

#### Jordforbindelse:

#### Metalfartøjer:

Hvis anlægget monteres på et metalskot, er det tilstrækkeligt at sørge for god forbindelse mellem anlæggets jordklemme (i bunden af sendekassen) og skottet. Det forudsættes, at skottet er svejset til ruftag og dæk. Er dette ikke tilfældet (aluminiumsruftag på ståldæk), skal effektiv strapning foretages for hver meter.

Hvis ruffet er af træ, skal det nederste jordbånd føres til dæk, medens det øverste føres til eventuelle store metalkonstruktioner, som findes på ruftaget (f.eks. rækværk, mast, skorsten). Findes ingen metalemnner på ruftag, kan øverste jordbånd udelades.

#### Træ- glasfiberfartøjer:

Det er ofte vanskeligt at opnå en god jord i sådanne fartøjer, følgende retningslinier er gældende.

Nederste jordbånd føres til en min. 1 m<sup>2</sup> kobberplade, som er anbragt udvendigt på skroget under vandlinien. Store metaldele såsom motorfundament, vandtanke, brændstoftanke, motor osv. forbindes også til senderens jordklemme. Forbindelserne mellem sender og de enkelte metaldele skal være så kort som overhovedet muligt. Det vil derfor ofte være en fordel at føre et separat jordbånd fra hver metaldel til senderen.

Har fartøjet metalstyrehus, skal der skabes en effektiv forbindelse mellem senderens jordsystem og styrehuset. Hvis styrehuset er af træ, skal øverste jordbånd forbindes som beskrevet under metalfartøjer.

Coaxkabel til modtagerens antenneindgang. Skærmen forbindes kun ved modtagerens antennestik. Laves så kort som muligt og ikke længere end antennelængde målt fra gennemføring. Høj ohms kabel f.eks. RG63.

Jordbånd

min. 50x1 mm

T121  
T122  
T126  
T128

R103  
R104  
R105  
R106

Jordbånd

Antennetråd

Antennegennemføring

Antennegennemføring

Isolator

Stand-off isolator

Feeder

Antenneomskifter

#### Pos. Rx:

Tilsluttes eventuel ekstramodtager. Coaxkabel skærmen jordes kun ved modtager.

#### Pos. DF:

Tilsluttes ikke. Mikroswitch aktiveres, når denne pos. benyttes, og hæver blokering af DF modtager.

#### Feeder:

Feederen udføres i enten  $\phi 6$  kobberør eller i stiv isoleret ledning f.eks. 7x1,5 (10 mm<sup>2</sup>) Feederens samlede længde målt fra antenne gennemføring via antenneomskifter til senderens antenneudgang må ikke overstige 15% af antennens samlede længde målt fra senderen.

#### Batterikabler:

Kabellængde mellem station og batteri	Min. kabel tværsnit.
under 6 meter	10 mm <sup>2</sup>
6 - 10 meter	16 mm <sup>2</sup>
10 - 16 meter	25 mm <sup>2</sup>

