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INTERNATIONAL FOUNDATIONS

LEADERS IN HYDRAULIC HAMMERS AND COMPACTION EQUIPMENT FOR OVER 100 YEARS

RIC RAPID IMPACT COMPACTION

DYNAMIC COMPACTION EQUIPMENT

THE POWER TO PERFORM

WHAT IS RIC?

RIC is a technique allied to Dynamic Compaction that can be used to increase the bearing capacity of soils through controlled Impact.

RIC units have been supplied with drop-weights of 5, 7, 9 and 12 tonnes. Depending on the size of machine used, the soil type and moisture content the treatment is effective in the top layers typically up to 6m depth, though improvements up to 10m have been seen in some conditions. The drop-weight is dropped onto a special foot assembly 40-60 times a minute. The foot remains in contact with the ground at all times making RIC a safe controlled compaction technique.

BENEFITS OF RIC

CONTROL: The machine is accurately controlled from the excavator cab and the degree of compaction electronically monitored.

SAFETY: The impact foot is in contact with the ground at all times and eliminates the risk of flying debris. Unlike conventional DC; other activities can take place in close proximity.

QUALITY ASSURANCE: The impact energy and soil deflection are re- corded by the onboard computer for presentation of compaction data to site managers. Results can verify work done to the client. The data can highlight weak zones where extra fill is required, or zones where underground obstructions were present (i.e. previously hidden old foundations).

SPEED: The unit is mounted on standard excavators with the additional work-tool circuit and can be mobilised in minutes after arriving on site.

COST EFFECTIVENESS: Fast mobilisation - and without the need for secondary lift cranes, mean even small areas can be tackled economically. Typically a quarter of the cost of other excavation and replacement techniques.

RIC has been successfully used to consolidate Gravel, Sands, some Silts, Miscellaneous sand/silt/clay and industrial and mining waste fills. The ability to dump and compact sand or stone to depths up to 6m simplifies remediation practises. RIC is less expensive than other overexcavation and replacement techniques.

APPLICATIONS

1. FOUNDATIONS SUPPORT:
Increase bearing capacity and reduce settlement.

2. FLOOR SLAB SUPPORT:
Stiffen soils and create uniform bearing conditions.

3. LIQUEFACTION MITIGATION:
Increase shear wave modulus to help raise seismic site class.

4. WASTE STABILIZATION:
Reduce waste volume and improve properties of loose fills.

5 SURFACE CONSOLIDATION:
Final treatment of upper strata following traditional DC.

6. COMBINATION TECHNIQUE:
Use RIC as blanket treatment around strategic stone columns or piled installations.

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GPS + DATA LOG

A&B

The RIC performance can be recorded with the on-board data log unit. An optional extra is to attach a GPS antenna and associated electronics to record the exact position of each compaction point.

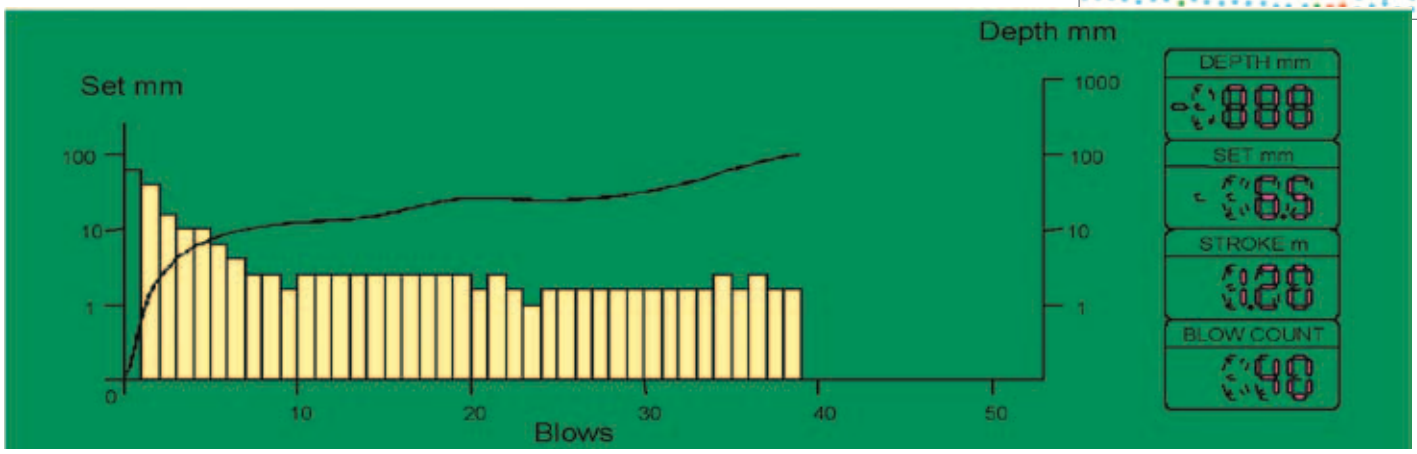
THE BENEFITS OF GPS:

