clay-bearing solution using the special clip-on syphon tube. The process of re-diluting, agitating and syphoning is repeated until the solution is clear. The sand grains collected in the beaker are then dried and weighed, and the clay grade is calculated from the loss in weight. The sand grains are normally retained for grading by sieving.

The features of the Type N Rapid Sand Washer are that the motor stirrer unit is more robust than in former models, the agitator disc is replaceable, and the wash bottle assembly is replaced by a special graduated heat resisting glass beaker which is mounted in a metal stand for stability during the agitation process. The incorporation of a separate control box provides an invaluable means of timing and controlling the agitation and settling periods. (This controller can be purchased as a separate item for use with former Rapid Sand Washer models or with other equipment).

SPECIFICATIONS:-	Net Weight:	6.4 kg
	Dimensions:	370 x 200 x 200 mm (Washer) 180 x 120 x 120 mm (Control Box)
	Gross Weight:	20 kg
	Gross Dimensions:	520 x 400 x 370 mm
	Power Supply:	110/115V or 220/240V, 1 phase, 50 and/or 60 Hz

For the rapid screen analysis of moulding sands.

OCTAGON 2000 DIGITAL. A high performance electromagnetic shaker that utilises a vibratory action which moves the sample over the sieve in a unique way, whilst rapid vertical movements keep the apertures from binding. Features include digital, vibration and amplitude control, continuous or intermittent vibration control, 0-99 minute timer. No rotating parts to wear out. Unique quick release sieve clamping device holds up to eight full height or eighteen half height sieves. Suitable for 200 mm or 8 inch diameter sieves.



SPECIFICATIONS:	Net Weight:	43 kg
	Dimensions:	500 x 420 x 730 mm (including rods)
	Gross Weight:	65 kg
	Gross Dimensions:	680 x 590 x 390 mm
	Power Supply:	110/115V or 220/240V, 1 phase, 50 and/or 60 Hz.

For the particle size analysis of moulding materials



These woven wire mesh sieves are designed to combine minimum weight with maximum rigidity, and are manufactured with no joints in the circumference to ensure complete freedom from any corners where test material may lodge. 60 degrees angle bevel leads onto the mesh. Lid and receiver are also available which nest smoothly with the sieves.

Sieves are usually supplied with brass frames and phosphor bronze mesh, but stainless steel frames and mesh are also available.

In Table 1 below is the BS 410: 1986 series recommended in UK for the normal particle size analysis of foundry moulding materials: in Table 2 is the DIN 4188 series and in Table 3 the AFS recommended series. The BS and DIN series conform to international standard ISO R565 and comprise 200 mm diameter sieves : the AFS series conforms to ASTM E11-95 and comprises 8" diameter sieves.

N.B. 200 mm diameter (metric) sieves will not nest with 8" diameter (imperial) sieves.

The standard sieve height is 50 mm for the metric sieves or 2" for the imperial sieves, but half height, 25 mm or 1", can be supplied if required.

In addition to the sieves specified below, intermediate micron (mesh) sizes are available if required.

Sieves to BS 410: 1986 (ISO R565)		Sieves to DIN 4188 (ISO R565)		AFS Sieves to ASTM E11-95	
Nominal Aperture in Microns	Nearest Mesh Number	Nominal Aperture in Microns	Nearest Mesh Number	Nominal Aperture in Microns	Nearest Mesh Number
1000	16	1400	12	3350	6
710	22	1000	16	1700	12
500	30	710	22	850	20
355	44	500	30	600	30
250	60	355	44	425	40
212	72	250	60	300	50
180	85	180	85	212	70
150	100	125	120	150	100
125	120	90	170	106	140
90	170	63	240	75	200
63	240	45	350	53	270

Table 1

Table 2

Table 3

SPECIFICATIONS (Set of 11 sieves plus lid, receiver and cleaning brush) :-

	FULL HEIGHT:	HALF-HEIGHT:
Net Weight:	6 kg	4 kg
Dimensions:	220 x 220 x 635 mm	220 x 220 x 350 mm
Gross Weight:	9 kg	8 kg
Gross Dimensions:	480 x 440 x 360 mm	480 x 440 x 360 mm

For milling and mixing experimental batches of moulding and core sands.



460 mm diameter pan capacity 1-4 kg of sand. Fitted with tundish and sprinkler for uniform distribution of water additions.

This mill is similar in design to the roller type of sand mills used in foundry practice. The preparation of experimental sand mixtures under full-scale conditions in the foundry can become costly, and a small mill is therefore an essential piece of equipment for the sand testing laboratory.

A $\frac{1}{2}$ hp motor is directly coupled to the driving shaft which is suitably geared to rotate the rollers at a speed of 30 rpm.

Push button Stop/Start switch with inching button gives easy control for adding materials and discharging the mixture.

A cut out switch is fitted to prevent operation of the motor when the safety grill is raised.

SPECIFICATIONS:	Net Weight:	172 kg
	Dimensions:	850 x 550 x 500 mm
	Gross Weight:	220 kg
	Gross Dimensions:	1030 x 730 x 700 mm
	Power Supply:	110/115V or 220/240V, 1 phase, 50 and/or 60 Hz.

LABORATORY SAND MIXER

Ridsdale

Ideally suited for mixing oil, resin and silicate bonded sand mixtures.



Two specially shaped blades mounted on solid steel cone rotate at a speed of 35 rpm.

Time Switch, incorporated in the machine for starting and switching off the motor, can be set for periods up to 15 minutes.

Designed for making small scale mixtures from 1-2_ kg in the laboratory. The blade assembly is driven directly from the output shaft of a robust _ hp geared motor. Fixed breakers on the side of the pan churn up the mixture and give very efficient blending in a few minutes. Sand is readily discharged by pulling out the door at the base of the pan. Another important feature is the ease with which the complete blade assembly can be removed to facilitate cleaning. A cut out switch is fitted to prevent operation of the motor when the safety grill is raised.

SPECIFICATIONS:	Net Weight:	42 kg
	Dimensions:	300 x 500 x 360 mm
	Gross Weight:	75 kg
	Gross Dimensions:	670 x 360 x 490 mm
	Power Supply:	110/115V or 220/240V, 1 phase, 50 and/or 60 Hz.

