BSP INTERNATIONAL FOUNDATIONS LIMITED

WORLD LEADERS IN PILING HAMMERS &
DYNAMIC COMPACTION EQUIPMENT
SINCE 1906

MAKING A GLOBAL IMPACT

World Leaders in Piling Hammers and Dynamic Compaction Equipment since 1906

- Wide range of hammers and accessories
- Flexible control options
- Environmentally friendly design
- Highly reliable performance
- Manufactured to BSEN ISO 9001:2015 standard
- Low power demand = Low running costs
- High efficient transfer of impact energy

BSP hydraulic piling hammers provide an economical solution for the installation of all types of steel or concrete piles in either land or marine environments. Energy outputs range from 20kNm to 590kNm and the versatile design allows operation by crane suspension, from piling rigs or leaders. BSP hammers can be powered by our own Hydropacks (Power Packs) which have been specifically designed to optimise the performance of BSP hammers. Alternatively, power can be taken directly from a piling rig or crane base.

SERVICE SUPPORT

BSP can offer service arrangements on a worldwide basis, in line with customers' individual requirements. The company provides service engineers for the on-site commissioning of new equipment, training operators and the customer's service personnel. In addition, contracts are available on request for the provision of workshop or on-site supervisors. Well equipped service centres can be found in UK, France, USA, Brazil, Mexico, Australia, South Africa, India, Russia, China, Malaysia and Singapore to name just a few.

SPARES

BSP has many years of experience in after-sales support and we pride ourselves in offering a knowledgeable, friendly and fast service to our customers wherever you are in the world. We hold an extensive range of spare parts at our Heaquarters in the UK and also at our strategically located dealers around the world, to ensure quick delivery of those parts you need fast. Genuine BSP parts, not only keep your equipment up to the original design standard, they also offer excellent value for money by lasting longer and performing better to give you the user, increased productivity and reduced downtime.

BSP INTERNATIONAL FOUNDATIONS LIMITED

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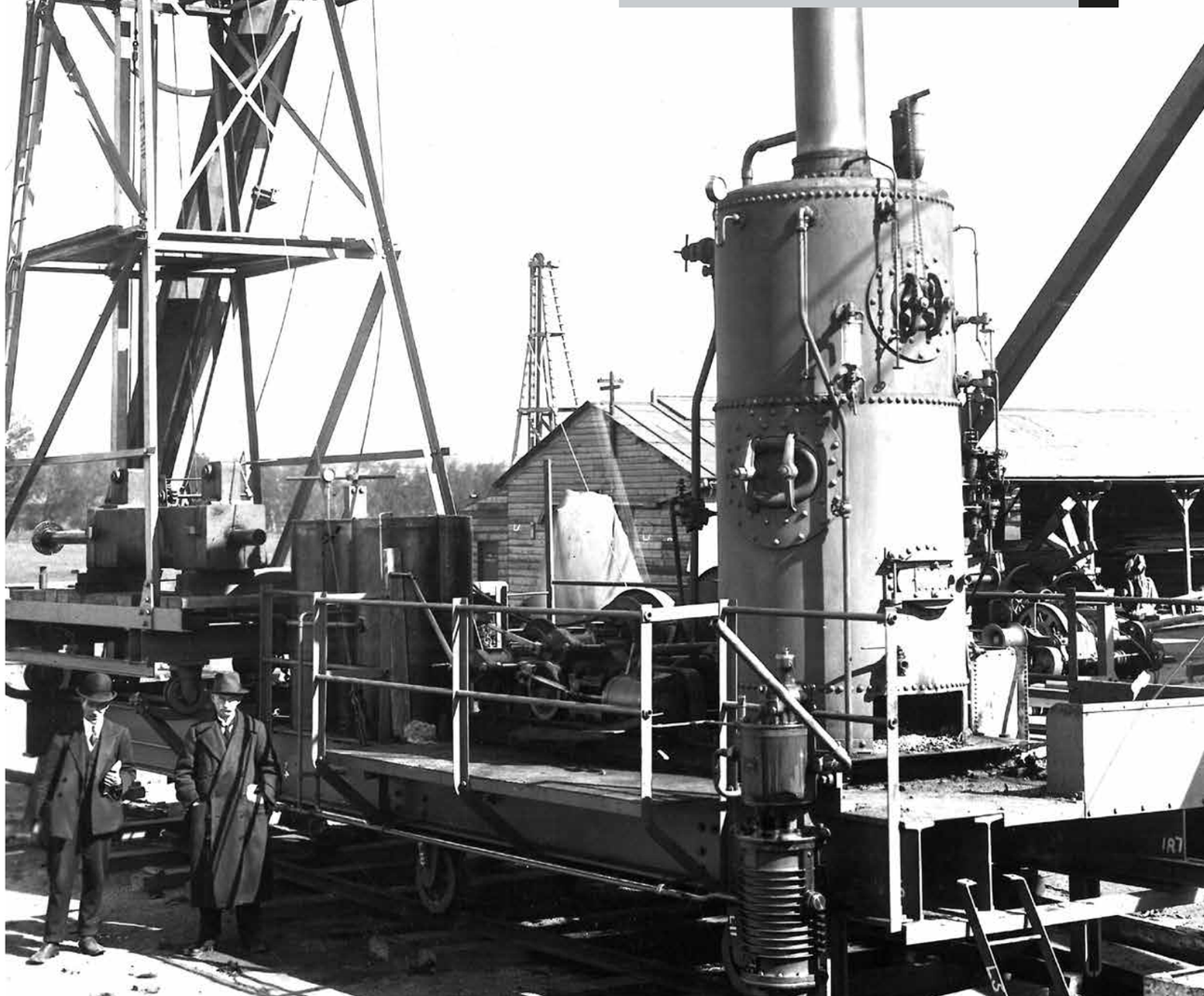

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BH HYDRAULIC HAMMER

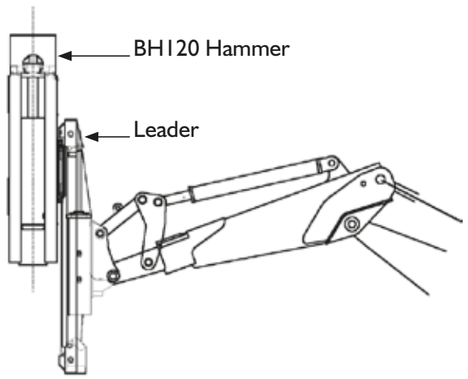
BH120 DRIVING STEEL PILES

BH120 IN TRANSPORT MODE

BH120 DRIVING STEEL PILES

The BSP BH120 is a compact, high performance, versatile Hydraulic Hammer specifically designed for driving small sheet piles, small bearing piles and general post driving. The BH120 has the following important features:

- Total control of hammer stroke and blow rate
- Allows precise matching of energy to suit the driving requirements
- Fast blow rate for high productivity
- Manual, Tamp and auto control modes
- Quick coupler for bucket to hammer attachment within minutes
- Suitable for transportation on machine around site or on highways
- Can be fitted to an Excavator or backhoe as shown
- Choice of metal or plastic drive caps
- Round, square, rectangular and H-section posts can all be driven
- Suitable for post and pile materials of wood, concrete and metal
- Low hydraulic flow demand – low fuel consumption



DROPWEIGHT MASS	MAX. POTENTAIL ENERGY	BLOW RATE ***	BASIC HAMMER LENGTH	BASIC HAMMER WIDTH	HAMMER WEIGHT (W/O LEADER)	LEADER WEIGHT	HYDRAULIC SUPPLY REQ.	HYDRAULIC SUPPLY TO HAMMER
Kg	Nm(J)	bpm	m	m	Kg	Kg	L/min @ Bar	Regulated by
100	1200	120-150	1.5	0.35	500	250	20-40 @ 160	Integrated Valve

*** Blow rate dependant on driving conditions.

BH TECHNICAL DATA

- The BH-120 is shown here mounted on the leader
- Leader allows up to1.5m of hammer movement before backhoe re-positioning is required
- Leader can be connected directly to bucket linkage or by a quick hitch coupler system
- Typical pile / post sizes up to 165dia x 3.5M length
- 2 quick-release coupling connections

TYPICAL APPLICATIONS

HIGHWAY CONSTRUCTION MAINTENANCE HOUSE BUILDING RAILWAY, DEFENCE

Motorway barrier posts, boundary fencing
Sign/direction posts, mini piling for house building
Mini piling for subsidence rectification
Piling for foundation support
Sheet piling for retention of banks, trenches & embankments, security fencing