Fig. 1. KYSTTELEFONI INSTALLATION

½ S. P. RADIO  
AALBORG

EMNE

VHF-Antenne type A 161

VHF-Aerial typ A 161

KODE

DATO 9 Feb 1979

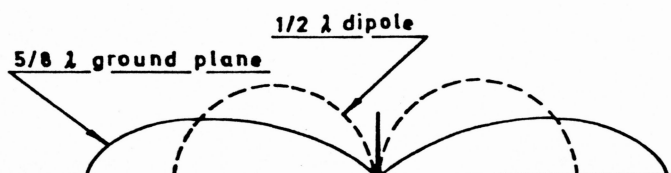
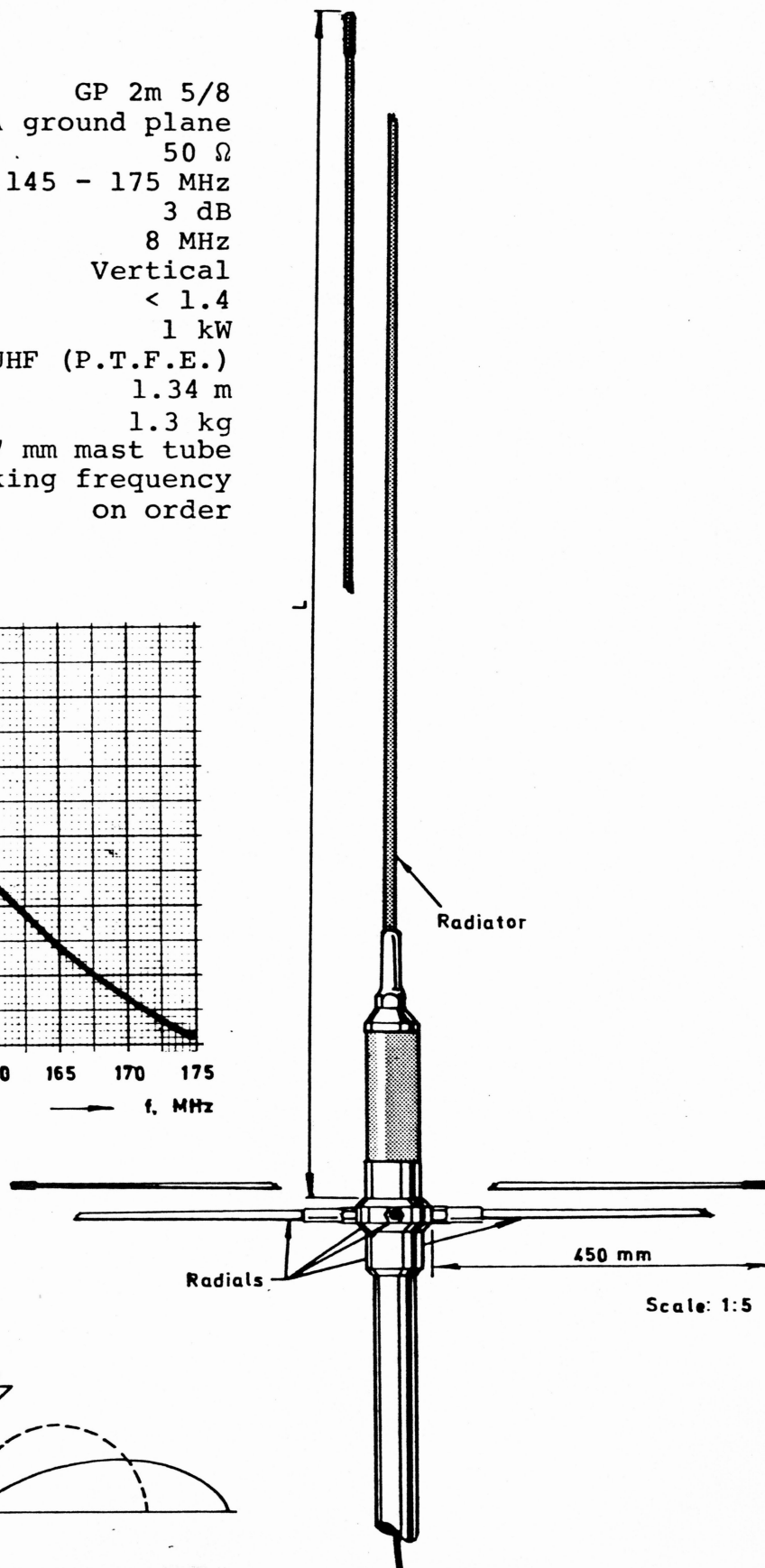
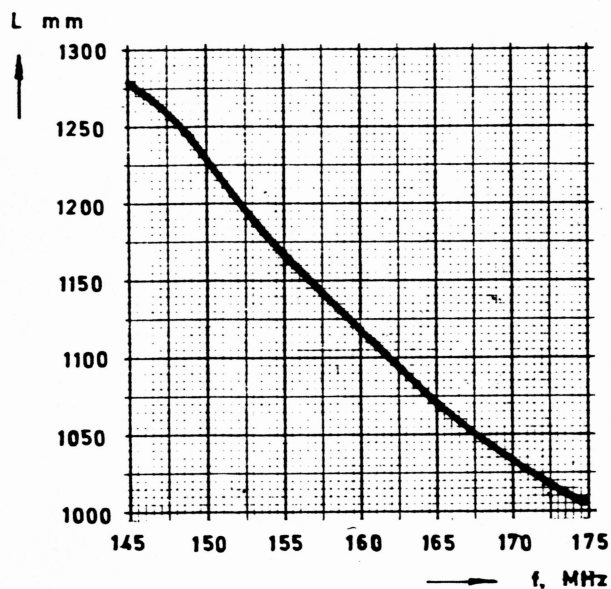
SIGN. Dantoft

SIDE

5/8 Ground-Plane Antenna.

designed for mounting on 27 mm diam. mast.

MODEL: GP 2m 5/8  
ANTENNA TYPE: 5/8λ ground plane  
IMPEDANCE: 50 Ω  
FREQUENCY: 145 - 175 MHz  
GAIN: 3 dB  
BAND WIDTH: 8 MHz  
POLARISATION: Vertical  
SWR: < 1.4  
MAX. EFFECT: 1 kW  
CONNECTOR: UHF (P.T.F.E.)  
TOTAL LENGTH: 1.34 m  
WEIGHT: 1.3 kg  
MOUNTING: 27 mm mast tube  
NOTE! Specify working frequency  
on order





