

WIBE

94-08-08

masts series 500[®]



AB WIBE



WIBE masts span the world

AB WIBE is a 100 % owned subsidiary of the investment company Promotion, which has a total turn-over of about 950 million Swedish Crowns and about 7000 employees. WIBE itself has 400 employees. (1975 figures).

The first step towards the present WIBE company was taken by the start of manufacturing ladders of steel and aluminium (which still constitute a great part of the company's turn-over). In 1947 masts and towers for lighting as well as for radio and TV-purposes were included in the manufacturing programme.

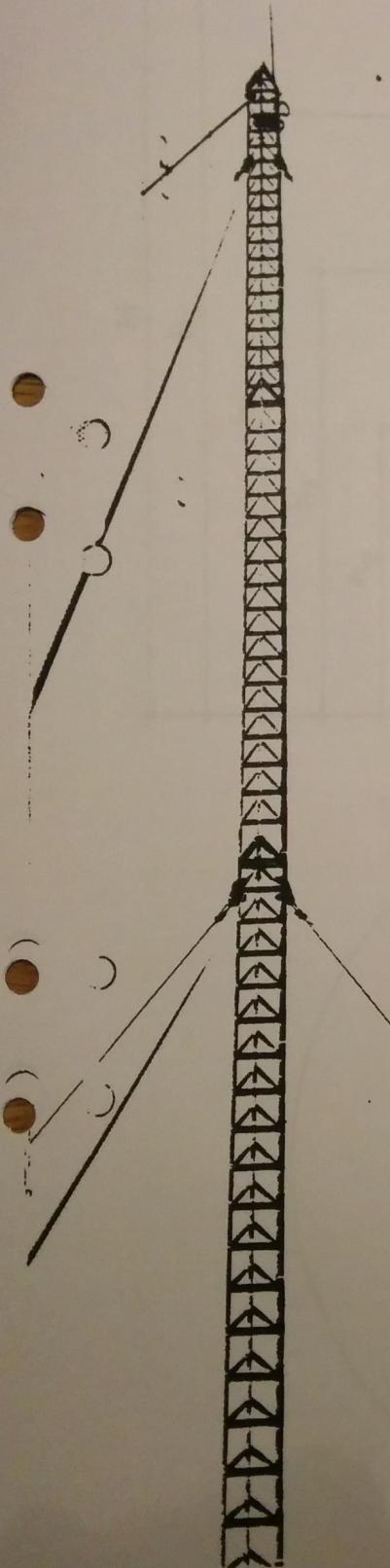
We have our own development and design department, but when it comes to extremely qualified problems, we have at our disposal independent consultants of the highest world reputation, who can solve any problem that may arise. Our designs are based on computer programs, which are constantly checked and revised in accordance with the newest trends in design and in line with the qualities of the most suitable raw-material available. Our designs are also checked in wind-tunnel tests and are made to withstand the cold and icy winds of the arctics as easily as the sand- and rainstorms of the tropics.

Our production is constantly checked by our own inspectors as well as by a well-known inspection company, AB Tekniska Röntgencentralen (TRC, i.e. the Technical X-Ray Center), which of course is a fully independent body, often entrusted with the inspection on behalf of our customers.

We have our own installation and erection department, with great experience from erection work in all parts of the world, also under very severe conditions, in the cold of Greenland as well as in the heat of Sudan. For customers, who have their own erection and installation teams, we can supply supervisors. We do not only erect the masts, we are also specialized in installing antennas and feeders as well as obstruction lighting, lightning arrestors etc.

A full range.

The present WIBE programme includes guyed masts from 6 to 335 meters and self-supporting towers up to 150 meters. We also make all kinds of special designs for radio communication, navigation, ionospheric and meteorological observations, radio activity measurements and other scientific activities. Also telescopic masts, mechanical as well as pneumatic, form part of our activities.



WIBE masts series 500

This series comprises 3 different types: 28/288, 35/368 and 50/500, all in triangular lattice design.

Type 28/288.