AGRICULTURE HORTICULTURE FORESTRY

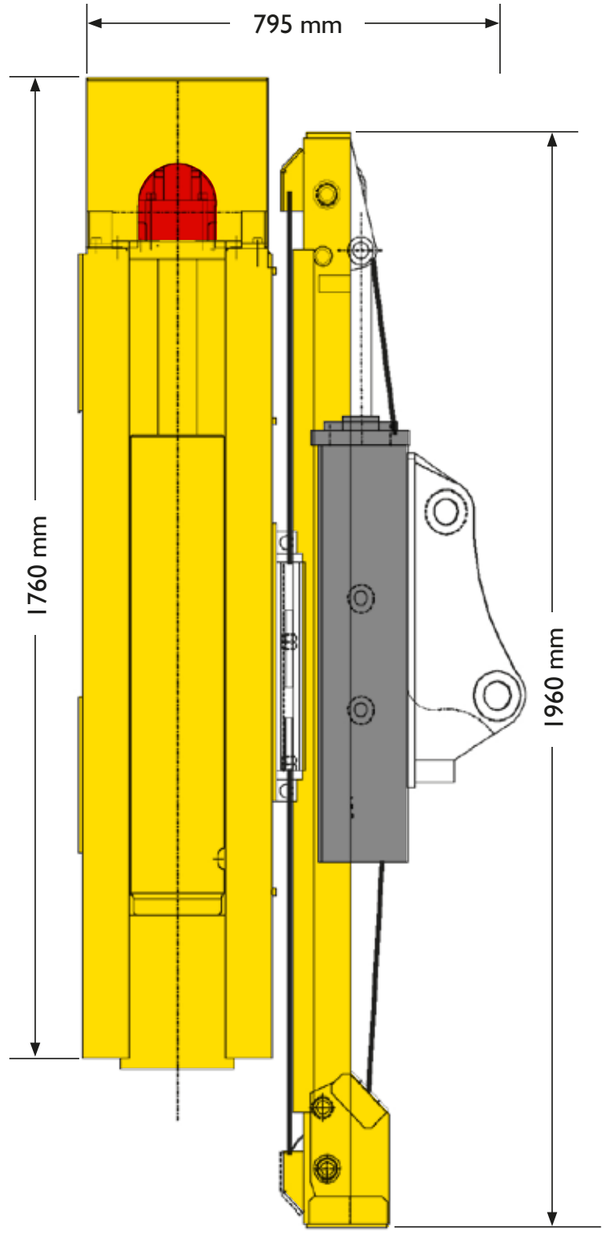
Sheet piling of river banks, waterways & slurry lagoons
Stock fencing, vine supports, gate posts
Bank stabilisation for ponds & reservoirs
Show jumping fences

LOCAL AUTHORITY SPORT & LEISURE

Sport pitch fencing, lighting posts, ball catch fencing
Temporary sheet piles for trench support during construction & repair of utility services

RENEWABLE ENERGY

Tube piles for solar panel and small wind turbine foundations



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DX HYDRAULIC HAMMER

DX-RT DRIVING 610 TUBES

DX HAMMER MOUNTED ON JX25-8 PILING RIG

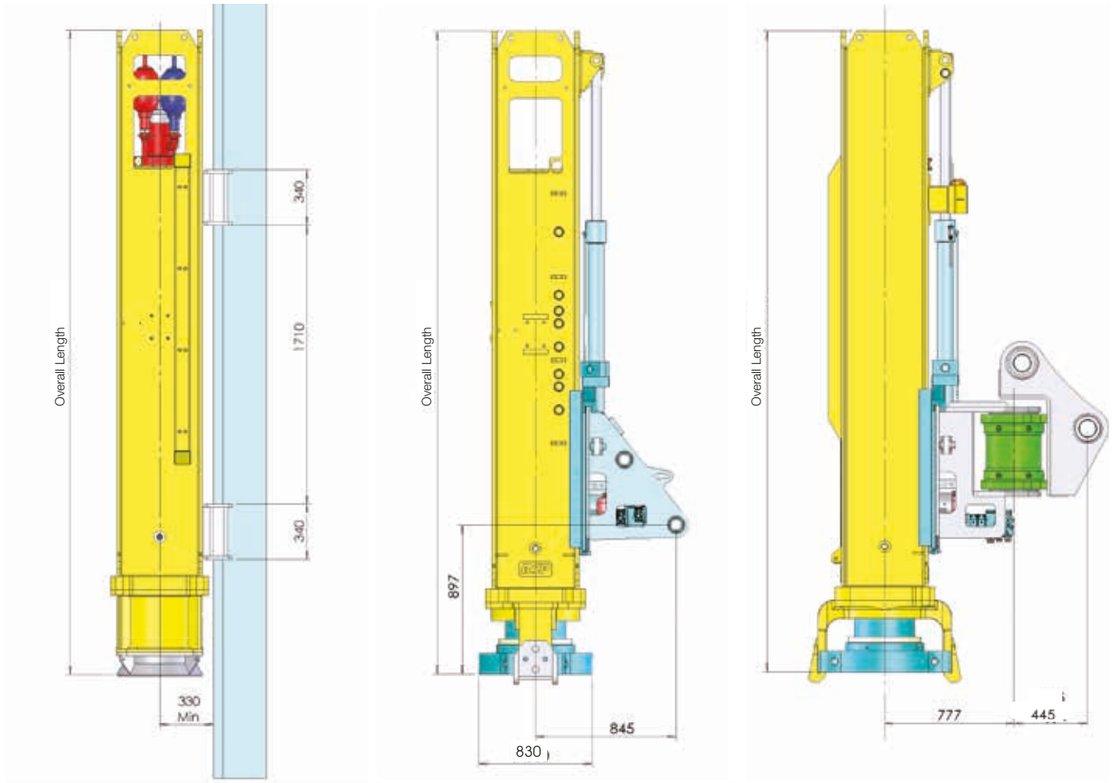
DX-SP DRIVING SHEET PILES

The DX range of hydraulic piling hammers are designed for small bearing piles of steel, timber, concrete and many sheet piles. The DX hammer is available with back guides for operating from a piling mast or a slider for operating from an excavator. The hammers have the following important features:

- Total control of hammer
- Allows precise matching of energy to suit the pile driving requirements
- Double acting cylinder produces high impact energy and fast blow rate
- Economical - Low Hydraulic power requirements
- Available with BSP Hydropacks for optimum hammer performance
- Hammer can be operated directly from hydraulic crane or excavator base
- Can drive piles with ultimate load bearing up to 1800kN

PILE TYPES					
TYPICAL PILES DRIVEN SINGLY OR IN PAIRS. Most Arcelor AZ and AU14 piles. Also, LX / PU / W Ranges, Hoesch H1200 to H3600, 'H' Piles, HP260 to HP400, USA HP10" to HP16". Tubes up to 406mm Dia (16") Rail Standard 610mm & 762mm Diameter tubes, plus many others...					
PERFORMANCE DATA	**RAM MASS**	**MAX. IMPACT ENERGY**	**BLOW RATE @ RATED ENERGY**	**OPERATING PRESSURE**	**HYDRAULIC OIL FLOW REQUIRED**
MODEL	**Kg**	**kNm**	**bpm**	**Bar**	**L/min**
DX20	1500	20	60	160	130
DX25	2000	25	60	160	150
DX30	2500	30	60	180	170

DX TECHNICAL DATA



DX LEADER MOUNTED | DX-RT RAIL TRACK APPLICATION | DX-SP SHEET PILING APPLICATION

SPECIFICATIONS	*OVERALL LENGTH DX RT SP	*HAMMER WIDTH DX RT SP	*HAMMER MASS DX	RT	SP
MODEL	mm	mm	Kg		
DX20	4000	600	3900	4350	5500
DX25	4000	600	4500	4950	6000
DX30	4300	600	5500	5750	6800

* Dimension depending on hammer configuration.

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JX PILING RIG

RIG DRIVING CONCRETE PILES

RIG RADIO HAND SET

The new JX Piling rig is an all British designed and manufactured purpose built piling rig.

It uses the well established JCB JS series excavator as the base unit and with calculated ground force of 0.57Kg/cm2 (for the JX25-8). It makes an economical solution for driving short piles of either concrete or steel on construction sites with restrictions on access or weight.