1/2 S. P. RADIO  
AALBORG

EMNE

Stavantenne type KUM 480

Whip Aerial type KUM 480

KODE

DATO 5 Feb. 1979

SIGN. Dantoft

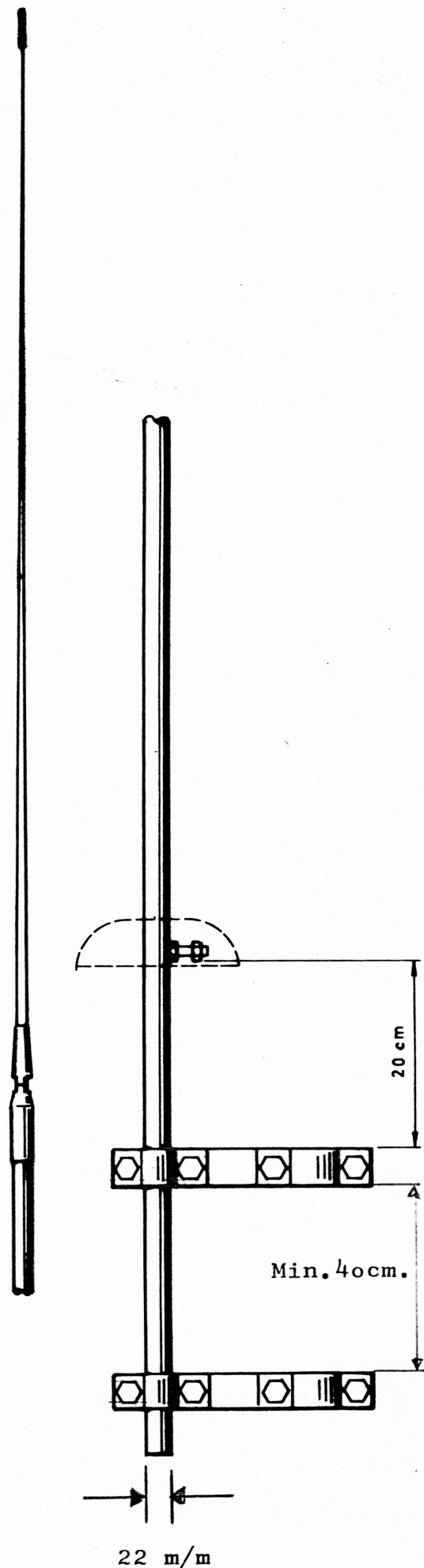
SIDE

Marine whip aerial for mast-mounting.

Antenna can be delivered with clamp in 3 different dimensions.

Materials are reinforced polyester fibre and stainless steel.

MODEL: KUM 480  
ANTENNA TYPE: Stick-antenna  
FREQUENCY RANGE: 1,4-25 MHz  
INSULATION RESISTANCE:  $10^9 \Omega$   
STATIC CAPACITY: Approx. 55 pF  
MAX. HF-VOLTAGE: 9 KV  
LENGTH: 500 cm  
WEIGHT: 2 kg  
MOUNTING: 30-50 mm, 50-80 mm or  
80-100 mm clamps



1/2 S. P. RADIO  
AALBORG

EMNE

Stavantenne type KUM 850

Whip Aerial type KUM 850

KODE

DATO 5 Feb.1979

SIGN. Dantoft

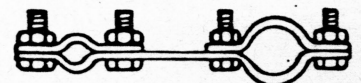
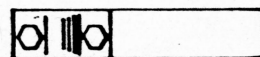
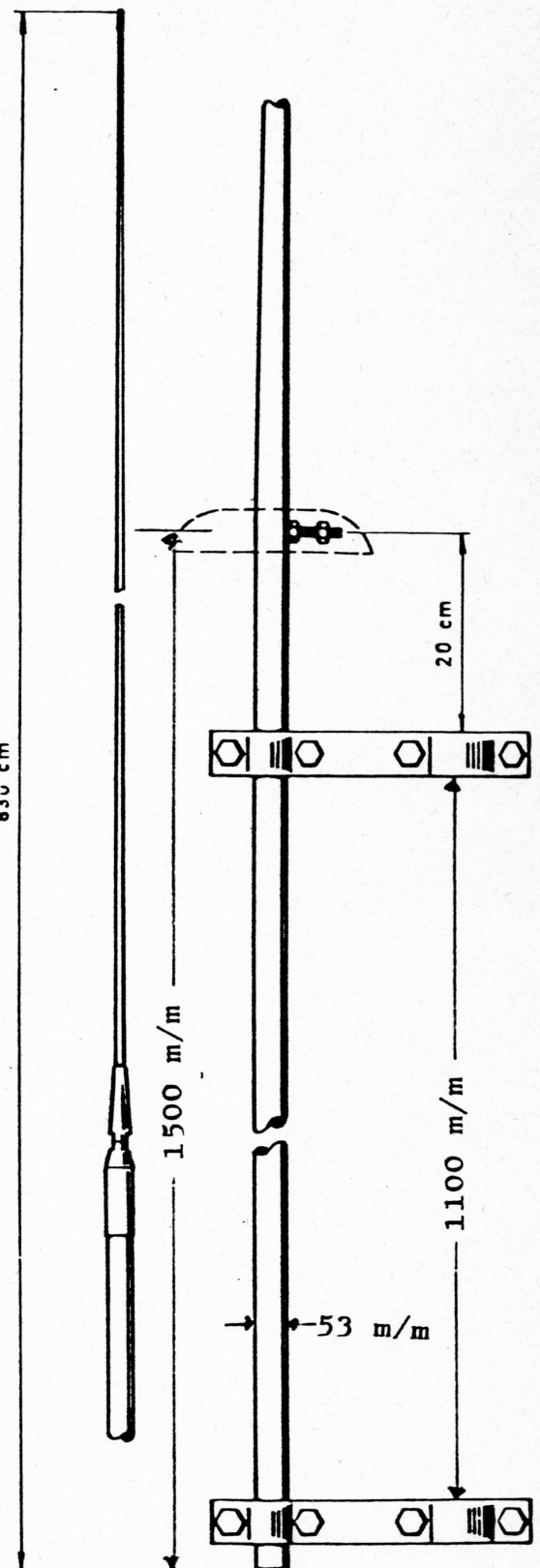
SIDE

