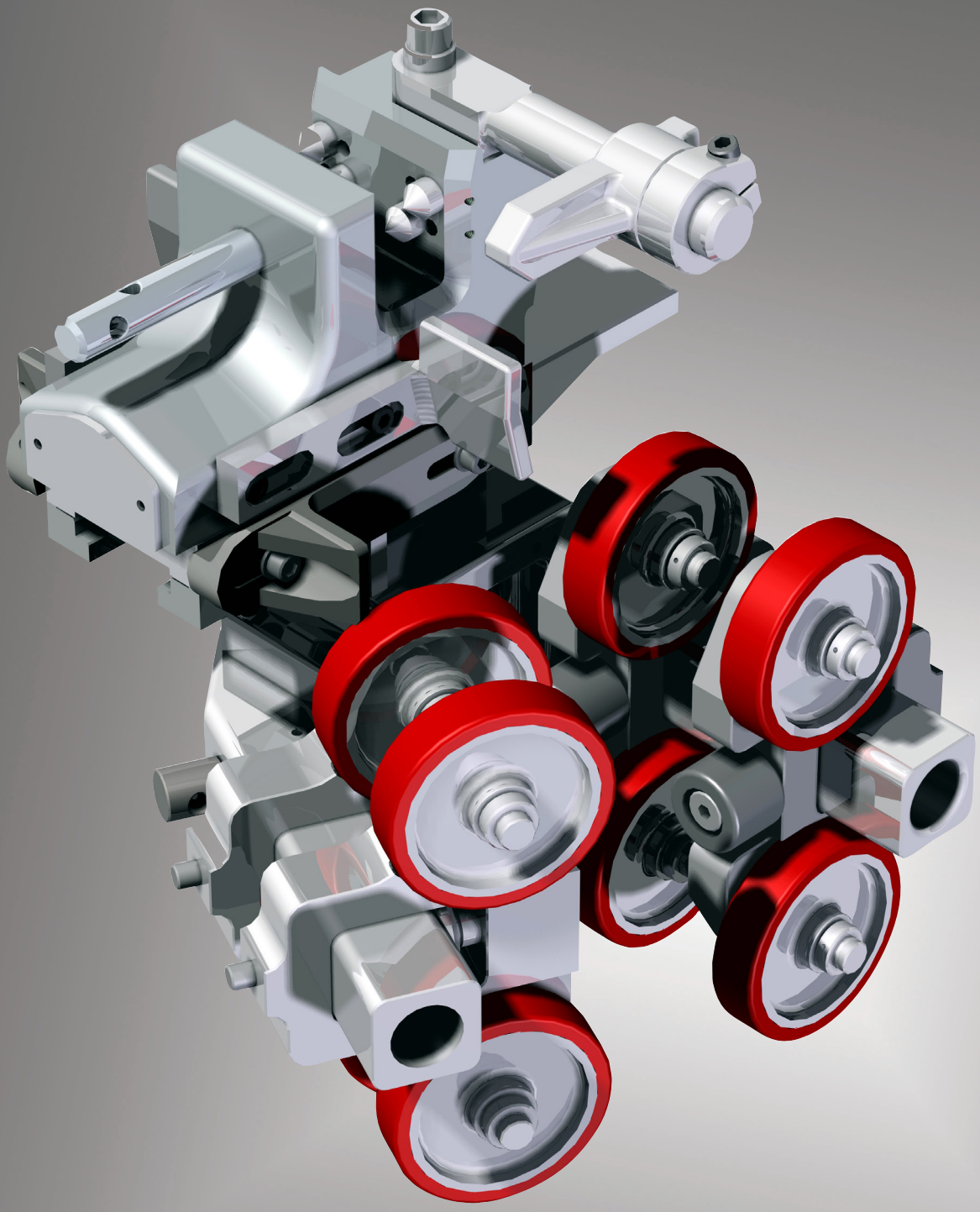
universal sheet pile threader | USPT



universal sheet pile threader

owners manual
operators instructions
spare parts list
safety precautions
maintenance

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USPT ver. 2017-01

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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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introduction

The Dawson Universal Sheet Pile Threader has been developed to enable a safe, easy and productive method of pitching sheet piles. The need for a “top man” is eliminated as all operations can be performed at ground or top frame level. The Universal Sheet Pile Threader can be set up for virtually all Larssen and Z section sheet piles, and once set correctly will quickly interlock the piles with one simple movement.

Care should be taken during the set-up procedure to ensure that each adjustment is accurately set, extra time spend here will be saved tenfold during operation.

If possible set the threader to off cuts of the piles that are to be used as even piles of similar types tend to vary from batch to batch. During use please pay particular attention to safety, do not stand directly beneath the threader as it is hoisted by the crane, wear safety glasses as dust and grit tends to fall from the piles, and of course a hard hat.

weights and dimensions

Complete assembly - 51Kg

Complete assembly in Aluminium Case - 64Kg

Roller assembly - 27Kg

Threading Head Assembly - 24Kg

Dimensions of Aluminium case - 780x580x400

Contents of case

1x Roller assembly

1x Threading head assembly

1x Instruction C.D

1x Instruction manual

1x Allen key 14mm

1x Allen key 10mm

1x Allen key 8mm

1x Allen key 3mm

1x Tommy bar

1x 5mm Packer plate

1x Hard point

cont'd - weights and dimensions

p-1

p-2

initial assembly on the unit

The new sheet pile threader is delivered packed inside a sturdy aluminium case. Before use the cross slide and vice assembly need to be fastened together, this is a simple case of sliding one into the other, but care must be taken to ensure that this is done the right way round.