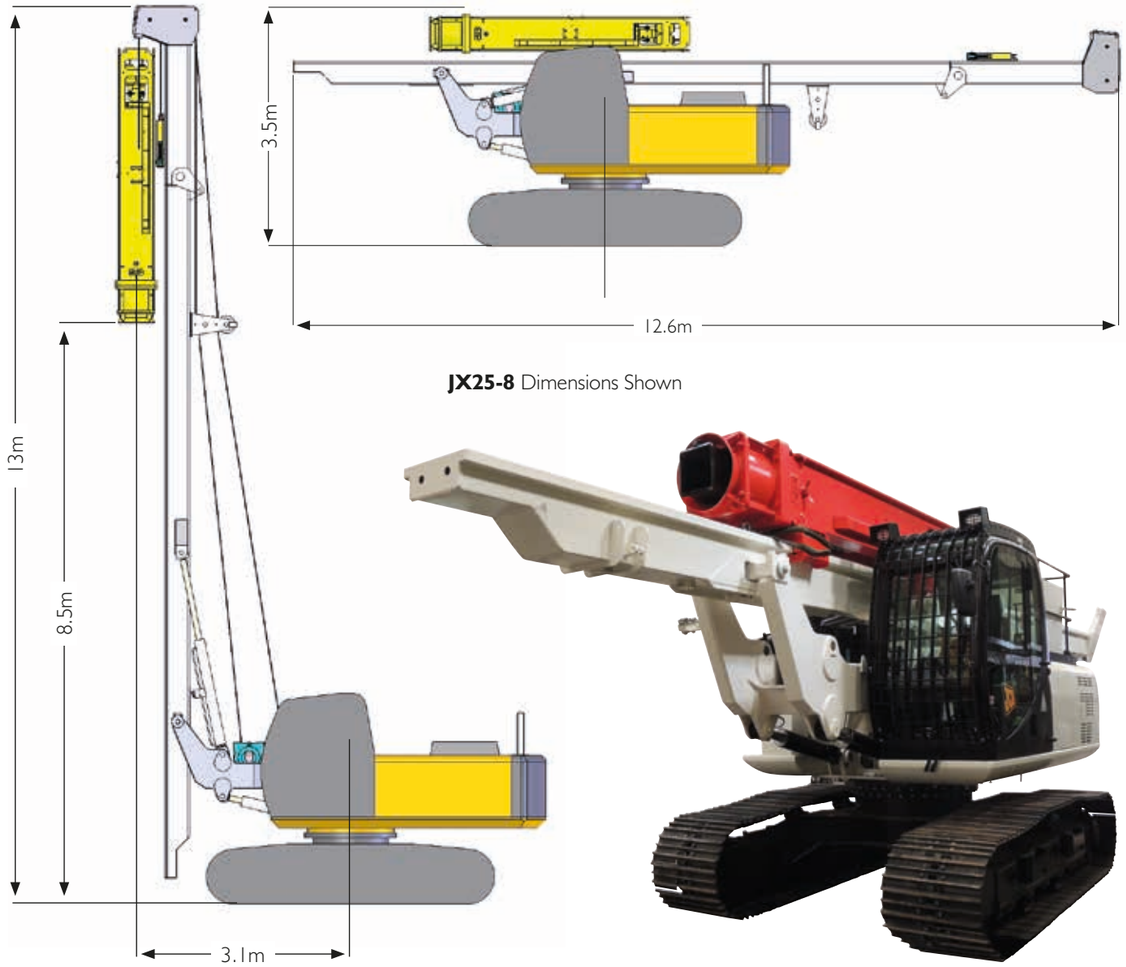
Designed to be used with BSP's DX range of piling hammers, which provide a highly efficient hammer in a small envelope, maximising the pile lengths that can be driven. Fuel consumption approx 7L/H.

- Total control of hammer
- Allows precise matching of energy to suit the pile driving requirements
- Double acting cylinder produces high impact energy and fast blow rate
- Economical - low hydraulic power requirements
- Can drive piles with ultimate load bearing up to 1800kN
- Available with synchronised hammer and pile winches
- Radio controlled option

PERFORMANCE DATA	HAMMER MODEL	BASIC WEIGHT*	WORKING HEIGHT	MAX PILING HEIGHT	BASIC EXCAVATOR	TRACK PADS	TRANSPORT LENGTH	TRANSPORT WIDTH
MODEL		Kg	m	m	JCB	m	m	m
JX20-6	DX20	20000	10.0	6.0	JS160	600	10.0	2.8
JX25-8	DX25	25000	12.0	8.0	JS200	700	12.6	2.8

JX TECHNICAL DATA

RIG BEING OPERATED BY RADIO CONTROL



JX25-8 Dimensions Shown

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SL HYDRAULIC HAMMER

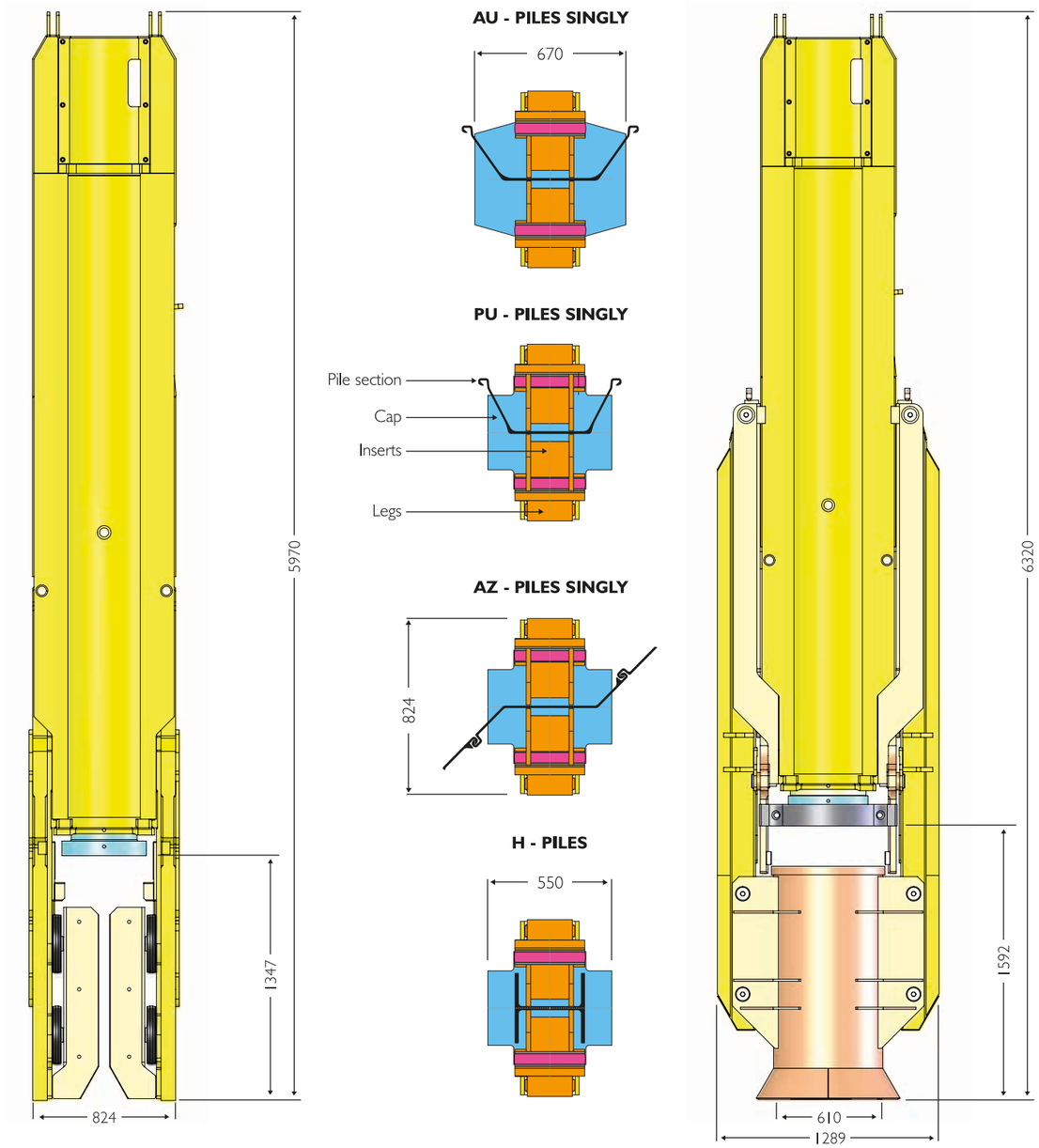
ABOVE: VARIOUS SL30 HAMMERS FITTED WITH LEGS AND INSERTS FOR DRIVING SHEET PILES.
ALL ARE SHOWN IN CRANE SUSPENDED OPERATION AND POWERED BY BSP POWER PACKS.

The SL range of piling hammers are designed for driving sheet piles and small bearing piles of concrete, steel or timber. The SL range is available with legs and inserts for use freely suspended or with backguides for operating from a piling mast. The hammers have the following important features:

- Total control of hammer
- Total control of hammer stroke and blow rate
- Allows precise matching of energy to suit pile driving requirements
- Double acting cylinder produces high impact energy from a short stroke to give a high blow rate
- Slim design allows hammer to pass between upstanding piles
- Economical - low hydraulic power requirement
- Available with BSP Hydropacks for optimum hammer performance
- Hammer can be operated directly from hydraulic crane or excavator bases
- Can drive piles with ultimate load bearing up to 1800kN

PERFORMANCE DATA	RAM MASS	MAX. IMPACT BLOW ENERGY	RATE @ RATED ENERGY	OPERATING PRESSURE	HYDRAULIC FLOW REQUIRED	HAMMER LENGTH (WITH LEGS)	HAMMER WIDTH	HAMMER WEIGHT (WITH LEGS)
MODEL	Kg	kNm	bpm	Bar	L/min	mm	mm	Kg
SL20DA	1500	20	90	170	170	4970	824	4900
SL30DA	2500	30	84	240	175	5970	824	5950

SL TECHNICAL DATA



Above: Standard SL30 Hammer for sheet piles and 'H' bearing piles. Inserts can be changed to drive tubes and square section piles.

Above: Wide leg assembly for SL30 driving 610 diameter tubes.

SL hammers can be used freely suspended from a crane or be fitted with backguides to allow mounting to leaders or piling rigs.

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LX HYDRAULIC HAMMER



ABOVE: THE LIGHTWEIGHT LX HAMMER GIVES GREATER STABILITY TO PILING RIGS, ESPECIALLY IN APPLICATIONS WHERE A GREATER REACH IS REQUIRED.

A lightweight powerful hydraulic piling hammer capable of driving all types of steel, concrete or timber piles in a variety of soil conditions.

