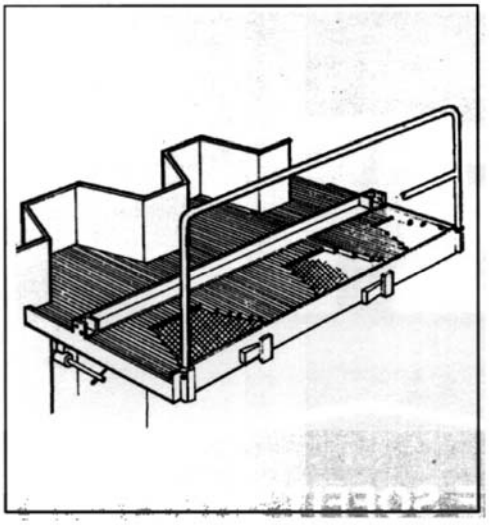
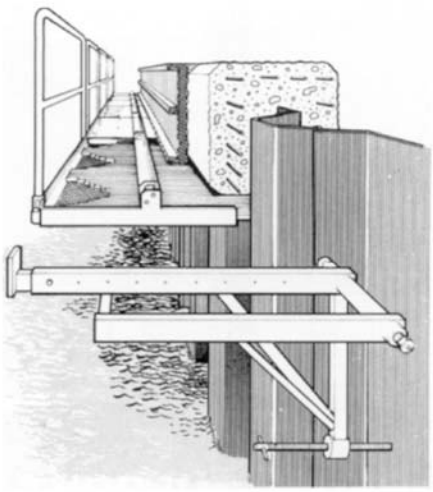


DAWSON

SHEET PILE CAPPING SYSTEM



The answer to capping sheet piles

The Redeb/Multi-pile Soffit Panel system provides a fast economical method of supporting shuttering for capping beams on permanent sheet piling works such as: River banks, Sea walls, Piers and jetties; Flood alleviation work.

Replaces the old fashioned, slow labour and material consuming methods.

Greatly increases speed of working.

Quickly dismantled for re-use.

No damage to sheet piles.

REDEB SUPPORT BRACKETS

MULTI-PILE SOFFIT SHUTTERS

The only purpose-made pile capping system available - its faster, more cost effective than any on-site 'lash ups'. Redeb and multi-soffit panels are easily assembled and re-used by unskilled labour. It renders obsolete the use of both individual plywood panels, cut to match pile pans and the welding of support brackets to piles which ultimately have to be burned off and the piles made good.

The REDEB provides a cheaper, simpler and faster method of supporting the soffit shutter on 'U' and 'Z' sheet piles.

The advantages of this system are considerable with increased production and decreased costs significant factors.