On the vice assembly a zero has been stamped on the lower edge, this should line up with the graduations on the cross slide support.

cont'd - initial assembly on the unit

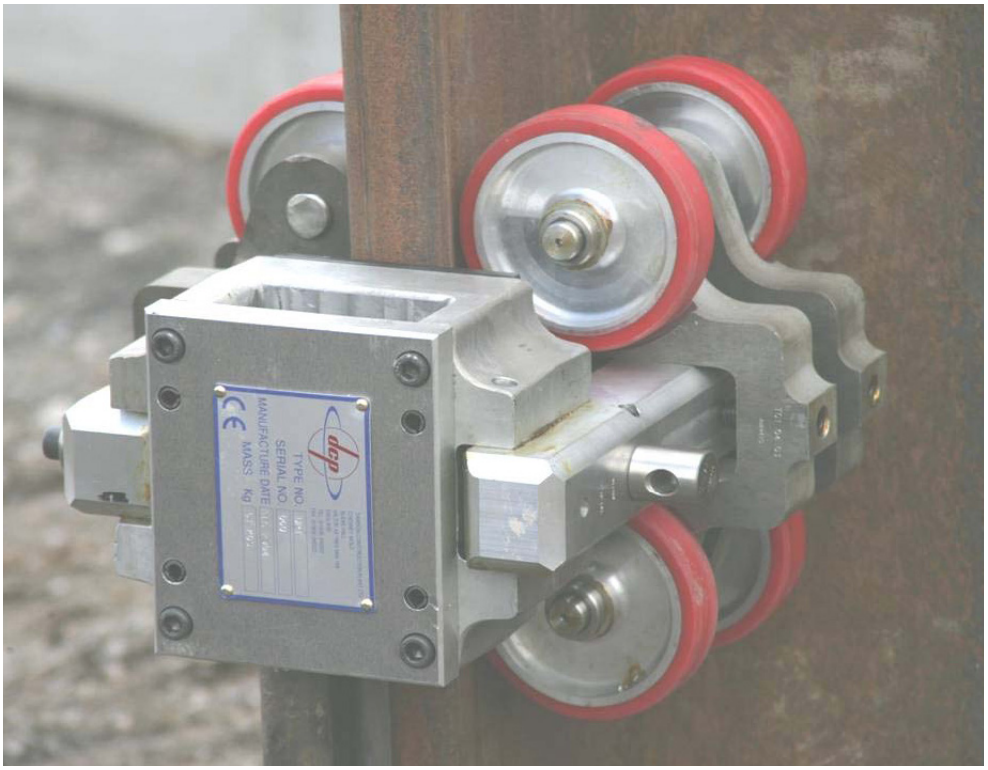
p-3

p-4

p-5

p-6

p-7



setting the rollers to fit the pile section

Before the Universal Threader can be used it must first be accurately set-up for the type of pile that it's to be used on. In order to do this it's recommended that two lengths of pile are cut 1 approx.1000mm long and the other aprox.200mm, these must be straight, clean and free from any damage.
Stage 1 is to set the rollers,

1. Release the swinging arm clamp bolt. (Picture 3)

2. Slacken the two roller units on the swinging arm. (Picture 4)

3. Screw the 2 pile thickness compensating screws fully in, these are found on the inside face of each roller unit. (Picture 5)

4. Re-tighten the clamp screws on the roller units on the swinging arm. This will now open the rollers to accommodate a pile thickness of 14mm (if the pile web is thicker than 14mm packers are added to the fixed roller arm in 5mm increments).

5. Open the swinging arm and place the unit onto the 1 meter length of pile with the swinging arm towards the pan of the pile, see fig.1, the rollers may need to be re-positioned to clear the pile interlocks. (Picture 6)

6. Tighten the swinging arm clamp

7. Adjust the rollers on the swinging arm to the pile thickness by slackening the roller clampscrews and adjusting the compensating screws until the rollers grip the pile section, re-tighten the clamp screws and re-check the roller to pile relationship, re-adjust if necessary. Set one roller plate close to the interlock, set the other as far as possible away for maximum stability.

8. Set the rollers on the fixed arm, one of these rollers has a thrust roller, this should be set to run on the inside on the interlock. Make sure that the main body of the unit is pushed against the pile so that the 2 wear plates are in light contact. Set the other roller plate as far apart as the pile section allows

setting the rollers to fit the pile section

9. It should now be possible to roll the unit up and down the pile by hand, if the unit is too tight to move or there is too much free play re-check the thrust roller / wear plates and the roller to pile web adjustments. (Picture 7)

p-8

When the roller unit has been set satisfactorily the next stage is to set the threading head, to work through the following steps, you will need an 8mm allen key and the tommy bar.

1. Make sure that the vice is not in its cocked position. (the cocking lever should be pointing upwards) (picture 20 , page 13)
2. Slacken the 6 clamp bolts. (Picture 8)
3. Slacken the bolts on the steady and the guide plates, the bolts for these parts have three positions to enable maximum adjustment, you may have to change the bolt positions later.
4. Engage the threading head into the roller unit, the vice clamp screw should point towards the pan of the pile. (Picture 9)
5. Rotate the clamp head 90 deg. and tighten the clamp nut. (Picture 10)
6. Thread the short pile section into the longer one and lower it down into the vice and lightly clamp, you will have to line up the vice unit with the pile section by sliding the unit back or forward, as the vice screw is tightened it will find its approximate position. Make sure that the vice stop is pointing away from the pile otherwise it may become trapped when the vice assembly adjusts its position as the vice screw is tightened. (Picture 11)
7. When the pile section is clamped into the vice, and lined up accurately with the longer pile, tighten the 6 clamp bolts (the ones you slackened in step 2)

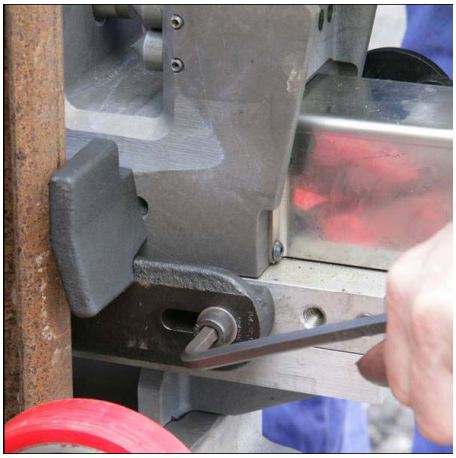
p-9

p-10

setting the threading head

p-11

p-12

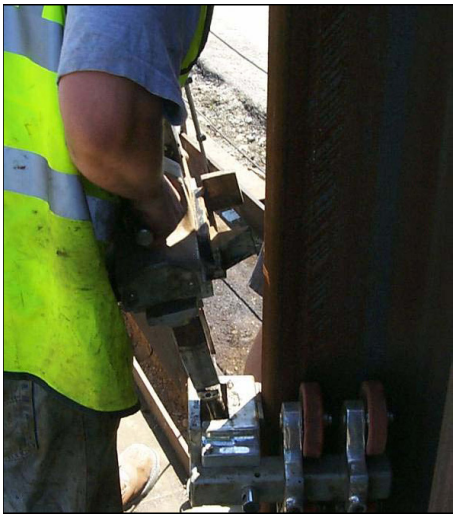


p-13

8. It should now be possible to roll the unit up the pile, this will need 2 people, lift until the 2 piles disengage, then re-engage them and check their line-up, they should re-engage easily, the clutches should be perfectly lined up with clearance all round, if this is not the case then re-adjust the vice position or the position of the pile in the vice.
9. Set the vice stop by slackening the clamp bolt and pushing up against the pile. (Picture 12)
10. Set both steadies so that they are in light contact with the pile. (Picture 13)
11. Set the guide plate so that the parallel face is in light contact with the pile, tighten one of the two screws, lift the unit enough to separate the two piles then cock the unit to gain access to the other screw and tighten.
12. Repeat steps 10 and 11 for the opposite hand by moving the roller unit to the other side of the pile, remember to keep the swinging arm towards the pile pan by rotating the roller unit through 180 degrees.