Marine whip aerial for mastmounting.  
Antenna can be delivered with hard-  
ware for welding or clamping.

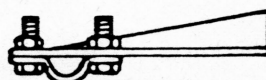
Materials are reinforced polyester  
fibre with cast-in sturdy polycore  
copper conductor.

MODEL: KUM 850  
ANTENNA TYPE: Stick-antenna  
FREQUENCY RANGE: 1,4-25 MHz  
INSULATION RESISTANCE:  $10^9 \Omega$   
STATIC CAPACITY: approx. 98 pF  
MAX. HF-VOLTAGE: 18 KV  
LENGTH: 8,5 m  
WEIGHT: 8500 g  
MOUNTINGS: Hardware for welding or  
clamps for fitting on  
mast (50-75 mm)

830 cm



Mounting clamp



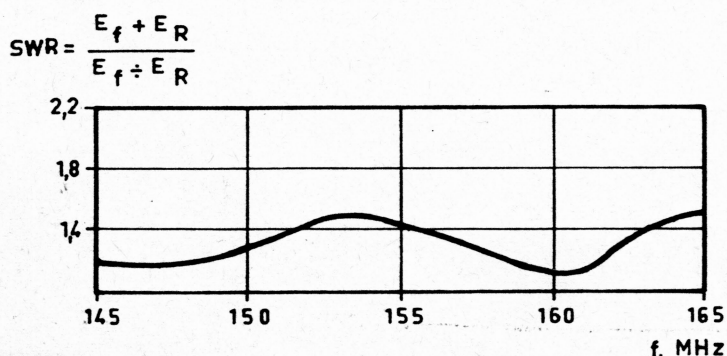
Hardware for welding

<b>% S. P. RADIO</b> AALBORG	EMNE <b>VHF-Antenne type A 151</b>  <b>VHF-Aerial</b>	KODE DATO 1 Juni 1979 SIGN. KD	SIDE
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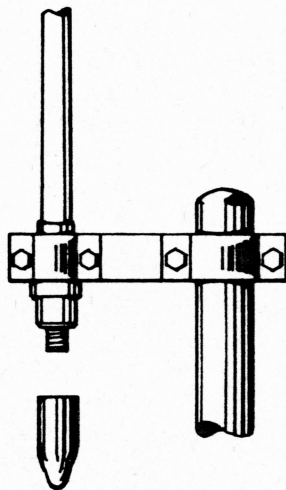
A maritime- and base antenna.  
 Antenna element mounted in watertight fibreglass tubing of highest quality.  
 Antenna is anti-static protected.  
 Antenna mounting is chromed brass.

MODEL:	CX 4
ANTENNA TYPE:	Coaxial broad band
IMPEDANCE:	50 $\Omega$
FREQUENCY:	145-165 MHz
GAIN:	0 dB
BAND WIDTH:	20 MHz
POLARISATION:	Vertical
SWR:	< 1,6
MAX. EFFECT:	100 W
CONNECTOR:	UHF (teflon)
WEIGHT:	500 g
MOUNTING:	1" mast tube or side-mounting
DIAMETER IN BOTTOM END:-	18 mm
DIAMETER IN TOP END:	9 mm
TOTAL LENGTH:	1,18 m

OBS! Side-mounting fittings are ordered separately.



Typical SWR-curve for CX 4.