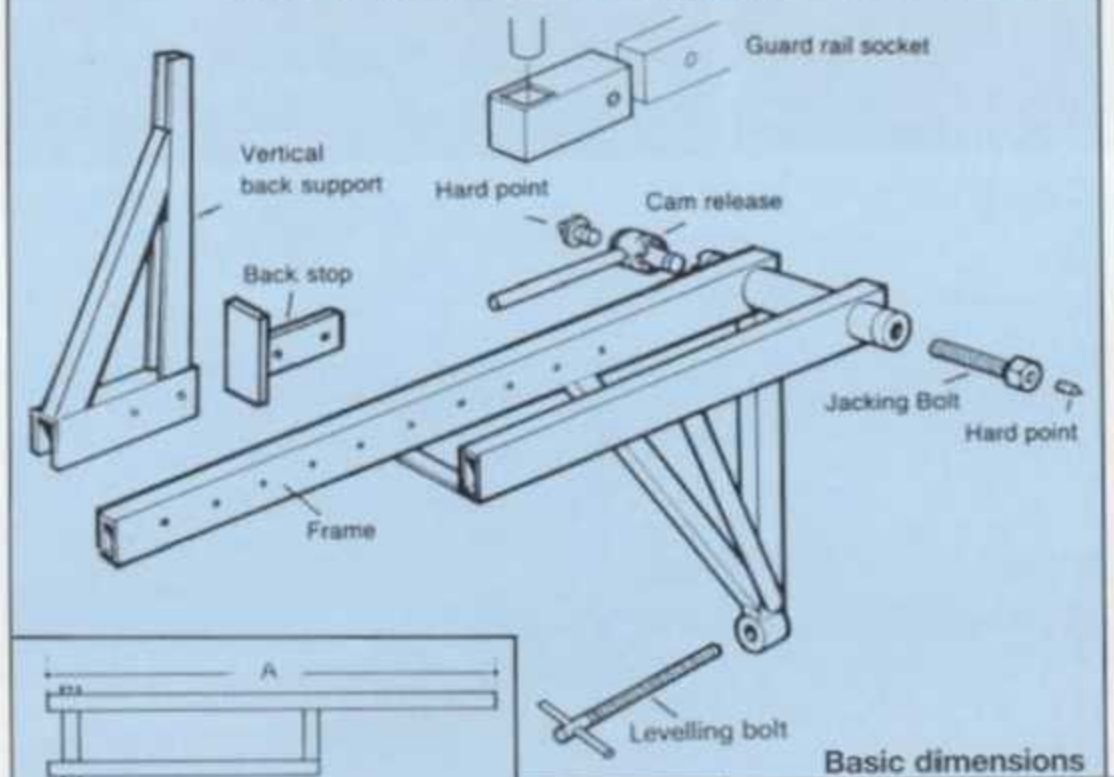
PRODUCTION

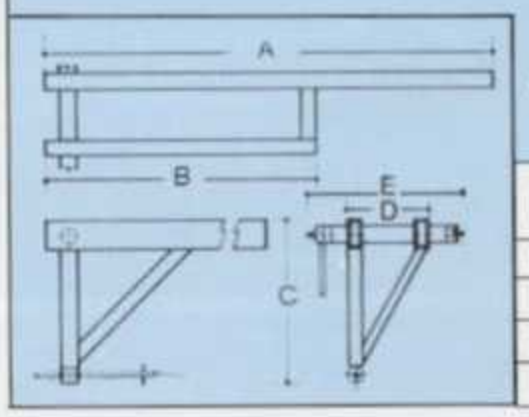
Redeb increases speed of working. For example fifty brackets complete with shuttering can be secured in one day. That represents approximately 50 metres of pile capping.
On completion of pile capping, the Redebs are quickly removed from under the concrete ready for further use.

SAVINGS IN LABOUR AND MATERIALS

No specialist labour is required.
No burning or welding
No sheet pile damage.

REDEB SUPPORT BRACKET ASSEMBLY





Basic dimensions

Model	A		B		C		D		E*	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
RSB225	705	27.8	–	–	475	18.7	–	–	225-302	8.8-11.9
RSB500	1250	49.2	750	29.5	475	18.7	235	9.25	418-524	16.5-20.6
RSB600	1250	49.2	750	29.5	524	20.6	295	11.60	503-609	19.8-24.0
RSB700	1250	49.2	750	29.5	525	20.6	355	14.00	652-729	25.6-28.7

** Jacking Bolt adjusts 77mm (3 inch) – other variations achieved using alternate Hard Points (details available on request)*

A standard soffit shutter panel for all normal pile caps and a lot of abnormal ones as well!

The Multi-pile Soffit Shutter panel consists of rectangular bars which are retained within a framework. The bars are free to slide within set limits. With the panel secured on the Redeb Bracket the rectangular bars are pushed towards the sheet piles, starting from the deepest part of each pile. The bars will deck out the soffit area and assume the shape of the sheet piles including the distortion which occurs during driving.

The panels will fit all known sheet piles and may also be used on continuous bored piles.

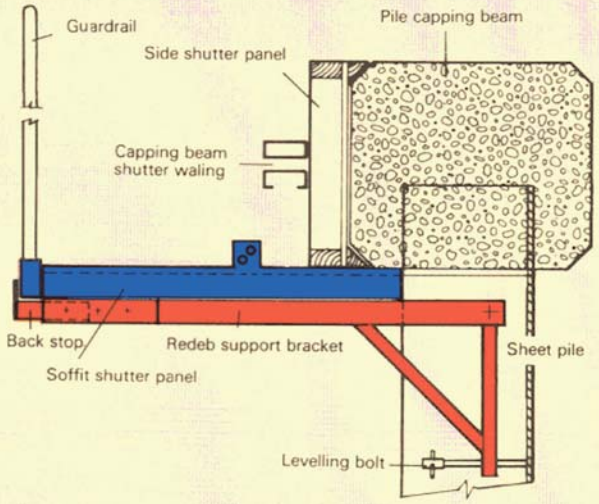
The 2.5m long panel is intended for mechanical handling (weight 360kg).