cont'd - setting the threading head

p-14



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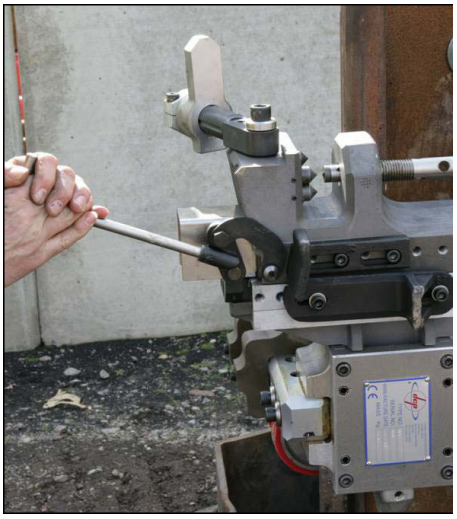

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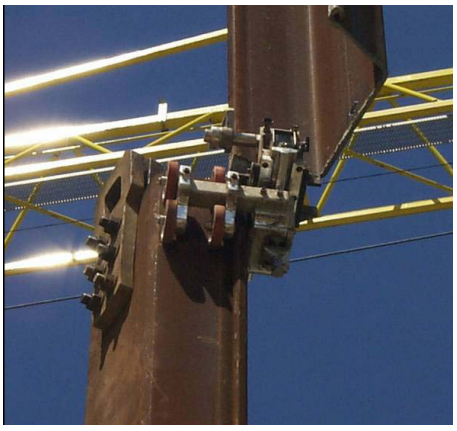
p-19



method of operation

When the setting procedure has been carried out satisfactorily do a final check that all bolts that were loosened during the setting procedure are tight. With this check done you can begin to thread piles by the following method.

1. Place the roller unit onto the driven or part driven pile with the swinging arm towards the pan of the pile, (if you are working on temporary works then you will need a bridging platform to stop the roller unit falling through,) tighten the roller clamp screw.

2. Place the threading head into the roller unit will the vice screw pointing towards the pan of the pile, rotate the clamp head 90 deg. and tighten the clamp screw, visually check . (Picture 14)

3. Cock the unit using the tommy bar (Picture 15)

4. Lower the pile to be threaded into the vice, and tighten the vice clamp screw, make sure that the pile is located accurately up against the vice, this is very important and should be checked visually after the vice is tightened. (Picture 16-17)

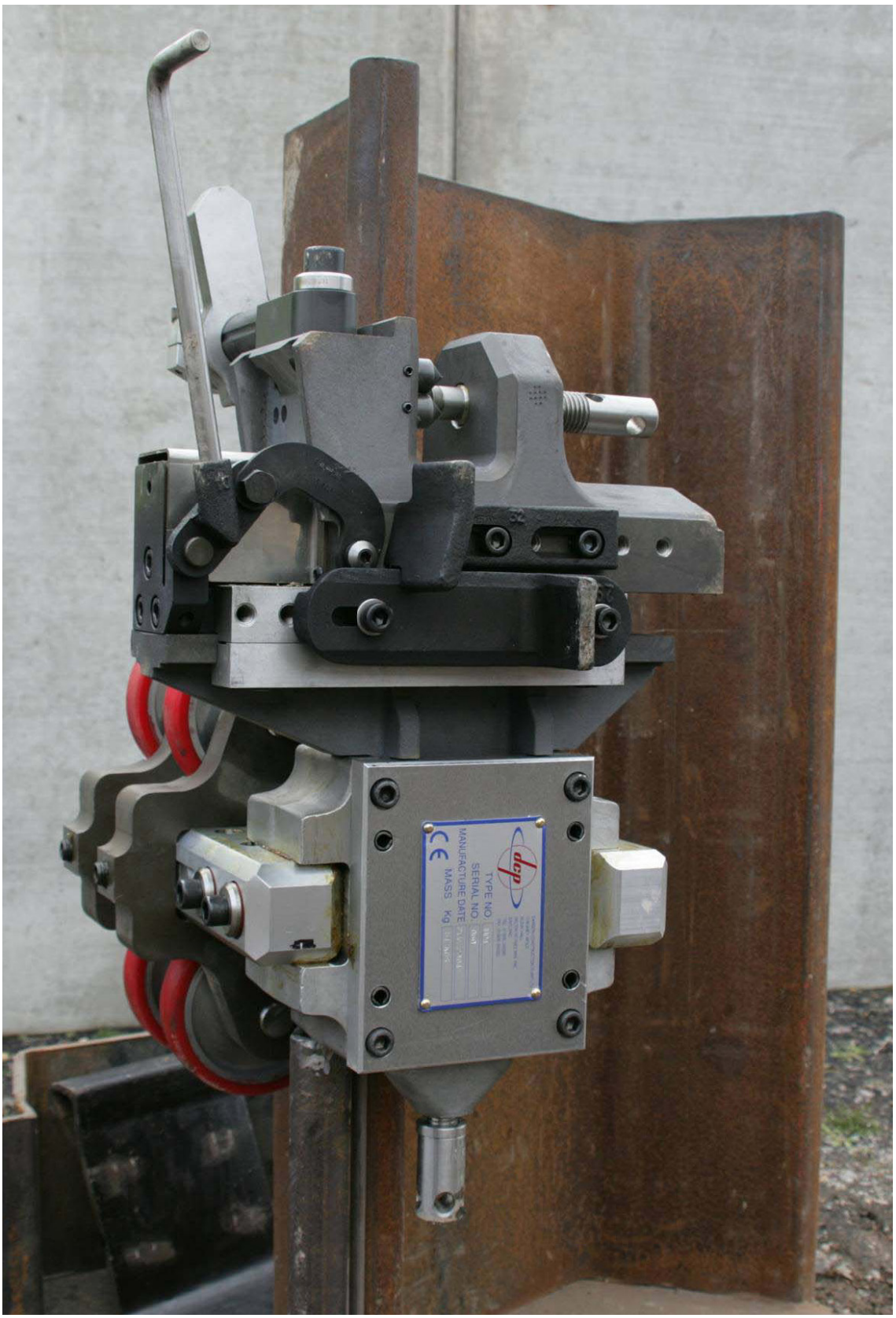
5. Un-cock the threading head, the two clutches on the pile should now be touching. (Picture 18)