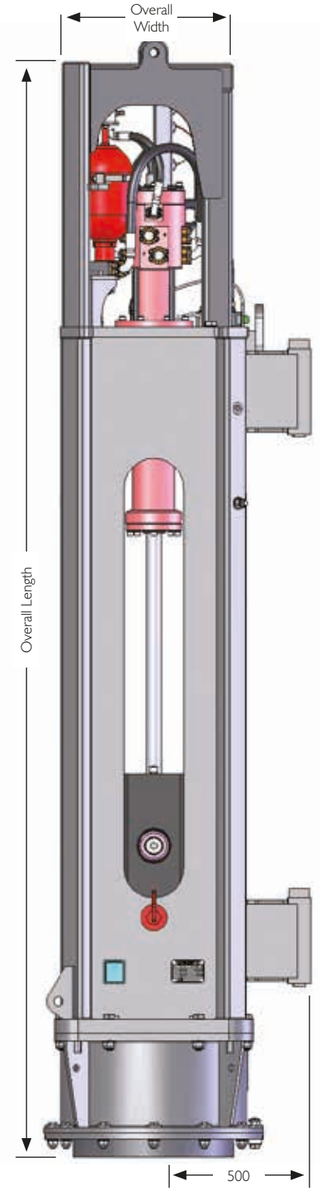
- Total control of hammer
- Designed for easy maintenance
- Short overall length
- Optimum power to weight ratio
- Can operate from BSP Power pack or from hydraulic piling rigs or cranes
- A range of standard drive caps and pile helmets are available
- The hammers are fitted with a single acting hydraulic cylinder system to give an equivalent stroke of 800mm
- Alternatively a cylinder can be fitted to give a stroke of 1200mm

SPECIFICATIONS	RAM MASS	IMPACT ENERGY	BLOW RATE	OPERATING PRESSURE	MAX OIL FLOW REQUIRED
MODEL	Kg	kNm	b/min	Bar	L/min
LX20	2500	20	55	120	150
LX30	4000	30	50	200	160
LX40	5000	40	45	220	165
LX60	7000	55	40	240	160

The above weights and dimensions are given as a typical guide and are nominal. Designs can vary to suit customer specific applications and pile type. Contact BSP IF for greater detail.

LX TECHNICAL DATA

The LX range of piling hammers is designed for driving a wide variety of bearing and sheet piles. Available with backguides operating from a piling mast the LX range have the following important features:



SPECIFICATIONS	RAM MASS	OPERATING WEIGHT	OVERALL LENGTH	OVERALL WIDTH	OVERALL DEPTH	STAND OUT FROM LEADER
MODEL	kg	kg	m	mm	mm	mm
LX20	2500	5600	4800	835	835	500
LX30	4000	7100	4800	835	835	500
LX40	5000	8000	4950	835	835	500
LX60	7000	10400	4950	835	835	500

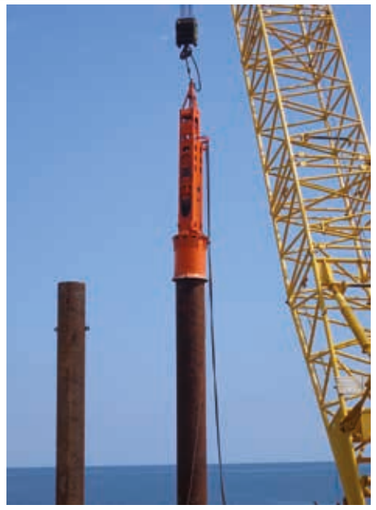
The above weights and dimensions are given as a typical guide and are nominal. Designs can vary to suit customer specific applications and pile type. Contact BSP IF for greater detail.

MAKING A GLOBAL IMPACT

CX HYDRAULIC HAMMER

CX110, MOUNTED ON PILING RIG

CX85, CRANE SUSPENDED AND FITTED WITH LEGS AND INSERTS FOR DRIVING SHEET PILES



CX110, CRANE SUSPENDED AND FITTED WITH TUBE GUIDE

The CX range of piling hammers is designed for driving a wide variety of bearing and sheet piles. Available with legs and inserts or pile sleeves for use freely suspended, or with back guides for operating from a piling mast, the CX range has the following important features:

- Total control of hammer stroke and blow rate
- Allows precise matching of energy to suit the pile driving requirements
- Highly efficient hydraulic system gives low energy loss and low running cost
- Simple, fast dolley changing
- Cylinder and dropweight connection with shock absorber, easily accessible
- Cage and dropweight design gives short overall hammer length
- Available with BSP Hydropacks for optimum hammer performance
- Can be operated directly from hydraulic crane or excavator base
- Suitable for driving Raked (Batter) Piles

PILE TYPES

TYPICAL PILES DRIVEN SINGLY OR IN PAIRS (IF GROUND CONDITIONS ALLOW):

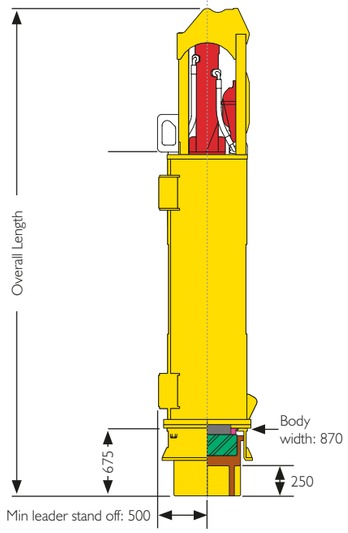
Arcelor AZ12 to AZ50, AZ36-700 to 40-700 All Arcelor AU sections. Also, LX / PU / W ranges, USA PZ range, Hoesch H series, 'H' Piles, HP200 to HP400 USA HP10" to HP16" Tubes and Concrete bearing piles up to 1220mm OD plus many others...

PERFORMANCE DATA	RAM MASS	MAX. IMPACT ENERGY	BLOW RATE @ RATED ENERGY	OPERATING PRESSURE	HYDRAULIC FLOW REQUIRED
MODEL	Kg	kNm	bpm	Bar	L/min
CX50	4000	51	46	200	180
CX60	5000	60	44	241	215
CX85	7000	83	40	260	215
CX110	9000	106	34	250	215
CXL140	11000	140	30	280	250

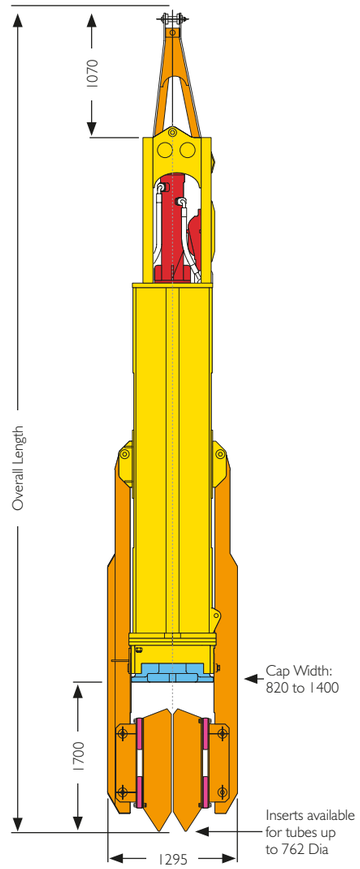
The above weights and dimensions are given as a typical guide and are nominal. Designs can vary to suit customer specific applications and pile type. Contact BSP IF for greater detail.

CX TECHNICAL DATA

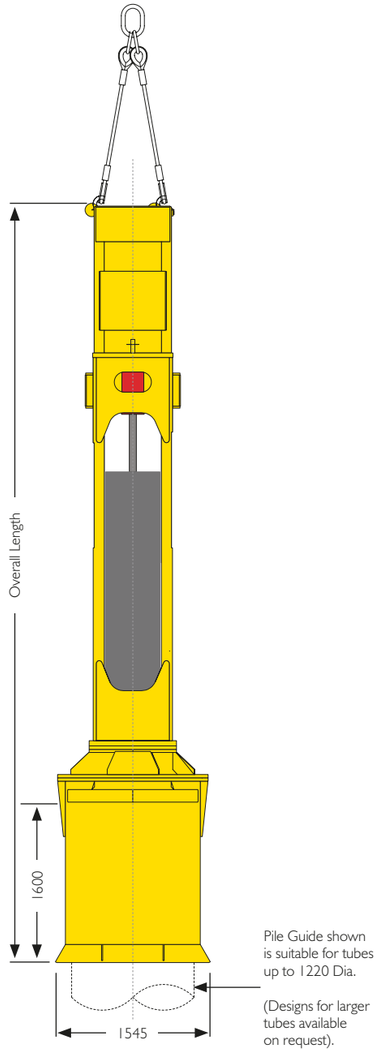
All CX hammers are available in the following three standard hammer configurations: Other options available upon request. (Dimensions are mm).



(A)
Hammer with back guides for use with leaders.



(B)
Hammer with legs and inserts for driving sheet or bearing piles freely suspended.



(C)
Hammer with pile guide for driving tubes vertically or at rakes.