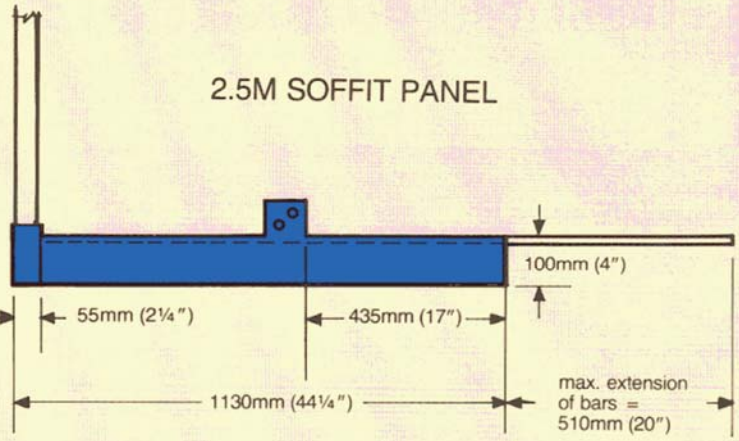
The panels' structural members, which retain the decking bars, are capable of carrying normal loads when supported on Redeb brackets at 'one pair' of pile centres. No additional structural support is necessary. If in doubt please ask.

ADVANTAGES

Very quick set up
Eliminates wastage of consumable materials
Provides a formal system tried and proven as opposed to one off on-site lashups
Re-usable for all shapes of sheet pile

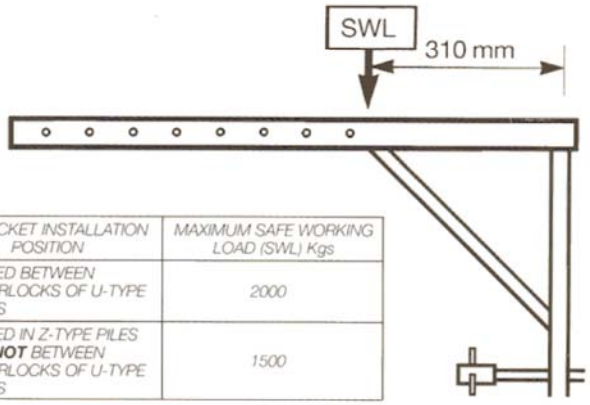
A concrete cap, approx. size 1.2m high by 0.9m wide and 275 metres in length was completed in four weeks.
A 15 metre concrete pour was made every day. Five per week using a total of 45 Redebs and 18 - 2.5m Panels (e.g. 3 - 15 metre lengths).
The result: a time saving of over 2 weeks over 'traditional' welded brackets and the cutting of timber soffits.





SAFETY POINTS

1) *Ensure the correct torque of 180Nm has been imparted on the Jacking Bolt prior to applying any loading. This will ensure the relevant Safe Working Load has been achieved.*
2) *Ensure that the Jacking Bolt has not been extended by more than 77mm during installation. Check this by measuring the amount of exposed thread.*
3) *Ensure the steel Hard Points are in good condition at all times and that the correct points are used for the sheet piles in question i.e. 90° or 70°. Any damage to these points necessitates immediate replacement. Damage includes 'chipping' or 'rounding' of the point. The point should not have a flat or rounding greater than 1.5mm.*
4) *Keep the threads on the Jacking Bolt in good order by regular cleaning and greasing – at least after every pour. This also applies to the Cam Release Mechanism and Lower Adjusting Bolt. Failure to keep the Jacking Bolt well lubricated will lead to a reduced load carrying capacity for each bracket.*
5) *Regularly check every Redeb bracket for damage or excessive wear on any item. The Safe Working Load of the bracket is dependent on all components being in tip-top condition. Damaged parts should not be used unless correctly repaired or replaced. If in doubt consult the manufacturer.*
6) *Consecutive Redeb brackets must be installed at precisely the same level to ensure correct load distribution amongst all brackets for any given pour.*