6. Hoist the pile, make sure that the pile is kept vertical in both planes or the threader may be damaged.

7. As the threader nears the top of the pile, watch for the threading head pitching across as the two piles separate, the clutches should now be in-line and when the pile is gently lowered, should engage. (Picture 19)

8. Lower the pile and threader down to working level , release the vice clamp screw making sure that the unit is supported, release the threading head from the roller unit, and the roller unit from the pile.

cont'd - method of operation



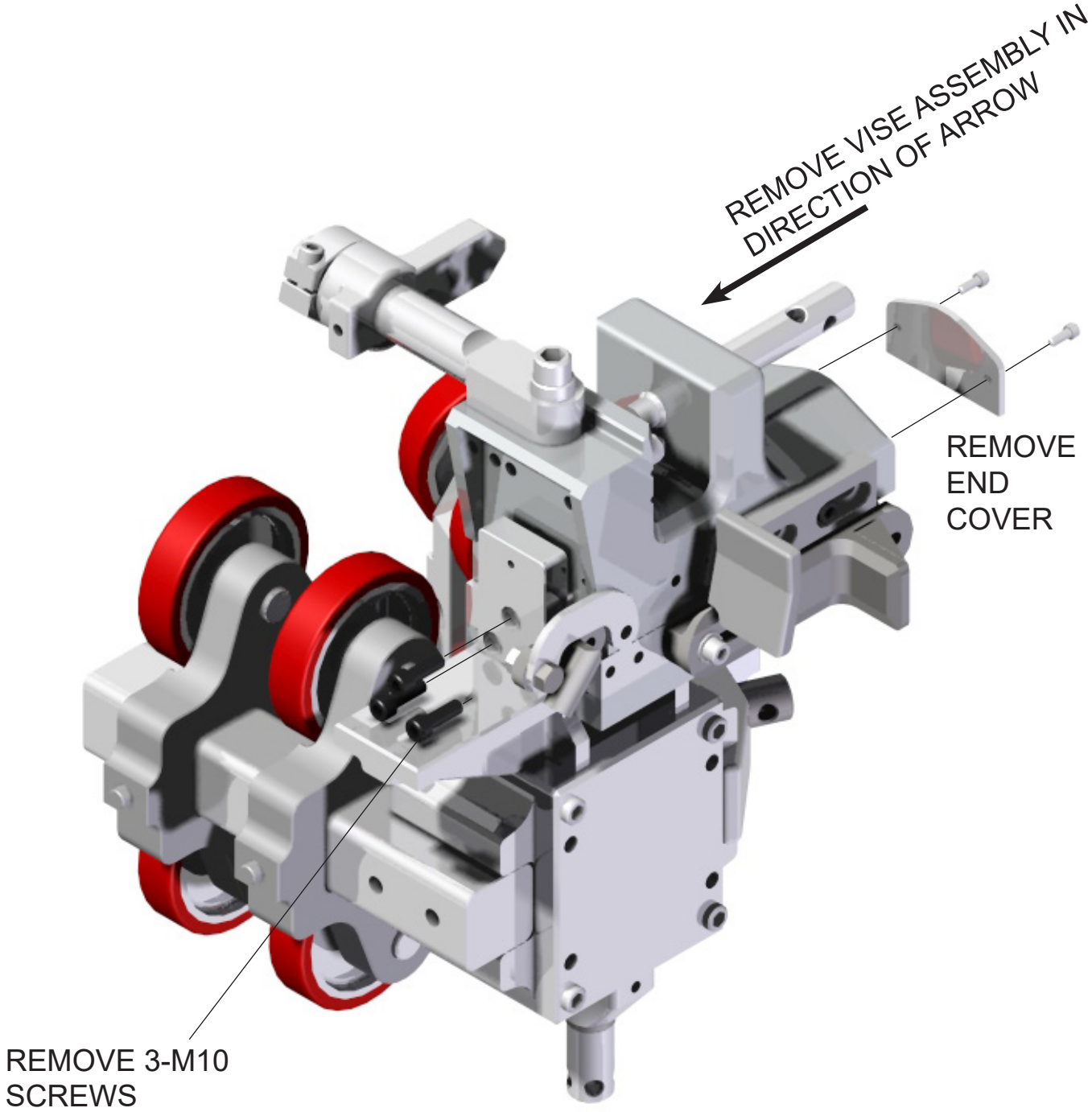
Because of the nature of sheet pilling it is possible to damage the sheet pile threader if not used as intended. A crane and a sheet pile can exert tremendous loads on the pile threader if any change to the pile verticality occurs once the pile is secured in the vice unit. Before hoisting the pile make sure that there are no obstructions to the rollers, check for damage, welded on brackets, bent sections, damaged clutches etc. these faults are common on previously used piles and can cause severe damage to the threader as the pile is hoisted.

When positioning the threader onto a pile it will be necessary to provide a support to hold the unit to a height that is comfortable for the operator, it is very important that the unit is supported from directly underneath the main body and **not** under the rollers

When lowering the pile into the threader make sure that its hanging directly above it's desired position in the vice unit and slowly lower into place taking care not to bang the pile into the bottom of the vice. Adjust the height of the pile so that the lower edge of the pile is just clear of the bottom of the vice, recheck the piles position, if ok then swing the setting gauge clear before hoisting,this will make positioning the pile against the setting gauge easier. When lining up the pile to the setting gauge care is needed, the setting gauge assembly is designed to swing clear if the pile hits it with too much force. Therefore ease the pile across until gentle contact is made, tighten the vice and recheck the piles position, if ok then swing the setting gauge clear before hoisting.

IMPORTANT SAFETY NOTE.
NEVER STAND DIRECTLY BELOW THE THREADER AS THE PILE IS HOISTED. SAFETY CHECK BEFORE AND AFTER USE.

