



DAWSON
OFFSHORE HAMMERS



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DAWSON
CONSTRUCTION
PLANT

DAWSON

H11-5000

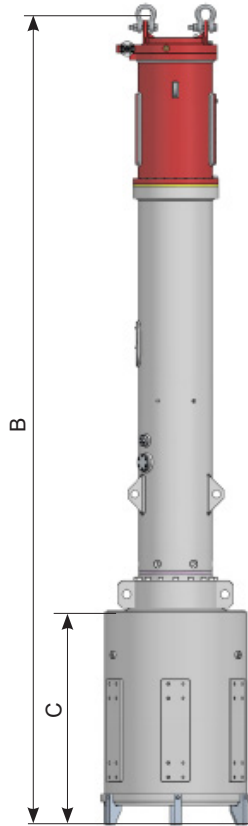
S1563
SWL
20
Offshore

Central Ram Hammers

Principal Advantages:

- Patented drive system
- Unrivalled production rates – rapid blow rates save time and money, shortening product duration
- Rapid blow rates – ‘chisel’ through compacted sands, out-driving heavier, slower hammers
- High energy transfer efficiency to the pile – smooth stress wave maintains optimum momentum
- Variable energy output – fully variable adjustment between limits at the touch of a button, with single or automatic blow regulation, these hammers enable total operator control throughout the driving process.
- Compact, enclosed design – simplifies application and handling whilst protecting vital components
- Versatility – all models are designed to be truly multi-tasking, driving a huge range of sizes of conductor and subsea pile either vertical or raking
- All Dawson hammers can operate underwater in excess of 100 metres depth
- CRH hammers can be used onshore to maximise utility and likewise will also readily adapt to being powered from hydraulic excavators, hydraulic crawler cranes or non-Dawson hydraulic power packs

Hammer Specifications



		UNITS	HAMMER MODEL	
			CRH10000	CRH15000
HAMMER				
RAM WEIGHT		kg	8,000	12,000
		lbs	17,650	26,400
IMPACT VELOCITY		m/s	5.00	5.00
		ft/s	16.40	16.40
MAXIMUM IMPACT ENERGY		kNm	100	150
		ft lb	73,750	110,634
MAXIMUM MOMENTUM		kg.m/s	40,000	60,000
		lbs ft/s	289,460	147,120
BLOW RATE		bpm	60-120	60-120
WEIGHT - WITH GUIDE SLEEVE	Ø914	kg	21,000	27,600
		lbs	46,300	60,720
	Ø1220	kg	22,300	28,900
		lbs	49,160	63,580
	Ø1450	kg	24,000	30,600
		lbs	52,900	67,320
GUIDE SLEEVE - MAX. TUBE DIA. (mm)	Ø914 Ø1220 Ø1450	B	7,400	8,185
			7,400	8,185
			7,460	8,185
	Ø914 Ø1220 Ø1450	C	1,610	1,610
1,610			1,610	
1,670			1,610	
BALLAST WEIGHTS			1,608 kg	3,110 kg



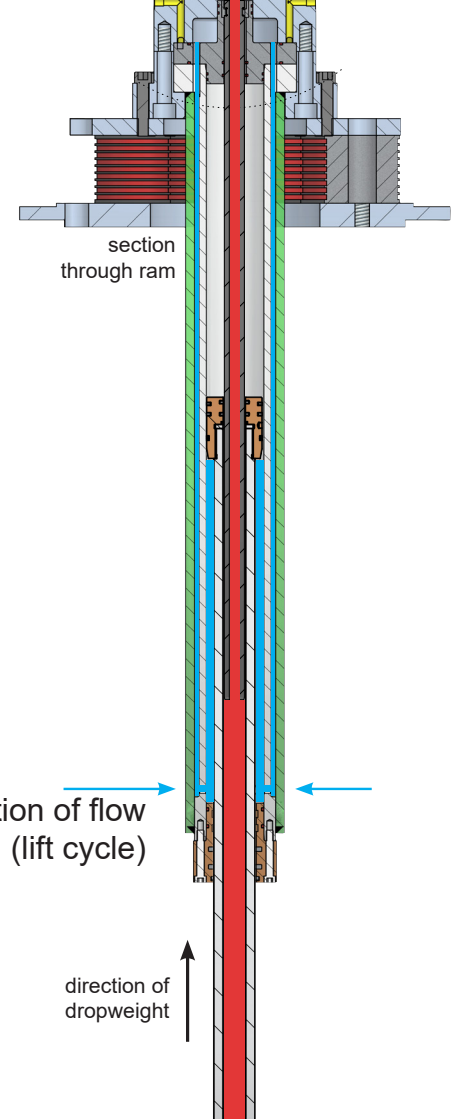
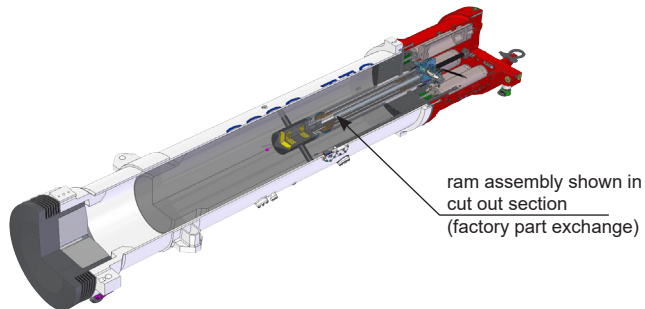
Weights & dims for guidance only & may vary according to application. Hammers can be configured for most tube types. Please contact Dawsons for further information.