Side width: 250 mm
Leg dia: 28 mm O.D.
Max height: 36 m
Approximate max. headload (horizontal): 250 daN (Kp)

Type 35/368.

Side width: 319 mm
Leg dia: 35 mm O.D.
Max height: 42 m
Approximate max. headload (horizontal): 400 daN (Kp)

Type 50/500.

Side width: 433 mm
Leg dia: 51 mm O.D.
Max height: 66 m
Approximate max. headload (horizontal): 550 daN (Kp)

All masts consist of few components which can be easily assembled by unskilled labour under the direction of a competent supervisor. A large number of combinations of height and allowable headload can be achieved. The guy brackets can be mounted at any brace level to match various loading requirements. The masts are easily erected and folded by means of the hinged base plate. Erection can thus be carried out either by levering the whole mast preassembled with the guy wires fitted or by the traditional "section by section" vertical hoisting method.

The masts can be climbed externally on the braces and can also be supplied with a climbing safety device as an option.

Corrosion resistance: All material is hot dip galvanized to Swedish Standard SMS 2950.

Applications: WIBE Masts Series 500 are ideally suitable for carrying radio communication antennas, log.-per. antennas, different types of wire antennas, single wires, rhombics, umbrellas etc.

Design: Mast sections are fabricated in lengths of 3 and 6 m and are fully welded, using tubular legs and profiled bracings.

Standards:

SBN 67 (Loadings)
St BK-N1 (Structural steel in buildings).

St BK-N2 (Welding)

Regulations issued by the National Swedish Board of Industrial Safety.

Testing:

Fulldscale windtunnel tests carried out by FFA (The National Swedish Aeronautical Research Institute)

Material:

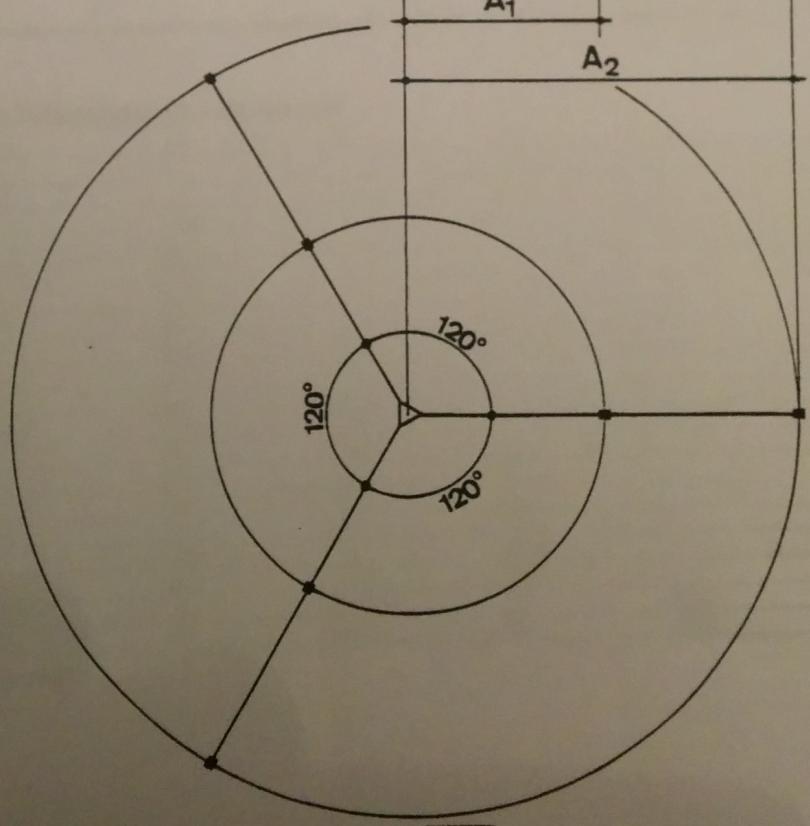
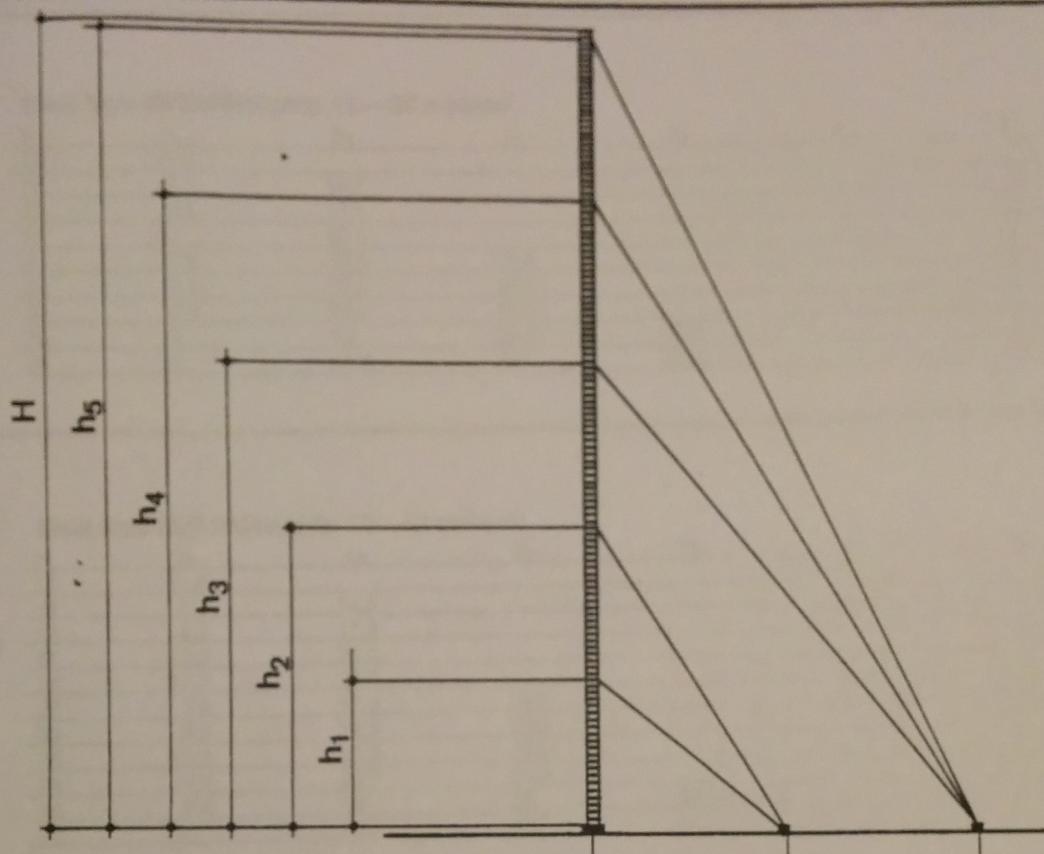
Structural steel: SIS 14-1412, SIS 14-1312

Bolts and nuts: SB 8.8 FZV

The Swedish Standards referred to, are in all essential parts equivalent to most International Standards.

Masts system and guying

(4)



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Mast type 28/288(Heights 12—36 meters)

H	h_1	h_2	h_3	h_4	h_5	A_1	A_2
12	11,5					7	
15	7	14,5				9	
18	8,5	17,5				11	
21	10	20,5				12	
24	7,5	15,5	23,5			14	
27	8,5	17,5	26,5			16	
30	9,5	19,5	29,5			17	
33	8	16	24,5	32,5		9	19
36	8	16,5	26	35,5		10	21

Mast type 35/368(Heights 12—42 meters)

H	h_1	h_2	h_3	h_4	h_5	A_1	A_2
12	11,5					7	
15	7	14,5				9	
18	8,5	17,5				11	
21	10,5	20,5				12	
24	11,5	23,5				14	
27	8,5	17,5	26,5			16	
30	9,5	19,5	29,5			17	
33	10,5	21,5	32,5			19	
36	11,5	23,5	35,5			21	
39	9,5	19	29	38,5		11	23
42	10	20,5	31	41,5		12	24