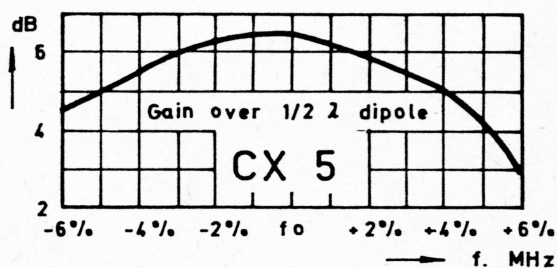
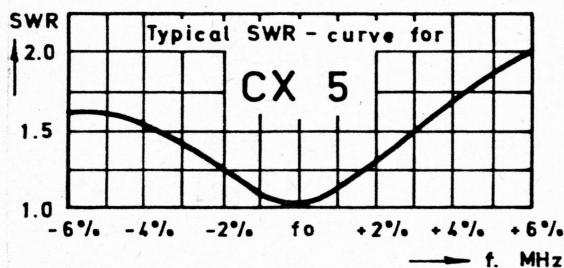
## VHF 6 dB glassfibre colinear

A new development in high gain glassfibre colinear arrays.

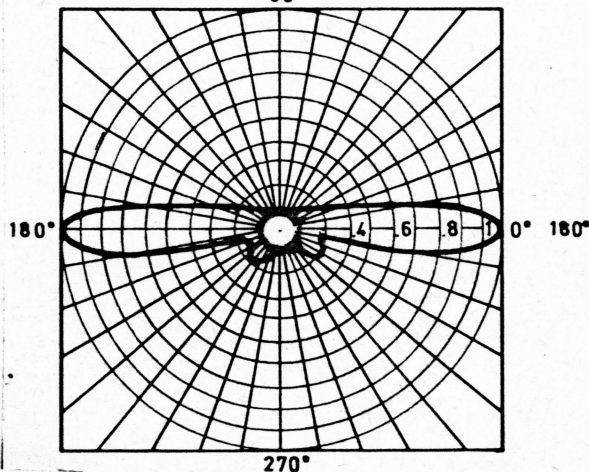
With the new patented 'phase inverters' it has been possible to reduce the overall height of the colinear to between 4,8 - 5,5 m.

Careful attention to the phasing of the radiators has insured maximum horizontal gain with minimum spurious lobes.

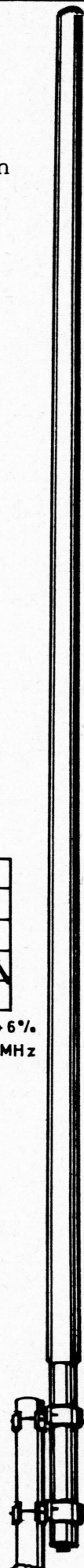
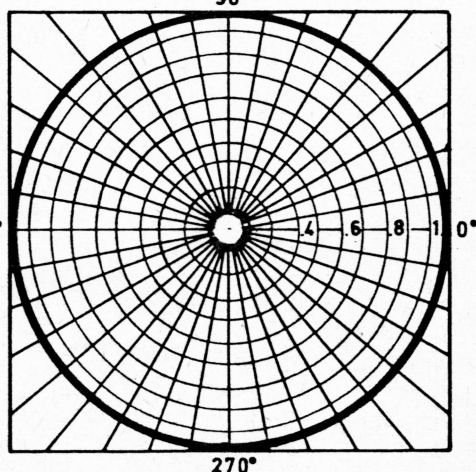
MODEL:	CX 5
FREQUENCY:	146-175 MHz (state centre frequency required)
IMPEDANCE:	50 $\Omega$
SWR:	< 1,5
MAX: EFFECT:	150 W
POLARISATION:	Vertical
BANDWIDTH:	$\pm 2\frac{1}{2}\%$
GAIN:	6 dB
HALF-POWER BEAMWIDTH:	(Vertical) 20°
CONNECTOR:	"N" type socket
MOUNTING:	Max. 48 mm
DIAMETER IN BOTTOM END:	60 mm
DIAMETER IN TOP END:	32 mm
ELEMENTS:	Brass
WEIGHT:	6,6 kg
LENGTH:	4,8-5,5 m
	(depending on frequency)
WIND LOADING:	28 Kp (V=160 Km/h)