SAFETY CHECK BEFORE AND AFTER USE
Check that all bolts are fully tightened to correct torque.
Check all components for cracks and damage caused by any previous misuse. If any damaged components are found contact the manufacturer or an approved distributor for spare parts or repair advice.


REMOVE VISE ASSEMBLY IN DIRECTION OF ARROW
REMOVE END COVER
REMOVE 3-M10 SCREWS

Cleaning and greasing slideway.

It is desirable from time to time to disassemble the main slideway to clean and re-grease, how frequently this is done depends on how clean the piles are, previously used piles are quite often covered in grit and scale, some of which eventually finds its way in to the slideway.

The procedure for this operation is as follows:

1. Remove the end cover by removing 2 M6 button head screws.

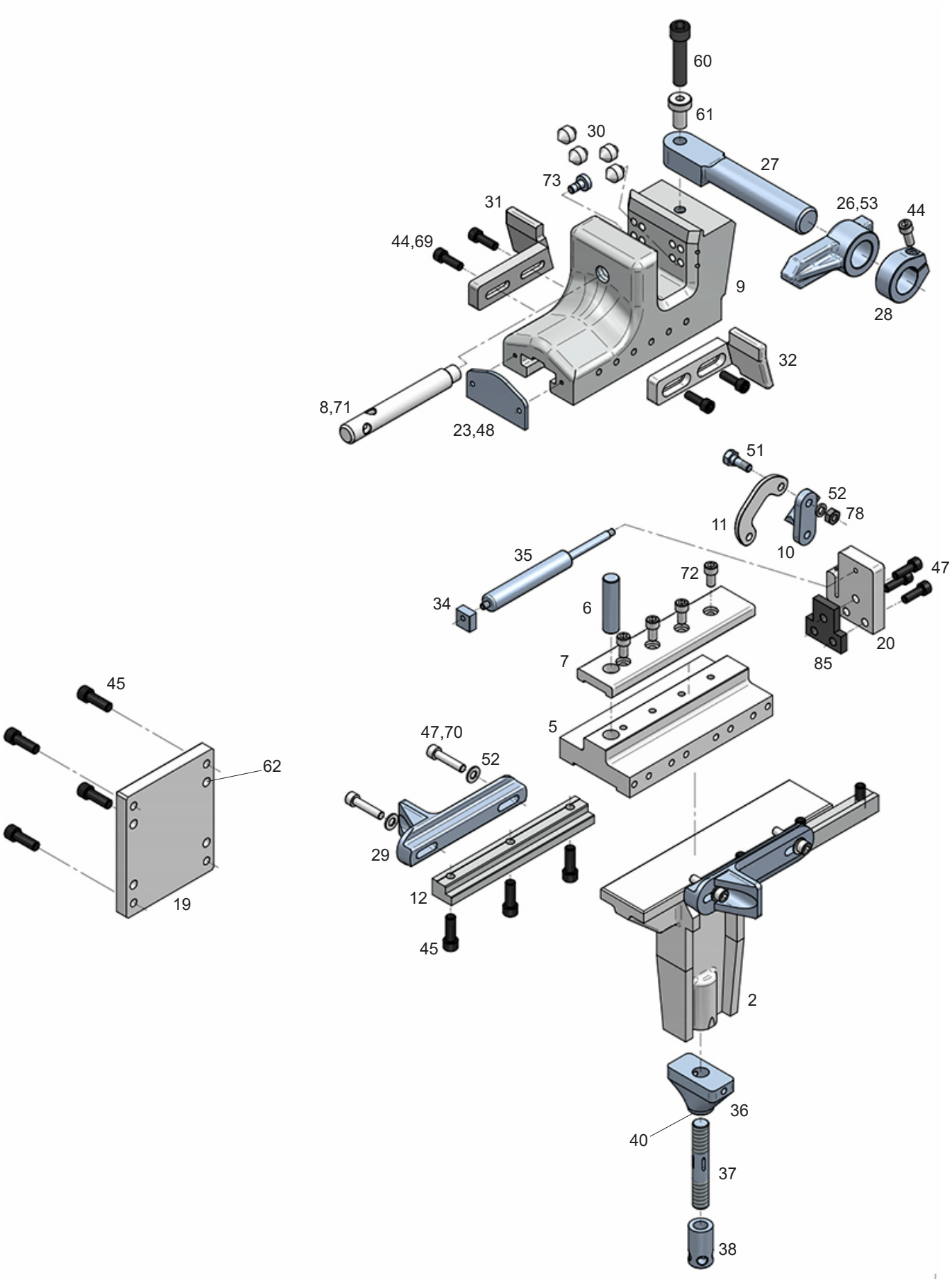
2. Remove 3 M10 cap head screws as shown in the illustration below, undo these evenly as the spring pressure is released during the first 20mm of these 3 screws.

