

INSTRUCTIONS.

TELESCOPIC- TILTOVER LATTICE TOWERS

BEFORE CARRYING OUT ANY WORK, READ ALL THE INSTRUCTIONS CAREFULLY

IF IN DOUBT - ASK.

1. GENERAL DESCRIPTION.

ALTRON lattice towers are robustly constructed in modular sections of 15ft, 4.57 M, overall length from quality heavy gauge steel tubeing, reinforced by a lattice of steel bracing rods. These are welded together using the electronically controlled MIG process and hot dip galvanized to BS729 for maximum weather durability. The sections are based on a standard format and designed to telescope one inside the other to make up numerous combinations of tower to suit most applications.

2. OPERATING PRINCIPLE

The ALTRON range of towers is made up of two types tower, those operated by a SINGLE winch system, as the AT32/31 'mini tower' series and those operated by a TWO winch system as the series 2 and comercial towers.

SINGLE winch system. On the AT32/31 'mini tower' series, the single winch system is used for economy and carries out both the telescoping and luffing operations as in the well proven ALTRON SM30 slimline mast. To carry out the tilt over operation using a single winch, the two sections are locked together and the now fixed cable merely operates as a luffing cable. Once the tower is locked in the upright position the sections are freed and the telescoping operation carried out in the normal way using the same winch.

TWO winch system. On the larger towers the telescoping and luffing, tilt over, operations are carried out indipendantly by two seperate winch and cable systems as shown in FIG 1. Where there are more than two sections, each additional section has a seperate telescoping cable to operate it so that all the sections are then extended or lowered in unison. The tilt over or luffing operation must only be carried out with the sections FULLY LOWERED DOWN.

3. FINISH.

All the main components of ALTRON towers are protected by hot dip galvanizing to BS729 and the smaller parts are electro zinc plated.

ALTRON products, manufactured exclusivly by Allweld Engineering, are purpose designed and engineered to a high standard with every effort made to ensure Quality, Reliability, Versatility and Economy.

4. ASSEMBLY. STANDARD TOWERS - TWO WINCH OPERATION - SINGLE WINCH AT32/31

- () 1. On delivery, check the tower for damage or missing components against the parts list. Notify the carriers and Allweld Engineering in writing of any damage within three days of receipt. If there are any parts missing, report the shortages to Allweld Engineering imediately.
- () 2. Select the place where the tower is to be installed, making sure that there is ample room for it to be lowered down with the aerials fitted.
- () 3. Prepare the foundations needed for your tower to the required specification which vary acording to the type of tower concerned. Soil conditions and the structure of any walls intended to support the tower can vary so it is recomended that a local builder is consulted for guidance.

Refer to DRG 01 2 02

POST MOUNTING. EMBEDDED GP SURFACE FP and BP

There are basically two forms of post mounting used, embeded post or ground post and the surface mounted frame post or base post.

- () 4. Dig the hole for the footing to the sizes specified for your particular model of tower.
- () 5. Fill the bottom 4" (100mm) with any suitable hard core filling such as broken brick etc.
- () 6. GROUND POST. Set the ground post in the centre of the hole packing it underneath until the required 'buried' depth of post is achieved. Fig. 4 Prop the post up to the upright position using either 4 guy ropes or suitable pieces of timber making sure that it is plumbed vertical using a sprit level. FIG 4
- () 7. With the now plumbed post held in position firmly once again check that the required amount of post is buried leaving the correct height above the top of the concrete base when it is filled. The hole can now be filled with concrete to a mix of 2:4:6 by volume using a suitable coarse aggregate or brick filling. It is recommended that a local builder is consulted.
- () 8. SURFACE MOUNTED POSTS. Where ragged bolts are to be used, these must be put into the foundation concrete before it has set. A suitable template of the fixing positions can be easily made from timber, Fig. 5 and should be used to fix the positions of the bolts to match the holes on the base of the post. Alternatively, the base itself can be used to locate the bolts.
- () 9. Allow the concrete to set for at least 72 hours before attempting to attach the tower to the post.
- () 10. Referring to Fig 12, fit the hinge bracket HB to the bottom section at the appropriate location depending on the type of mounting. See Fig B. Use the 3/8" dia X 1" HTS bolts and spring washers provided making sure that not more than 3/16" of threaded portion projects behind the flat bar on the tower as it is liable to foul the inner section. In the WM position, at the bottom of the section, it does not matter. (continue at LINE 23)
- () 11. WALL MOUNTING. WM (carry out instruction 10 first)

Using a plumb line, make a chalk mark vertically down the wall where the centre of the tower is to go and extend it onto the concrete or ground where the ground hinge GH is to go.

- () 12. Measure off the height at which the wall bracket WB is to go and using a spirit level, mark a horizontal line at this point crossing the centre line.
The height of the wall bracket may vary but should be at least 10ft (3M) above the hinge pin. Refer to FIG 8 The minimum amount of brickwork remaining above the wall bracket will depend on the structure and condition of the wall and any reinforcement that is used. The higher up the wall bracket is positioned, the less is the load on the wall. FIG 7
It is recommended that a local builder is consulted on the matter.
- () 13. Using the plumbed centre line, inst. 11, measure out the position of the ground hinge taking into account the appropriate stand off distance from the wall Fig. 8 Prepare the base for the ground hinge. FIG 6

- () 14. Refer to FIG 11A & B and anchor the ground hinge by which ever method is applicable making sure that it is plumbed. Allow to set.
- () 15. Fit the wall bracket luffing pulley to the WB if not already fitted DO NOT over tighten bolt. FIG 9
- () 16. Anchor the wall bracket to the wall at the place marked out (inst'r 12) using suitable rawall bolts (10mm Dia X 100 mm L) or by bolting through the wall. See FIG. FIG 7 & 9
- () 17. From the luffing pulley on the WB, drop a plumb line down and mark a chalk line on the wall. This is the cable line. Attach the winch wall bracket the the wall at the appropriate height, FIG 8 , so that centre of the winch drum corresponds to the cable line. Use rawall bolts (10mmD X 100mmL) or bolt through. FIG 7
- () 18. Using 3/8" Dia X 1" long bolts with stiff nuts, attach the winch making sure that the drum is the correct way around. The pull from the cable must be against the ratchet
- () 19. Attach the hinge bracket. Refer to inst'r 10 and FIG. 12 .
- () 20. Attach the hinge to the ground hinge FIG. 8 Note. Make sure that the ground hinge is firmly set.
- () 21. Attach the luffing cable bracket and luffing cable to the outer section at the appropriate height up the tower from the ground hinge pin, making sure that it will come below the wall bracket when the tower is verticle. See FIG. 8 & 10
- () 22. Run the free end of the luffing cable over the pulley on the WB and down to the winch. Attach it to the winch drum as indicated. The bottom tower section can be raised using the winch to check that everything ligns up correctly. Make sure the cable layers evenly on the winch drum.

NOTE. When installing the AT32 'mini' tower which uses a single winch system, make sure that the two sections, if assembled, are always LOCKED together BEFORE CARRYING OUT ANY LUFFING OPERATION. THE LOCKING PIN MUST BE IN POSITION. REF FIG 24

WALL MOUNTING COMPLETE. Continue at general section. No. 28

- () 23. MOUNTING TO THE POST.
Support the bottom tower section so that it is in the horizontal with the hinge bracket in alignment with the hinge on the post. Make sure that the section is correctly orientated and aligned with the post.
Couple the hinge together using two 1/2" Dia X 1 1/2" bolts with stiff nuts or the hinge pin when provided. Do not over tighten nuts. Use some general purpose grease to lubricate the hinge. FIG 21
- () 24. Fit the luffing winch to the bracket on the post making sure the drum is downward. See FIG 21 . use 3/8" X 1" bolts with stiff nuts.
- () 25. Unless already fitted, fit the cable pulleys, 1 or 2 as supplied, with any cable cleats where supplied, use 5/16" Dia X 1 1/2" bolts
- () 26. Refer to FIG 21 and attach the luffing cable to the tower attachment point acording to which type of system is applicable. Where needed, assemble and fit the luffing pulley assembly as shown in FIG 24 . Route the cable acording to FIG 20/21 and anchor the free end to the winch drum. Take up slack, layering the cable on the spool as you go.

- () 27 Refer to FIG 16 and fit the locating peg to the tower section.
POST MOUNTING COMPLETE.
- () 28 GENERAL ASSEMBLY.
Refer to FIG 18 and fit the winch bracket to the tower using 3/8" Dia X 1" L bolts with stiff nuts.
- () 29 Refer to FIG 19 and fit the telescoping winch to the winch bracket. Keep the drum uppermost.
- () 30 Make sure the outer section is properly supported so the the cable is not under load, insert the first inner section into it keeping horizontal and in line with the outer one. Check that the sections are correctly orientated, the pulley brackets should be all on the same side. Check the section runs freely, DO NOT FORCE.
- () 31 Referring to FIG 17 the up latch assembly and stop plate can be fitted with the 5/16" X 1 1/2" counter sunk screws from the inside of the tower. Move the inner section out sufficiently to gain access to the cross plate on the outer section.

Note. You should see a flat strip 1" W X 1/4" T across one side of the first inner. This acts as a stop when it is extended by meeting with the stop plate just fitted. Check that it does this.
- () 32 Referring to FIG's 13, 14 & 15 route the winch cable between the two sections and attach the thimble end to the anchor point at the bottom of the inner one using a 5/16" 'D' shackle. Note that the cable passes over the first rod up from the bottom.
- () 33 Pass the plain end (only the winch cable has a plain end) of the winch cable through the top pulley bracket and over the pulley on the outer section See FIG 13
- () 34 Anchor the cable end to the winch drum making sure that the pull is against the ratchet. Take up the slack layering the cable on the drum spool.
- () 35 Where there are more than one inner section, assemble these one at a time in the same way. Note that INTERMEDIATE cables are used with a thimble fitted to both ends. In this case the free end after passing over the top pulley is then anchored to the top attachment point of the next outer section. See FIG 14
- () 36 EXTENDED TOWERS AT 31/41/51/61. CONTINUE AS AT 35
- () 37 HEAD UNIT ASSEMBLY (sections L2 and L3) Refer to FIG's
- () 38 RH2 Head unit to section L2. Assemble the adaptor to the top of the tower section using three 3/8" dia long bolts with stiff nuts and the three retaining plates, See FIG. 22 & 23
- () 39 Socket the end of the RH2 into the outer sockets on the adaptor and hold down with three 3/8" dia X 1 3/4" bolts with spring washers. DO NOT over tighten bolts.
- () 40 RH2 Head unit to section L3. In this case the adaptor is not required Socket the RH2 directly into the end of the section L3 and secure as at 38

SINGLE WINCH OPERATED TOWERS AT31-32

These are generally similar to the standard ALTRON tower with some minor exceptions.