POLAR DIAGRAM E PLANE  
90°



POLAR DIAGRAM H PLANE  
90°



**S. P. RADIO**  
AALBORG

EMNE

VHF-Mobil Antenna

Type TA-S

KODE

DATO 1 Juni 1979

SIGN. KD

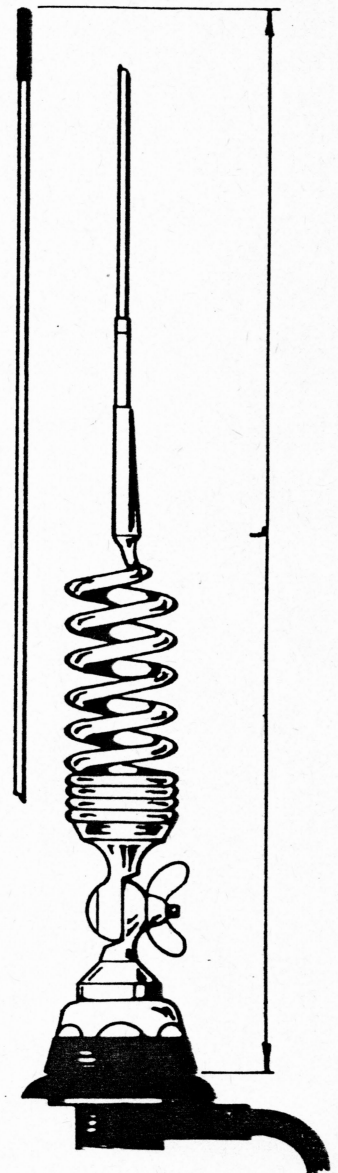
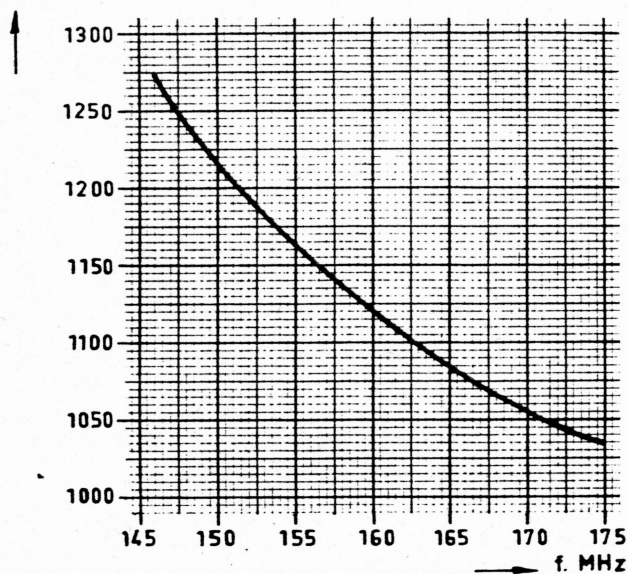
SIDE

2m  $5/8\lambda$  mobile antenna with tiltable ball-joint and fibre-glass whip.

Materials are stainless steel, chromed brass and armed fibreglass polyester.

MODEL:	TA-S
ANTENNA TYPE:	$5/8\lambda$ mobile antenna
IMPEDANCE:	50 $\Omega$
FREQUENCY:	145-175 MHz
GAIN:	3 dB
BAND WIDTH:	5 MHz
POLARIZATION:	Vertical
SWR:	< 1,3
WEIGHT:	275 gr
MOUNTING HOLE DIA.:	24 mm

L mm



½ S. P. RADIO  
AALBORG

EMNE

VHF-Antenne type CX 3

VHF-Aerial type CX 3

KODE

DATO 6 Juni 1979

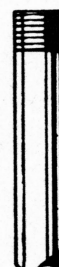
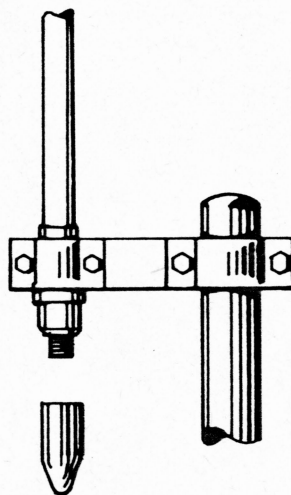
SIGN. KD

SIDE

A maritime- and base antenna with 3 dB gain.  
Antenna element mounted in watertight fibreglass tubing of highest quality.  
Antenna is anti-static protected.  
Antenna mounting is chromed brass.

MODEL: CX 3  
ANTENNA TYPE: Colinear  
IMPEDANCE: 50  $\Omega$   
FREQUENCY: 155-165 MHz  
GAIN: 3 dB  
BAND WIDTH: 10 MHz  
POLARISATION: Vertical  
SWR: < 1,5  
MAX. EFFECT: 100 W  
CONNECTOR: UHF (teflon)  
WEIGHT: 900 g  
MOUNTING: 1" mast tube or side-mounting  
DIAMETER IN BOTTOM END: 18 mm  
DIAMETER IN TOP END: 9 mm  
TOTAL LENGTH: 1,65 m