Ridsdale DieterT

MOISTURE TELLER

**For the rapid and accurate determination of moisture in moulding sands.
Equal in accuracy to the oven drying method**



Complete with three 50 mm deep drying pans, pan cooling base and handling tongs.

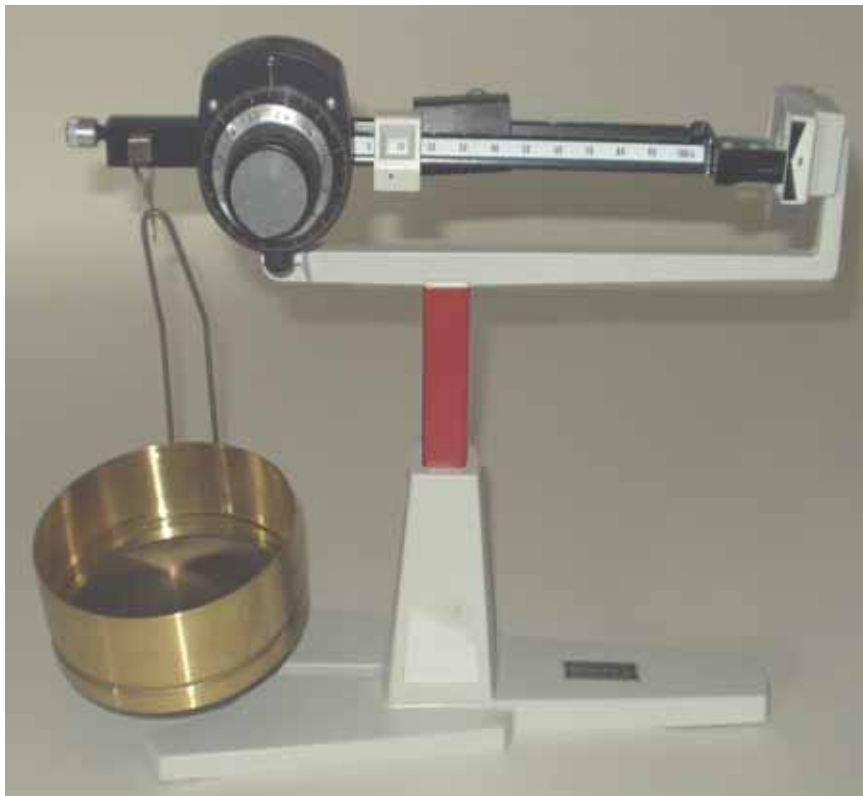
Mechanical time switch 0-15 minutes. Temperature range approximately 90-170 °C.

This is an instrument in which preheated air is passed through the material to be tested which is contained in a tared sample pan with special woven wire base. The sample is weighed, and then dried for a specified time at a thermostatically controlled temperature. After the moisture has been removed, the material is again weighed. The quick action of the Moisture Teller is due to the hot air being blown through a thin layer of the material. A feature of this machine is that a large sample (50 grams) is used, thus increasing the accuracy of the method.

The Moisture Teller can also be used to determine moisture in materials other than moulding sands (eg iron ore, crushed sinter, coal, metal powder, salt, hay, yarn, soap powder, malt and dried or shredded foodstuffs). Pans deeper than the normal 50 mm depth can be provided to accommodate an equivalent weight of material if this is less dense than moulding sand.

SPECIFICATIONS:-	Net Weight:	10 kg
	Dimensions:	250 x 350 x 570 mm
	Gross Weight:	30 kg
	Gross Dimensions:	670 x 340 x 480 mm
	Power Supply:	110/115V or 220/240V, 1 phase, 50 and/or 60 Hz.

Used in conjunction with the moisture teller for direct reading of moisture content.



Moistbalance fitted with direct reading dial graduated 0-20% moisture in 0.2% divisions using a 50 g sample. This is a sturdily constructed precision balance using high grade materials such as agate bearings, steel knife edges and Alnico damping magnets.

SPECIFICATIONS:	Net Weight:	4 kg
	Dimensions:	360 x 140 x 300 mm
	Gross Weight:	10 kg
	Gross Dimensions:	530 x 540 x 340 mm

For easing weighing of sand samples used for preparing test specimens.



Sliding riders eliminate the use of weights and facilitate quick weighing.

Combined funnel and scoop avoid physical loss when transferring sand to specimen tubes

These scales have been specially designed for use in the sand testing laboratory.

Small weights are not required for weighing samples up to 210 grams. This range is quite adequate for all test specimens which usually weigh from 140-180 grams.

The total capacity of 2 kilograms is achieved, if required, using additional weights and, with a sensitivity of 0.2 grams, this is sufficient for most research and control tests.

SPECIFICATIONS:

Net Weight:	4kg
Dimensions:	460 x 200 x 250 mm
Gross Weight:	20 kg
Gross Dimensions:	670 x 340 x 480 mm

DIGITAL BALANCE

For easy weighing of sand samples used for preparing test specimens.

Supplied with a specially designed combined funnel and scoop to avoid physical loss of sample when transferring to specimen tubes.

This is a flat platform digital balance with a capacity of 1200 g, readability 0.1 g, linearity ± 0.1 from 0-600 g, ± 0.2 from 601-1200 g.

Has several weighing as well as parts counting modes and also a tare facility.

Supplied complete with mains adaptor.

SPECIFICATIONS:

Net Weight:	1.8 kg
Dimensions:	135 x 235 x 70 mm
Gross Weight:	3.5 kg
Gross Dimensions:	260 x 300 x 140 mm



LABORATORY SAND RAMMER (Type 'N')

**Ridsdale
DieterT**

For preparing test specimens in the laboratory

The Type 'N' Sand Rammer is an improved version of the original model, incorporating a second cam next to the crosshead which facilitates easy location of the specimen tube under the ram head. The new model is also substantially stronger in construction and easier to use and maintain.

This Sand Rammer, like the original version, is thus used to ram cylindrical specimens either to AFS (2" diameter x 2" height) or DIN (50 mm diameter x 50 mm height) specifications for use on the Permeability Meter/Electric Permmeter to determine permeability, the Shatter Index Tester to determine toughness or plasticity or the Green Compression Strength Machine, Universal Sand Strength Machine or High Strength Testing Machine to determine compressive strength.