POST MOUNTED TYPE. ASSEMBLY

- () 01 Refer to FIG 24 and fit the cross over pulley bracket to the tower on the flat plate that is on the same side as the top pulley. Use 2 X 3/8" X 1" bolts with stiff nuts.
- () 02 If not already assembled, assemble the two pulleys onto the cross over bracket using 2 X 5/16" X 1 1/2" bolts with stiff nuts. Dont over tighten these as pulleys must run free.
- () 03 Fit the cable rubbing shoe to the flat opposite the cross over pulley but on the same side as the hinge bracket. Use 2 X 3/8" X 1" bolts with stiff nuts.
- () 04 Refer to instruction 10 on sheet 2 and fit the hinge bracket in the post (upper) position.
- () 05 Refer to instruction 23 on sheet 3 and continue as for standard towers.

NOTE 1. Refer to FIG 20A and route the luffing cable as shown for post mounted single winch towers. Intermediate cables are the same as for standard towers.

NOTE 2. W A R N I N G. ON SINGLE WINCH TOWERS, THE TWO SECTIONS MUST BE LOCKED TOGETHER BEFORE ANY LUFFING OR TILTING OPERATION CAN BE CARRIED OUT. THE SECTION LOCKING PIN MUST BE IN POSITION WITH THE FIRST TWO SECTIONS LOCKED BEFORE TILTING.

WALL MOUNTED TYPE. ASSEMBLY

- () 06 Refer to FIG 25 and fit the hinge bracket to the bottom flat plate on the outer section on the same side as the top pulley. This is different from the standard towers. Use 2 X 3/8" X 1 1/2" bolts with stiff nuts.
- () 07 Refer to FIG 25 and fit the luffing pulley bracket to the outer section at the required height. See instruction 21 on sheet, 3, do not fit the cable at this stage.
- () 08 With the outer section supported in an horizontal position, slide the first inner section into it making sure that it is orientated the same way. ie, the top pulley brackets are on the same side. Support the inner section so that it runs freely into the outer. DO NOT FORCE.
- () 09 Refer to FIG 25 and carry out instruction 32 . Route the luffing cable as shown for the wall mount single winch towers.
- () 10 Insert the locking pin to lock the first two sections before any luffing operation. SEE NOTE 2.
- () 11 Where there is a further inner section, continue at instruction 35

The remainder of the assembly is the same as for the standard two winch towers.

ALTRON TOWERS. OPERATING AND MAINTENANCE NOTES.

ALTRON towers are manufactured to a high standard and designed to be as simple and as safe as possible to operate. However, as with all mechanical equipment, SAFETY and PERFORMANCE must depend on CORRECT USAGE and regular MAINTENANCE.

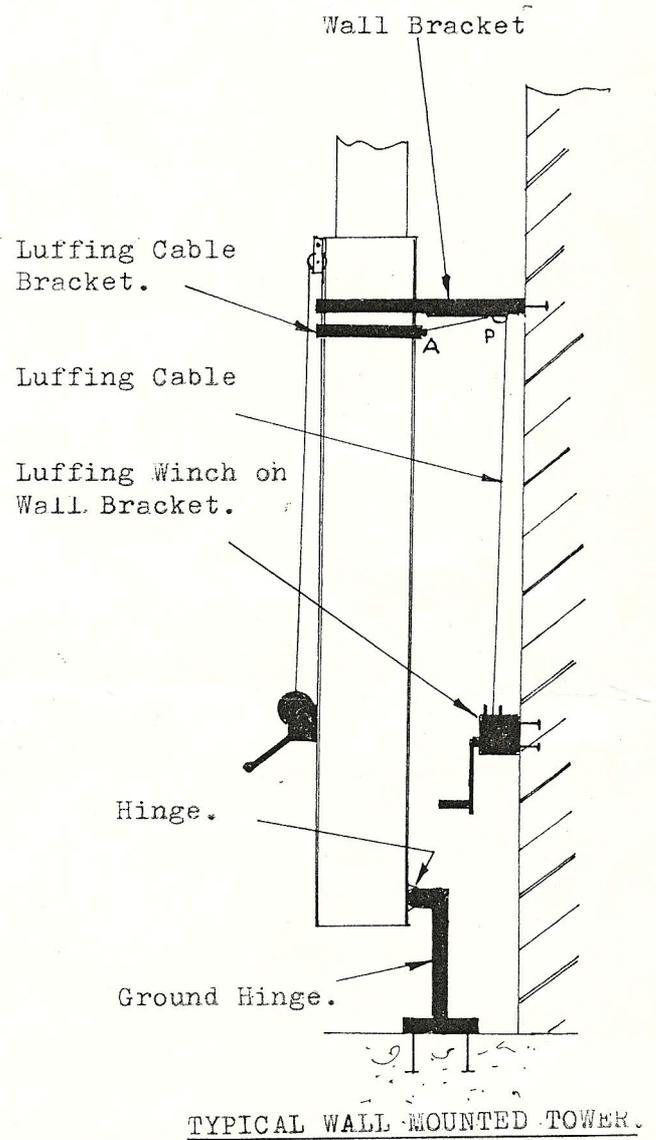
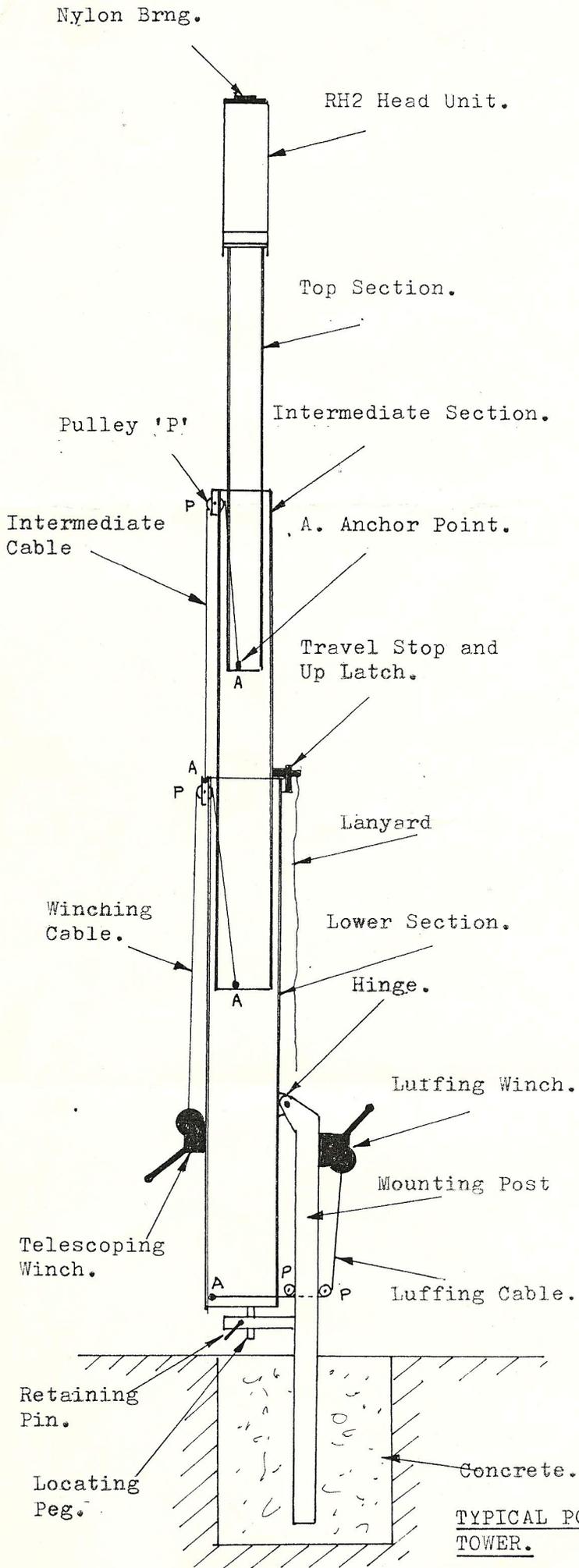
1. BEFORE CARRYING OUT ANY WORK, READ THE INSTRUCTIONS CAREFULLY. IF IN DOUBT. ASK.
2. OBSERVE THE STATED LOAD VALUES. DO NOT OVERLOAD THE TOWER.
3. BEFORE TILTING OR LUFFING, MAKE SURE THAT THE AREA IN LINE WITH THE FALL OF THE TOWER IS CLEAR OF PERSONS AND OBSTRUCTIONS. DO NOT STAND BELOW THE TOWER WHEN TILTING IT OVER, KEEP A FIRM GRIP OF THE WINCH HANDLE. DO NOT TILT OVER WITH TOWER THE SECTIONS EXTENDED.
4. When the tower is at rest in the horizontal, support its weight on a suitable trestle or similar structure when carrying out any work on the aerials or the tower. DO NOT RELY ON THE CABLES ALONE.
5. BEFORE any Luffing operation, check that the cables are correctly seated in their pulleys. Check for signs of fraying or wear and that the splicing are secure. BE CAREFULL NOT TO TRAP YOUR FINGERS.
6. SINGLE WINCH SYSTEM. (AT32/31). Towers operated by a single winch rely on the sections being locked together when tilting or luffing operations are to be carried out. MAKE SURE THE SECTIONS ARE LOCKED TOGETHER WITH THE LOCKING PIN BEFORE TILTING. WARNING. DO NOT TILT THE TOWER WITH THIS PIN REMOVED.
7. BEFORE extending the tower check that the uplatch works freely and that the lanyard is not snagged. Check that the cable is are correctly seated in their pulleys and not snagged up, check for signs of fraying or wear etc. MAKE SURE that the tower is SAFELY LOCKED in the vertical position. KEEP YOUR HANDS AWAY FROM THE SLIDING PARTS ON THE TOWER. Ensure that any coaxial cables etc do not snag the sections or cause excessive drag during extension.
8. Whilst the tower is being extended, check that the uplatch drops in under the respective cross members. DO NOT TRY TO EXTEND BEYOND THE FULL EXTENSION. There is a stop on the tower to prevent this so dont force the winch when full extension height is reached. The tower can be parked at any intermediate height relative to a cross member engaging on the uplatch. The tension in the winch cable can be relaxed just enough to let the cross member rest on the uplatch leaving the winch ratchet ENGAGED IN THE HOLDING POSITION, ie. stoping any cable being pulled out. THIS IS A DOUBLE SAFETY MEASURE. DO NOT FREE THE WINCH DRUM OR REMOVE ANY CABLE WITH THE TOWER SECTIONS EXTENDED. (This applies to Tower and Tiltover Winches)
9. WARNING. KEEP HANDS WELL AWAY FROM MOVING PARTS WHILE THE TOWER IS IN USE OR LEFT EXTENDED. DO NOT PLACE HANDS WITHIN THE LATTICE SECTIONS.
10. GENERAL SERVICING.
BEFORE CARRYING OUT ANY SERVICING ENSURE THAT THE TOWER SECTIONS ARE FULLY RETRACTED AND THE TOWER SUPPORTED HORIZONTALLY, ie TILTED OVER. If it is at all necessary to service the tower while it is in its vertical position, MAKE SURE IT IS SECURELY LOCKED,The Tilting/Luffing Winch ratchet MUST BE ENGAGED IN HOLD POSITION WITH NO SLACK IN THE CABLE.