Patented Double Acting Ram

DCP has created a unique, patented, truly double-acting hydraulic piston, which is in fact a twin ram assembly. This is the heart of the hammer's energy generation.

- A central core maintains permanent light downward pressure (shown in red) to the 'Auxiliary Ram' which accelerates the down stroke; the larger 'Piston Ram' opposes with greater force during the lift cycle (shown in blue). The hydraulic system is entirely contained, is robust to operate and simple to maintain.
- The assembly is uniquely resilient and incorporates working faces treated with a special high wear resistance coating, ensuring much more durability over the long term compared to chrome plated equivalents.
- Being centrally mounted it keeps the hammer beautifully balanced for a composed character while driving, with minimal movement from the hoses or on the pile.

Subsea conversion - because both ram and hammer casing are mechanically sealed, it also only requires around an hour to install a kit to ready the hammer's hydraulic controls from driving on the surface to driving underwater and attach air lines.



Subsea Configuration

AIR SUPPLY
TO SLEEVE

HOSE BUNDLE
HIGH PRESSURE HOSE
RETURN HOSE
PILOT LINE
AIR SUPPLY
ELECTRIC CABLE

TUBE GUIDE (X6)

Ø610 (24") TUBE



VIEW ON UNDERSIDE OF SLEEVE

Ø914 SLEEVE SHOWN
WITH TUBE GUIDES TO SUIT A
Ø610 TUBE

BALLAST WEIGHT

Ø30 AIR VENTS
THAT CONTROL WATER
LEVEL IN THE SLEEVE

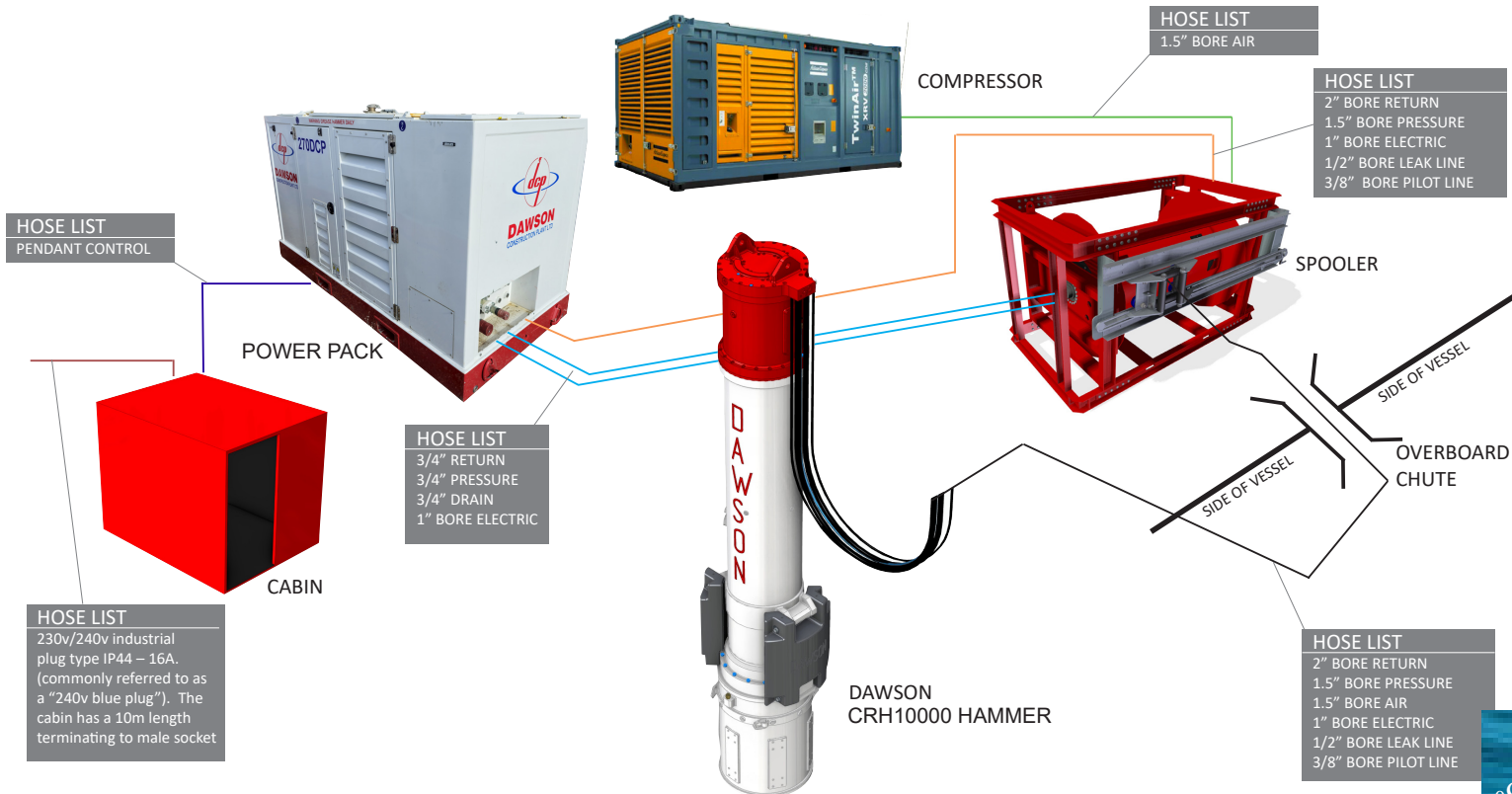
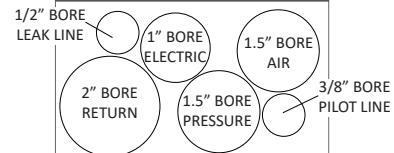
AIR CONNECTION ON SLEEVE