By using suitable accessories with the Sand Rammer, it can also be used to determine density, flowability or compactability or to produce specimens for testing shear strength, tensile strength, transverse strength or splitting strength on the Universal Sand Strength Machine or High Strength Testing Machine.



SPECIFICATIONS:-

Net Weight:	27 kg
Dimensions:	600 x 220 x 270 mm
Gross Weight:	42 kg
Gross Dimensions:	800 x 360 x 370 mm



RAMMING BLOCK

To eliminate variation in ramming density of test specimens

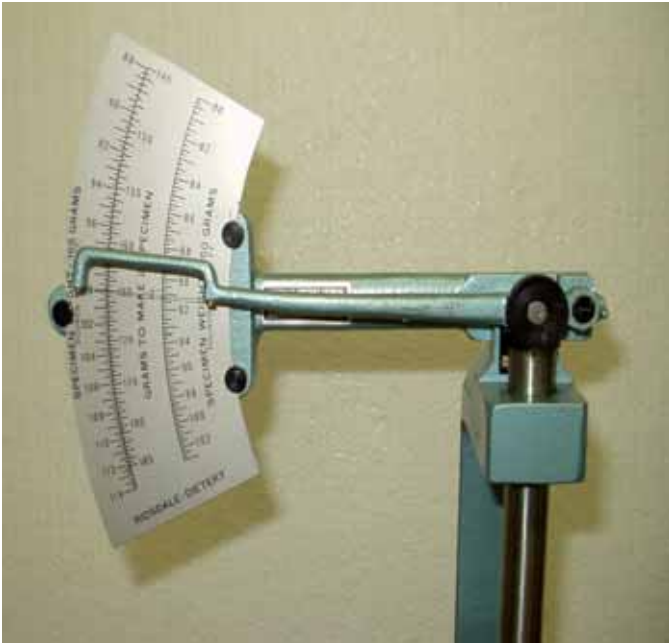
Uniform ramming of sand specimens is essential when comparing results between different laboratories. By using the Ramming Block it is no longer necessary to mount the Sand Rammer on a separate bench or solid support. Uniformity in ramming is assured irrespective of the type of bench used.

SPECIFICATIONS:

Nett Weight:	51 kg
Dimensions:	345 x 255 x 105 mm
Gross Weight:	60 kg
Gross Dimensions:	440 x 340 x 340 mm

Ridsdale DieterT

DENSITY INDICATOR



For determining the density of a rammed moulding or core sand or the correct weight of sand to form a 2" diameter AFS (imperial) or 50 mm diameter DIN (metric) specimen

Density indicators can be supplied to fit either AFS (imperial) or DIN (metric) rammers.

This accessory is readily attached to the Sand Rammer. The position of the pointer is controlled by the length of rammed sand specimen. Two of the graduations on the scale indicate the density of sand in lb/ft^3 for AFS (imperial) and kg/m^3 for DIN (metric) equipment. The third shows the weight of sand required to form a 2" x 2" dia. (AFS) specimen after ramming 165 grams of sand or 50 mm x 50 mm dia. (DIN) specimen after ramming 157 grams of sand.

SPECIFICATIONS:

Net Weight:	0.5 kg
Dimensions:	250 x 50 x 200 mm
Gross Weight:	0.9 kg
Gross Dimensions:	310 x 80 x 210 mm

FLOWABILITY INDICATOR

Suitable for controlling the flowability of moulding sands

"Flowability" is the property which enables a sand to flow readily into a mould and fill up the interstices when subjected to ramming. It is influenced by moisture, permeability, grain shape, fineness and clay content. The indicator is a specially constructed dial gauge calibrated to read in percentage flowability, and may be readily attached to the Sand Rammer. The stem rests on top of the plunger shaft and the movement between the fourth and fifth drop of the weight is registered as flowability. The further the plunger descends, indicating incomplete flow the lower the percentage flowability. When the Sand Rammer is used for ramming test specimens, the indicator is rotated out of position. The flowability indicator can be supplied to fit either an imperial (AFS) rammer or a metric (DIN) rammer.

SPECIFICATIONS:

Net Weight:	0.3 kg
Dimensions:	60 x 50 x 120 mm
Gross Weight:	0.55 kg
Gross Dimensions:	170 x 130 x 120 mm



COMPACTABILITY TESTER

**Ridsdale
DieterT**

For measuring the degree of temper of a sand and for providing a means of assessing the water requirement irrespective of grain size or shape



Filler Accessory for the consistent filling of the specimen tube.



Compactability Scale Accessory mounted on Sand Rammer.

Comprises scale (for mounting on the Sand Rammer), plus tube filler necessary complete with sieve and strike off blade.

This accessory is mounted on the standard Sand Rammer and measures the percentage decrease in height of a riddled mass of sand 4 ¾" high (AFS) or 120 mm high (DIN) under the influence of the compacting force. It is easy to install and does not interfere with the use of the Density Indicator.

SPECIFICATIONS:-	Net Weight:	5 kg
	Dimensions:	170 x 170 x 380 mm
	Gross Weight:	6 kg
	Gross Dimensions:	180 x 260 x 400 mm

For preparing either AFS (1" x 1" central section) or
DIN (22.4 mm x 22.4 mm central section) tensile test specimens.



The accessory consists of a split metal core box, base and ramming head for attaching to Sand Rammer. Produces a convenient specimen for testing high strength sand mixtures.

The assembled core box is placed under the Sand Rammer and the handled cranked three times as for ramming the compression test specimens.

SPECIMENS:
Net Weight: 1.3 kg
Dimensions: 120 x 100 x 90 mm
Gross Weight: 1.7 kg
Gross Dimensions: 90 x 140 x 140 mm

TRANSVERSE RAMMING ACCESSORY

For ramming AFS (1" x 1" x 8") or DIN (22.4 mm x 22.4 mm x 172.5 mm)
transverse test specimens



Comprises steel-faced aluminium ram head with clip for securing to Sand Rammer; hopper; split mould, to allow easy removal of core; base plate; spring steel cut-off knife to size specimens accurately; and four drying plates.

A practical and accurate method of preparing transverse specimens when attached to the Sand Rammer.