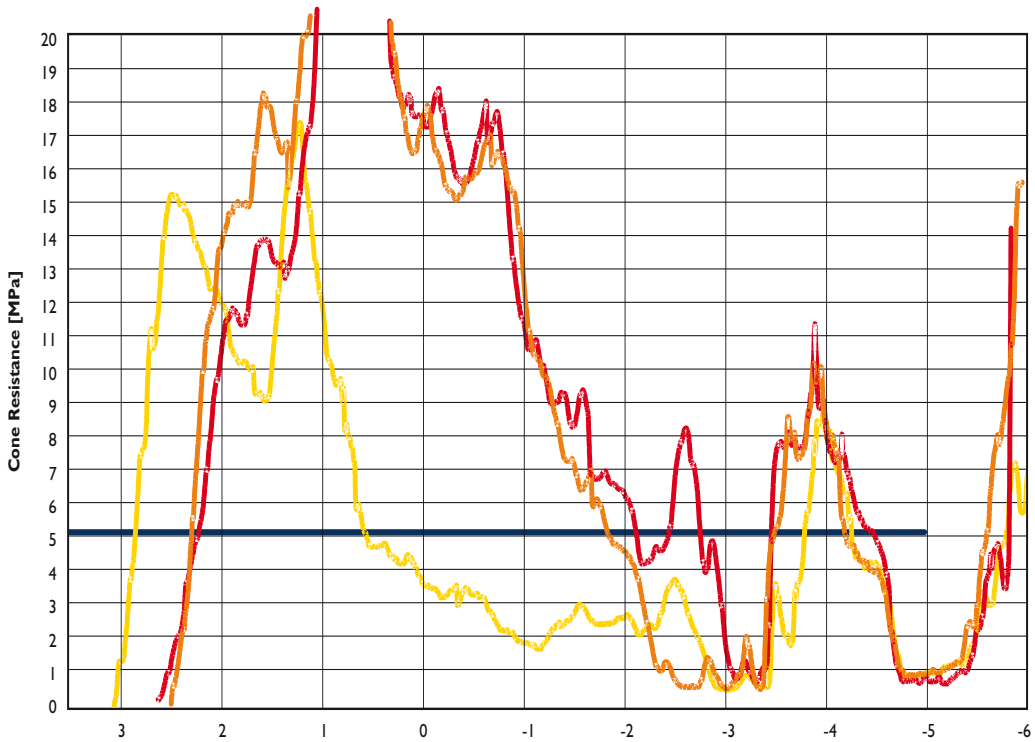
A Marking out of the sites is reduced to a minimum.

B The operator has visual - real time - display of progress, and can differentiate between points compacted and those still to do.

C Soft areas that may need extra fill, or hard areas that may contain underground obstructions are easily identified.

D Detailed data-maps are automatically generated showing the degree.





PALM ISLAND
JEBEL ALI AREA

Block 2-2
Pattern: Pattern 2
Blows: 40 blows

PRE-2.02.xls
POST-B2.2a.xls
POST-B2.2b.xls

TO PERFORM

TRANSPORTATION

Transport can be arranged in two ways:

Either a single Lo-bed as illustrated. Mobilisation after reaching site is a matter of minutes. If road capacity is limited the compactor is un-pinned and the boom used to self-loaded onto a second trailer. Mobilisation is still relatively swift and does not require a secondary crane.