3. Slide off the vice assembly in the direction of arrow.

4. Thoroughly wash out slides with degreasing agent and wipe clean, re-grease slide-way.

5. Reassemble vice and replace the 3 M10 cap head screws, tighten evenly to compress the gas spring.

6. Replace end cover.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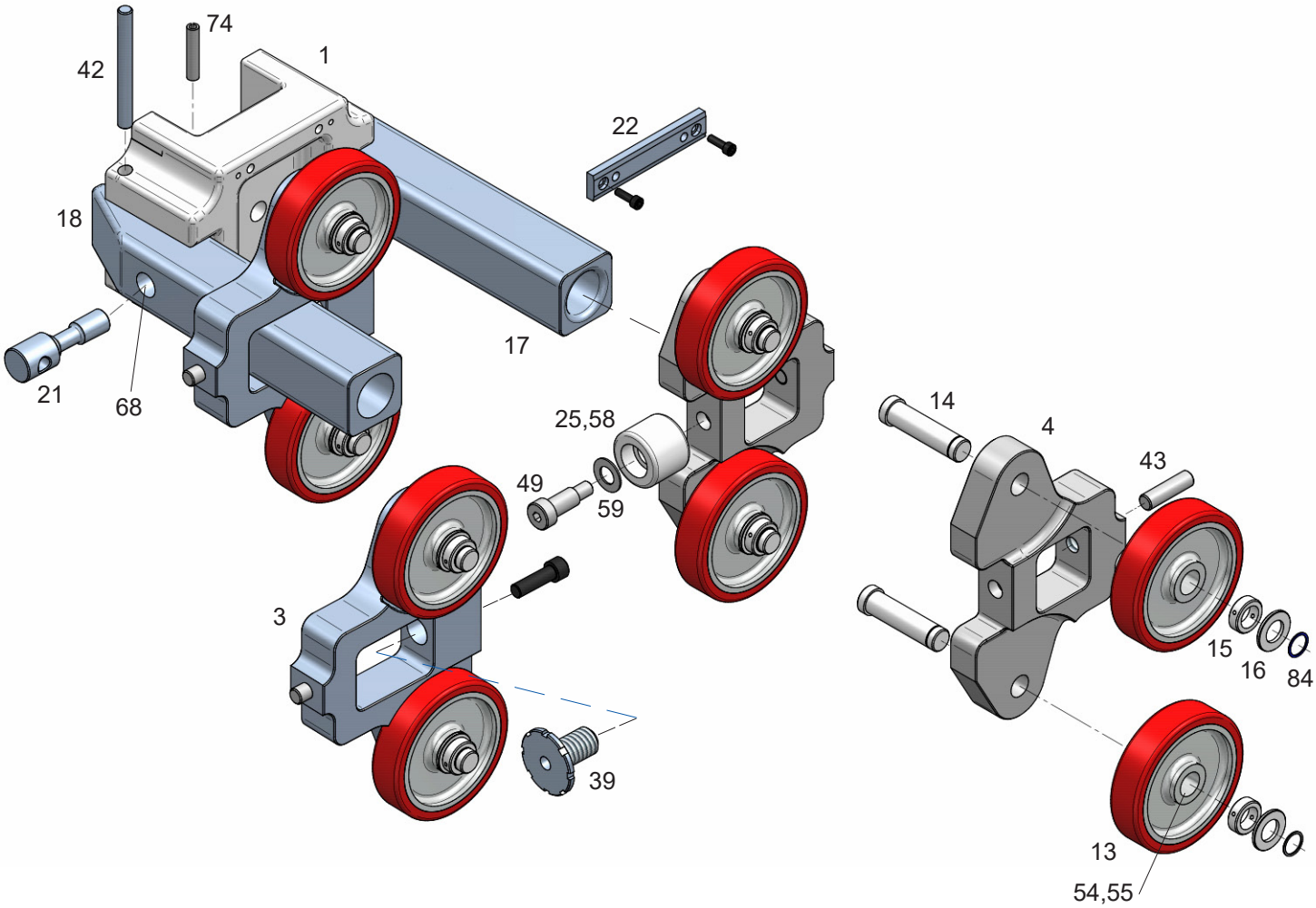
parts list



Ref No.	Qty	Part Name	Material	Dim.	Part Number
1	1	Main Body	Alloy		T01-01-02
2	1	Cross Slide Support	Alloy		T02-01-01
3	2	Adjustable Roller Plt.	Alloy		T01-04-03
4	2	Fixed Roller Plt.	Alloy		T01-05-03
5	1	Cross Slide	Alloy		T03-01-01
6	1	Stop Pin	St. Steel		T03-02-01
7	1	Slide Plate	P.H.Bronze		T03-03-01
8	1	Vice Clamp Screw	St. Steel		T04-03-01
9	1	Vice	T6 Alum.		T04-01-03
10	1	Toggle Lever	St. Steel		T06-01-01
11	1	Toggle Link	Mild Steel		T06-02-01

cont'd - parts list

Ref No.	Qty	Part Name	Material	Dim.	Part Number
12	2	Slide Clamp	Alloy		T03-05-01
13	8	Roller	T6 Alum.		T01-06-01
14	8	Roller Hub	St. Steel		T01-07-01
15	8	Roller Collar	St. Steel		T01-21-01
16	8	Washer		ES-20	T01-08-01
17	1	Clamped Roller Arm	Alloy		T01-03-02
18	1	Swinging Roller Arm	Alloy		T01-02-01
19	1	Tie Plate	Alloy		T01-18-01
20	1	Gas Spring Anchor Plate	Mild Steel		T05-01-01
21	1	Swing Arm Clamp Nut	St. Steel		T01-15-01
22	2	Wear Plate	GFS		T01-16-02
23	1	End Cover	Alloy		T04-17-01
24	1	Slide Cover	St. Steel		T04-06-01
25	1	Side Thrust Roller	EN32B		T01-11-01
26	1	Setting Gauge	Alloy		T04-02-01
27	1	Setting Gauge Shaft	Alloy		T04-07-02
28	1	Setting Gauge Clamp	Alloy		T04-08-01
29	2	Static Guide	A5		T04-12-01
30	4	Hard Points	EN32B		HP20C
31	1	Entry Guide R.H	A5		T04-13-01
32	1	Entry Guide L.H	A5		T04-14-01
33	1	Packer Plate	Alloy		T04-20-01
34	1	Gas Spring Plate	St. Steel		T05-02-01
35	1	Gas Spring 10-23			T05-03-01

cont'd - parts list

Ref No.	Qty	Part Name	Material	Dim.	Part Number
36	1	Clamp	Alloy		T02-02-01
37	1	M20 Stud	St. Steel		T02-03-01
38	1	Main Clamp Nut	St. Steel		T02-04-01
39	2	Roller Adjuster Screw	St. Steel		T01-10-02
40	1	Washer	St. Steel		T02-05-01
41	1	Toggle Pivot Pin	St. Steel		T06-03-01
42	1	Swinging Arm Pivot Pin	St. Steel		T01-22-01
43	4	Grub Screw		M16x50	0M16.050.05
44	5	Cap Head Screw		M10x25	0M10.025.02
45	10	Cap Head Screw		M10x35	0M10.035.02
46	5	Grub Screw		M6x16	0M6.016.05
47	7	Cap Head Screw		M10x45	0M10.045.02
48	10	Button Head Screw	St. Steel	M6x12	0M06.012.08
49	1	Shoulder Bolt		M12x40	0M12.040.30
50	1	Shoulder Bolt		M10x16	0M10.016.30
51	1	M10 Shoulder Screw			T06-05-01
52	5	Ø10 Washer	St. Steel		0M10.000.26
53	3	M12 Ball Plunger	St. Steel		T02-06-01
54	8	Glacier 2030DX Bush			T01-20-01
55	16	Glacier WC18 Hx Washer			T01-21-01
56	1	Cap Head Screw		M12x80	0M12.080.02
57	2	Ø12 Buffer Washer			T01-24-01
58	1	Glacier PM1625DX Bush			T01-12-01
59	1	Glacier WC14DX Washer			T01-13-01
60	1	Cap Head Screw		M16x70	0M16.070.02
61	1	Bush			T04-22-01