SPECIFICATIONS:
Net Weight: 4.2 kg
Dimensions: 240 x 65 x 90 mm
Gross Weight: 4.6 kg
Gross Dimensions: 280 x 205 x 180 mm

SPLIT SPECIMEN TUBE

**Ridsdale
DieterT**

For ramming AFS (2" diameter) or DIN (50 mm diameter) dry sand and core sand specimens



Complete with pedestal cup and four metal drying plates.

The tube is placed on a drying plate and is split to free the rammed specimen.

This tube furnishes a convenient method of preparing core specimens which, because of their very low green strength, cannot be stripped from the ordinary specimen tube. The split feature enables the operator to withdraw the mould from the test specimen, thus preventing distortion by handling.

SPECIFICATIONS:-	Net Weight:	1.4 kg
	Dimensions:	90 x 70 x 110 mm
	Gross Weight:	1.7 kg
	Gross Dimensions:	190 x 140 x 140 mm

CO₂ GASSING ACCESSORIES

For gassing test specimens of sand mixtures bonded with sodium silicate based binders

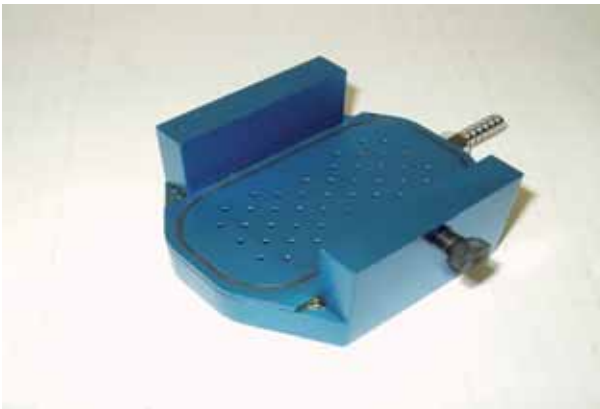


Gassing Accessory for Compression Test Specimen

The specimen is rammed in the AFS or DIN Split Specimen Tube (2" diameter x 2" height for AFS, 50 mm diameter x 50 mm height for DIN) and transferred to the perforated base cup for gassing.

SPECIFICATIONS:

- Net Weight: 0.5 kg
- Dimensions: 100 x 70 x 30 mm
- Gross Weight: 1.0 kg
- Gross Dimensions: 130 x 130 x 60 mm.



Gassing Accessory for Tensile Test Specimen

The specimen is rammed in the AFS or DIN Tensile Ramming Accessory and the core box containing the rammed sand is transferred to the perforated base for gassing.

SPECIFICATIONS:

- Net Weight: 0.5 kg
- Dimensions: 125 x 100 x 50 mm
- Gross Weight: 1.0 kg
- Gross Dimensions: 170 x 130 x 120 mm

Gassing Accessory for Transverse Test Specimen

The specimen is rammed in the AFS or DIN Transverse Ramming Accessory (1" x 1" x 8" for AFS, 22.4 x 22.4 x 172.5 mm for DIN) and the core box containing the rammed sand is transferred to the perforated base for gassing.

SPECIFICATIONS:

- Net Weight: 0.7 kg
- Dimensions: 235 x 65 x 30 mm
- Gross Weight: 1.3 kg
- Gross Dimensions: 335 x 135 x 70 mm



SHELL MOULD TENSILE ACCESSORY

**Ridsdale
DieterT**

For making tensile specimens of shell moulding materials.



The accessory consists of a three gang split mould, base plate, combined dump box and strike-off blade and special inserts for the tensile grip jaws on the Universal Sand Strength Machine.

The dump box is used to measure the quantity of pre-coated sand and to strickle the top of the mould.

SPECIFICATIONS:

Net Weight:	2.5 kg
Dimensions:	285 x 85 x 15 mm
Gross Weight:	2.9 kg
Gross Dimensions:	330 x 140 x 70 mm

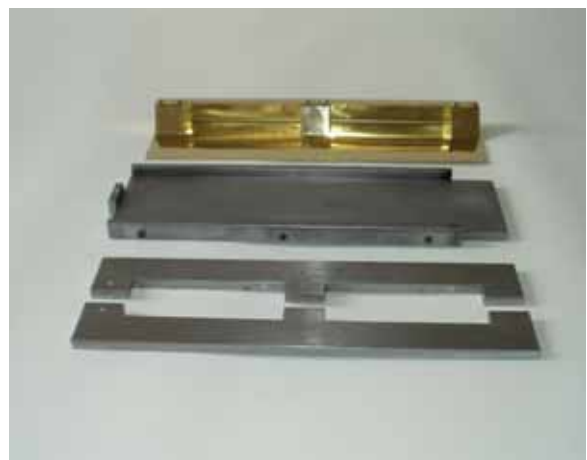
SHELL MOULD TRANSVERSE

For making transverse specimens of shell moulding materials

This accessory includes a two gang core box for the preparation of transverse test specimens and a combined dump box and strike-off blade.

SPECIFICATIONS:-

Net Weight:	2.5 kg
Dimensions:	285 x 85 x 15 mm
Gross Weight:	2.9 kg
Gross Dimensions:	330 x 140 x 70 mm



For preparation of test specimens of chemically bonded sand

For Tensile Specimens

The core box is constructed of four three cavity tensile core boxes clamped side by side in a wooden frame. Each polished hardwood core box is split for easy removal of specimens. The unit comes complete with strickle blade.

SPECIFICATIONS:

Net Weight: 4.5 kg
Dimensions: 380 x 350 x 80 mm
Gross Weight: 7.0 kg
Gross Dimensions: 450 x 390 x 280 mm

The multigang tensile core box can be supplied to produce specimens with either AFS (imperial) 1" cross section or DIN (metric) 22.4 mm cross-section test widths.



For Transverse Specimens

The core box is constructed of twelve polished hardwood transverse core boxes clamped in ladder style in a wooden frame. Each core box is shaped in such a way to enable easy removal of core specimens. The unit comes complete with a strickle blade.

SPECIFICATIONS:

Net Weight: 6.0 kg
Dimensions: 590 x 300 x 90 mm
Gross Weight: 8.0 kg
Dimensions: 620 x 310 x 340 mm

The multigang transverse core box can be supplied to produce either AFS (imperial) 1" x 1" x 8" or DIN (metric) 22.4 x 22.4 x 172.5 mm specimens



The multigang core boxes are made from wood rather than metal to prevent any chill effects during curing.

