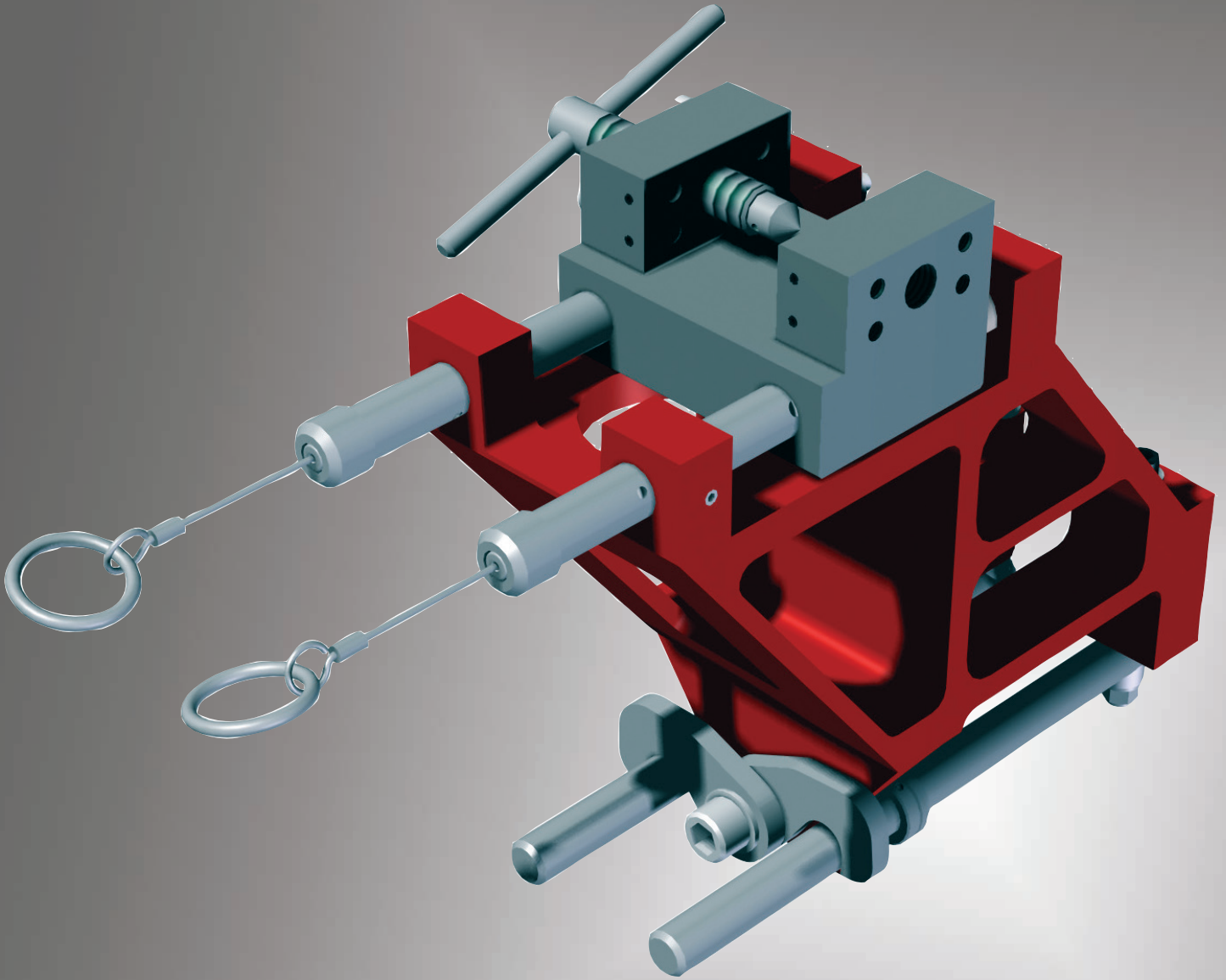


sheet pile threader | SPT



sheet pile threader

owners manual
operators instructions
spare parts list
safety precautions
maintenance

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preface

This manual is used to familiarise you with safety, assembly, operation, adjustment, troubleshooting, and maintenance. Read and follow the recommendations in this manual to ensure safe and efficient operation. Keep this manual with the attachment at all times for future reference.

We want you to be completely satisfied with your new product, feel free to contact your local authorized service dealer for help with service, replacement parts, or any other information you may require. If you need assistance in locating a dealer, visit our web site at www.dcpuk.com or call customer service at +44 (0) 1908 240300.