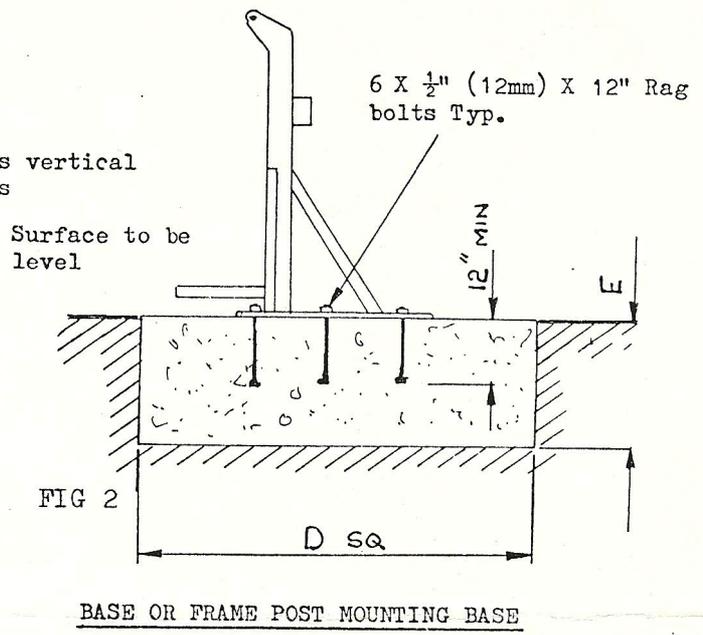
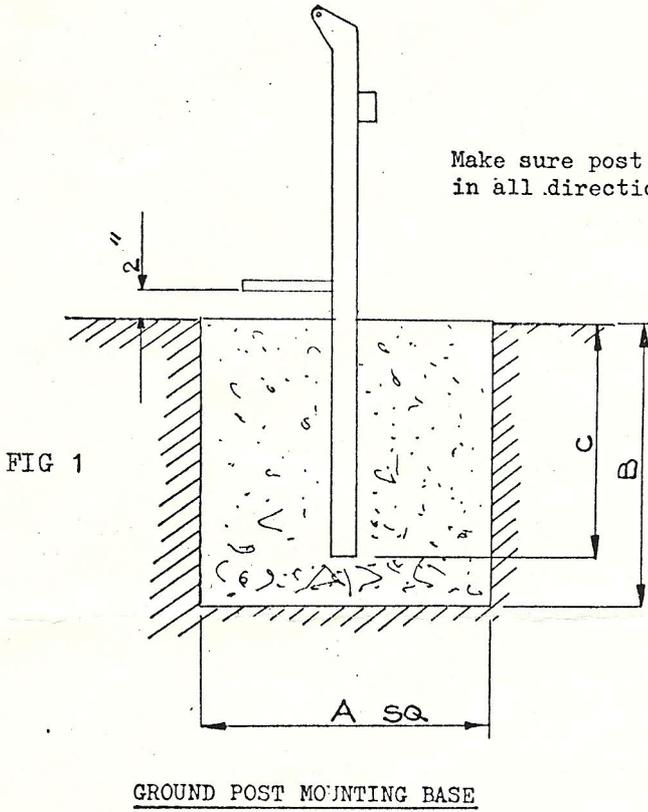
LUBRICATION. Regularly lubricate Pulleys, Cables and Winch mechanism, make sure that the ratchet on the winch/s operates freely and correctly. Any general light grease or oil may be used. Dont over lubricate.

INSPECTION. Inspect regularly for wear and tear, pay particular attention to the cables. Check that the cable is layering evenly on the winch drum, some flatening of the cable nearest to the drum is normal. Check for signs of damage or any fraying.

LOCKING. Ensure that the tower is secured against unauthorised use.

The company accepts no liabilities for the installation or use or any consequential claims thereof. The user to ensure compliance with safety acts and any relavant statuts.





TYPICAL FOUNDATIONS

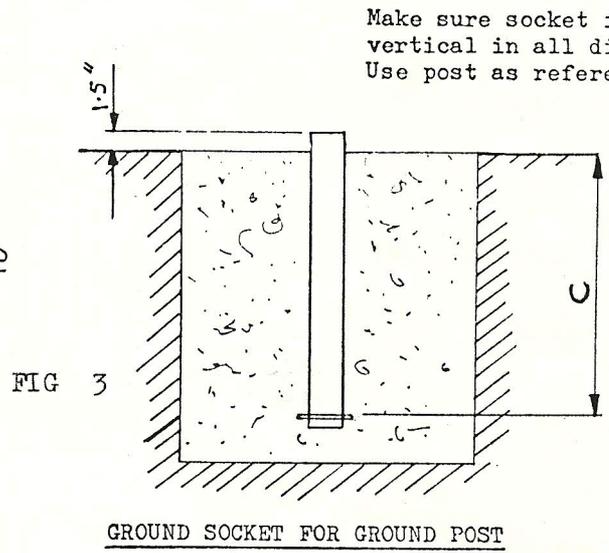


Table 01 TABLE OF CONCRETE BASE DIMENSIONS

MODEL No.	ASQ		B		C		DSQ		E		Volume	
	in	mm	in	mm	in	mm	in	mm	in	mm	ft ³	M ³
AT31-32PM	42	1066	42	1066	36	914	48	1219	24	609	42.8	1.21
AT41-42PM	48	1219	48	1219	40	1016	60	1524	24	609	64	1.81
AT51-52PM	54	1371	54	1371	40	1016	60	1524	36	914	91	2.57

All diagrams etc. are for guidance only, the company accepts no liabilities for the installation or any consequential claims.

Typical ground post held upright by simple guys

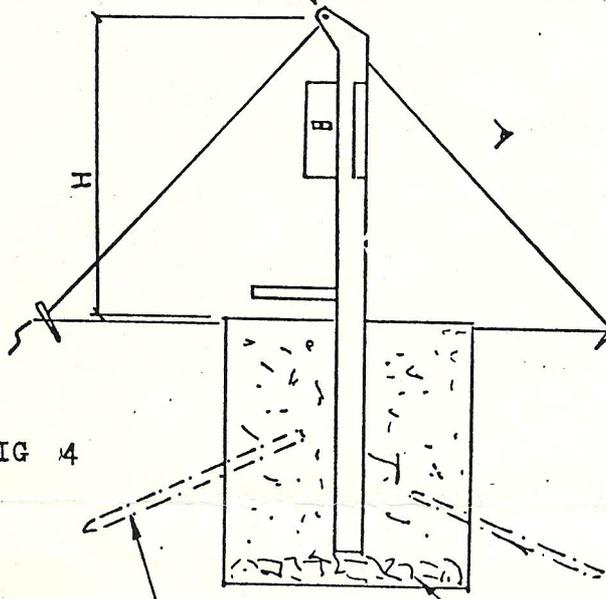
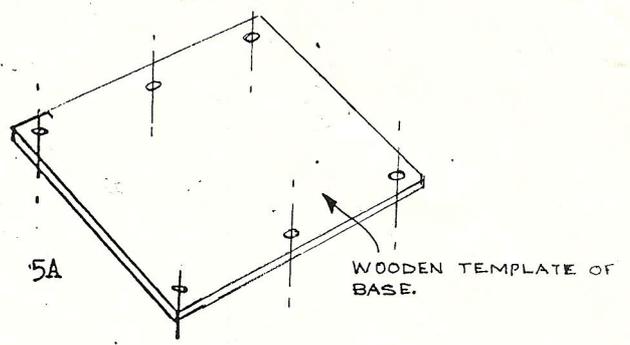


FIG 4

Steel stakes embedded across the hole can be additional anchorage in some soils.

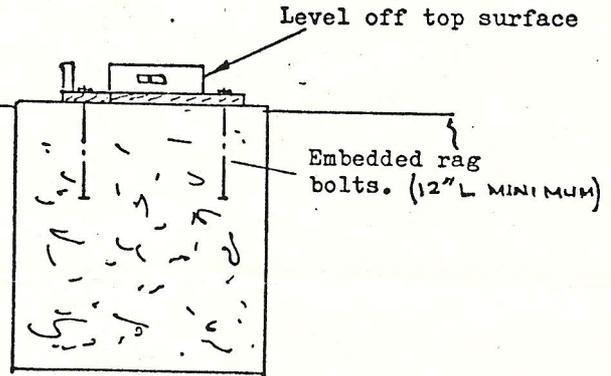
Hard core

FIG 5A



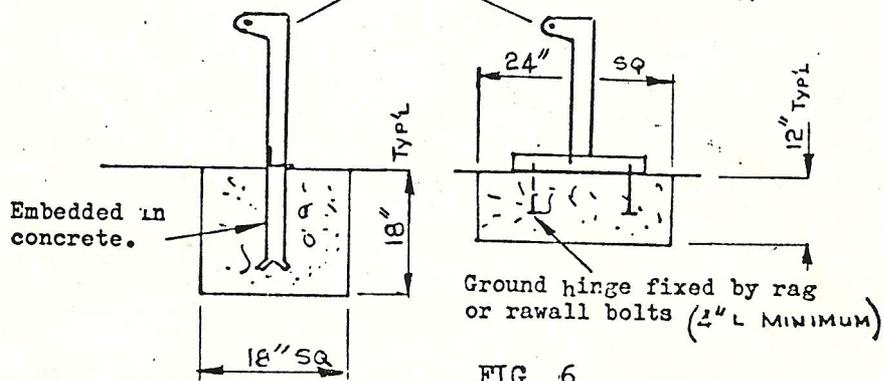
WOODEN TEMPLATE OF BASE.