LABORATORY CORE BAKING OVEN

Ridsdale

**For baking or curing oil sand and resin bonded core sand specimens
or drying clay bonded specimens**



The temperature range of 30°-300°C is precisely controlled by a solid state controller with thermocouple sensor. A fail safe thermostat is also incorporated.

The inclusion of large area heating elements, mineral wool insulation and a forced convection fan ensures optimum thermal efficiency with rapid heat up. The flow of air through the oven may be controlled by adjustable vents in the back.

The case is fabricated in mild steel, with stainless steel interior. There are two sets of shelf supports with two bright nickel wire plated shelves capable of accommodating twenty-four compression or tensile specimens.

SPECIFICATIONS:

Net Weight:	47 kg
Dimensions:	(Internal): 400 x 392 x 420 mm
	(External): 570 x 765 x 620 mm
Gross Weight:	112 kg
Gross Dimensions:	960 x 720 x 720 mm
Power Supply:	110/115V or 220/240V, 1 phase, 50 and/or 60 Hz.

This unit is portable and enables quick permeability testing



The Electric Permmeter employs the orifice method and the pressure drop is indicated on a very sensitive gauge graduated directly in Permeability Units.

In sand control laboratories where time is an important factor, quicker testing with the Electric Permmeter makes it possible to carry out more routine tests per day and to speed decisions so that immediate action can be taken in correcting any drift in permeability which may otherwise result in loss in production.

As this instrument is readily portable it can also be taken into the foundry to carry out permeability tests on actual production moulds in conjunction with the mould permeability accessory.

The actual test is extremely simple. An expanding 'O' ring is used to form an airtight seal between the centre post and the specimen tube. The required air pressure (10 cm of water) is supplied by a high speed fan with rheostat-controlled universal motor. Two standard jets are provided to permit checking of the Electric Permmeter.

SPECIFICATIONS:-	Net Weight:	13 kg
	Dimensions:	245 x 380 x 300 mm
	Gross Weight:	25 kg
	Gross Dimensions:	350 x 490 x 360 mm
	Power Supply:	110/115V or 220/240V, 1 phase, 50 and/or 60 Hz

MOULD PERMEABILITY ACCESSORY

**Ridsdale
DieterT**

Used to measure the permeability of the actual mould surface in permeability units

This accessory is essentially a rubber-faced contact head connected with pvc tubing to an adaptor that fits any permeability meter centre post. For maximum convenience it should be used with the Electric Permmeter which is readily portable.

The contact head is held against the mould surface and the permeability is read on the permeability meter. Mould permeability correlates with casting quality, whereas laboratory permeability is a gauge for sand comparison and for determining any change in the venting power of the sand itself.



SPECIFICATIONS:	Net Weight:	0.9 kg
	Dimensions:	60 x 70 mm (Tube 13 mm dia. X 1000 mm)
	Gross Weight:	1.2 kg
	Gross Dimensions:	190 x 140 x 140 mm

CORE PERMEABILITY TUBE



Supplied complete with inflation bulb.

For determining the permeability of dry sand, baked or cured core sand specimens after they have been stripped from the specimen tube

This specially shaped tube is fitted with an internal rubber sleeve which is inflated to seal the curved surfaces of the specimen.

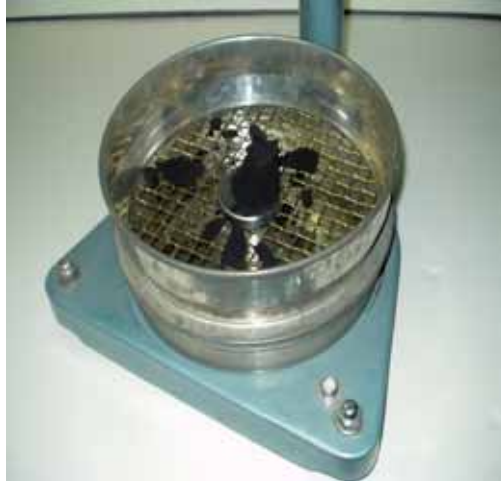
Under test, air can only pass through the specimen between the flat faces. This tube can be used with either the Permeability Meter or Electric Permmeter.

SPECIFICATIONS:-	
Net Weight:	0.8 kg
Dimensions:	160 x 90 x 130 mm
Gross Weight:	1.1 kg
Gross Dimensions:	200 x 180 x 210 mm

Approved Ridsdale design for determining the “mouldability” of green sands



This method of ejecting the test Specimen ensures reproducible results.



Anvil mounted on solid steel support integral with base prevents impact vibration.



In accordance with the JCST specification the specimen falls exactly six feet (1.83 metres).

Complete with sieve assembly comprising sieve with 13.2 mm aperture to BS 410:86, special receiving pan and lid.

The Shatter Index Test is a simple control test which has been standardised in the United Kingdom by the Joint Committee on Sand Testing (JCST). The Ridsdale tester conforms to the specification of this Committee.

A standard AFS or DIN green sand test specimen is ejected from a specimen tube and falls 6 ft. (1.83 m) on to a steel anvil mounted in the centre of the 13.2 mm mesh British Standard Test Sieve. Shatter Index is defined as the percentage of the total weight of the fractured sand specimen which remains on the test sieve. This value, when correlated with the compression strength test gives a good indication of the mouldability of a sand, ie, the kind of “lift” which can be obtained when a sand mould is removed from a pattern.

SPECIFICATIONS:

Net Weight: 54 kg
 Dimensions: 420 x 430 x 2400 mm
 Gross Weight: 104 kg

Shatter Index less Support Tube

Gross Weight: 84 kg (net 44 kg)
 Gross Dimensions: 590 x 580 x 680 mm

Support Tube:

Gross Weight: 20 kg (Net 10 kg)
 Gross Dimensions: 2260 x 100 x 100 mm.