Table shows approximate weights and dimensions for the hammer configurations that are illustrated above (weight includes typical drive cap or helmet)

TYPICAL DIMENSIONS	(A) HAMMER WITH BACK GUIDES FOR LEADER OPERATION		(B) HAMMER WITH LEGS & INSERTS FREELY SUSPENDED		(C) HAMMER WITH Ø 1.22M PILE GUIDE FREELY SUSPENDED	
MODEL	OVERALL LENGTH (mm)	WEIGHT (Kg)	OVERALL LENGTH (mm)	WEIGHT (Kg)	OVERALL LENGTH (mm)	WEIGHT (Kg)
CX50	5020	7799	7325	9150	CONTACT BSP	CONTACT BSP
CX60	5863	9159	8170	10500	CONTACT BSP	CONTACT BSP
CX85	5863	11452	8170	12500	8400	14276
CX110	6380	14107	8680	15100	8910	16524
CXL140	7750	17000	8750	17900	8950	19000

The above weights and dimensions are given as a typical guide and are nominal. Designs can vary to suit customer specific applications and pile type. Contact BSP IF for greater detail.

MAKING A GLOBAL IMPACT

CG HYDRAULIC HAMMER

CG240 DRIVING CONCRETE PILES	CG300, LEADER MOUNTED ON A BARGE, DRIVING STEEL TUBE PILES	CG300 DRIVING 2.5M DIAMETER STEEL TUBES

The CG range of piling hammers is designed for driving a variety of bearing piles including steel tube, combi piles, 'H' sections and reinforced / pre stressed concrete piles. Operated from piling rig leaders or crane suspended, the CG range has the following important features:

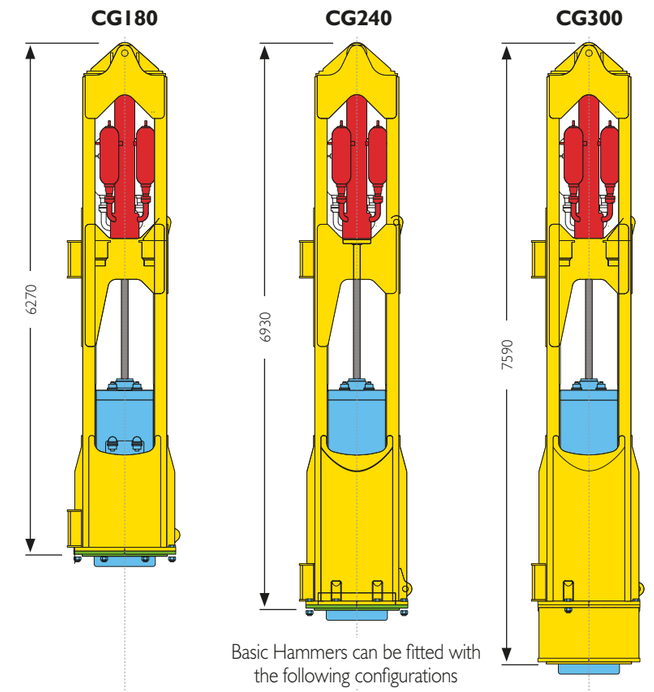
- Total control of hammer stroke and blow rate
- Allows precise matching of energy to suit the pile driving requirements
- Simple fast dolley changing
- Cylinder and dropweight connection with shock absorber, easily accessible
- Economical - Low hydraulic power requirement
- Available with BSP Hydropacks for optimum hammer performance
- Can drive piles with ultimate load bearing up to 14,500 kN
- Suitable for driving Raked (Batter) Piles

PERFORMANCE DATA	RAM MASS	MAX. IMPACT ENERGY	BLOW RATE @ RATED ENERGY	OPERATING PRESSURE	HYDRAULIC FLOW REQUIRED
MODEL	Kg	kNm	bpm	Bar	L/min
CG180	12000	176	36	180	380
CG210	14000	206	36	280	420
CG240	16000	235	34	280	420
CG300	20000	294	34	280	420

The above weights and dimensions are given as a typical guide and are nominal. Designs can vary to suit customer specific applications and pile type. Contact BSP IF for greater detail. Performance related to use with BSP Hydropacks.

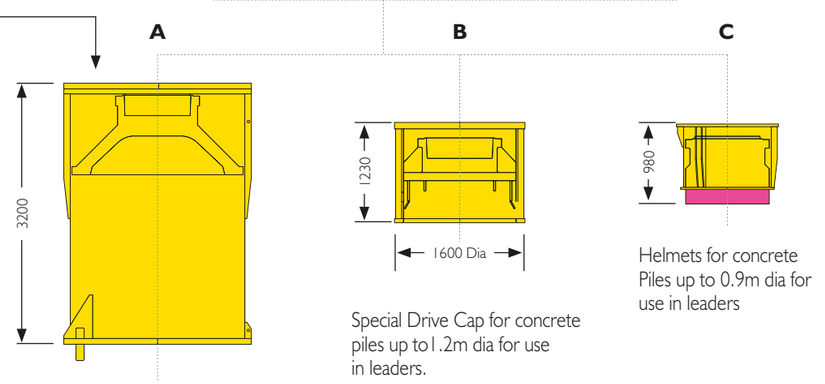
CG TECHNICAL DATA

Body width for CG Hammers:
1250 sq



Basic Hammers can be fitted with the following configurations

Pile guide for use freely suspended, vertically or raked. Versions available to suit: 1.5m max dia tubes or 3.0m max dia tubes.



Special Drive Cap for concrete piles up to1.2m dia for use in leaders.

Helmets for concrete Piles up to 0.9m dia for use in leaders

Standard Drive Cap, Helmet & Pile Guide options. Other options available upon request. (Dimensions are mm).

TYPICAL DIMENSIONS	BASIC HAMMER	HAMMER IN CONFIGURATION (A)		HAMMER IN CONFIGURATION (B)		HAMMER IN CONFIGURATION (C)	
MODEL	WEIGHT Kg	TOTAL LENGTH (mm)	TOTAL WEIGHT (Kg)	TOTAL LENGTH (mm)	TOTAL WEIGHT (Kg)	TOTAL LENGTH (mm)	TOTAL WEIGHT (Kg)
CG180	17300	9050 (ø1.5m guide)	23750	7500	23150	7250	20880
CG210	19350	9370 (ø1.5m guide)	25800	7830	25200	7580	22930
CG240	21700	9810 (ø2.0m guide)	34200	8160	27550	7910	29500
CG300	26000	11310 (ø2.4m guide)	46000	8820	31850	8570	33500

The above weights and dimensions are given as a typical guide and are nominal. Designs can vary to suit customer specific applications and pile type. Contact BSP IF for greater detail.

BSP

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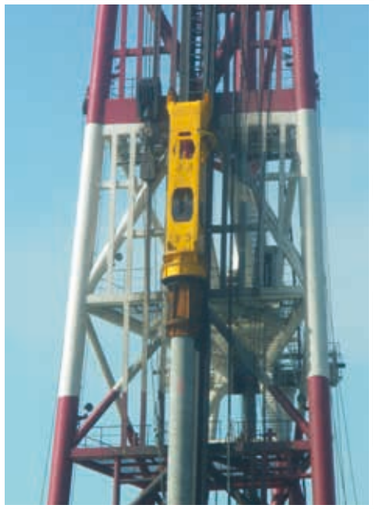
CGL HYDRAULIC HAMMER



ABOVE: HAMMERS SHOWN IN LEADER MOUNTED OPERATION. CRANE SUSPENDED OPTION ALSO AVAILABLE.

The BSP range of large piling hammers shown here can be used freely suspended or configured with backguides for leader use. They include the following features:

- Cylinder and dropweight connection parts easily accessible
- Digital readout of hammer performance in choice of units (i.e. Stroke or Energy)
- Square section giving a shorter overall height
- Attachment points allowing vertical or raking piles to be driven
- Pile up to 2m dia can be driven as standard and with special attachments, larger diameters can be easily accommodated

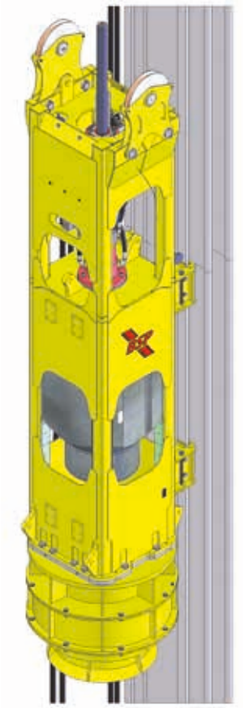
PERFORMANCE DATA	RAM MASS	MAX. IMPACT ENERGY	BLOW RATE @ RATED ENERGY	OPERATING PRESSURE	HYDRAULIC OIL FLOW REQUIRED
MODEL	Kg	kNm	bpm	Bar	L/min
CGL370	25000	370	32	260	700
CGL440	30000	440	32	275	820
CGL520	35000	520	32	290	940
CGL590	40000	590	32	290	1200

Performance related to use with BSP Hydropacks.

CGL TECHNICAL DATA

Typical Suspended Operation

2.0m (78") cap, and pilesleeve.
Reduction inserts extra.



Typical Leader Operation

1.6m (63") cap, backguides and sheaves.

TYPICAL DIMENSIONS	BASIC HAMMER	HAMMER CRANE SUSPENDED 2M DIA PILE SLEEVE REDUCTION INSERTS EXTRA		HAMMER LEADER MOUNTED 1600MM DIA DRIVE CAP AND BACK GUIDES	
MODEL	WEIGHT (k)g	TOTAL LENGTH (mm)	TOTAL WEIGHT (kg)	TOTAL LENGTH (mm)	TOTAL WEIGHT (kg)
CGL370	37230	12050	57970	9250	49000
CGL440	43700	12550	64440	9750	55470
CGL520	50160	13050	70900	10250	61930
CGL590	60000	13550	83000	10750	71770

The above weights and dimensions are given as a typical guide and are nominal. Designs can vary to suit customer specific applications and pile type. Contact BSP IF for greater detail.