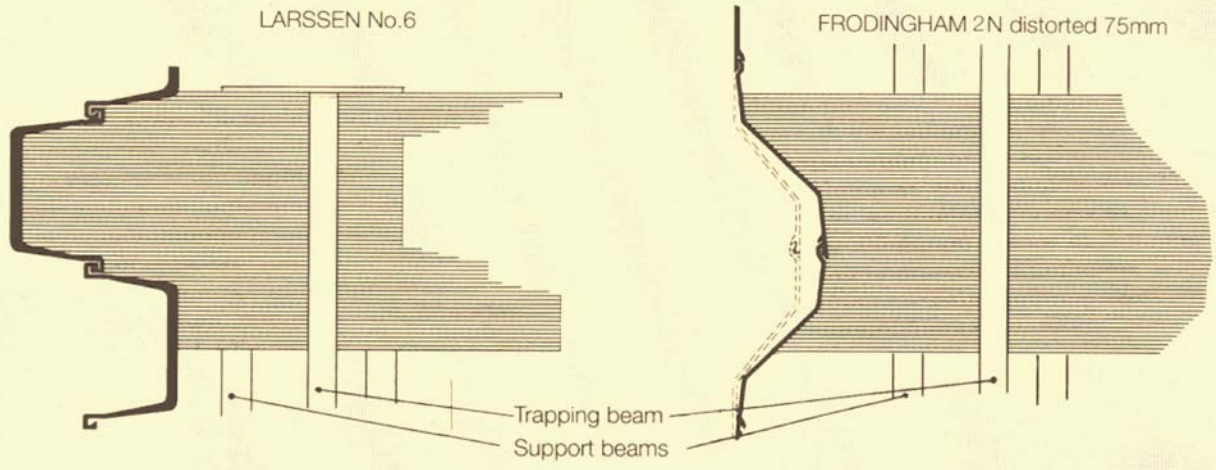


BRACKET INSTALLATION POSITION	*MAXIMUM SAFE WORKING LOAD (SWL) Kgs*
FITTED BETWEEN INTERLOCKS OF U-TYPE PILES	*2000*
*FITTED IN Z-TYPE PILES OR **NOT** BETWEEN INTERLOCKS OF U-TYPE PILES*	*1500*

7) *When pouring concrete into the shuttering ensure that dynamic loading on the system is kept to a minimum i.e. do not pour from any height!*
8) *Watch the angle between Hard Points and the sheet pile fixing face – follow the guidelines under the section headed 'Limitations of the Redeb bracket' in the Operators Instruction Manual. Remember – this angle can decrease on radius walls!*
9) *Read the Operators Instruction Manual fully before taking the equipment into use.*

D.C.P. LTD RESERVES THE RIGHT TO DISCONTINUE EQUIPMENT AT ANY TIME, OR CHANGE SPECIFICATIONS OR DESIGNS WITHOUT NOTICE OR INCURRING OBLIGATIONS.

MULTI-PILE SOFFIT PANELS used in conjunction with Frodingham and Larssen profiles



SETTING UP REDEB SUPPORT BRACKETS

1) *Scribe a setting out line at the correct height on the pan of every alternate pile. Using a counter punch, mark a position on this line (a).*
Allow a distance of 40mm from the fixing centres to the top surface of the bracket.

2) *Lower the bracket into position and with the quick-release mechanism in its extended position, with the release lever pointing downwards, tighten up the jacking bolt at the other end of the bracket with a torque wrench to the required torque (180Nm) (b) by doing this the two tempered steel points will enter into the sides of the piles.*

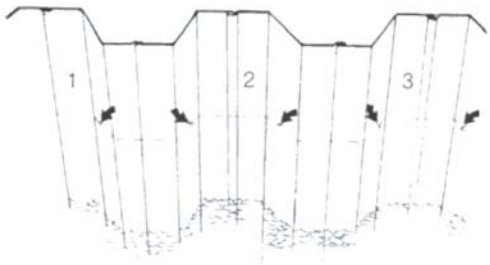
3) *The axis of the bracket is now at the correct level. The leg of the bracket has to be levelled by adjusting the levelling bolt at the base of the leg (c).*
Place a spirit level on the horizontal arm to obtain the correct level.