GREEN COMPRESSION STRENGTH MACHINE

Ridsdale

BCIRA type with special direct reading balance



Fitted with readily interchangeable spring balance.
Alternative capacities :-

AFS (imperial)	DIN (metric)
0 – 4.5 psi	0 – 33.0 kN/m ²
0 - 12.5 psi	0 – 90.0 kN/m ²
0 – 31.0 psi	0 – 220.0 kN/m ²

This is an alternative tester for determining green compression strength. When fitted with the low capacity balance it is specially suited for testing unbaked oil-sand core mixtures and uncured resin-bonded sands of very low green strength. The test specimen is rammed in the Split Specimen Tube and stripped directly on to a special carrying plate.

SPECIFICATIONS:

Net Weight:	19 kg
Dimensions:	270 x 270 x 600 mm
Gross Weight:	38 kg
Gross Dimensions:	700 x 370 x 440 mm

For determining the green and dry bond strengths of moulding and core sands



Capacity:

Green Compression Strength

(lower position)

AFS (imperial): 18.7 psi:

DIN (metric): 130 kN/m²

Dry Compression Strength

(upper position)

AFS (imperial): 93.5 psi:

DIN (metric): 650 kN/m²

Dry Compression Strength

(with High Dry Strength Accessory)

AFS (imperial): 280 psi:

DIN (metric): 1950 kN/m²

Supplied with a pair of swivel heads for compression testing.

This highly accurate machine consists of three major parts; frame, pendulum weight, and pusher arm. The pendulum weight swings on ball bearings which are mounted on a steel shaft. Various accessories may be easily attached to perform different tests such as COMPRESSION, SHEAR, TENSILE, TRANSVERSE and SPLITTING strength.

When testing green-sands the test heads are placed in the lower holes of the pusher arm and weight. For dry sands they are inserted in the upper holes where the breaking force is increased by a factor of five. (The breaking force can be increased by a further factor of three by using the High Dry Strength Accessory). A magnetic rider on the scale records the position at which the specimen collapses, and the strength of the sand is read direct from the scale. The Universal Sand Strength Machine is a deadweight testing machine which will stay in calibration indefinitely.

SPECIFICATIONS:- Net Weight: 77 kg
Dimensions: 520 x 290 x 520 mm
Gross Weight: 116 kg
Gross Dimensions: 640 x 620 x 450 mm

**UNIVERSAL SAND
STRENGTH MACHINE**
(Motor Driven)

**Ridsdale
DieterT**

For determining the green and dry bond strengths of moulding and core sands



Capacity:
Green Compression Strength
(lower position)

AFS (imperial): 18.7 psi:
DIN (metric): 130 kN/m²

Dry Compression Strength
(upper position)

AFS (imperial): 93.5 psi:
DIN (metric): 650 kN/m²

Dry Compression Strength
(with High Dry Strength Accessory)

AFS (imperial): 280 psi:
DIN (metric): 1950 kN/m²

With the motor driven model the test specimen is loaded uniformly eliminating the chance of personal error. When the specimen collapses, a switch reverses the motor drive which returns the pusher arm to the zero position where it is stopped ready for the next test.

Supplied with a pair of swivel heads for compression testing.

This highly accurate machine consists of three major parts; frame, pendulum weight, and pusher arm. The pendulum weight swings on ball bearings which are mounted on a steel shaft. Various accessories may be easily attached to perform different tests such as COMPRESSION, SHEAR, TENSILE, and TRANSVERSE strength.

When testing green-sands the test heads are placed in the lower holes of the pusher arm and weight. For dry sands they are inserted in the upper holes where the breaking force is increased by a factor of five. (The breaking force can be increased by a further factor of three by using the High Dry Strength Accessory). A magnetic rider on the scale records the position at which the specimen collapses, and the strength of the sand is read direct from the scale. The Universal Sand Strength Machine is a deadweight testing machine which will stay in calibration indefinitely.

SPECIFICATIONS:-

Net Weight:	84 kg
Dimensions:	600 x 370 x 535 mm
Gross Weight:	115 kg (Net 73 kg) (Frame Only)
Gross Dimensions:	640 x 620 x 450 mm
Gross Weight:	20 kg (Net 11 kg) (Motor Only)
Gross Dimensions:	550 x 350 x 310 mm
Power Supply:	110/115V or 220/240V, 1 phase, 50 and/or 60Hz

Ridsdale DieterT

SHEAR STRENGTH ACCESSORY FOR USSM

For green and dry shear strength tests on moulding and core sands



Comprises shear specimen holder and head

For green shear, test heads are placed in lower position on the pusher arm and weight of the Universal Sand Strength Machine as for the compression test. When the heads are placed in the upper position the breaking force is increased five times, and the scale designated "dry shear" is read. Shear strength tests up to 220 psi (AFS) or 1530 kN/m² (DIN) can be made by using these test heads in the High Dry Strength Accessory.



Capacity:

Green Shear Strength (lower position)
AFS (imperial) 14.7 psi:
DIN (metric) 102 kN/m²

Dry Shear Strength (upper position)
AFS (imperial) 73.5 psi:
DIN (metric) 510 kN/m²

Dry Shear Strength (with High Dry Strength Accessory)

AFS (imperial) 220 psi:
DIN (metric) 1530 kN/m²

SPECIFICATIONS:-	Net Weight:	0.3 kg
	Dimensions:	70 x 55 x 55 mm
	Gross Weight:	0.6 kg
	Gross Dimensions:	110 x 60 x 70 mm

HIGH DRY STRENGTH ACCESSORY FOR USSM



Increases the capacity of the Universal Sand Strength Machine for compression and shear strength tests

The High Dry Strength Accessory provides the means for determining the dry compression and dry shear strengths of moulding and core-sand mixtures by increasing the capacity of the Universal Sand Strength Machine by a factor of three. It is of sturdy design and produces accurate results.