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HYDROPACK TECHNICAL DATA

HYDROPACK 260

HYDROPACK 130

The BSP range of Hydropacks has been developed after many years' experience in the piling industry and are specifically designed to maximise the performance of BSP piling hammers.

SPECIAL BUILD AVAILABLE ON REQUEST

SPECIFICATIONS		HYDROPACK 130	HYDROPACK 150	HYDROPACK 252	HYDROPACK 260
EMISSION LEVEL		EU-STAGE IIIa	EU-STAGE IV	EU-STAGE IIIa	EU-STAGE IV
		EPA-TIER 3	EPA-TIER 4 FINAL	EPA-TIER 3	EPA-TIER 4 FINAL
ENGINE TYPE		PERKINS 1106D	PERKINS 1206F	CAT C9	CAT C9.3
ENGINE POWER	Kw	129	151	261	261
ENGINE SPEED	rpm	1800	2100	1900	1900
MAX OIL FLOW	L/min	215	250	450	450
MAX OPERATION PRESSURE	Bar	300	300	300	300
HYDRAULIC OIL CAPACITY	Litre	600	600	1000	1000
FUEL CAPACITY	Litre	350	350	500	500
L x W x HT	M	3.5 x 1.65 x 1.75	3.5 x 1.65 x 1.75	4.5 x 1.8 x 2.3	4.5 x 1.8 x 2.3
WEIGHT DRY/WET	Kg	3100/3890	3700/5000	5300/6500	5800/7200
LOW OIL LEVEL CUT-OUT		Standard	Standard	Standard	Standard
HIGH OIL LEVEL CUT-OUT		Standard	Standard	Standard	Standard
PROVISION FOR HAMMER CONTROL BOX		Option	Option	Option	Option
APPLICABLE BSP HAMMER		SL/CX	SL/CX/CXL	CG	CG

HYDROPACK TECHNICAL DATA

HYDROPACK 800

OPTIONAL CONTROL BOX MOUNTED IN HYDROPACK

The larger BSP Hydropacks are designed with the same important features as the smaller Hydropacks. Particular attention has been paid to the overall dimensions to allow the Hydropack to be transported via the containerised shipping system. The Hydropack range incorporate the following important features:

- Turbo charged diesel engines used exclusively for reliability, fuel economy and compliance with the latest EU/EPA regulations
- Open circuit hydraulic system using electronically controlled axial piston pumps (continue overleaf)
- Robust, welded steel skid frame with bund for containment of spillages
- Lockable doors provide security and easy service access
- Tank mounted hydraulic filter with sensor for service indication
- Hydraulic oil temperature controlled by independent air blast cooler
- Can Bus Control panel functions include, engine rpm, emergency stop, system load test & fault diagnosis
- System pressure gauge
- Offline cooling and filtration of hydraulic oil as standard
- Option of hydraulic oil condition monitoring system
- EPA-Tier 4 engines available on larger power packs

SPECIFICATIONS		HYDROPACK 570	HYDROPACK 800
EMISSION LEVEL		EPA-TIER 2	EPA-TIER 3
ENGINE TYPE		CAT C18	2x CAT C15
ENGINE POWER	Kw	571	806
ENGINE SPEED	rpm	1800	1800
MAX OIL FLOW	L/min	900	1200
MAX OPERATION PRESSURE	Bar	300	300
HYDRAULIC OIL CAPACITY	Litre	2100	3000
FUEL CAPACITY	Litre	1000	1800
L x W x HT	M	5.2 x 2.0 x 2.3	7.2 x 2.2 x 2.5
WEIGHT DRY/WET	Kg	10000/12700	12000/16000
LOW OIL LEVEL CUT-OUT		Standard	Standard
HIGH OIL LEVEL CUT-OUT		Standard	Standard
PROVISION FOR HAMMER CONTROL BOX		Option	Option
APPLICABLE BSP HAMMER		CGL370/CGL440	CGL520/CGL590

MAKING A GLOBAL IMPACT

HAMMER & HYDROPACK CONTROL

NEW DIGITAL CONTROL BOX (ENERGY MONITOR INCLUDED)

ANALOG CONTROL BOX

BSP HAMMER CONTROL BOX

The BSP Hammer Control Box allows hammer operation to be carried out remotely.
The comprehensive control functions include:

- Cylinder and dropweight connection parts easily accessible
- Engine run and stop
- Electrical supply on / off switch
- Pump flow selection
- Hammer stroke and dwell adjustment dials
- Automatic / Manual operation selector
- Digital blow count display
- Stroke indicator - LED display
- Warning light for incorrect hammer to pile location - with hammer cut-out
- Choice of Digital or Analog controls, handheld or cab/ PPack mounted

BSP STROKE WATCH

To complement the range of controls, a Stroke Watch has been developed as an economic means of displaying the energy and the stroke of any of BSP's hydraulic hammers.

The Stroke Watch interfaces with the Analog Hammer Control Box to provide a direct reading to an LCD display. To configure the device to suit a particular hammer, the internal DIL switch is set to a hammer code before use. A choice of metric or imperial units can be displayed.

HAMMER & RIC MONITORING

BSP/JEAN LUTZ MONITOR. DIALOG

BSP Hydraulic Hammer performance monitoring and pile penetration recording.

With the Dialogue Pile Monitor fitted to a piling rig, the piling process can be observed for quality control and to provide a documentary record of each pile driven. Using sensors to measure both hammer performance and pile penetration rate, the parameters below can be displayed and transferred to a PC via Bluetooth or USB.

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MAKING A GLOBAL IMPACT

SPEED
The unit is mounted on standard excavators, typically in the 40-90 tonne class and can be mobilised in minutes from arrival on site.

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.

RIC

WWW.BSP-IF.COM

QUALITY
The impact energy and soil deflection are recorded by the on-board computer for presentation of compaction data to site managers. The data can highlight weak zones where extra fill is required or zones where underground obstructions were present (i.e. previously hidden old foundations).

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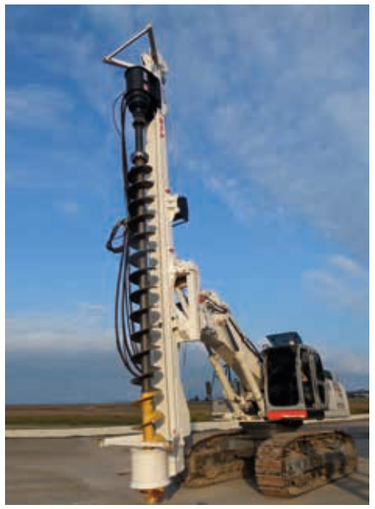
MAKING A GLOBAL IMPACT

RAPID IMPACT COMPACTION



RIC CAN BE FITTED WITH POSITION MONITORING (OPTIONAL EXTRA)

RIC WITH DRILLING ATTACHMENT

WHAT IS RIC?

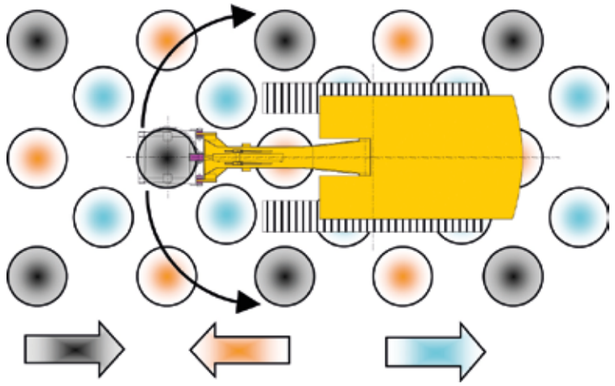
RIC is a technique allied to Dynamic Compaction that can be used to increase the bearing capacity of soils through controlled impact. The treatment is effective in the top layers typically up to 6m depth, though improvements up to 9m have been seen in some conditions. A drop weight of 5 to 16 tonnes (depending on size) is dropped onto a special foot assembly 40-60 times a minute. The foot remains in contact with the ground at all times.

METHODOLOGY

The method for efficiently covering the ground varies from country to country. A common pattern used to cover uses a track in three passes (see diagram below). The outer (black) points being compacted first, followed by the intermediate (orange) lastly the infilling (blue) positions. This has the effect of achieving the best depth of influence. The first pass effecting the ground to a deeper level than the latter.

RESULTS

Most granular fills and some silts are compactable, The best results being achieved where the fill is well-graded particle size. An area of 800m^2 -16000m^2 can be covered in an average day (depending on the 'blow-perposition' setting.) This also allows time for routine maintenance and rotation of the special dolley pads located in the foot assembly which transfers the force of the blow through to the ground.