SLEEVE



CRH10000 Subsea Connections Schematic

MAIN HAMMER HOSE LAYOUT





SUBSEA STRUCTURE

COMPRESSOR

DCP POWER PACK

ANCHOR PILES

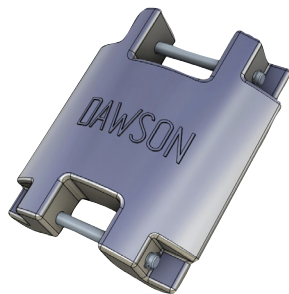
DCP CABIN

OVERBOARD CHUTE

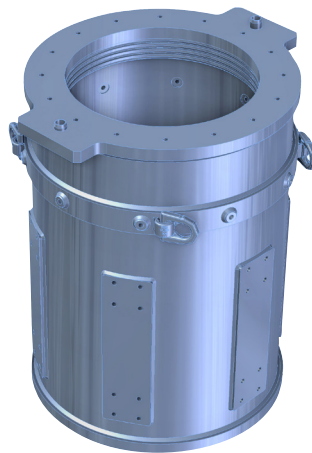
SPOOLER

DCP HAMMER IN
OVERBOARDING FRAME

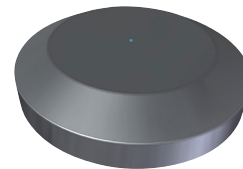
	DAWSON SUBSEA CRH10000		
	Ø914 SLEEVE	Ø1220 SLEEVE	Ø1626 SLEEVE
HAMMER ONLY	13,308 kg	13,308 kg	13,308 kg
SLEEVE + ANVIL + DOLLY	3,818 kg	4,456 kg	6,977 kg
BALLAST	1,608 kg (x2)	1,608 kg (x2)	1,608 kg (x2)
TOTAL WEIGHT	21,000 kg	22,300 kg	24,000 kg
APPARENT TOTAL WEIGHT IN SEA WATER	16,550 kg	16,902 kg	18,109 kg
DIMENSIONS			
A	Ø1092	Ø1380	Ø1808
B	1485 mm	1610 mm	1540 mm
C	6905 mm	7005 mm	6935 mm



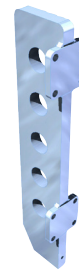
BALLAST WEIGHT



GUIDE SLEEVE

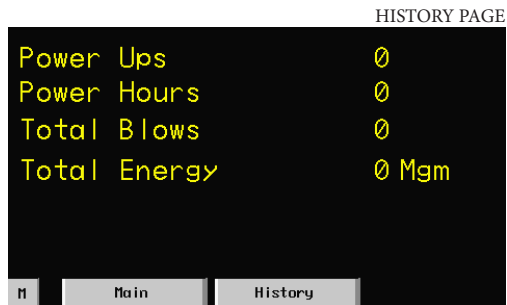
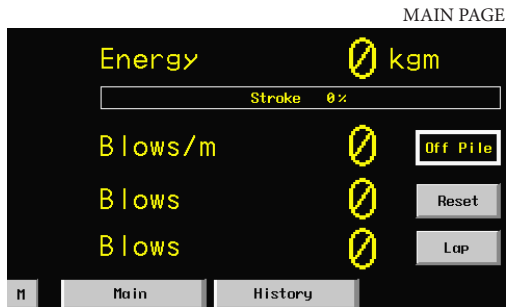


SPREADER PLATES	
Ø914	1,100 kg
Ø1220	1,620 kg
Ø1626	3,500 kg



TUBE GUIDE

Energy Monitoring



TYPICAL SCREEN SHOTS

DCP's Energy Monitoring System is uniquely robust and simple. It incorporates solid state electronic proximity sensors embedded into the hammer casing with indentations machined in a line into the face of the hammer drop weight. The sensors simply 'read' the indentations as they pass, to monitor the drop weight position and know the exact energy imparted to the pile; this constant monitoring allows the switching timing on the main hydraulic spool to be regulated continually to optimise hammer performance throughout varying piling conditions, such as:

- Output is accurately measured and is displayed to the operator on the power pack interface screen.
- The main screen displays bar graphs showing hammer stroke and hydraulic oil temperature.
- An 'Off Pile' indicator confirms when the hammer is securely seated on the pile, and allows piling to commence.
- There are numerical read outs showing blows per minute, energy per blow and total blows. The lower reading shows blows in LAP cycle. (measuring blows per increment). The units can be changed from imperial to metric.
- The history screen provides information on the total number of start ups / total hours / total blows and total energy throughout the life of the hammer.