4) *Repeat this procedure until a bracket is correctly positioned in every alternate pile pan.*

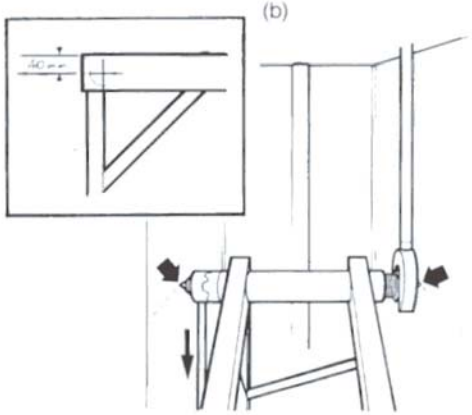
5) *The intermediate brackets can now be positioned, by levelling them up to a straight edge between two previously positioned brackets.*

6) *Once all the brackets are secured, go back and check that they all have the correct torque.*
The brackets are now ready to receive the soffit shuttering.

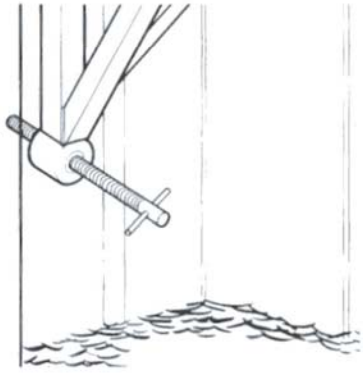
(a)



(b)



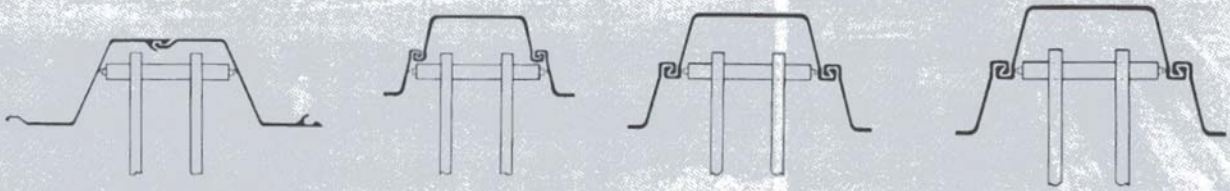
(c)



WHAT PILE SECTIONS

There is a Redeb Bracket available to suit most 'Z' (Frodingham) and most 'U' (Larssen) shaped piles.

It is necessary to use an alterrnative method of fixing for use of the bracket on flat angle piles (e.g. Frodingham 1N & 2N), where the angle of splay of the pile is less than 60° to the flange.



'Z' Profile
(e.g. Frodingham, Arbed AZ etc.)

Narrow Larssen
(e.g. Corus GSP3)

Wide Larssen
(e.g. Corus PU20)

Euro Larssen (e.g. Hoesch L703)
Use only wide Redeb brackets

(left)
Pile capping at Whitstable Harbour, Kent, shows clearly soffit panels following the shape of Larssen profiles.
Main Contractor:
John Shelbourne Ltd. (Costain)

(above and front cover)
2 metre high pile cap over a total length of 1000 metres at the Royal Docks, Portsmouth.
Main Contractor:
Harbour and General Works Ltd.
Client: Property Services Agency

(right)
Pile capping on tidal river bend at Boston, Lincs. Length of capping approximately 300 metres.
Main Contractor:
Fairclough Civil Engineering Ltd. (Howard)

(below left)
New dock facility at Harwich.
Main Contractor:
May Gurney Ltd.

(below right and front cover)
River wall on Thames near the tidal barrier at Greenwich.
Main Contractor: John Shelbourne Ltd.

REDEB SUPPORT BRACKETS & MULTI-PILE SOFFIT PANELS

Method of Operation

Method of Operation
(For use in conjunction with the Redeb Brackets).