FIG 05



Typical foundation for surface mounted posts FP and BP

Alternative ground hinges



Ground hinge fixed by rag or rawall bolts (1" L MINIMUM)

FIG 6

Number of courses above bracket will depend on structure and condition of wall. (3-4 MINIMUM)

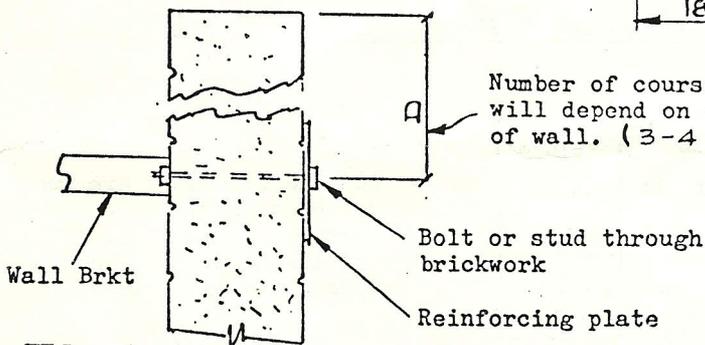


FIG 7A

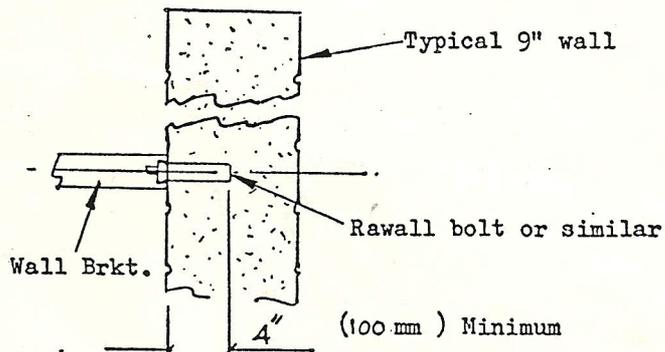


FIG 7B

All dimensions etc. are given for guidance only and it is recommended that a local builder is consulted

SOME TYPICAL MOUNTINGS.

FIG 9

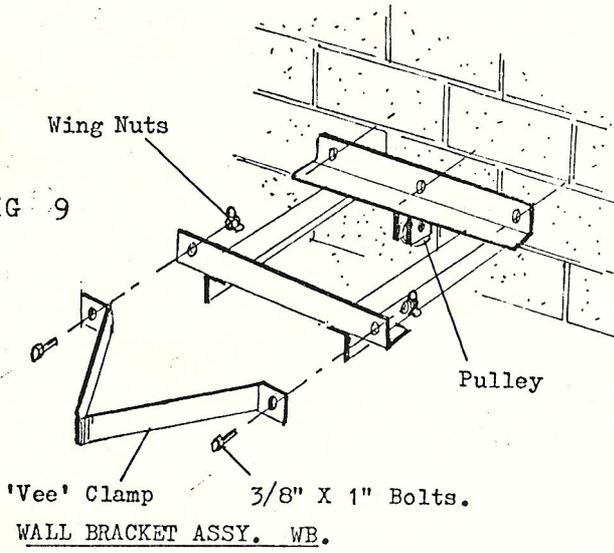


FIG 10

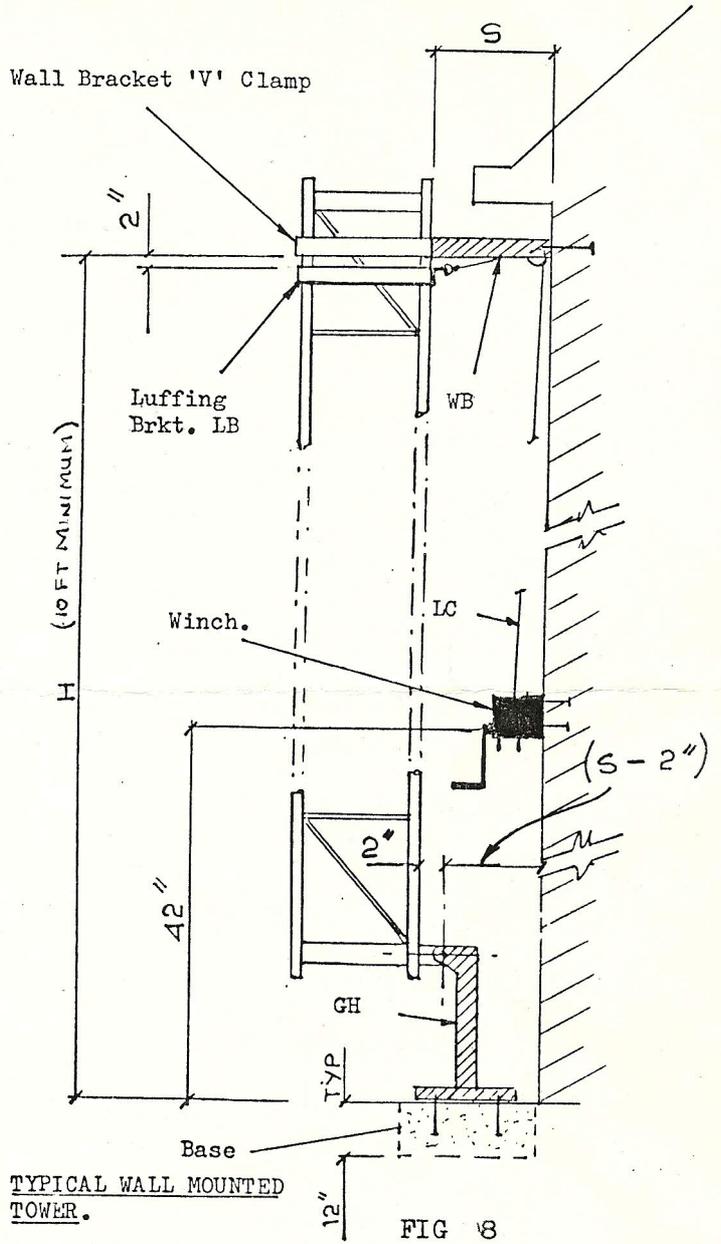
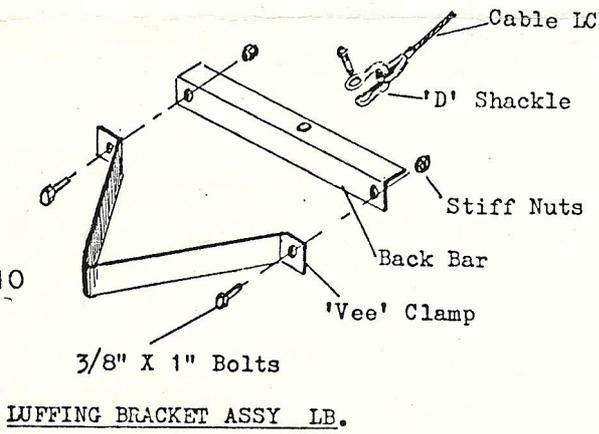
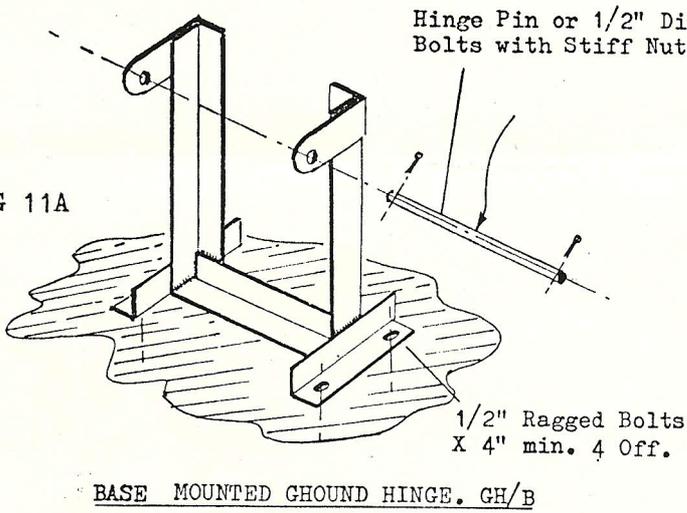
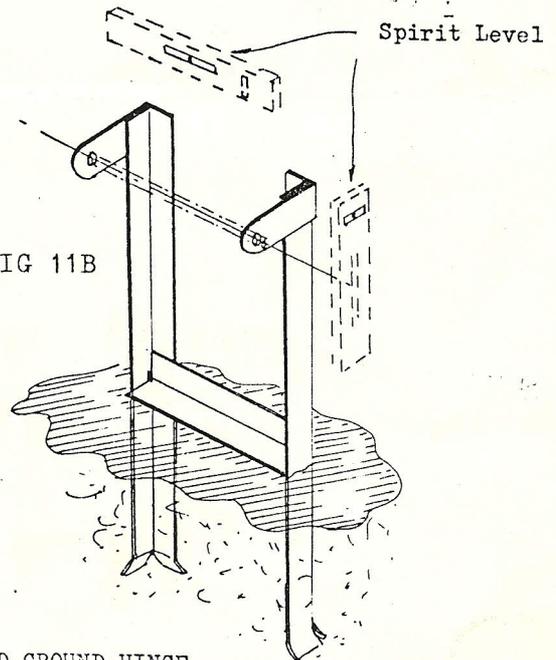


FIG 11A



NOTE. Ensure mounting surface is level and hing correctly plumbed

FIG 11B



DETAIL OF HINGE BRACKET

POSITION A = AT43-up
B = AT32/31

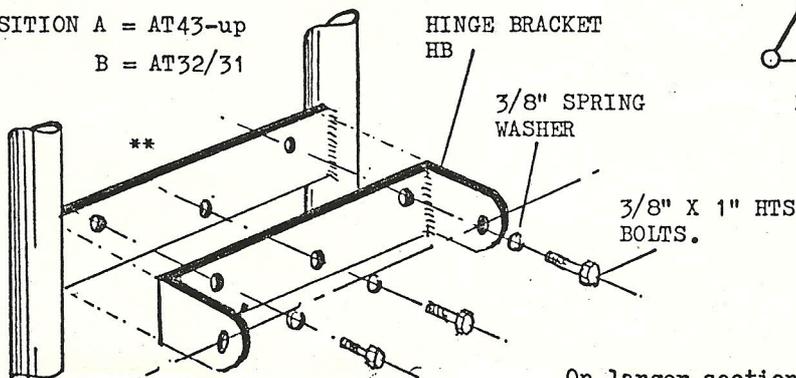


FIG 12A

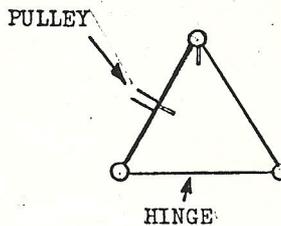


FIG 12B

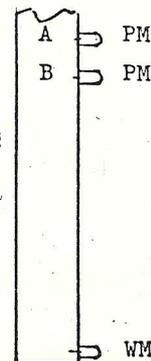


FIG 12C

HINGE POSITIONS

On larger sections, there may be 4 bolts.