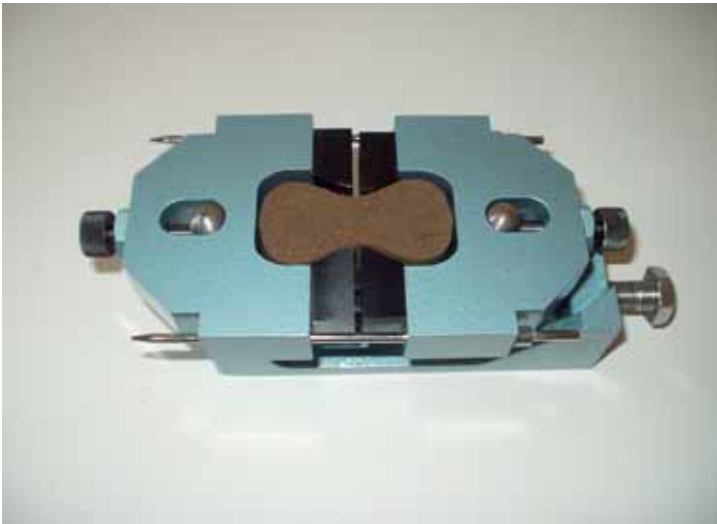
Capacity:
Compression: 280 psi (AFS)
1950 kN/m² (DIN)

Shear: 220 psi (AFS)
1530 kN/m² (DIN)

SPECIFICATIONS:-	Net Weight:	2.4 kg
	Dimensions:	150 x 80 x 300 mm
	Gross Weight:	2.8 kg
	Gross Dimensions:	200 x 220 x 320 mm

TENSILE CORE
STRENGTH
ACCESSORY FOR
USSM

**Ridsdale
DieterT**



Improved design for breaking the tensile core specimen

The Tensile Core Strength Accessory is fitted with self-aligning contoured grips to AFS (imperial) or DIN (metric) specification. The guide pins line up both left and right-hand jaws for insertion of the specimen. The guide pins are removed during the test allowing self-alignment of the jaws. It thus provides a means of uniformly pulling and breaking the test specimen on the Universal Sand Strength Machine. When the specimen breaks, the weight falls away from the scale rider. Distance pieces can be supplied for this accessory so that it can be used for breaking specimens of shell moulding materials.

Capacity: 365 psi (AFS)
3180 kN/m² (DIN)

SPECIFICATIONS:-

Net Weight: 2.8 kg
Dimensions: 240 x 30 x 105 mm
Gross Weight: 3.2 kg
Gross Dimensions: 280 x 180 x 205 mm

SPLITTING STRENGTH
ACCESSORY



Comprises splitting specimen holder and head

For the determination of the splitting strength of a sand specimen

This accessory is to be used in conjunction with the hand operated Universal Sand Strength Machine but not with the motor driven Universal Sand Strength Machine. A modified accessory is also produced for use with the Green Compression Strength Machine.

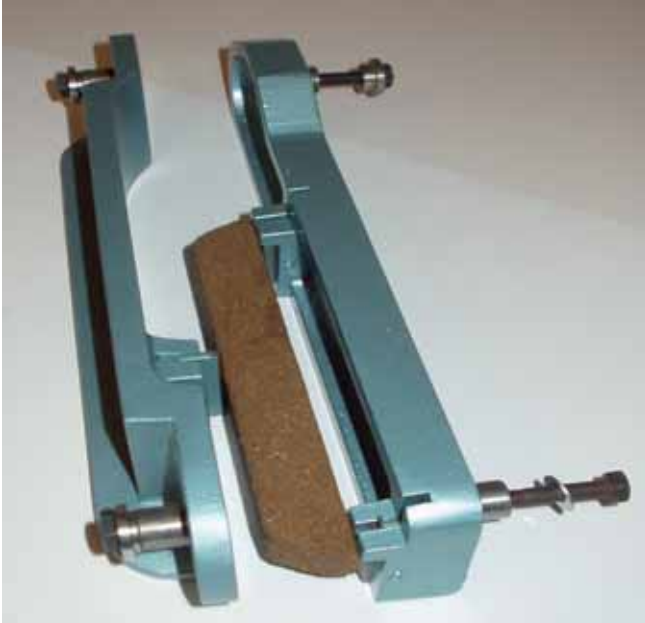
Resistance to breaking under a compression load applied perpendicular to the circumference of the sand specimen provides a measure of its splitting strength.

SPECIFICATIONS:

Net Weight: 0.6 kg
Dimensions: 110 x 80 x 70 mm
Gross Weight: 0.9 kg
Gross Dimensions: 170 x 130 x 120 mm

Ridsdale DieterT

TRANSVERSE CORE STRENGTH ACCESSORY FOR USSM



For breaking the transverse core test specimen

The Transverse Core Strength Accessory consists of two support arms which locate on the pusher arm and loading weight, and can be attached to the Universal Sand Strength Machine in less than one minute. The left-hand support is fitted with two self-aligning knife edges and the right-hand support has one fixed knife edge.

The load on the test specimen is read directly from the "Dry Shear" scale. Maximum transverse load 73.5 lb (AFS) or 32.5 kg (DIN).

Core specimen loaded at 6" (150 mm) centres.

SPECIFICATIONS:-

Net Weight:	1.3 kg
Dimensions:	90 x 60 x 310 mm
Gross Weight:	1.7 kg
Gross Dimensions:	200 x 220 x 320 mm



TRANSVERSE SHELL STRENGTH ACCESSORY FOR USSM

For breaking the transverse shell test specimen

The two knife edges in the left hand arm may be adjusted to give loading at either 2" (50 mm) or 3" (75 mm) centres.

Maximum transverse load 73.5 lb (AFS) or 32.5 kg (DIN).

SPECIFICATIONS:-

Net Weight:	1.3 kg
Dimensions:	90 x 60 x 310 mm
Gross Weight:	1.7 kg
Gross Dimensions:	200 x 220 x 320 mm

CALIBRATION EQUIPMENT

Ridsdale

For routine checking of the calibration of Universal Sand Strength Machine

PROVING RING



The Proving Ring consists of a steel ring with a dial gauge inset into the centre.

It is placed in the lower compression head position of the Universal Sand Strength Machine and comes complete with a table of certified readings.

It is used for checking the range of 0-18 psi or 0-130 kN/m².

Included in the kit are 2 x 9/16" (14 mm) studs which locate the pivots on the steel ring.

SPECIFICATIONS:

Net Weight:	0.3 kg
Dimensions:	70 mm x 65 mm x 30 mm
Gross Weight:	0.6 kg
Gross Dimensions:	240 mm x 170 mm x 200 mm

TUBE TYPE PERMEABILITY STANDARDS

For routine checking of Electric Permmeter and Permeability Meter

The Tube type Permeability Standard consists of a steel tube with a baked sand specimen inside. It may be used to calibrate the Electric or drum type Permmeter. It does not require a matching serial number.