Whenever you contact your authorised service dealer, always have the model number and serial number of your product available. These numbers will help provide exact information about your specific product. You will find the model and serial numbers on an ID plate located on the product.

The descriptions and specifications in this manual are subject to change without notice. Dawson reserves the right to improve products. Some product improvements may have taken place after this manual was printed.

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The Sheet Pile Threader is a mechanical device which interlocks sheet piles when sheet piles are being pitched in panels. It replaces the “Top Man” or “Pile Monkey” who normally carries out the interlocking by hand.

The Pile Threader has two main advantages:



PRODUCTION

- a. Interlocking piles, with the Pile Threader is faster than any other method of working.
- b. Every year, several weeks of pitching time is lost due to strong winds. Much of this time is recovered using the Pile Threader, as it will operate in severe weather conditions e.g. half gale.



SAFETY

Instead of the “Top Man” climbing or being hoisted up to the top of the piles and interlocking manually in an exposed position, the Pile Threader can be attached to the pile at top frame level and the guide goes to the top to do the interlocking. This eliminates a most dangerous manual operation.

suitable pile sections

The one basic guide frame is standard for ALL “Z” section piles, ALL straight web piles and “U” piles of size 2 and upwards. Below this size may require modifications to the main frame, but the principal of operation remains the same.

The different sections are accommodated simply by inserting appropriate rollers onto the lower spindles which form part of the lower clamp. These rollers fit the pile profile to give positive and accurate location. Different stop plates are attached to the top grip to suit different pile sections.



VARIATIONS

Within one pile section, there may be several variations. On “Z” sections, the interlocks are usually different at each end. The leading end can also be left hand or right hand.

The Pile Threader can accommodate these variations by swapping the rollers around on the lower grip spindles to accommodate changes in handing and by replacing some elements of the roller to accommodate the different interlock.

On “U” sections, the interlocks are identical and the only variations are on handing.

The Threader is designed for interlocking steel sheet piles. It should be used for no other purpose whatsoever.

The Threader should be used in accordance with the “Method of Operation” set out in the brochures.

method of operation

The METHOD OF OPERATING THE SHEET PILE THREADER

Two Stages:

1st: Setting the S.P.T. up correctly (with the exact Rollers, Spacers,etc.) to suit the required sheet pile section.

2nd: Attaching it to the pile and thereby enabling it to interlock the piles.



First Stage - Setting the S.P.T. up

For all 'Z' shaped pile profiled, there are 4 possible ways of pitching the piles and 4 corresponding ways of setting up the S.P.T.

(2 for pitching Clutch into Tongues - 1 for DL and 1 for DR - and 2 for pitching Tongues into Clutch - see 4 drawings).

For all 'U' shaped piles (and straight web piles) there are 2 possible ways of pitching the piles and 2 corresponding ways of setting up the S.P.T. (See 2 drawings).

1. Find out which pile section is being used.

2. Find out which way you are pitching the piles, to discover which of the 4 drawings (for 'Z' piles) or 2 drawings (for 'U' piles) is appropriate. The drawings represent a plant view of the S.P.T. resting on its 2 bottom bars (slightly opened). The pile section (on the drawing) shown resting on the vice (lying across the S.P.T. body and at the bottom of the drawing) represents the pile that has yet to be pitched (i.e. the next pile in the panel). The other pile section at the top of the drawing, drawn in the open fork of the S.P.T. represents the pile that is already in the ground i.e. it is the pile that was last pitched.

Select the appropriate drawing.

3. Set up the S.P.T. with the required Roller Set to suit this drawing. In general, each roller set will comprise of a number of rollers (each of which will have stamped on them a figure followed by a number i.e.

cont'd - method of operation

B10) and an assortment of spacers each of which is numbered, the number corresponding to the length of the spacer in millimetres. The roller set will also comprise of 4 no. Hard Points e.g. HP20 (or in some pile sections these have been replaced by an Adaptor Block) and a Stop Plate e.g. SP20.

Set up the S.P.T. with the rollers, etc. in the position they are marked on the drawing.

Undo the collar, using the 3mm Allen Key provided, from the end of each roller spindle. This will enable the rollers and spacers to be inserted onto the spindle. N.B. They must be in the exact position, the rollers placed the correct way around on the roller spindle. When they have been correctly positioned on the spindles, replace the collars on each spindle.