Mast type 50/500(Heights 12—66 meters)

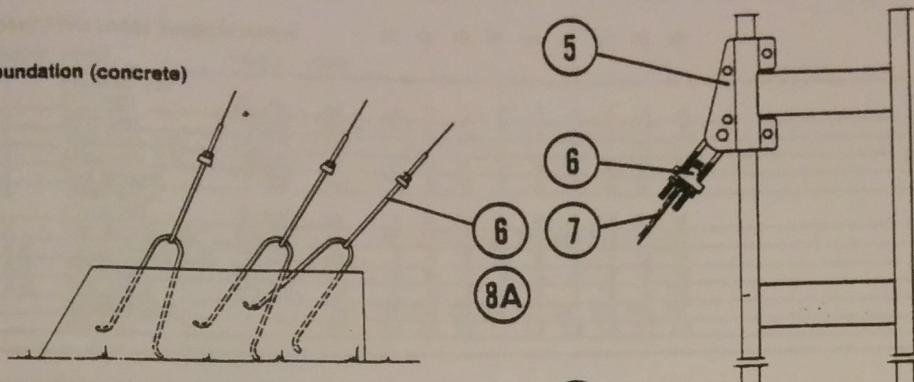
H	h_1	h_2	h_3	h_4	h_5	A_1	A_2
12	11,5					7	
15	14,5					9	
18	8,5	17,5				11	
21	10,5	20,5				12	
24	11,5	23,5				14	
27	13	26,5				16	
30	14,5	29,5				17	
33	10,5	21,5	32,5			19	
36	11,5	23,5	35,5			21	
39	12,5	25,5	38,5			23	
42	13,5	27,5	41,5			24	
45	14,5	29,5	44,5			26	
48	11,5	23,5	35,5	47,5		14	28
51	11,5	24,5	37,5	50,5		15	30
54	13	26,5	40	53,5		16	32
57	14	28,5	43	56,5		17,5	33
60	14,5	29,5	44,5	59,5		18	35
63	12,5	25	37,5	50	62,5	16	37
66	13	26	39	52	65,5	17	39

All measures in meters.

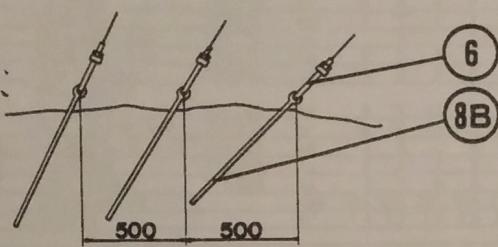
Sections and components

(6)

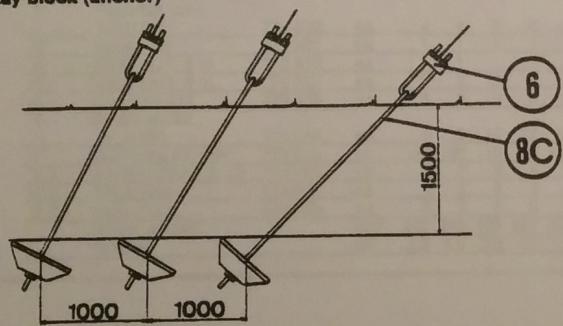
Soil foundation (concrete)