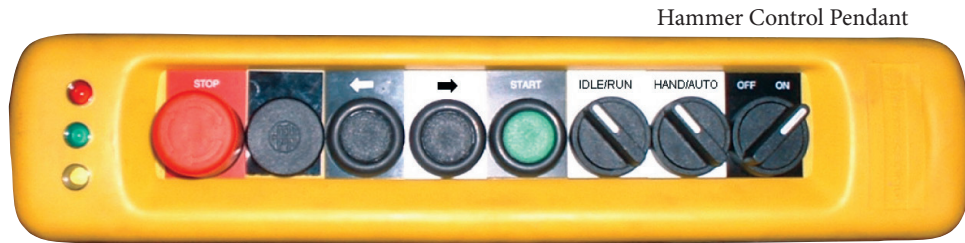
Hammer Controller



Hammer Control Screen

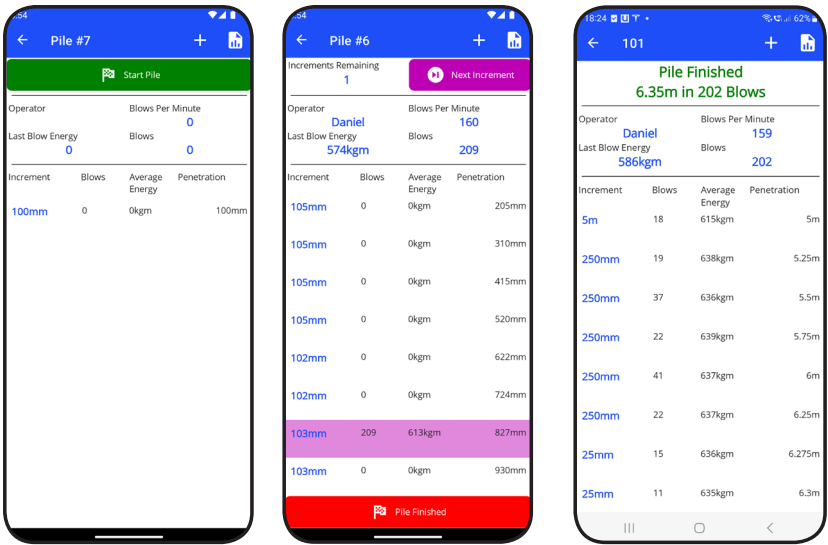
The Hammer Control Pendant (below) is connected to the HPU and is the operator's interface with the HPU and therefore the hammer. This allows the operator to control key HPU operations: to start the engine; raise engine speed from idle to fast (operating speed); and conduct an emergency stop.

The hammer operator also uses the pendant to change the hydraulic switching of the spool inside the hammer to optimise driving efficiency. This is done in conjunction with observing the Hammer Control Screen (left) by raising and lowering the height of the hammer stroke, which reduces energy at a higher blow rate or increases energy at a lower blow rate. The energy screen shown enables computed feedback while observing the hammer on the pile.

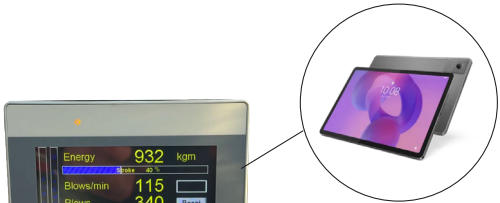


Hammer Control Pendant

Android Pile Logger App



A tablet can be wired directly into the HPU to remotely view and record driving data; it can be saved in standard spreadsheet formats, giving a blow by blow account of every pile driven and a day to day productivity record.



DATA CAN BE RECORDED TO A WIRED TABLET

INTERFACE SCREEN ON POWER PACK

Standard Hydraulic Power Pack



	CRH10000
Model	DCP270*
Power Source	Caterpillar Diesel Tier 4f / Stage 5
Max. power	186 kW
Diesel oil	490 l
Hydraulic oil	540 l
Weight (estimate)	4250 kg
Dimensions (LxWxH)	3375 x 1550 x 1970 mm

Standard Hydraulic Power Packs

Dawson hydraulic power units ('HPU' or 'power pack') are fully self-contained, including all oil and fuel reservoirs, prime mover and hydraulic circuitry. The HPU is connected to the hammer and provides all hydraulic power and electric control elements.

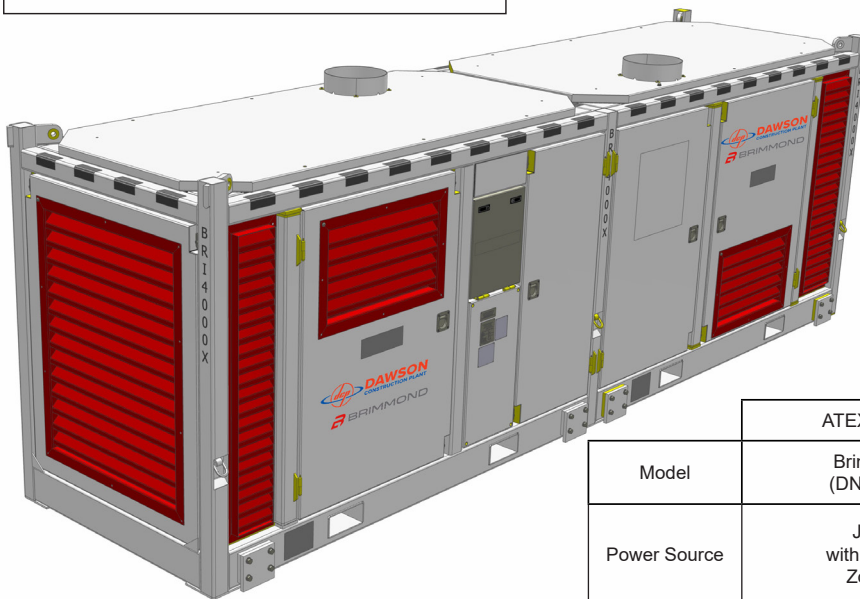
The power pack is designed to run at a fixed engine speed and produces a fixed oil flow rate at a pre-set pressure (270 bar/270 lpm max) to supply the hammers in diverse environments, from hot summers in Kuwait to cold winters in Ontario. A built-in offline filtration system conditions the hydraulic oil to 2 microns and remove any water contamination.