The Permeability Standard tubes are equipped with a lower stopper containing a vial of silica gel to keep the sand specimen dry. If the silica gel is pink instead of blue, dry the permeability standard in a laboratory drying oven at a temperature of 105°C for 30 minutes.

SPECIFICATIONS:

Net Weight:	1.3 kg
Dimensions:	60 mm diameter x 150 mm
Gross Weight:	2.0 kg each
Gross Dimensions:	280 mm x 190 mm x 200 mm



'B' Scale



For measuring surface hardness of green sand moulds and green cores

The Green Hardness Tester ('B' Scale) is a practical instrument which can be conveniently carried in the pocket and is always ready for use. It is particularly valuable for measuring the degree of ramming in different parts of a mould, and for checking the uniformity of machine rammed moulds. The pointer can be secured by turning the locking button which is used when testing in blind positions of a mould.

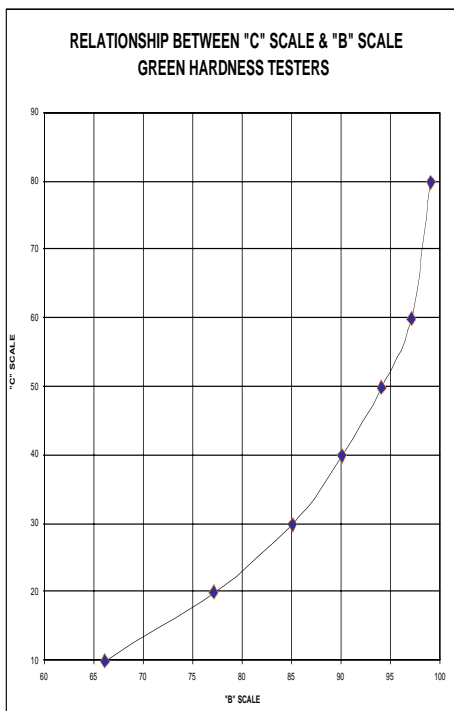
The hardness number indicated is the measurement of the depth of penetration of the "probe", in thousandths of an inch, which is spring loaded to 1000 grams. A mould offering no resistance to the "probe" would have a zero hardness reading; conversely a mould having a maximum hardness of 100 would withstand penetration.

Range of readings	Hardness
Very soft rammed mould	20
Soft rammed mould	40
Medium rammed mould	50
Hard rammed mould	70
Very hard rammed mould	85

'C' Scale

For measuring surface hardness of high pressure green sand moulds

This tester has a conical probe with a rounded tip and is spring loaded to 1520 grams. A press button at the front of the instrument locks the pointer when testing in blind portions of the mould.



Generally, mould hardness values are within the range of 60-85 on the standard Green Hardness Tester ("B" Scale) with 13 mm (1/2") radius probe, and this has proved satisfactory within this range. With the development of high pressure moulding, however, hardness values in excess of 90 ("B" Scale) have become common and this instrument has been introduced for testing moulds in the higher range of 85-100 hardness.

The relationship between "B" Scale and "C" Scale Hardness Testers is shown in the accompanying graph. It will be noted that the sensitivities of the two scales are very similar up to a hardness of 85, above this the "C" Scale Tester has a greater sensitivity.

SPECIFICATIONS:-

Net Weight:	0.2 kg
Dimensions:	45 x 35 x 65 mm
Gross Weight:	0.5 kg
Gross Dimensions:	200 x 150 x 150 mm

CORE HARDNESS TESTER

**Ridsdale
DieterT**

For controlling the surface hardness of cores

This instrument has a four-point penetrator for abrading the surface of the core. Depth of penetration is registered directly onto a gauge which represents numerically the hardness of the core.



SPECIFICATIONS:

Net Weight: 0.4 kg

Dimensions:
50 x 50 x 80 mm

Gross Weight: 0.7 kg

Gross Dimensions:
130 x 120 x 170 mm

Hardness measurements will indicate errors in the degree of bake or cure and variations in density over a core surface.

IMPACT PENETRATION TESTER

Ridsdale

For measuring the sub-surface strength of sand moulds and cores

This instrument was developed primarily for determining the safe stripping time for moulds and cores made from cold self-hardening sand mixtures, but it has been found equally useful for measuring the sub-surface strength of CO₂-silicate moulds and cores and surface dried green sand moulds.



SPECIFICATIONS:

Net Weight: 0.2 kg

Dimensions: 25 x 25 x 225 mm

Gross Weight: 0.4 kg

Gross Dimensions: 130 x 30 x 200 mm

The graduated probe is driven into the surface of the mould or core by means of a spring loaded hammer inside the body of the instrument. The number of hammer blows of equal impact required to drive the probe a given distance into the material indicates the sub-surface strength.

The spring loading on the hammer is adjustable so that for a given setting it can readily be used as a routine acceptance test for production moulds and cores.

Ridsdale DieterT

MOULD STRENGTH TESTER

For measuring the green compressive strength of mould surfaces



This pocket-sized instrument gives a strength reading comparable to the green compressive strength test obtained on the standard laboratory specimen rammed to the same degree as the mould.

Capacity: 30 psi 210 kN/m²

SPECIFICATIONS:

Net Weight: 0.1 kg
Dimensions: 45 x 30 x 90 mm
Gross Weight: 0.5 kg
Gross Dimensions 125 x 125 x 60 mm

FOUNDRY HYDROMETER (0-90 BAUMÉ)

A robust pocket unit for measuring the concentration of core and mould mould coating mixtures.

Manufactured from plastic tubing resistant to organic solvents. Improved design to give greater stability in heavy liquids.

Made of transparent plastic and fitted with an easily read scale (0-90 (Baumé)), this hydrometer is ideal for foundry work. Little longer than a pencil it may be carried in the pocket ready for immediate use, without fear of breakage.

It may be used for determining the specific gravity of all types of heavier-than-water foundry washes, sprays and coating materials, or any other dense liquids or suspensions.

SPECIFICATIONS:

Net Weight: 0.02 kg
Dimensions: 10 x 10 x 240 mm
Gross Weight: 0.06 kg
Gross Dimensions: 40 x 40 x 260 mm