Now position the Hard Points (or Adaptor Block) on the Stop Plate and the Vice Screw, as shown on the drawing.

The S.P.T. should now be correctly set up and ready for use.



2nd Stage - Attaching the S.P.T. to the Pile

1. With the crane lifting the pile (that is the next pile - the pile to be pitched) to the vertical position, allow the pile to hang with the base of the pile approximately 1 metre above ground level.

If the pile can be rested on, say, a block of wood in this position so much the better, as the pile is thus prevented from swinging to and fro in the wind. The leading clutch (or tongue) must, of course, not be impeded by the block of wood i.e. it must be hanging over the edge, as it is to this section of the pile that the S.P.T. is positioned beneath, with the base of the pile resting flat on the base of the vice block of the S.P.T. When in the correct position, the vice screw can be tightened, as tight as possible, thereby securing the S.P.T. to the base of the pile. (The S.P.T. will now be tightly clamped between the vice screw and the 4 no. hard points (or adaptor block.)

cont'd - method of operation

The position of the pile in the vice is very important, as incorrect positioning will render the interlocking of the pile an impossibility. The correct position should be noted from the drawing, and is where the end of the stop plate just touches the pan of the pile. This can be checked even more accurately by the the setting dimension - a distance given on every drawing and is measured from the front of the pile to the front of the vice.

In practice, this is quickly and easily set up, once a few piles have been pitched - **practice makes perfect!**

It should be noted that if interlocking 'Z' shaped piles, where you are interlocking a clutch into a tongue i.e. tongues leading, the correct setting dimension is usually where the edge of the clutch is lined up with the edge of the vice. This is very quick to do.

2. The S.P.T. has now been attached to the base of the 'free' swinging pile and is ready to be brought over to the last pile in the panel. However, before interlocking the piles, the 2 wires and rings on the S.P.T. must be pulled out and the spring cocked.

The main body of the S.P.T. should now be free to slide and must be slid along to remove the vice and pile away from the open fork of the S.P.T. When the vice and pile have been pulled out of the way, the last pile in the panel is able to be positioned into the open fork of the S.P.T. and the 2 roller spindles, which will have been open, can now be closed around the sides of the pile and the locking latches closed over the spindles.

N.B. Only when the pile is vertical and in the correct position on the S.P.T. will the roller spindles close.

The wire and rings are now ready to be released, releasing the pressure on the springs and causing the vice with the pile on it to move over against the pile in the ground.

With the pile as vertical as possible (by looking up to the top of the

cont'd - method of operation

pile, the two piles should be touching all the way up) the pile and S.P.T. should now be lifted up by the crane until the base of the lifted pile is above the top of the pile in the ground. The spring pressure should now bring the vice and pile over the top of the 'existing' pile, ready for the pile to be lowered and interlock into the 'existing' pile.

Once the pile has been lowered to ground (or frame) level, the S.P.T. can be removed, by unscrewing the vice screw and unlocking the latches and opening the roller spindles. It is now ready for the next pile.

Hints

1. For 'Z' piles - normally pitched in pairs - only 1 S.P.T. and roller set is required. However, if piles are pitched in singles, as Larssen 'U' piles often are, then it is preferable to have 2 no. S.P.T. 's set up to suit the 2 opposite hands of pitching, rather than use 1 S.P.T. and keep changing over the rollers, etc. for each pile.

2. The pile to be pitched should be as vertical as possible.

The S.P.T. relies upon spring pressure to carry the pile to be pitched over and above the pile in the ground.

If the pile is not vertical, or there is a very strong wind, it may hold back the spring.

In practice, it may help to slightly lean the top of the pile to be pitched in the direction of the line that the spring will carry the pile (for 'Z' piles, lean the pile in the direction of the panel of piles already in the ground.) This will ensure that the spring carries the vice and pile over and above the 'existing' pile, as requested.

3. For pitching sheet piles, as well as for using the S.P.T. it is always preferable to have the crane rigged on a single whip i.e. a single line.

cont'd - method of operation

For the S.P.T. this ensures greater control and feeling for the driver. A multi-line return block can cause the pile not to hang vertically, which may prevent a precise interlocking.

4. Always tighten the vice screw as firmly as possible when screwing it into the pile, to ensure that it cannot work loose.

5. The vice must always be able to slide freely on the vice slide tubes. Do not grease, as this will attract dust and dirt, but always keep clean of dirt and grease.