** Ends of bolts must not project behind back plate by more than 3/16"

To next section.

INTERMEDIATE CABLE

INNER SECTION

NOTE
(PULLEYS MAY BE
DOWNWARD)

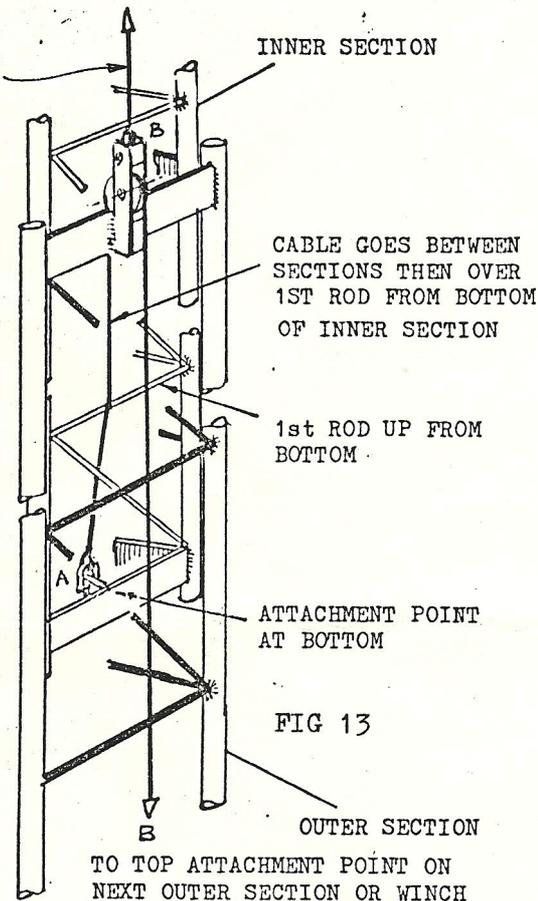


FIG 13

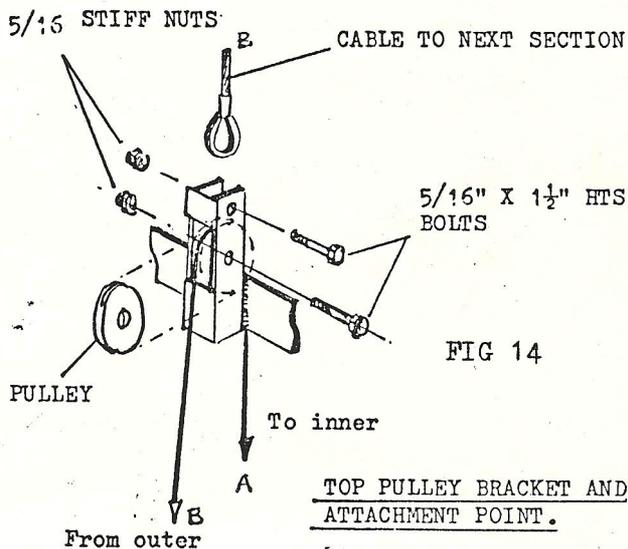


FIG 14

TOP PULLEY BRACKET AND ATTACHMENT POINT.

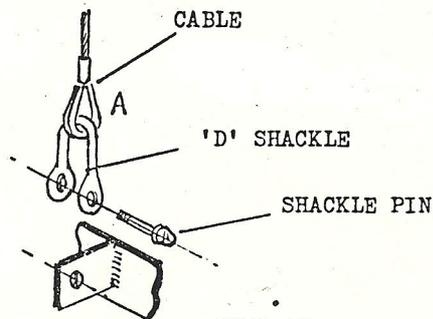
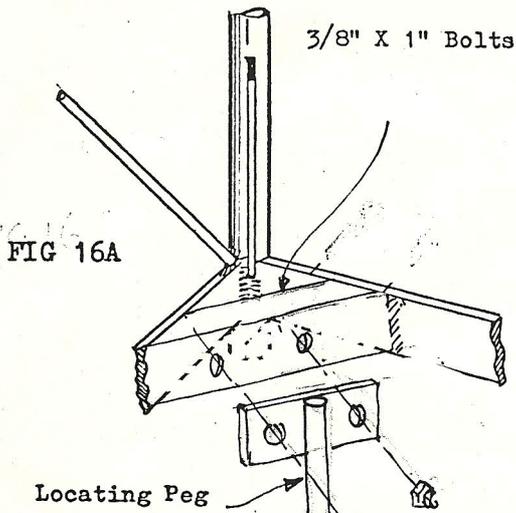


FIG 15

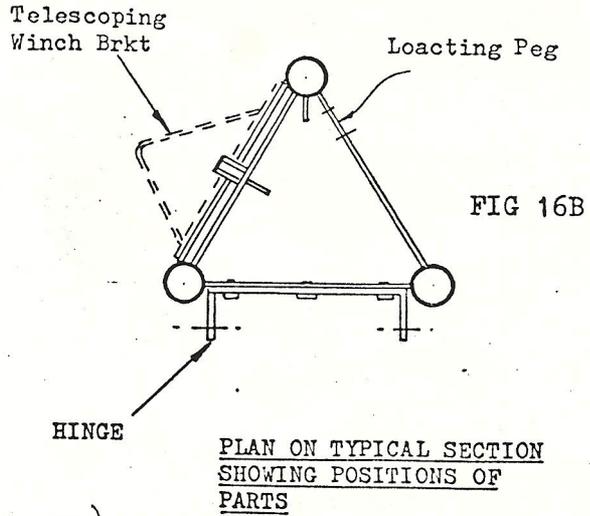
BOTTOM ATTACHMENT POINT

DETAIL OF TELESCOPING CABLE ROUTING.

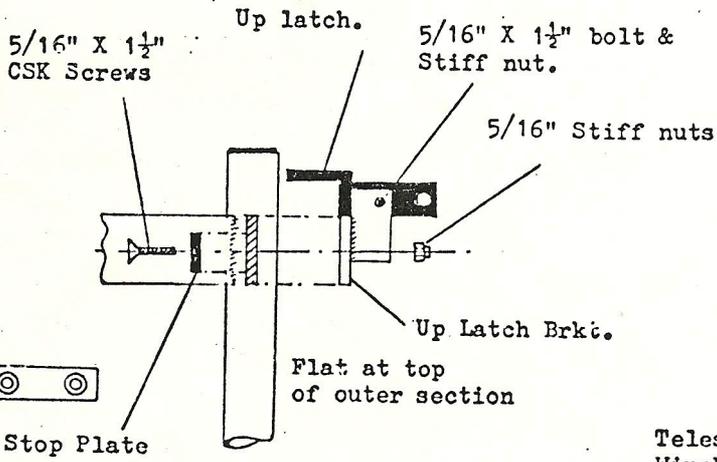
WARNING. When assembling the interlocking sections, slide them in slowly and carefully. DONT PLACE YOUR HANDS WHERE THEY MAY BE TRAPPED BY THE SLIDING SECTIONS.



(DESIGN MAY ALTER IN SOME CASES)



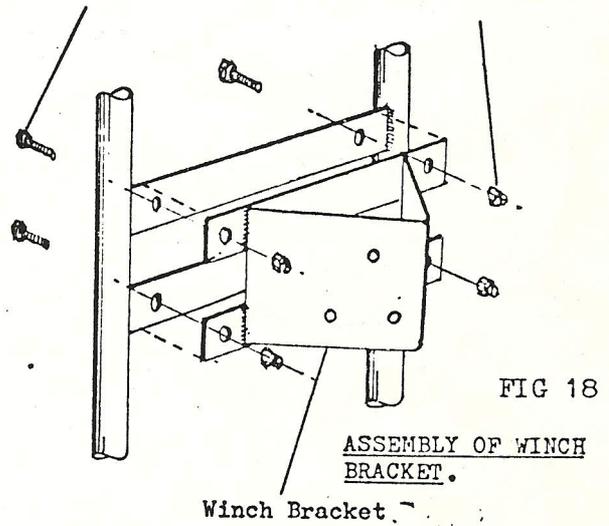
DETAIL OF LOCATING PEG. POST MOUNT



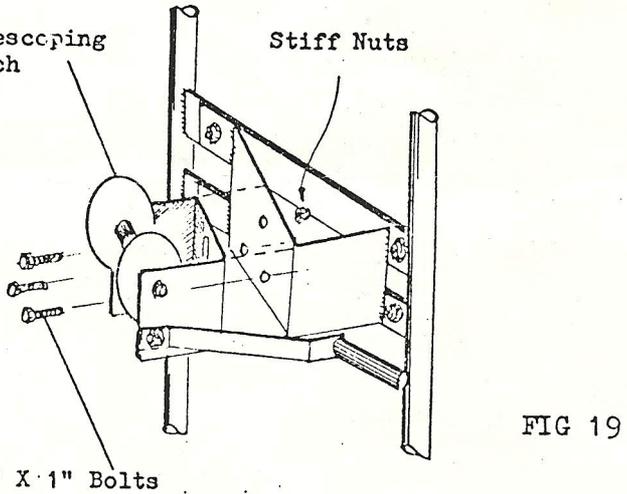
DETAIL OF UP LATCH AND STOP PLATE ASSEMBLY

Note.
Do not assemble Up latch and stop until first inner section is inserted.

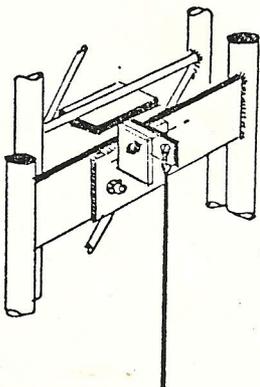
3/8" X 1" Bolts CSK. Stiff Nuts



Telescoping Winch Stiff Nuts



DETAIL OF WINCH MOUNTING ON TOWER SECTION.