OBS! Side-mounting fittings are ordered separately





½ S. P. RADIO  
AALBORG

EMNE

FM-AM-Antenne

FM-A M-Aerial

KODE

DATO 6 Juni 1979

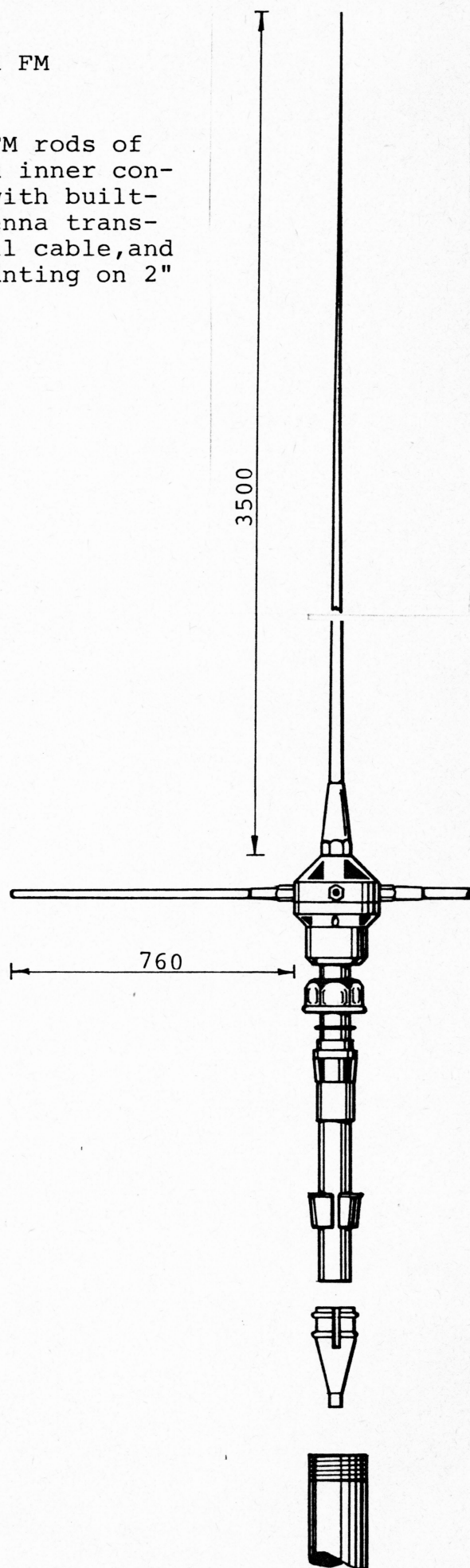
SIGN. KD

SIDE

Ships multipoint antenna for AM and FM  
broadcast reception

Comprising: 3,5 m AM-rod and four FM rods of  
reinforced glassfibre with drawn-in inner con-  
ductor, watertight terminal block with built-  
in lightning protection, AM-FM antenna trans-  
former and terminal for 75  $\Omega$  coaxial cable, and  
steel tube mounting section for mounting on 2"  
water pipe.

MODEL: AM - FM  
ANTENNA TYPE: AM and FM  
broadcast antenna  
IMPEDANCE: 75  $\Omega$   
FREQUENCY AM: 0,15-30 MHz  
FREQUENCY FM: 88-104 MHz  
BAND WIDTH FM: 16 MHz  
POLARISATION AM: Vertical  
POLARISATION FM: Horizontal  
SWR FM: < 1.6  
CONNECTOR: UHF  
TOTAL LENGTH: 4.10 m  
WEIGHT: 4,2 kg  
MOUNTING: 2" water pipe



MABC 1 (Main Aerial/Broadcast) is an active antenna for ordinary broadcast receiving (LW, MW, SW and FM-bands) specially developed for marine use. It is particularly suitable for pleasure crafts, where it can be difficult to establish regular receiving antennas of conventional type.

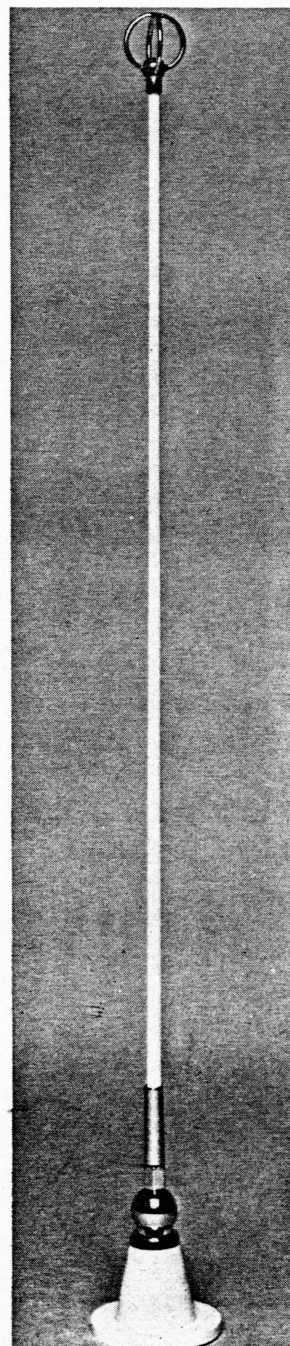
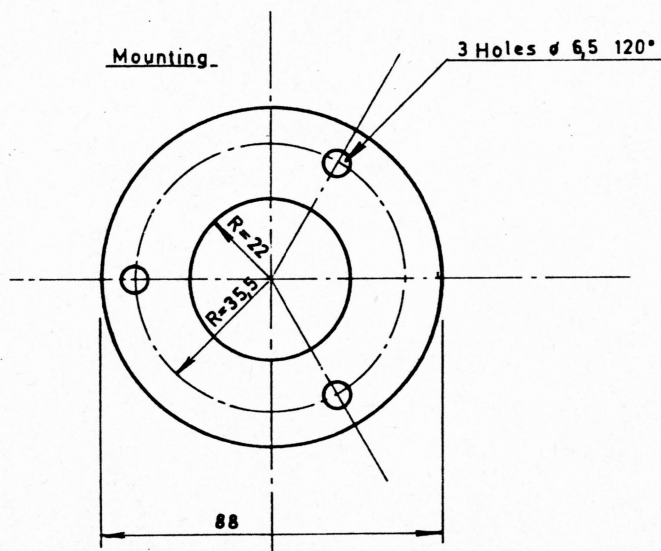
This active antenna is characteristic by having very small physical sizes, max. high is 85 cm. This has been made possible because of the two transistor amplifiers built into the antenna mount.