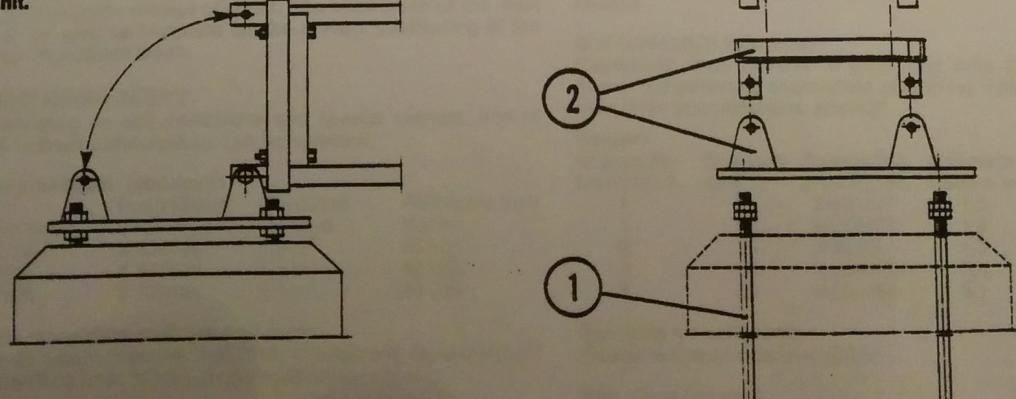
Tie bolts for solid rock



Stay block (anchor)



Base unit.



(7)

MAST TYPE 28/288 Height in meters

Pos.no	Detail	Art.no.	Unit	12	15	18	21	24	27	30	33	36
1	Foundat. bolt 3/4" × 800	774 010	ea	4	4	4	4	4	4	4	4	4
2	Base unit	770 001	ea	1	1	1	1	1	1	1	1	1
3	Mast sect. 3 m	770 010	ea		1	1						
4	Mast sect. 6 m	770 012	ea	2	2	3	3	4	4	5	5	6
5	Guy bracket	770 102	ea	3	6	6	6	9	9	9	12	12
6	Slack pullar 1 1/2" × 200	774 042	ea	6	12	12	12	18	18	18	24	24
7	Guy wire 25 mm ²	774 030	m	45	95	115	125	210	240	265	380	410
8 A	Anchor hook Ø 18	774 022	ea	3	6	6	6	9	9	9	12	12
8 B	Rock bolt	774 015	ea	3	6	6	6	9	9	9	12	12
8 C	Stay block	774 086	ea	3	6	6	6	9	9	9	12	12
	Gross weight		kgs	152	209	233	258	317	347	372	440	487
	Volume		m ³	1,1	1,3	1,3	1,7	1,7	1,9	1,9	2,1	2,1

MAST TYPE 35/368 Height in meters

Pos.no	Detail	Art.no.	Unit	12	15	18	21	24	27	30	33	36	39	42
1	Foundat. bolt 3/4" × 800	774 010	ea	4	4	4	4	4	4	4	4	4	4	4
2	Base unit	770 101	ea	1	1	1	1	1	1	1	1	1	1	1
3	Mast sect. 3 m	770 110	ea		1	1								
4	Mast sect. 6 m	770 112	ea	2	2	3	3	4	4	5	5	6	6	7
5	Guy bracket	770 102	ea	3	6	6	6	6	9	9	9	9	12	12
6	Slack pullar 1 1/2" × 200	774 042	ea	6	12	12	12	12	18	18	18	18	24	24
7	Guy wire 25 mm ²	774 030	m	45	95	115	130	150	235	280	285	320	440	480
8 A	Anchor hook Ø 18	774 022	ea	3	6	6	6	6	9	9	9	9	12	12
8 B	Rock bolt	774 015	ea	3	6	6	6	6	9	9	9	9	12	12
8 C	Stay block	774 086	ea	3	6	6	6	6	9	9	9	9	12	12
	Gross weight		kgs	185	248	281	314	347	418	452	486	521	600	636
	Volume		m ³	1,4	1,7	1,7	2,3	2,3	3,7	3,7	4,1	4,1	5,2	5,2