Check that the uplatch operates freely and engages the cross members. Make sure the lanyard does not get snagged.

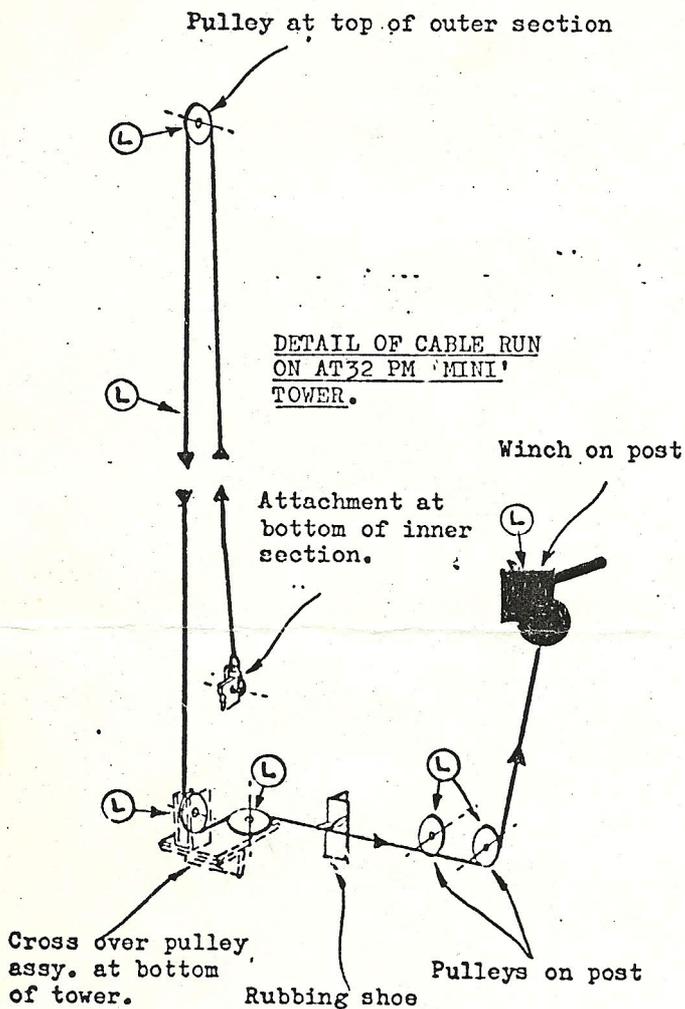


FIG 20A

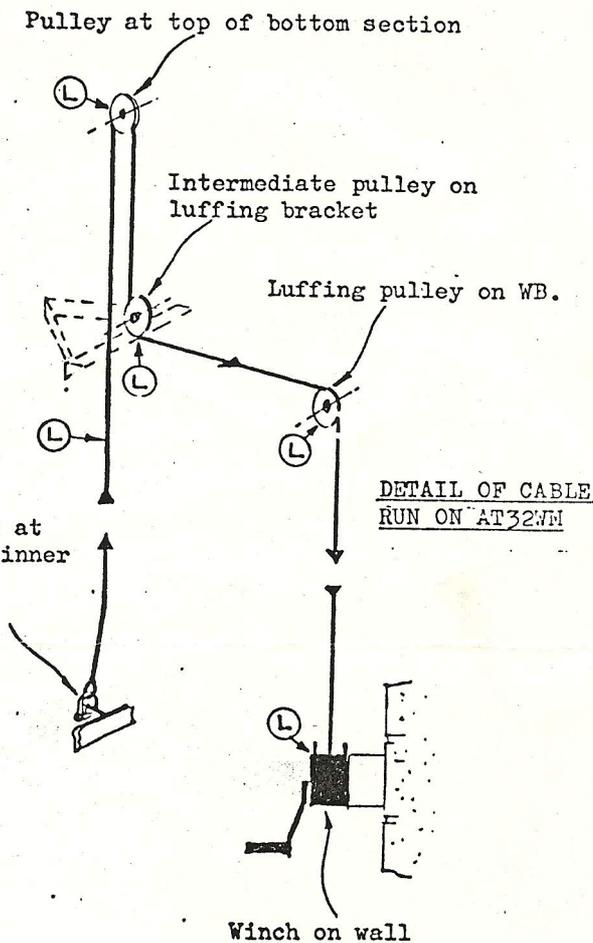


FIG 20B

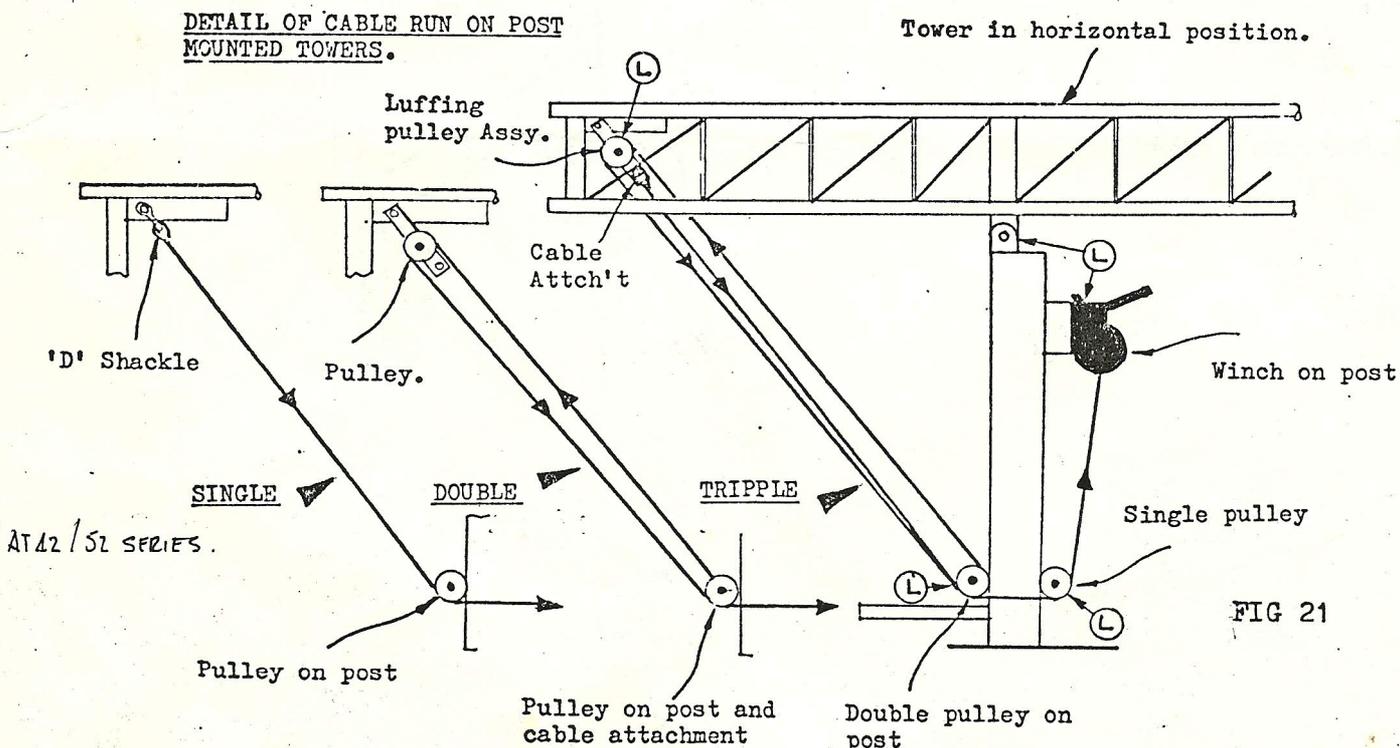
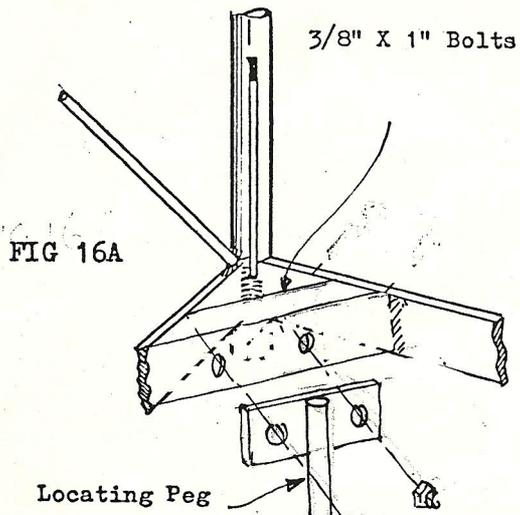
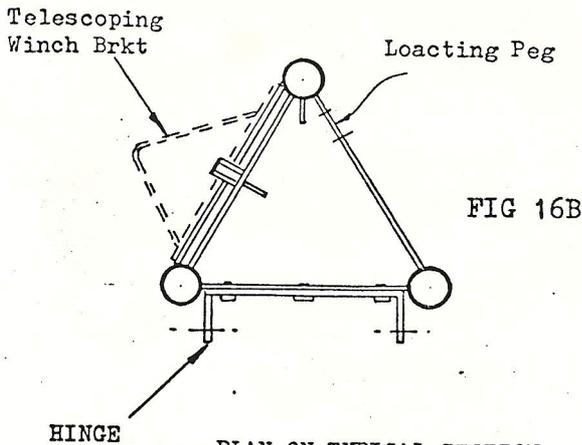


FIG 21



(DESIGN MAY ALTER IN SOME CASES)



PLAN ON TYPICAL SECTION SHOWING POSITIONS OF PARTS

DETAIL OF LOCATING PEG. POST MOUNT

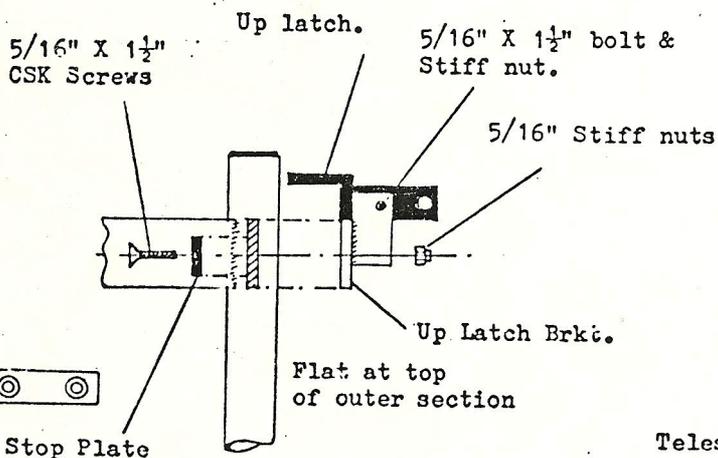


FIG 17A

DETAIL OF UP LATCH AND STOP PLATE ASSEMBLY

Note.
Do not assemble Up latch and stop until first inner section is inserted.