6. When the S.P.T. is not in use, always leave it with the pull wires in i.e. not cocked.

If it is left cocked, accidental sudden release will put a lot of pressure on the transfer screws, which can slide along the base of the vice slide tubes and can cause them to break. However, they can be quickly replaced by cocking the pull wires, turning the S.P.T. upside down moving the vice along to line up with the hold in the base of the vice and the transfer screw, and by removing the old transfer screw with the correct allen key and replacing with a new one.

7. The S.P.T. can withstand some abuse, however, careful use will prolong its life.

Essentially, the S.P.T. does the job normally done by a man interlocking the pile at a high level off the ground.

IF CARE IS NOT TAKEN, THE MAN MAY BE KILLED.

IF CARE IS NOT TAKEN WITH THE S.P.T. IT WILL BE BROKEN.

Treat the S.P.T. with care - it could save your life!

parts list

PART NO.	DESCRIPTION	QUANTITY
001	Main Casting	1
007	Vice Block	1
010	M6 x 16mm D.P. Grub Screw	8
011	M12 x 25mm Cap Head Screw	2
012	M12 Plain Washer	6
018A	Vice Screw Assembly	1
028A	Vice Slide Tube Assembly	2
031	Transfer Screw	2
032	M8 x 12mm D.P. Grub Screw	3
033	17mm P.V.C. Clip-on Spacer	2
035	M12 x 160mm Cap Head Screw	2
036	Nylon Spindle Saddle	4
037	M12 Nyloc Nut	2
038	Roller Spindle	2
039	Stepped Collar	2
040	Fixed Collar	2
041	M6 x 8mm D.P. Grub Screw	4
042	M20 x 60mm Cap Head Screw	1
043	M20 Plain Washer	2
044	Locking Latch Bush	1
045	Locking Latch	2
046	'O' Ring	2

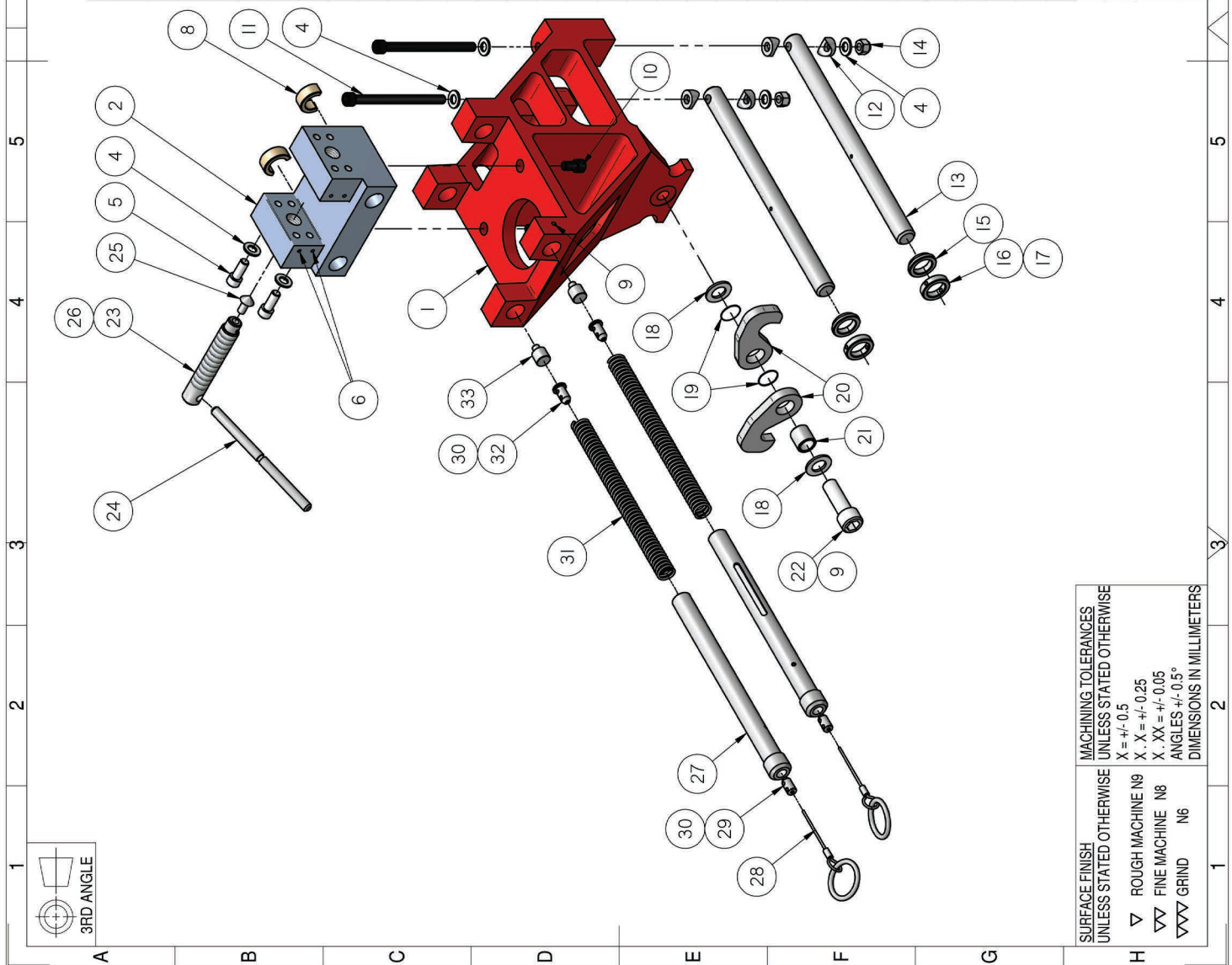
Part no. 018A consists of:

014	Vice Screw	1
016	Tommy Bar	1
HP16C	Hard Point	1
027	M6 x 6mm Grub Screw	2

Part no. 028A consists of:

020	Vice Slide Tube	1
023	Pull Wire	1
024	Wire Stop	1
025	Top Tube Spring	1
026	Plunger Pusher	1
027	M6 x 6mm Grub Screw	4
030	Nylon Plunger	1

Ref.no.	Qty.	Part name	Material	Dimension	Remark
33	1	NYLON PLUNGER			030
32	1	PLUNGER PUSHER			026
31	1	TOP TUBE SPRING			025
30	4	M6 x 6MM GRUB SCREW			027
29	1	WIRE STOP			024
28	1	PULL WIRE			023
27	1	VICE SLIDE TUBE			020
26	2	M6 x 6 GRUB SCREW			027
25	1	HARD POINT	HP16C		
24	1	TOMMY BAR			016
23	1	VICE SCREW			014
22	1	M20 x 60mm MACHINED CAPHEAD SCREW			042
21	1	LOCKING LATCH BUSH			044
20	2	LOCKING LATCH			045
19	2	O' RING			046
18	2	M20 PLAIN WASHER			043
17	4	M6 x 8mm D06 POINT GRUB SCREW			041
16	2	FIXED COLLAR			040
15	2	STEPPED COLLAR			039
14	2	M12 NYLON NUT			037
13	2	ROLLER SPINDLE			038
12	6	NYLON SPINDLE SAUOLE			036
11	2	M12 x 150mm CAPHEAD SCREW			035
10	2	TRANSFER SCREW			031
9	3	M8 x 12mm D06 POINT GRUB SCREW			032
8	2	17mm P.V.C. CLIP ON SPACER			033
7	2	VICE SLIDE TUBE ASSEMBLY			028A
6	8	M6 x 16mm D06 POINT GRUB SCREW			010
5	2	M12 x 25mm CAPHEAD SCREW			011
4	6	M12 PLAIN WASHER			012
3	1	VICE SCREW ASSEMBLY			018A
2	1	VICE BLOCK			007
1	1	MAIN CASTING (Aluminium / Steel)			(001 / 002 /)



Surface Finish	Machining Tolerances
UNLESS STATED OTHERWISE	UNLESS STATED OTHERWISE
▽ ROUGH MACHINE N8	X = +/- 0.5
▽▽ FINE MACHINE N8	X . X = +/- 0.25
▽▽▽ GRIND N6	X . XX = +/- 0.05
	ANGLES +/- 0.5°
	DIMENSIONS IN MILLIMETERS



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INNOVATIVE PILING EQUIPMENT

HYDRAULIC PILING HAMMERS

EXCAVATOR MOUNTED VIBRATORS

EXCAVATOR MOUNTED DRILLS

QUIET, VIBRATIONLESS PUSH-PULL PILING

PILE EXTRACTION

SHEET PILE GUIDE FRAMES

SHEET PILE CAPPING SYSTEMS

CFA CLEANERS

PILE POINTS & SPLICERS

SAFETY HANDLING / LIFTING EQUIPMENT

SHEET PILE THREADERS

sheet pile threader

SPT

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