MAST TYPE 50/500 Height in meters

Pos.no	Detail	Art.no.	Unit	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66
1	Foundat. bolt 3/4" × 800	774 010	ea	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
2	Base unit	770 301	ea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Mast sect. 3 m	770 310	ea		1	1																
4	Mast sect. 6 m	770 312	ea	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	
5	Guy bracket	770 302	ea	3	3	6	6	6	6	6	9	9	9	9	12	12	12	12	12	15	15	
6	Slack pullar 1 1/2" × 200	774 044	ea	6	6	12	12	12	12	18	18	18	18	24	24	24	24	24	30	30		
7	Guy wire 52 mm ²	774 032	m	45	60	110	130	150	170	195	290	310	345	375	400	550	580	615	660	695	885	930
8 A	Anchor hook Ø 19	774 021	ea	3	3	6	6	6	6	9	9	9	9	12	12	12	12	12	15	15		
8 B	Rock bolt	774 015	ea	3	3	6	6	6	6	9	9	9	9	12	12	12	12	12	15	15		
8 C	Stay block	774 086	ea	3	3	6	6	6	6	9	9	9	9	12	12	12	12	12	15	15		
	Gross weight		kgs	257	316	406	467	502	563	601	742	777	848	887	951	1130	1161	1204	1279	1322	1513	1562
	Volume		m ³	2,3	2,9	2,9	4,1	4,1	6,3	6,3	6,9	8,1	8,1	8,7	8,7	9,9	9,3	10,5	11,1	11,1		

Foundations

Drawings for standard foundations, dimensioned for a minimum permitted soil pressure of 2 kp/cm², are delivered free of charge upon receipt of order. The base plate of the mast is to be used as template for the correct positioning of the mast foundation bolts.

Mast foundations

Depending on soil conditions and special request, one of the following alternatives can be selected:

Soil foundation (concrete)

Mast type	Foundation Drawing no.	Concrete Volume	Reinforcement irons
28/288	X 831008	1,3 m ³	42 kgs
35/368	X 831008	1,3 m ³	42 kgs
50/500	X 830424	2,0 m ³	60 kgs

Rock foundation (soil covered rock)

For all types: Drawing X-831015. Volume and reinforcement depending from height above rock level.

Rock foundation (for rock above soil level)

For all mast types: Drawing X-831016

Guy foundations

Depending from different soil conditions and special requirements one of the following alternatives can be selected:

Soil foundation (concrete)

Depending from number of guys and area of guy wires, one of the following alternatives should be selected (please also refer specifications above):

Number of guys per foundation	Guy area mm ²	Foundation drawing no.	Concrete volume m ³	Reinforcement iron kg
1	25	X-831017	1,5	100
1	50	X-831017	1,5	100
2	25	X-831017	1,5	100
2	50	X-830425	2,4	144
3	50	X-830254	3,1	182

Eye bolts for solid rock

Please see specifications above.

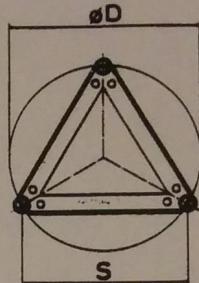
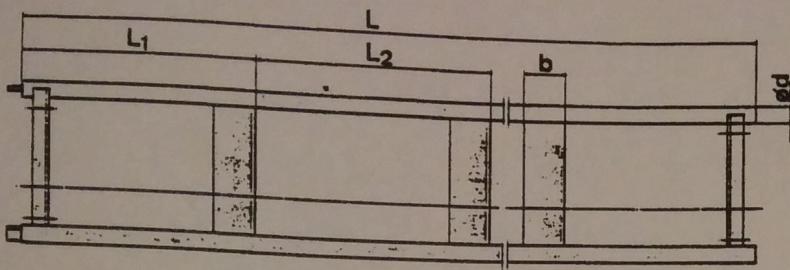
Stay block (anchor)

Please see specifications above.

Note: This design shall be used in soft soil.

Mast sections dimensions

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	L	Art.no.	L ₁	L ₂	b	Ø d	Ø D	S
Mast sect. 28/288	3000	770 010	285	310	50	28	288	250
M. sect. 35/388	3000	770 110	410	320	60	35	368	319
M. sect. 50/500	3000	770 310	340	400	80	50	500	433
Mast sect. 28/288	6000	770 012	390	310	50	28	288	250
Mast sect. 35/388	6000	770 112	310	320	60	35	368	319
Mast sect. 50/500	6000	770 312	440	400	80	50	500	433

All measures in mm.



AB WIBE
STEEL DIVISION

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