3/8" X 1" Bolts CSK Stiff Nuts

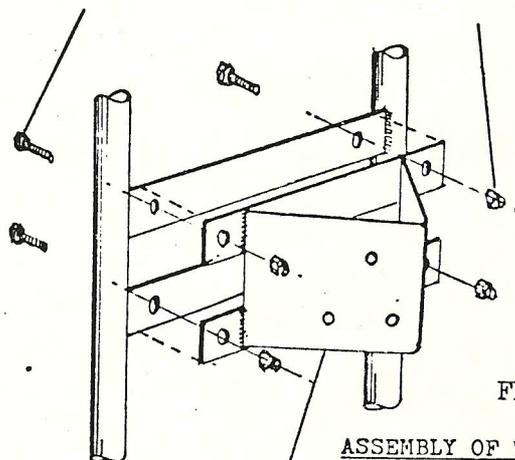


FIG 18

ASSEMBLY OF WINCH BRACKET.

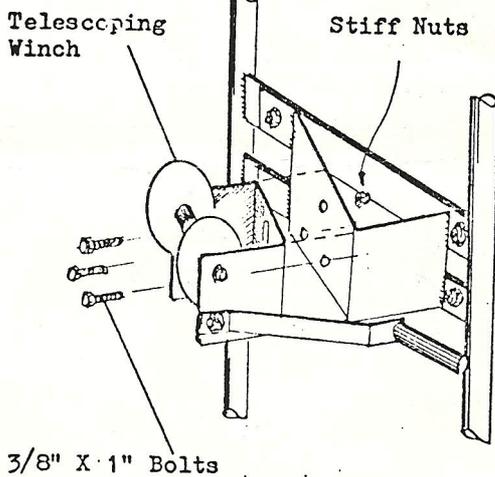


FIG 19

DETAIL OF WINCH MOUNTING ON TOWER SECTION.

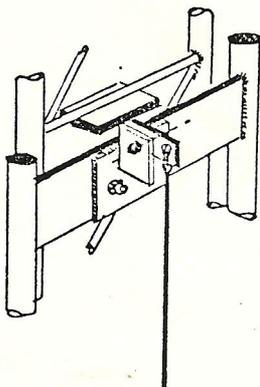


FIG 17B

Check that the uplatch operates freely and engages the cross members. Make sure the lanyard does not get snagged.

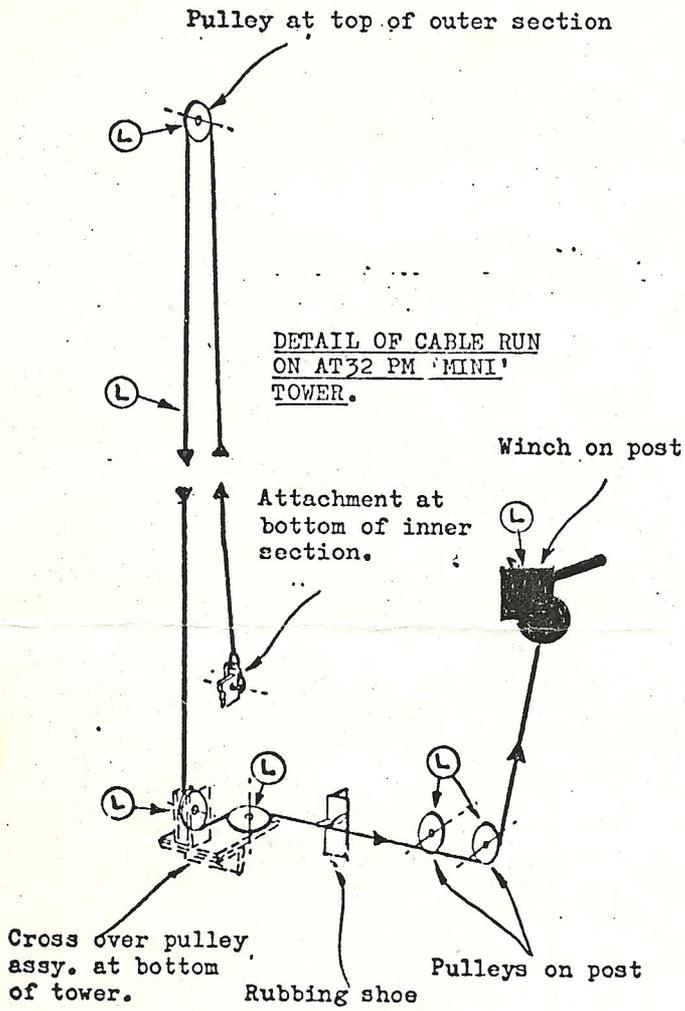


FIG 20A

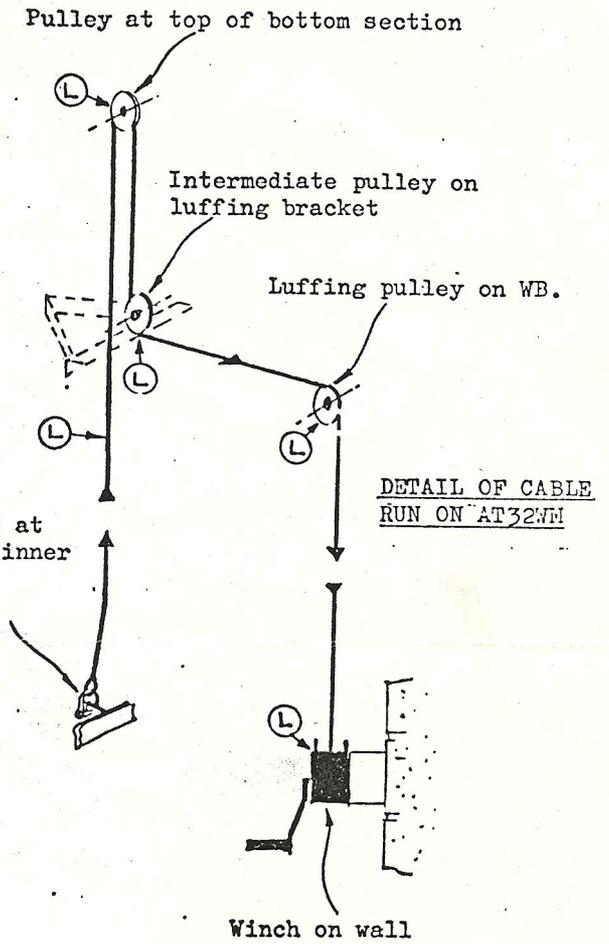


FIG 20B

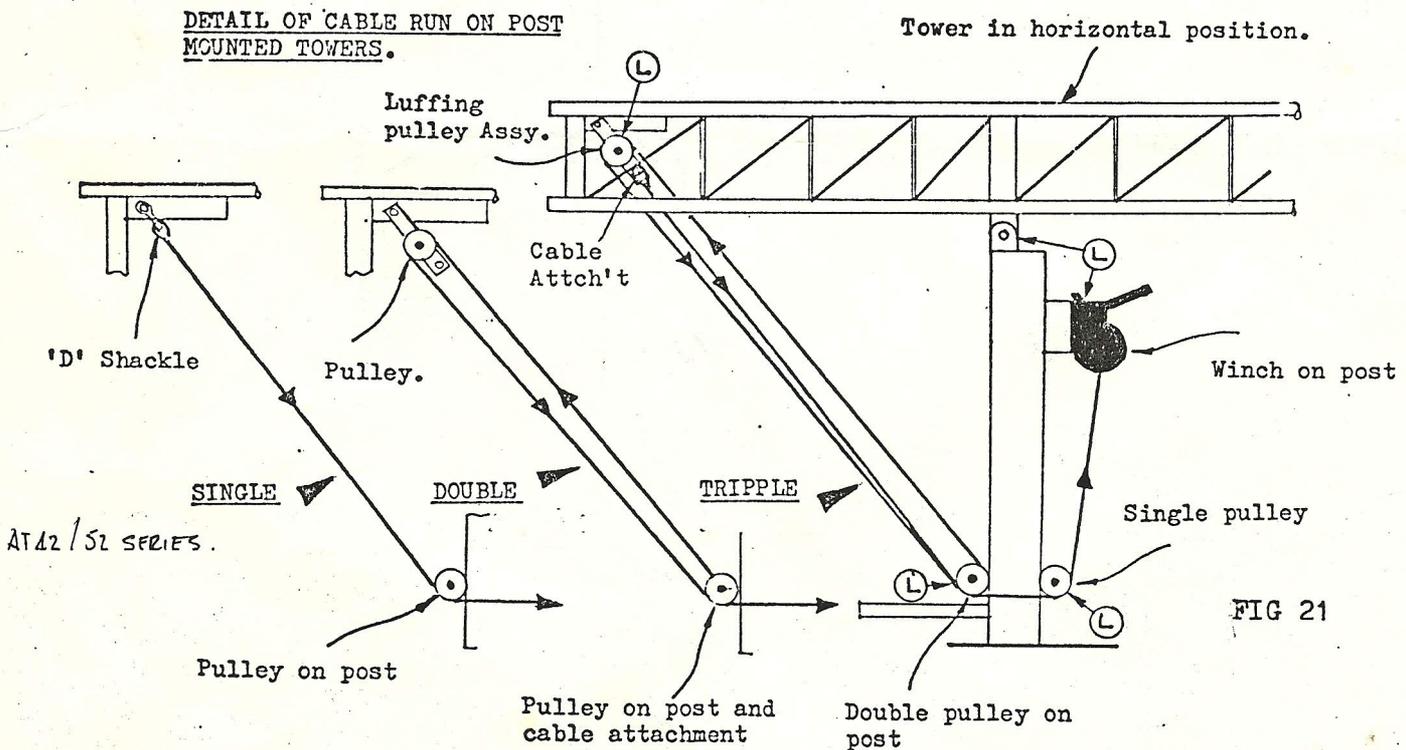
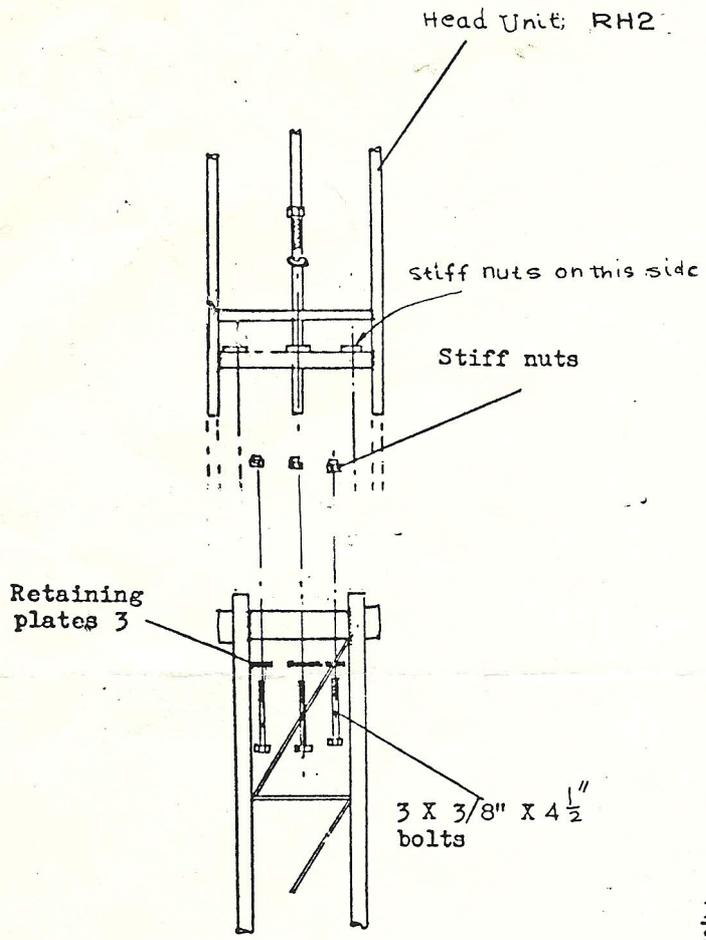
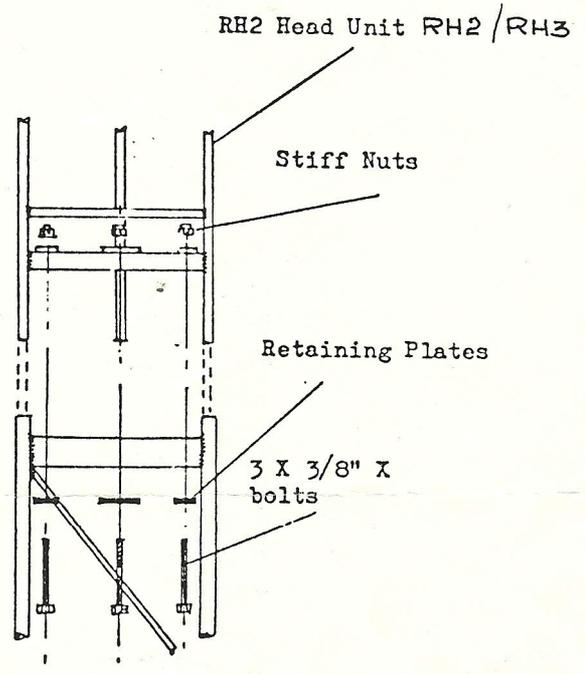