Other variants are available on request; a controller 'Hydraulic Interface Module' (un-zoned) is available which will connect to a compatible hydraulic power source to enable clients to adapt their existing HPUs to run the hammers.

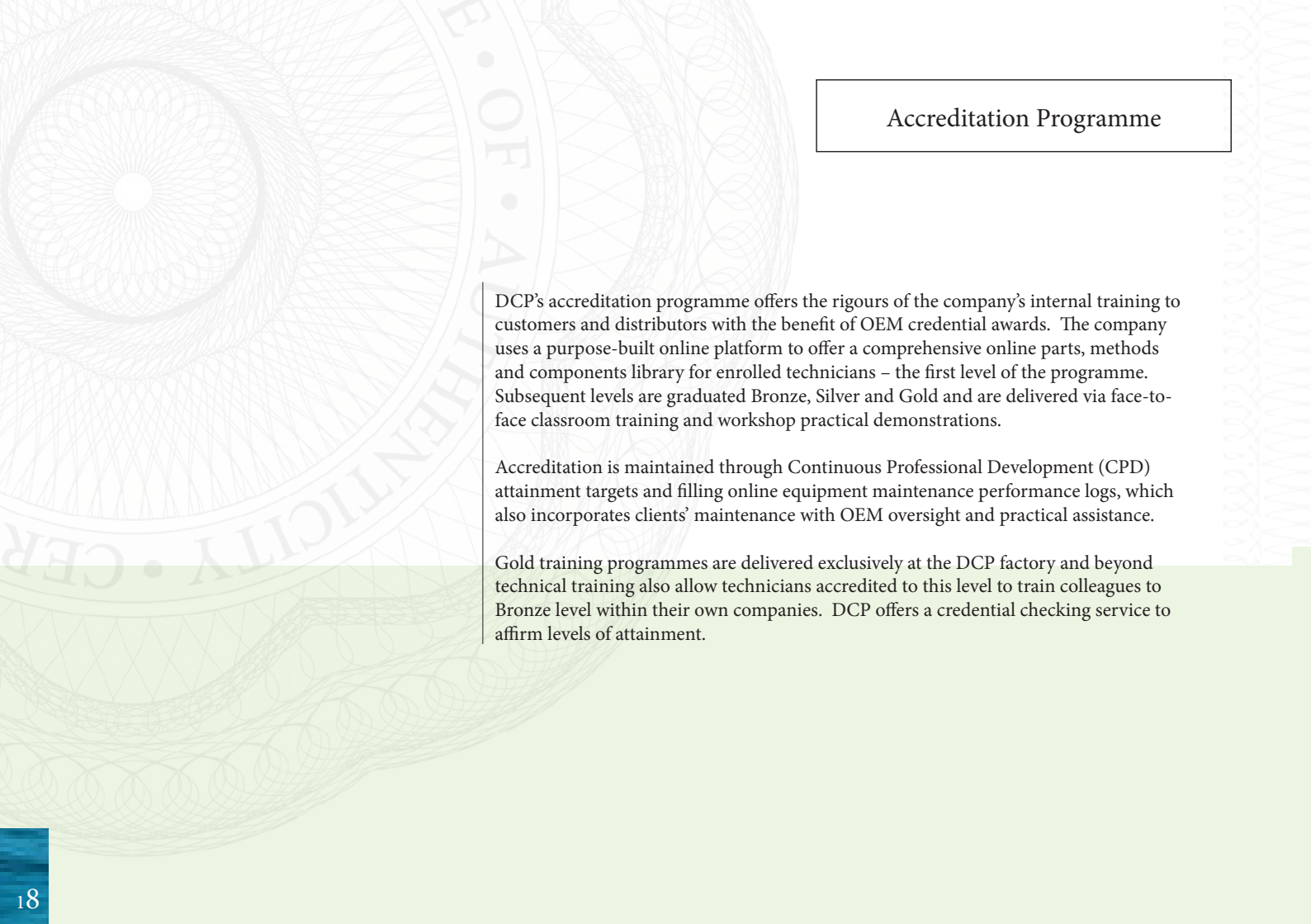
* Chalwyn Valve, Spark Arrestors, Anti-Static Belts

** Or equivalent

Zoned Hydraulic Power Pack



	ATEX Zone 2 Diesel	ATEX Zone 1/Zone 2 Electric
Model	Brimmond 270D2 (DNV 2.7-3 R45**)	Brimmond 270E1 (DNV 2.7-3 R45**)
Power Source	JCB444 TCA with Pyroban ATEX Zone 2 kit (x2)	400-460V external supply Load @ 400V = 271A
Max. power	Single 84kW Double 168kW	160 kW
Diesel oil	580 l	-
Hydraulic oil	1000 l	-
Weight (estimate)	12,000 kg	8,000 kg
Dimensions (LxWxH)	6000 x 2000 x 2500 mm	2990 x 2438 x 2664 mm



Accreditation Programme

DCP's accreditation programme offers the rigours of the company's internal training to customers and distributors with the benefit of OEM credential awards. The company uses a purpose-built online platform to offer a comprehensive online parts, methods and components library for enrolled technicians – the first level of the programme. Subsequent levels are graduated Bronze, Silver and Gold and are delivered via face-to-face classroom training and workshop practical demonstrations.