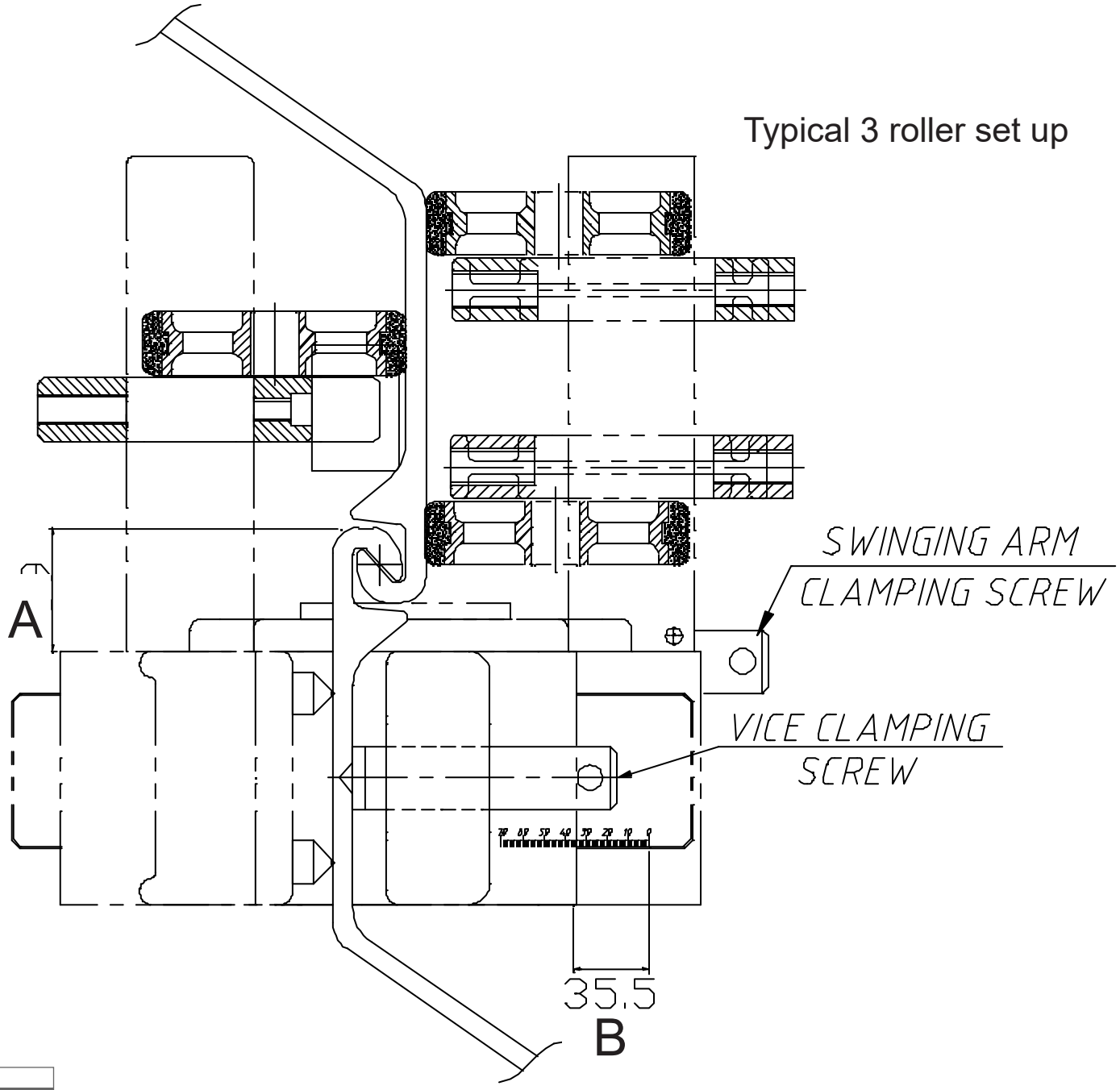
cont'd - parts list

Ref No.	Qty	Part Name	Material	Dim.	Part Number
62	4	Spring Pin		Ø12x40	0M12.040.22
63	1	Grub Screw		M8x16	0M08.016.05
64	1	Actuating Lever		Ø12x40	T06-06-01
65	1	Carry Case Assem.			T07.00.01
66	1	Grub Screw		M6x6	0M06.006.05
67	4	Spring Pin		Ø8x25	0M08.025.22
68	1	Cap Head Screw		M12x40	0M12.040.02
69	12	Helicoil		M10x20	0M10.020.50
70	22	Helicoil		M10x25	0M10.025.50
71	1	Helicoil		1"BSWx1.5"	0M25.037.50
72	4	Low Head Cap Screw		M10x30	0M10.030.09
73	1	Hard Point			HP08
74	1	Spring Pin		Ø10x50	0M10.050.22
75	2	Polyurethane Buffer			T01-23-01
76	2	Sleeve		Ø10x50	T01-25-01
77	1	Spacer			T05-04-01
78	1	Nut M10			0M10-000-11
79	1	Nut M12			0M12-000-11
80	1	Cap Head Screw			0M12.110.02
81	1	Ø12 Washer			0M12.000.20
82	1	DCP Name Plate			1.203.00.02
83	4	N.6 x 1/2" Type U Screw			1.204.00.01
84	8	Retainin Ring			T01-09-01
85	1	Spacer Plate			T05-04-01