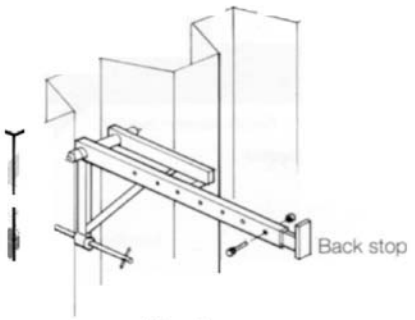
Before

1) Position the Redebs as described earlier, in every outside pile pan. Ensure that they are at the correct level, correct torque (180 Newton metres) and horizontal (check with spirit level. See item 6- 'Safety Points')
2) Fix a 'back stop' inside the end of the longer arm of each Redeb Bracket and bolt it to the Redeb. (Fig. 1)
3) Lower the Soffit Panels onto the Redebs and ensure, where possible, that the front edge of the panel is tight up against the outside edge of the sheet piles. Next, ensure that the back stops are tight up against the back of the panels. This can be achieved by use of wedges. (Fig. 2) These back stops prevent the Soffit Panels moving back along the Redebs and take any horizontal load that may try to cause such a movement.
4) The guardrails are an integral part of the 2.5m Soffit Panel.
5) Using a nail bar or similar, lightly tap on the ends of each of the steel bars, until they have all been pushed hard up against the sheet piles; start by tapping the bars into the centre of the pan of the piles and then work outwards. Oil the bars generously with shutter oil.
6) The side Shutter Panels can now be positioned straight on to the top of the Soffit Panel bars. The trapping bar member on the top side of the panel can be used to aid positioning of the side shutter. (Fig. 3) However, the horizontal load exertion by the wet concrete should not be taken by the Panel, but by some other method, such as ties passing through the concrete and fixed to the sheet piles.
7) Any small gaps between the steel bars and the sheet piles can be filled with mastic or other filler plugs to prevent grout leakage.
8) Use mould oil on the bars to minimise any adhesion from the concrete.
9) Join each Soffit Panel together with fixing bolts provided. (Fig. 4)

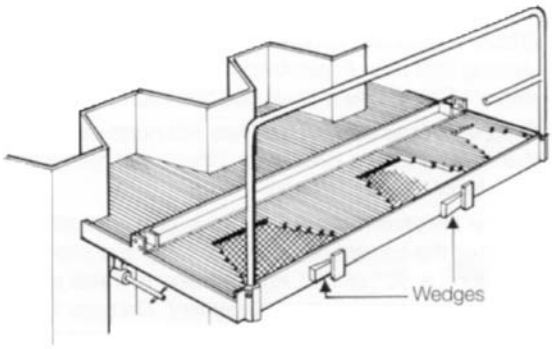
After

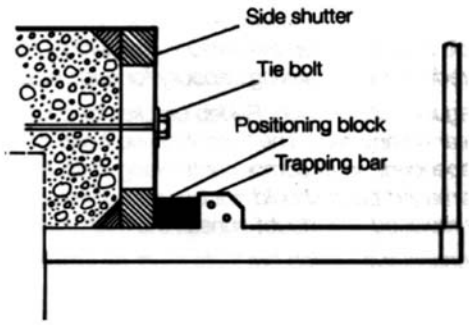
1) After 36 hours the Soffit Panels and Redebs are ready to be stripped.
2) From underneath the concrete cap, turn the levelling bolt on the Redeb to slightly lower the Soffit Panel. This helps the removal of the Soffit Panel which can now be done, followed by the Redebs - by way of the Quick Release cam release.
3) The lifting of the Soffit Panel will automatically cause free movement of the steel bars, and will help to shed any grout. With a stiff brush sweep all concrete grout and debris off the bars to ensure no concrete becomes encrusted. The sooner the panels are scrubbed and cleaned after the concrete pour, the easier and quicker it is to prepare them for re-use.

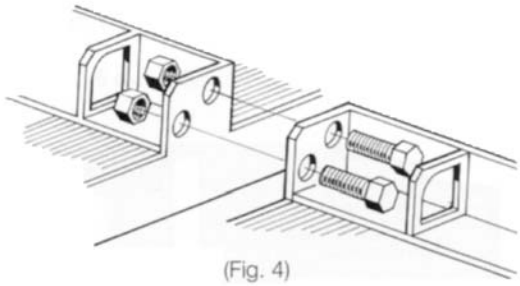
The panels will be supplied with as many bars in them as possible, which ensures a minimum of grout leakage between the bars. However, after a number of concrete pours, the free movement of the bars in the panel may become restricted and in practice this may be eased by removing one or two of the bars. Any 'gaps' caused by this will immediately be taken up by the remaining bars.



(Fig. 1)







(Fig. 4)

DAWSON CONSTRUCTION PLANT LTD
Chesney Wold, Bleak Hall, Milton Keynes MK6 1NE, England.
Tel: (01908) 240300 Fax: (01908) 240222 Int Tel: +44 1908 240300 Int Fax: +44 1908 240222
E-mail address: dawson@dcpuk.com Web address: www.dcpuk.com