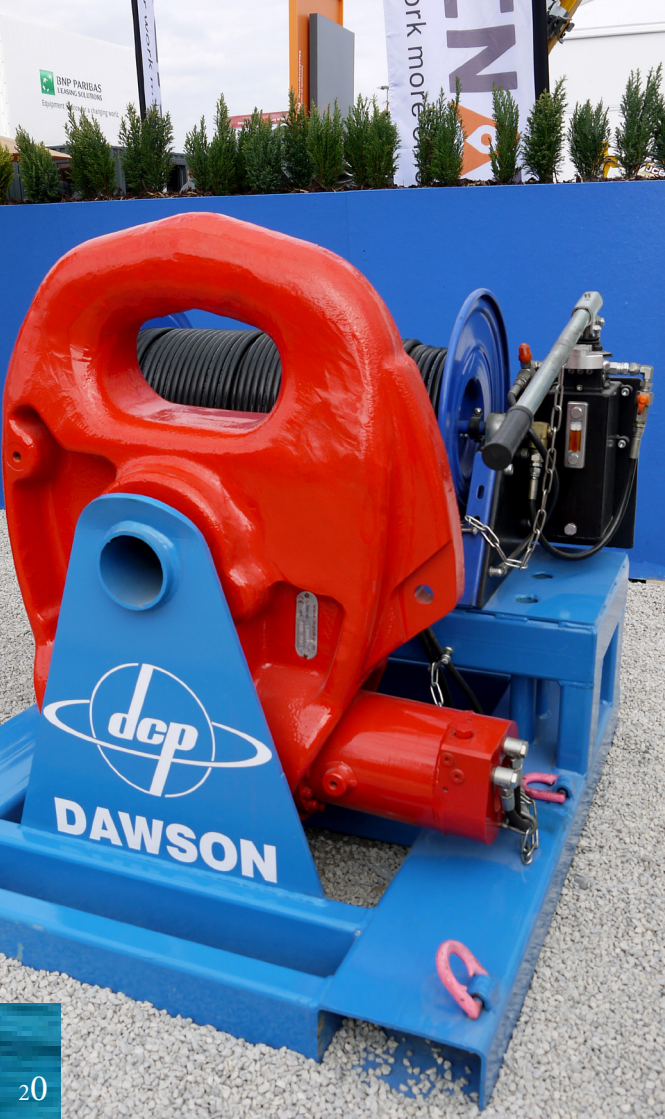
Accreditation is maintained through Continuous Professional Development (CPD) attainment targets and filling online equipment maintenance performance logs, which also incorporates clients' maintenance with OEM oversight and practical assistance.

Gold training programmes are delivered exclusively at the DCP factory and beyond technical training also allow technicians accredited to this level to train colleagues to Bronze level within their own companies. DCP offers a credential checking service to affirm levels of attainment.

HAMMER FOUNDATION LEVEL	ONLINE TECHNICAL AND USER INDUCTION	ONLINE
HAMMER TRAINING LEVEL 2	BRONZE AWARD	CUSTOMER / DCP SITE
HAMMER TRAINING LEVEL 3	SILVER AWARD	CUSTOMER / DCP SITE
HAMMER TRAINING LEVEL 4	GOLD AWARD	DCP HEADQUARTERS

Certificate of Achievement





100T Hydraulic Release Shackle

The Dawson 100 tonne hydraulic release shackle has been specifically designed for use on large tubes, and when used as a pair, tubes weighing up to 200 tonnes can be lifted.

The pin size is 130mm diameter and is retracted and engaged hydraulically with a hand pump mounted on the ground, complete with spooler to keep the hose under control.

The hose length is 60m allowing long piles to be positioned; because the pin is released hydraulically the operator does not need to be directly underneath the shackle.

The shackle and spooler are mounted onto a stand so that loading and unloading or moving around the job site is just a single crane lift.

FEATURES

- High strength cast steel body.
- Pin and hydraulic ram are easily removed for easy maintenance.
- Hydraulic pin release.