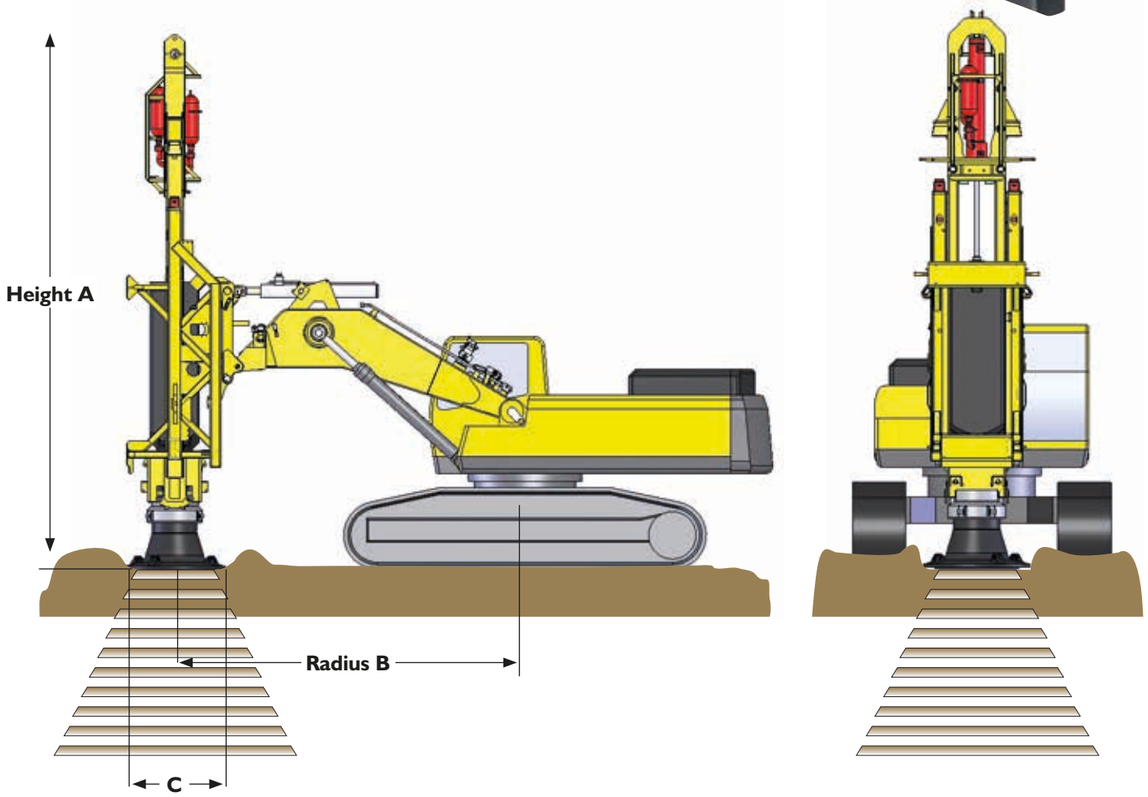


DATA LOGGING

A standard machine has the ability to record work done. Target criteria settings are adjusted for final set, depth and blow counts. The driver then compacts until one of those criteria is reached before moving the machine on. A visual representation of the data is seen in the cab and recorded by the on-board monitor.

POSITION MONITORING: OPTIONAL EXTRA

It is possible to add GPS coordinates to the compaction points. This allows the data logged to be precisely allocated to real position. Data presentations to the client can then be greatly enhanced.



TYPICAL DIMENSIONS	DIMENSIONS WHEN IN ERECT WORKING MODE			DIMENSIONS WHEN IN SINGLE-PIECE TRANSPORT MODE			OPTIMUM BASIC EXCAVATOR SIZE
MODEL/Ram Mass (Kg)	HEIGHT A (m)	RADIUS B (m)	FOOT DIA C (m)	LENGTH (m)	TRACK WIDTH (m)	APPROX. WEIGHT (T)	(T)
RIC 7000	7.5	5.0	1.3	12.9	3.5	58	35-42
RIC 9000	8.0	5.0	1.5	13.4	3.5	60	40-48
RIC 12000	8.1	5.2	1.6	*	4.0	88	60-75
RIC 16000	8.8	6.0	2.0	*	4.4	100	75-92

The above weights and dimensions are a typical guide only and may vary slightly depending on the base machine chosen.
Lengths marked * would normally be shipped with hammer and excavator on separate trucks.

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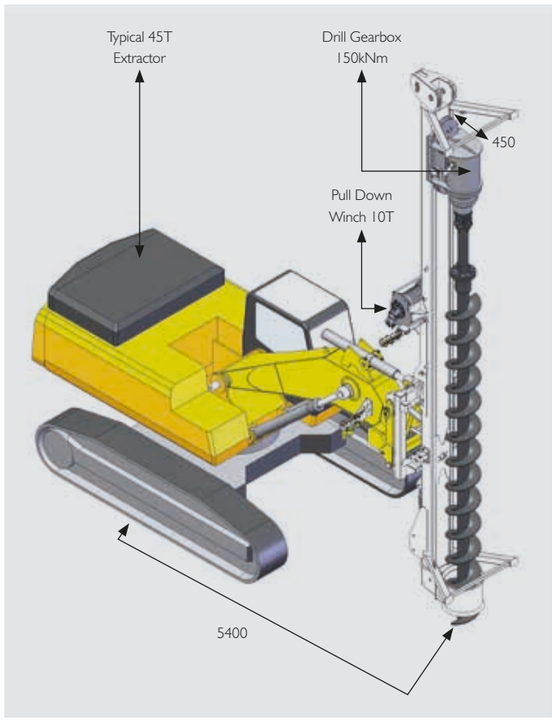
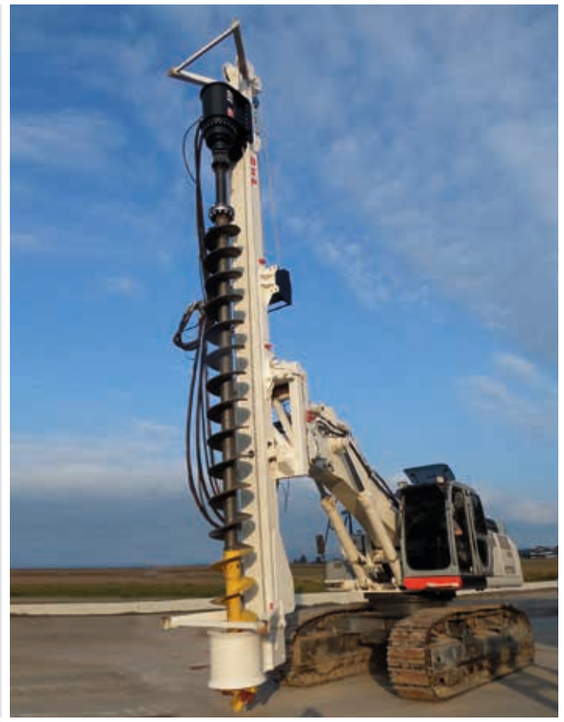
MAKING A GLOBAL IMPACT

NEW RIC DRILLING ATTACHMENT



RIC WITH DRILLING ATTACHMENT



RIC WITH DRILLING ATTACHMENT

RIC has traditionally been used for the compaction of soils consisting of sand and gravels.

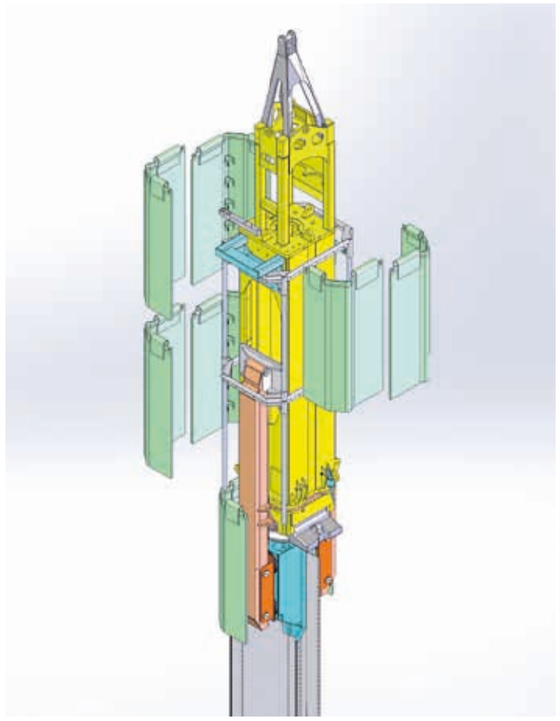
Up until now, RIC has been limited on the use of silty and clay material. RIC activities can be combined with other soil improvement techniques to provide a cost effective solution even in these silty/clay conditions. This essentially includes soil mixing and stone columns. To make best use of the base excavator, BSP can now offer a mast and drill attachment to enable shallow holes to be drilled with either CFA or displacement type tools. Filled with stone, these columns can be subsequently treated by RIC to produce a more effective load bearing foundation.

- Robust mounting frame
- Easy removable panels for maintenance
- No reduction in performance
- Can be fitted to existing range of compactors
- Can be tailored for sheet or tube piles

AUGER DIAMETER	DRILL DEPTH	MAX. TORQUE	MAX. SPEED	PULL DOWN	PLUMBING TO VERTICAL
mm	m	kNm	rpm	T	° per side
650	7 (8 overall auger length)	150	20	10	3

MAKING A GLOBAL IMPACT

NOISE REDUCTION



HAMMER NOISE REDUCTION (EXPLODED VIEW)

RIC NOISE REDUCTION

BSP is committed to the environment and as part of its ongoing design and improvement programme we are now proud to offer noise reducing measures. These will be available for new and existing hammers and compactors in all the BSP product ranges.