set up drawing

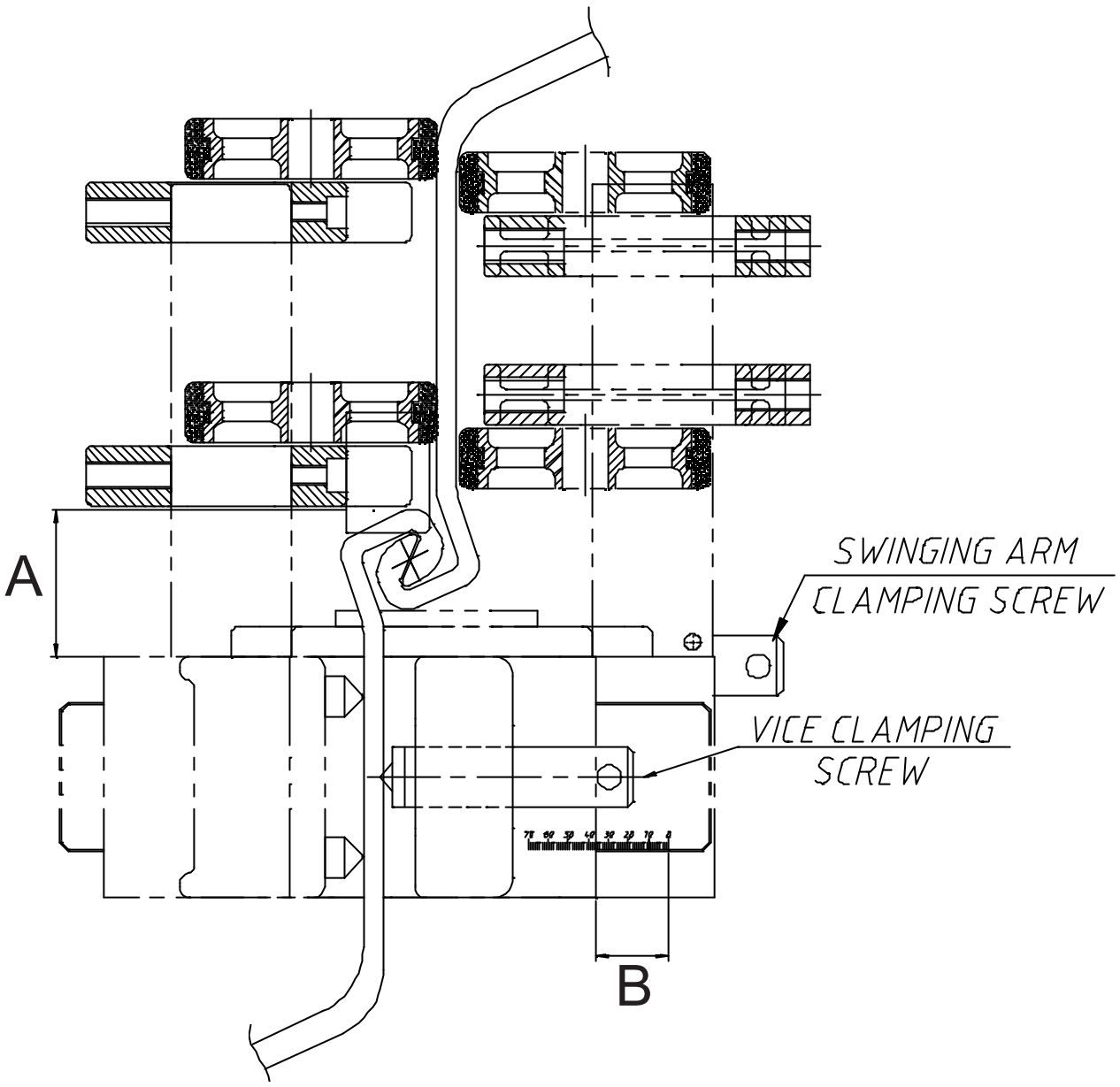
An alternative method of setting the pitching head is to position the cross slide and setting gauge to predetermined dimensions, a typical set-up is shown below. After setting the threader up to these dims some further adjustment may be necessary as sheet piles tend to vary from batch to batch. Further set-ups of common sheet piles are listed on later pages. On piles with a web thickness greater than 13mm the packer plate must be added to the fixed roller arm.

Typical 3 roller set up



cont'd - set up drawing

Typical 4 roller set up



cont'd - set up drawing

SHEET PILE TYPE	DIMENSIONS		5MM PACKER PLATE	3 ROLLERS	4 ROLLERS
	A	B			
ARBES AZ 13	59	0		x	
ARBES AZ18	59	0		x	
ARBED AZ 19	60	0		x	
ARBED AZ 26	60	0		x	
ARBED AZ 34	59	5	x		x
ARBED AZ 36	60	5	x		x
ARBED AZ 50	58.5	5	x		x
ARBED AS 500	65.5	3.5			x
ARBED L3S	73	36			x
ARBED PU 16	70.5	22			x
ARBED PU 32	73	38			x
ARBED AZ 48	60	5	x		x
ARBED AU14	69	12.5			x
ARBED AU17	69	11			x
ARBED AU20	71	20.5			x
BETHLEHEM PZ 22	44.5	0		x	
* BETHLEHEM PZ 27A	46	0		x	
BETHLEHEM PZ 27B	46	0			x
BETHLEHEM PZ 35	46.5	5	x		
BETHLEHEM PZ 40	46	5	x		

* - FIX ARM SECOND POSITION (50mm SHORTER)

cont'd - set up drawing

SHEET PILE TYPE	DIMENSIONS		5MM PACKER PLATE	3 ROLLERS	4 ROLLERS
	A	B			
BETHLEHEM PLZ 23	46	0			x
CANADIAN XZ 90	84	50			x
CASTEEL CZ148PX	85.5	0			x
CORUS FRODINGHAM 1BXN	67.5	0		x	
CORUS FRODINGHAM 5	84	5	x	x	
CORUS LARSSEN 20 WD	70	46			x
CORUS LARSSEN LX 8	65.5	9			x
CORUS LARSSEN LX 12	65.5	30			x
CORUS LARSSEN LX 16	68	31			x
CORUS LARSSEN LX 20	73	30			x
CORUS LARSSEN LX 25	72.5	35			x
CORUS LARSSEN LX 32	74	41			x
CORUS LARSSEN LX 3	77	44.5			x
HOESCH 12	67	0		x	

cont'd - set up drawing

SHEET PILE TYPE	DIMENSIONS		5MM PACKER PLATE	3 ROLLERS	4 ROLLERS
	A	B			
HOESCH 1700K	65	0		x	
HOESCH 2500	70	0			x
HOESCH 32	72	39			x
HOESCH 602	64.5	0			x
HOESCH 603	54	26			x
HOESCH 604	70	32.5			x
HOESCH 605	73.5	27			x
HOESCH L606	74.5	27			x
HOESCH L607	74	28			x
HOESCH 703	69	6.5			x
HOESCH L22	72.5	25			x
HOESCH L25	74	36			x
HOESCH PU 16	69	22			x
HOESCH PU 20	70.5	41			x
HOESCH PU 32	72	39			x
HOESCH 512	47	0			x

CE

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

INNOVATIVE PILING EQUIPMENT

HYDRAULIC PILING HAMMERS

EXCAVATOR MOUNTED VIBRATORS

EXCAVATOR MOUNTED DRILLS

QUIET, VIBRATIONLESS PUSH-PULL PILING

PILE EXTRACTION

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