40T Remote Release Shackles

Release shackles are reversible so they can be released from above

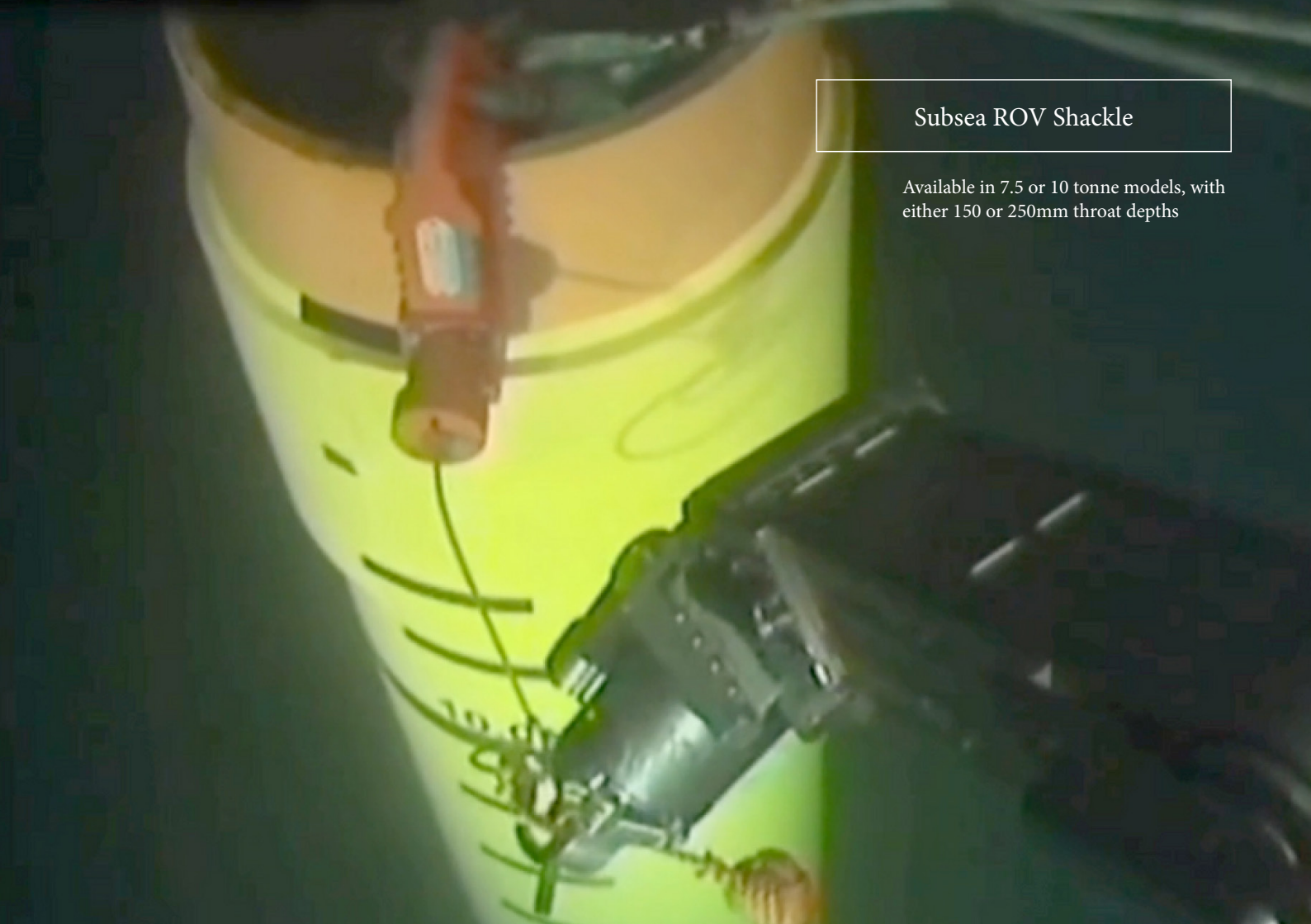
Robust high strength cast steel body
Proof loaded to twice the SWL
Designed to five times the SWL

'Feet on the ground' approach
Ratchet Belt for ease of release once
the pile is in position

Simple repair & upkeep
Parts are easily maintained and
serviceable

Available in 7.5, 10, 25 and 40 tonne models,
either 150 or 250mm throat depths



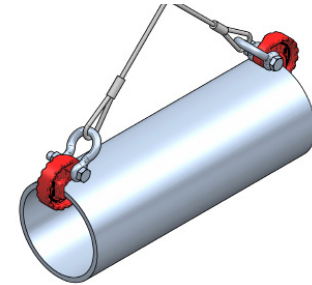
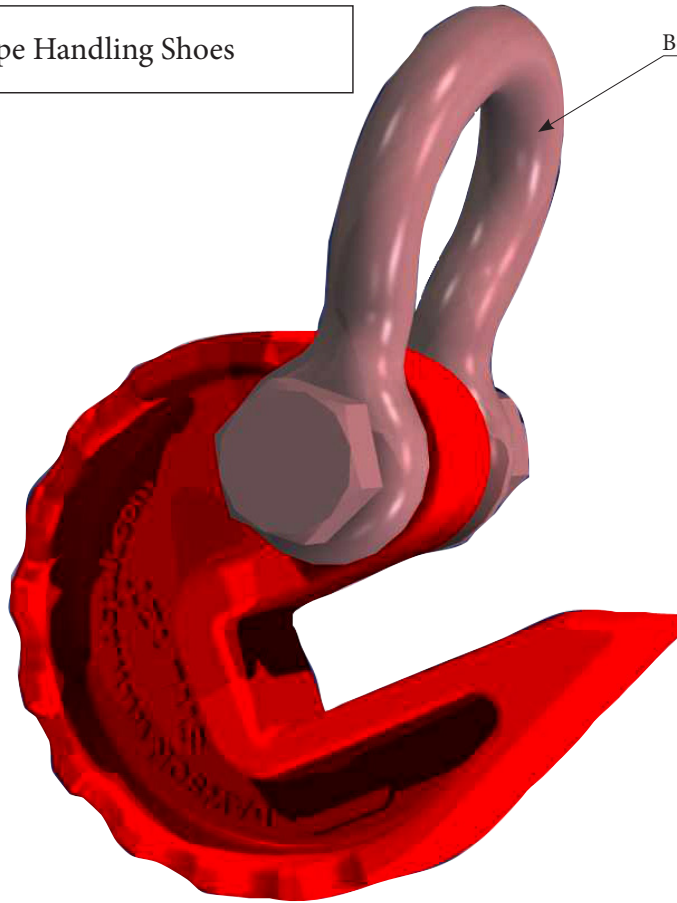
A close-up photograph of a subsea ROV shackle. The shackle is a complex metal component with a threaded end and a hook-like structure. It is attached to a yellow cylindrical object, possibly a buoy or part of the ROV. A red cable with a white label is also visible, connected to the shackle. The background is dark and out of focus.