FIG 21



DETAIL OF RH2 ASSEMBLY TO SECTION L2.

FIG 22



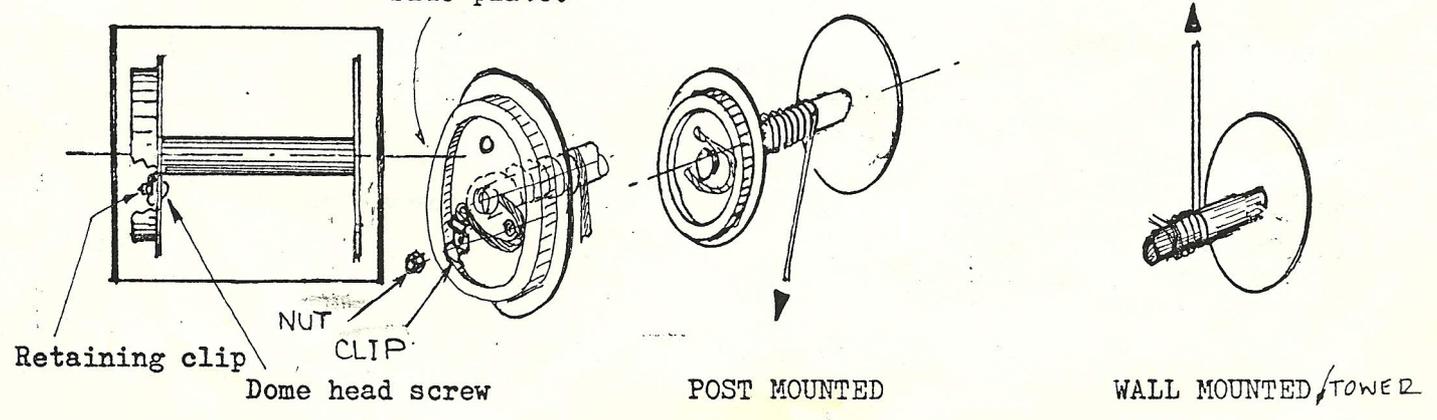
DETAIL OF RH2 ASSEMBLY TO SECTION L3.

FIG 23

When winding the cable onto the winch drum make sure that it layers evenly and avoids coming into contact with the retaining clip. The retaining clip should be on the same side as the gear with the nut outside. The cable fouling this clip may cause damage to it. HOLD THE CABLE OFF THE SIDE BY PULLING IT SIDWAYS. CHECK REGULARLY FOR ANY SIGNS OF FRAYING.

Fixing the cable to the winch drum.

After tightening nut cut off surplus thread to clear side plate.



POST MOUNTED

Inner section here.

FIG 24

Note. Pulley brkts may be downward.

WALL MOUNTED

FIG 25

Top pulley

Top Pulley

Hinge bracket

Vee clamp

Luffing pulley

AT31-32

** 3 X 3/8" X 1" Bolts

Stiff nuts

Luffing pulley Brkt.

Locking Pin

2 X X 3/4" Bolts with stiff nuts

Locking Pin

Stiff nuts

Rubbing shoe

Bolts on with locating peg use 1X CSK & 1X Hex 3/8" bolts

2X 3/8" X 1" Bolts

Cross over pulley Assy.

2 X 3/8" X 1" Bolts

Hinge bracket

** Ends of bolts must not protrude inside by more than 3/16" or inner section may be fouled.

MODEL NUMBER AT43/42/41

SERIES 2.

ITEM	DESCRIPTION	QNTY	CODE
01.	Bottom Lattice Section (varies)	1	✓
02.	First Section. (varies)	1	✓
03.	Tower Hinge (size to suit item 01)	1	✓
04.	Hinge Pin (size to suit item 01)	1	✓
05.	Luffing Winch	1	✓
06.	Tower Winch	1	✓
07.	Uplatch Plate	1	✓
08.	Uplatch Bracket	1	✓
			Applicable to Model AT43/42/41
09.	Travel Stop Plate	1	✓
10.	Lanyard	1	
11.	Tower Winch Bracket	1	✓
12.	Tower Winch Cable 10M.	1	
13.	'D' Shackle	1	✓
14.	Cable Pulley 2 ³ / ₄ "D	1	✓ no 2 ³ / ₄
15.	Bolts HEX HD 5/16"D X 1 ³ / ₄ "L	1	✓
16.	Bolts HEX HD 3/8"D X 1"L	9	✓
			3 On Tower Hinge
17.	Screws CSK HD 5/16" X 1 ¹ / ₄ "L	2	✓
18.	Bolt HEX HD 5/16" X 1"L	1	✓
19.	Stiff Nut 5/16" Nylock	4	✓
20.	Stiff Nut 3/8" Nylock	10	✓
21.	Plain Washer 3/8"	3	ON TOWER HINGE
22.	Spring Washer 3/8"	3	2 — 1 miss
22A.	Bolts CSK 3/8" X 1"L	4	✓
23.	Lattice Section/s (Second and subsequent sect) As required.		—
24.	Intermediate Cable	1	
25.	Pulley 2 ³ / ₈ "D	1	✓
26.	'D' Shackle	1	✓
27.	Bolt 5/16"D X 1 ¹ / ₂ "L	1	✓
28.	Bolt 5/16"D X 1 ³ / ₄ "L	1	✓
29.	Stiff Nut 5/16" Nylock	2	✓
30.	Head Unit RH2. (As required)	1	
34.	Retaining Bolts HEX HD 3/8"D X 4 ¹ / ₂ "L	3	✓
			Applicable to Model AT43/42 with RH2.
35.	Retaining Plates.		✓

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QNTY</u>	<u>CODE</u>
36.	Stiff Nuts 3/8" Nylock	3	✓
37.	Guide Brng 2"D Nylon	1	on tower
38.	Bolts HEX HD 5/16"D X 1"L	4	
39.	Stiff Nuts 5/16" Nylock	4	
40.	Mounting Post PM3/BP3	1	
41.	Locating Peg	1	
42.	Cable Pulleys 2 3/8"D	2	
43.	Luffing Cable 4M	1	
44.	'D' Shackle 5/16	1	
45.	Bolt 5/16D X 1 3/4"L	2	
46.	Bolt 3/8"D X 1 1/2"L	2	
47.	Stiff Nuts 5/16 Nylock	2	
48.	Stiff Nuts 3/8	2	
49.	Plain Washers 3/8	2	
50.	Retaining Pin	1	
	Large Cable Cleat	1	
51.	Ground Hinge GH3	1	✓
52.	Wall Bracket. (Winch)	1	✓
53.	Tower Wall Bracket.4WB (Size varies)	1	✓
54.	Luffing Cable Bracket	1	✓
55.	'Vee' Clamp Bracket	2	✓
56.	Luffing Cable 12M (Wall Mount).	1	✓
57.	'D' Shackle	1	✓
58.	Pulleys 2 3/8"	1	✓
59.	Bolts HEX HD 5/16"D X 1 3/4"L	1	✓
60.	Bolts HEX HD 3/8"D X 1"L	4	
61.	Stiff Nut 5/16" Nylock	1	
62.	Stiff Nuts 3/8" Nylock	2	
63.	Wing Nuts. 3/8"	2	✓
64.	Spring Washer 3/8	2	
65.	One Cable stand off for each section except inside section.		

Postment?