RIC Technical Specifications

Typical Dimensions	Dimensions when in Erect working mode		Dimensions when in single piece transport mode			Working Parameters		
MODEL	Height A (m)	Radius B (m)	Length (m)	Width over tracks (m)	Weight (T)	Foot Dia (m)	Typical working Strip width (m)	Typical point spacing (m)
RIC-5000	6.9	4.5	11.9	3.0	50	1.0	8	4
RIC-7000	7.5	5.0	12.9	3.5	63	1.5	9	4.5
RIC-9000	8.0	5.0	13.4	3.5	65	1.5	9	4.5
RIC-12000	8.1	5.4	13.4	4.2	89	1.6	10	5

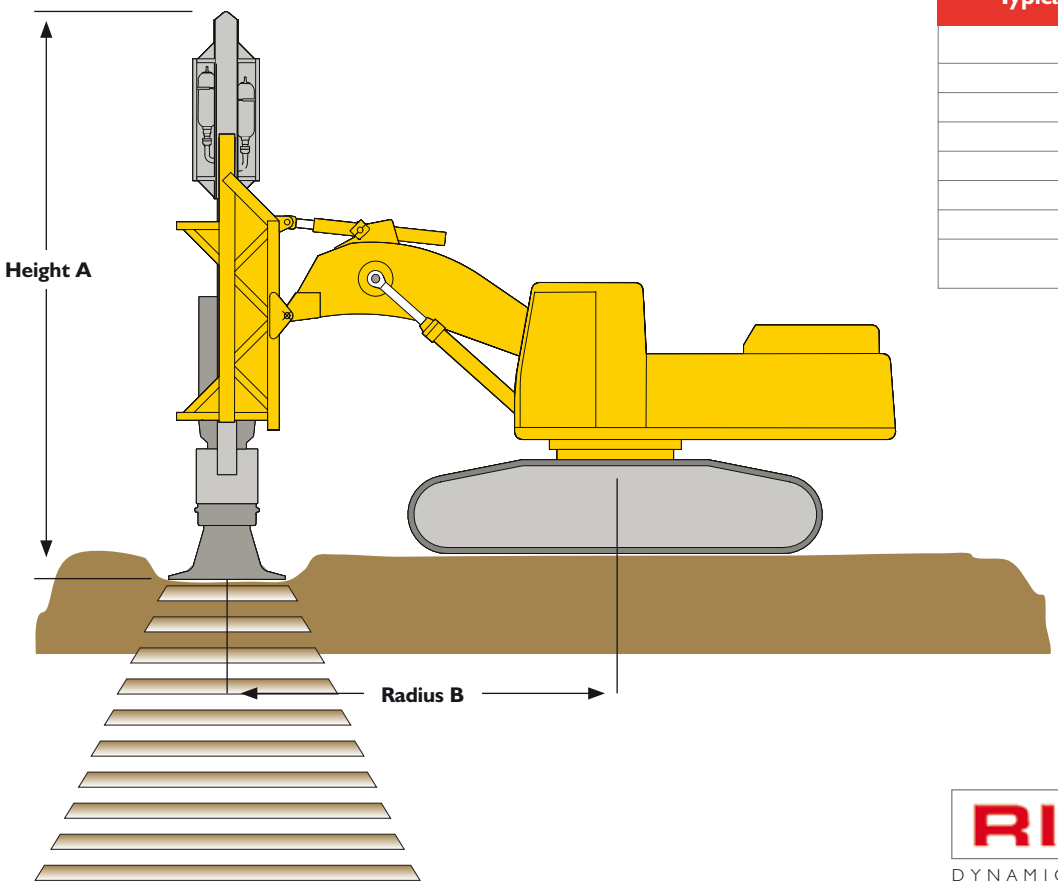
The above weights and dimensions are given as a typical guide only. Designs can vary to suit customer specific applications and base machines. In the interest of quality and performance, we reserve the right to amend specifications at any time.

Depth of Influence			
RIC-5000	**RIC-7000**	**RIC-9000**	**RIC-12000**
2-4m	3-5m	4-6m	6-8m

The degree of compaction is affected by soil type, moisture content and clients acceptance criteria. Each application is assessed on its own merits. An approximate guide to usefulness is listed above - But in many circumstances this can be exceeded with the RIC-7000 having been recorded affecting stiffness down to 10m in ideal conditions.