Subsea ROV Shackle

Available in 7.5 or 10 tonne models, with either 150 or 250mm throat depths

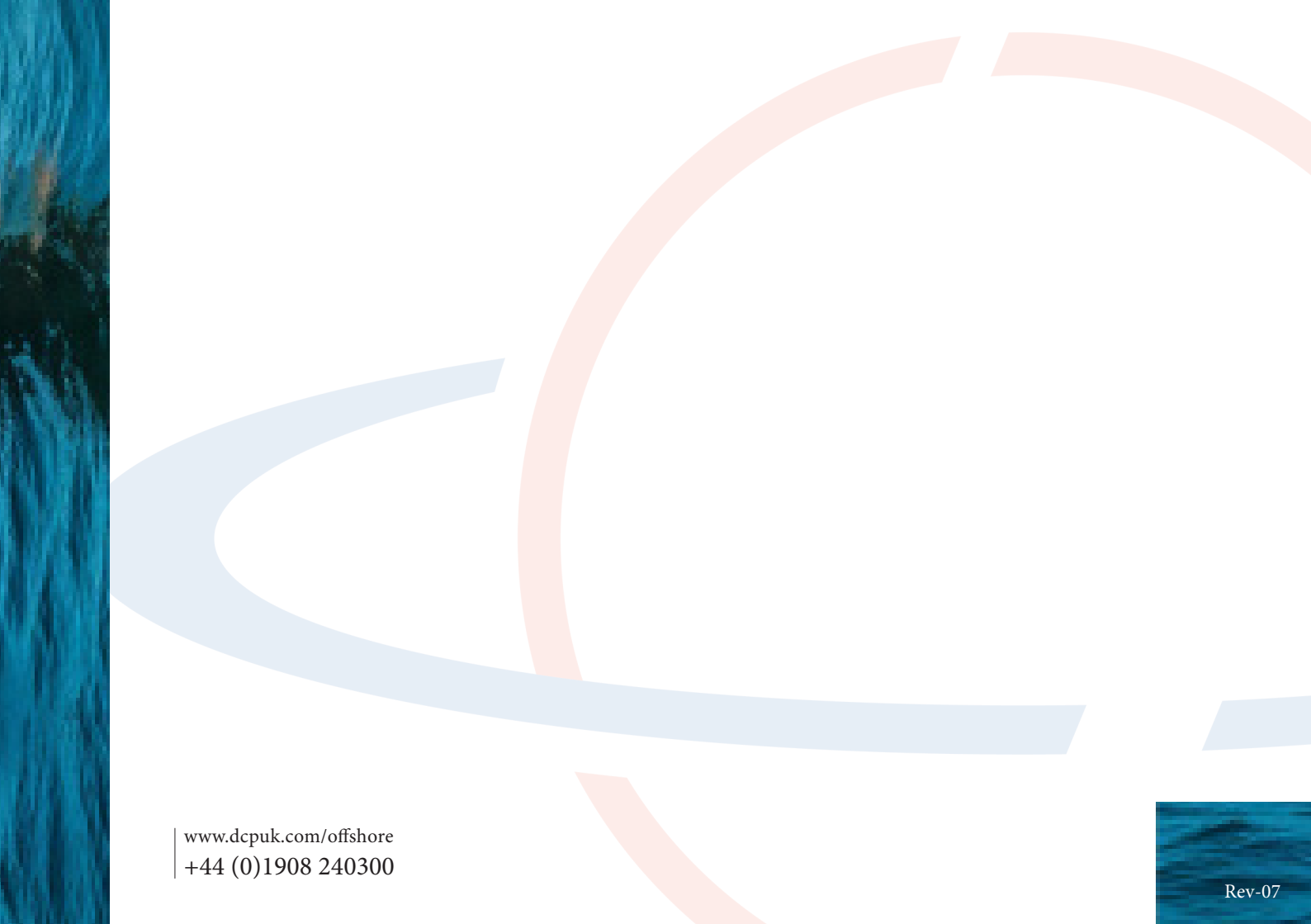
Pipe Handling Shoes

Bow Shackle



12 / 16 / 24 tonne

Variants available: 12, 16 and 24T pipe handling shoes are made from a high grade cast steel allowing weight reduction to be made in the design. New features include a radial profile engagement face and all round grip handling ridges.



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Rev-07