- Robust mounting frame
- Easy removable panels for maintenance
- No reduction in performance
- Can be fitted to existing range of hammers
- Can be tailored for sheet or tube piles
- Lightweight rugged panels

TEX HOLDINGS PLC GROUP STRUCTURE

BSP International Foundations Limited is a member of Tex Holdings PLC Group.

Tex Holdings PLC Group comprises of nine manufacturing companies. They are all located and registered in the United Kingdom supplying commercial businesses and O.E.M.s around the world.

The Group structure is split in to three categories, Engineering, Plastics, Boards & Panels. A brief description is shown below:

BSP International Foundations Limited has been at the forefront of design, manufacture and sales of foundation equipment around the world for over 100 years.
www.bsp-if.com

Tex A.T.C Services Limited design, manufacture and install Air Traffic Control Rooms (ATCRs). Tex A.T.C. has developed the next generation of ATCRs in response to growing Worldwide demand for ever higher standards.
www.tex-atc.co.uk

Eurotex International Limited specialise in the refurbishment of diesel engines and provides engineering services for marine and land based industries.
www.eurotex-intl.com

QK Honeycomb Products Ltd is a leading manufacturer of bespoke lightweight composite panels for the Retail and Exhibition sector, and fabricator of specialist furniture products to the Leisure Vehicle industry.
www.qkhoneycomb.co.uk

G&M TEX Ltd provides bespoke AC power generation equipment for marine, industrial and military applications worldwide.
www.gmtex.co.uk

ADR Sales Ltd has been formed to meet the needs of military air forces to offer fast Airfield Damage Repair (ADR) systems.
www.adr-sales.com

Tex Plastics Division manufacture plastic injection moulded components for life critical applications, electronic products, white goods, medical solutions, construction and exteriors markets - the highest levels of precision and quality come as standard.
www.tex-plastics.co.uk

Tex Special Projects Limited design and manufacture bespoke and modular structures and radio frequency-blocking glazing for both civilian and military applications.
www.tex-atc.co.uk

Tex Engineering Limited, manufactures specialist road construction machinery and associated asphalt and bitumen processing plant. Alongside a broad range of engineered products which include: stainless steel kiosks, enclosures and vent stacks, mobility scooter stores, bespoke trailers for recreational, commercial and military usage.
www.tex-engineering.co.uk

BSP RANGE TECHNICAL DATA

BH TECHNICAL DATA

DROPWEIGHT MASS	MAX. POTENTAIL ENERGY	BLOW RATE ***	BASIC HAMMER LENGTH	BASIC HAMMER WIDTH	HAMMER WEIGHT (W/O LEADER)	LEADER WEIGHT	HYDRAULIC SUPPLY REQ.	HYDRAULIC SUPLLY TO HAMMER
Kg	Nm(J)	bpm	m	m	Kg	Kg	L/min @ Bar	Regulated by
100	1200	120-150	1.5	0.35	500	250	20-40 @ 160	Integrated Valve

DX TECHNICAL DATA

SPECIFICATIONS	RAM MASS	MAX. IMPACT ENERGY	BLOW RATE @ RATED ENERGY	OPERATING PRESSURE	HYDRALIC OIL FLOW REQUIRED
MODEL	Kg	kNm	bpm	Bar	L/min
DX20	1500	20	60	160	130
DX25	2000	25	60	160	150
DX30	2500	30	60	180	170

SL TECHNICAL DATA

PERFORMANCE DATA	RAM MASS	MAX. IMPACT BLOW ENERGY	RATE @ RATED ENERGY	OPERATING PRESSURE	HYDRAULIC FLOW REQUIRED	HAMMER LENGTH (WITH LEGS)	HAMMER WIDTH	HAMMER WEIGHT (WITH LEGS)
MODEL	Kg	kNm	bpm	Bar	L/min	mm	mm	Kg
SL20DA	1500	20	90	170	170	4970	824	4900
SL30DA	2500	30	84	240	175	5970	824	5950

LX TECHNICAL DATA

SPECIFICATIONS	RAM MASS	IMPACT ENERGY	BLOW RATE	OPERATING PRESSURE	MAX OIL FLOW REQUIRED
MODEL	Kg	kNm	b/min	Bar	L/min
LX20	2500	20	55	120	150
LX30	4000	30	50	200	160
LX40	5000	40	45	220	165
LX60	7000	55	40	240	160

CX TECHNICAL DATA

SPECIFICATIONS	RAM MASS	MAX. IMPACT ENERGY	BLOW RATE @ RATED ENERGY	OPERATING PRESSURE	HYDRAULIC FLOW REQUIRED
MODEL	Kg	kNm	bpm	Bar	L/min
CX50	4000	51	46	200	180
CX60	5000	60	44	241	215
CX85	7000	83	40	260	215
CX110	9000	106	34	250	215
CXL140	11000	140	30	250	280

CG TECHNICAL DATA

SPECIFICATIONS	RAM MASS	MAX. IMPACT ENERGY	BLOW RATE @ RATED ENERGY	OPERATING PRESSURE	HYDRAULIC FLOW REQUIRED
MODEL	Kg	kNm	bpm	Bar	L/min
CG180	12000	176	36	180	380
CG210	14000	206	36	280	420
CG240	16000	235	34	280	420
CG300	20000	294	34	280	420

CGL TECHNICAL DATA

SPECIFICATIONS	RAM MASS	MAX. IMPACT ENERGY	BLOW RATE @ RATED ENERGY	OPERATING PRESSURE	HYDRAULIC OIL FLOW REQUIRED
MODEL	Kg	kNm	bpm	Bar	L/min
CGL370	25000	370	32	260	700
CGL440	30000	440	32	275	820
CGL520	35000	520	32	290	940
CGL590	40000	590	32	290	1200

HYDROPACK TECHNICAL DATA

SPECIFICATIONS	ENGINE POWER	ENGINE SPEED	EMISSION LEVEL	MAX. OIL FLOW	MAX. OPERATING PRESSURE	BSP HAMMER
MODEL	kW	rpm	EU Stage/EPA	bpm	Bar	Range
HYDROPACK 130	110*/129	1500*/1800	T3	180*/215	300	SL*/CX
HYDROPACK 150	151	2100	T4	280	300	SL/CX/CXL
HYDROPACK 250	261	1900	T3	450	300	CG
HYDROPACK 260	261	1900	T4	450	300	CG
HYDROPACK 570	571	1800	T2	900	300	CGL
HYDROPACK 800	806	1800	T3	1200	300	CGL

JX TECHNICAL DATA

PERFORMANCE DATA	HAMMER MODEL	BASIC WEIGHT*	WORKING HEIGHT	MAX PILING HEIGHT	BASIC EXCAVATOR	TRACK PADS	TRANSPORT LENGTH	TRANSPORT WIDTH
MODEL		Kg	m	m	JCB	m	m	m
JX20-6	DX20	20000	10.0	6.0	JS160	600	10.0	2.8
JX25-8	DX25	25000	12.0	8.0	JS200	700	12.6	2.8

RIC TECHNICAL DATA

TYPICAL DIMENSIONS	DIMENSIONS WHEN IN ERECT WORKING MODE			DIMENSIONS WHEN IN SINGLE-PIECE TRANSPORT MODE			OPTIMUM BASIC EXCAVATOR SIZE
MODEL/Ram Mass (kg)	HEIGHT A (m)	RADIUS B (m)	FOOT DIA C (m)	LENGTH (m)	TRACK WIDTH (m)	APPROX. WEIGHT (T)	(T)
RIC 5000	6.9	4.5	1.0	11.9	3.0	40	32-35
RIC 7000	7.5	5.0	1.3	12.9	3.5	58	35-42
RIC 9000	8.0	5.0	1.5	13.4	3.5	60	40-48
RIC 12000	8.1	5.2	1.6	*	4.0	88	60-75
RIC 16000	8.8	6.0	2.0	*	4.4	100	75-92

PERFORMANCE DATA	IMPACT ENERGY	OPERATING PRESSURE	HYDRAULIC FLOW	TYPICAL EXCAVATOR MODELS
MODEL	kN.m	Bar	L/min	LIST IS NOT EXCLUSIVE, OTHER MODELS IN THE SAME WEIGHT CLASS HAVE BEEN USED AND ARE ALSO SUITABLE
RIC 5000	60	220	180-200	CAT329, Komatsu PC290
RIC 7000	83	240	220-250	CAT330/336, Komatsu PC360, Kobelco SK330/350
RIC 9000	106	270	220-250	CAT345/349, Komatsu PC490, Kobelco SK480/500, Hyundai R520
RIC 12000	180	250	280-420	CAT365/374, Komatsu PC700
RIC 16000	240	280	380-420	CAT385/390, Hyundai R800, Komatsu PC800

RIC DRILL ATTACHMENT TECHNICAL DATA

AUGER DIAMETER	DRILL DEPTH	MAX. TORQUE	MAX. SPEED	PULL DOWN	PLUMBING TO VERTICAL
mm	m	kNm	rpm	T	° per side
650	7 (8 overall auger length)	150	20	10	3

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