Performance Data	Ram Max. Mass	Imapct Energy	Blow Rate @ Rated Energy*	Operating Pressure	Hydraulic Flow Required	Excavator Basic Size
MODEL	kg	kNm	bpm	bar	L/min	T
RIC-5000	5000	60	50	220	180-200	30+35
RIC-7000	7000	83	40-50	240	220-250	30-40
RIC-9000	9000	106	35-45	270	220-250	40-45
RIC-12000	12000	180	35-40	250	380-400	65-75

*Performance governed by hydraulic supply of excavator used.



Typical excavators for RIC system
CATERPILLAR 345 / 365
DAEWOO DH450
HITACHI EX400/450
HYUNDAI R450
KOBLECO SK330 / 480
KOMASTU PC340 / 400
VOLVO EC460
Other models also suitable

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BSP International Foundations is one of the world's premier manufacturers of hydraulic hammer and compaction equipment. BSP supplies high performance products which provide the construction industry with economic benefits. A continued program of research and development allows BSP to offer products benefiting from the latest techniques and environmental acceptability. This brochure introduces our equipment range which performs efficiently and economically in all working environments around the world.

BSP International Foundations est un des premier fabriquants au monde de matériels de Battage et de forage. Un programme continu de recherche et déveoppement permet à BSP de présenter des produits bénéficant des dernières anancées techniques tout enrespectant l'environnement. Cette documentation présente la gamme de nos équipements. Pour des documentations concemant les caractéristiques technique, veuillez nous contacter.

BSP International Foundations ist weltweit einer der renommiertesten Hersteller von Hydraulikhämmern und Geräten für Bodenverdichtungen. Die Baubranche proffitiert von der Wirtschaftlichkeit unserer leistungsstarken Produkte. Unser kontinuierliches Forschungs- und Entwicklungsprogramm ermöglicht es, Produkte herzustellen, die ständig dem neuesten Stand der Technik und Umweltverträglichkeit entsprechen. Dieser Katalog stellt unser umfangreiches Geräteangebot vor, welche weltweit, wirtschaftlich und effizient, in allen Anwendungsbereichen eingesetzt werden.

A BSP International Foundations é uma das principais fabricantes mundiais de equipamento de compactaço e martelos hidrúlicos. A BSP fornece produtos de alto desempenho que oferecem vantagens e economia à indstria da construço. Um programa continuado de investigaço e desenvolvimento permite à BSP oferecer produtos que beneficiam das mais avançdas ténicas e de aceitabilidade ambiental. Esta brochura apresenta a nossa gama de equipamento, que opera com eficiêcia e economia em todos os ambientes de trabalho do mundo.

BSP International Foundations es uno de los más imortantes fabricantes mundiales de martinetes hidráulicos y equipos de compactación. El elevado rendimiento de los productos suministrados por BSP le proporciona beneficios económicos a la industria de la construcción. Gracias a su programa continuo de investgación y desarrollo, BSP puede ofrecer productos que aprovechan las tecnologías más recientes, sin deteriorar el medio ambiente. Este folleto es la presentación a nuestra garna de equipos que trabajan con eficacia y rendimiento económico en cualquier parte del mundo.

英国BSP国际基础施工设备有限公司是全球液压锤和夯实设备的主要生产商之一。BSP产品性能优良，经济效益丰厚。坚持不懈的研究和发展使BSP的产品具备最新技术性和环保性。这册样本介绍了在全世界各种工作环境下都具有高效率和高经济性的BSP产品范围。

BSP International Foundations является одним из ведущих мировых производителей гидравлических молотов и уплотнительного оборудования. BSP предлагает компаниям, работающим в строительной индустрии, высокопроизводительное и экономически эффективное оборудование. Постоянная работа в области совершенствования и модернизации позволяет компании предлагать продукцию, отвечающую последним технологическим и природоохранным требованиям. В данной брошюре мы представляем номенклатуру техники, которая экономично и эффективно выполняет поставленные задачи по всему миру.

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