AM & FM signals are dispersed via a lowpass- and a bandpass filter to the respective amplifiers where they are amplified and, via coaxial cable, led to carradio or portable.

The amplifiers are secured against cross- and intermodulation by means of the built-in filters preceding the amplifiers, and negative feed back and the composition of FET- and bipolar transistors, respectively, in order to obtain a dynamic working point.

The antenna is made from fibreglass and chromed brass, the mount is made from macrolon.

MODEL:	MABC 1
ANTENNA TYPE:	AM and FM active broadcast antenna
FREQUENCY AM:	0,15 - 30 MHz
GAIN AM:	15 dB
FREQUENCY FM:	87 - 104 MHz
GAIN FM:	20 dB
SUPPLY VOLTAGE:	12 - 24 VDC
CONSUMPTION:	approx. 10 mA
TOTAL LENGTH:	approx. 85 cm
WEIGHT:	600 gr
MOUNTING:	flange mounting (3 holes)



1/2 S. P. RADIO  
AALBORG

EMNE

Stavantenne type KUF 480  
for montering på Dæk.  
Whip-Aerial for Deck-Moun-  
ting.

KODE

DATO 5 Feb.1979

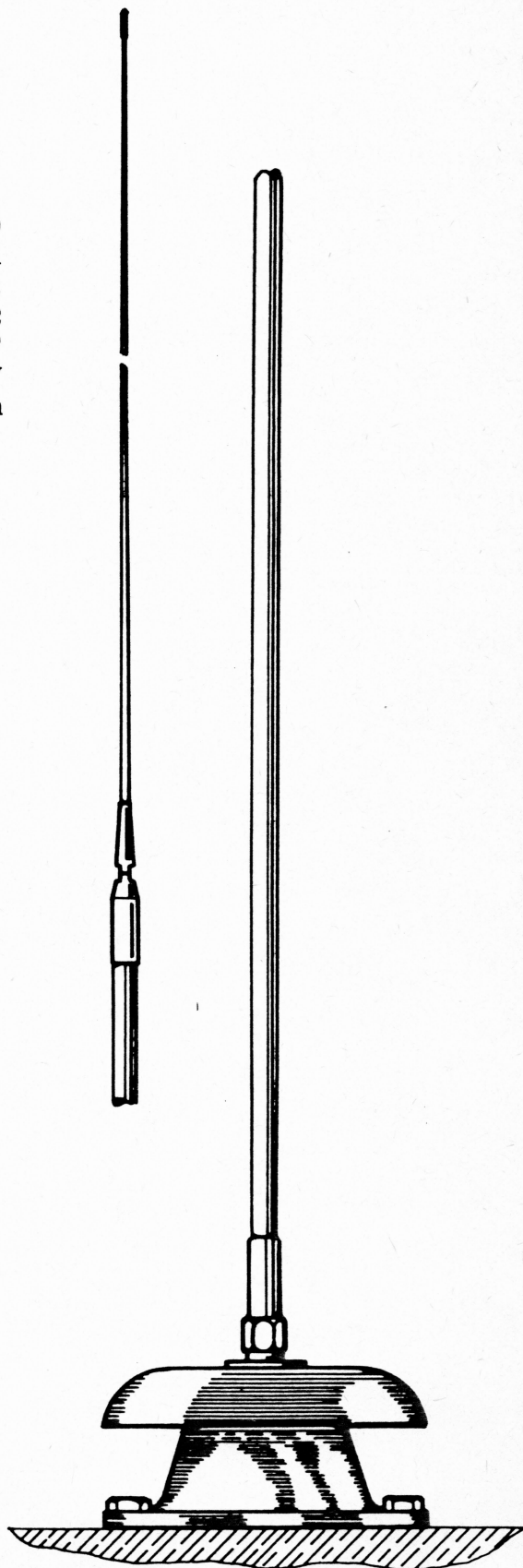
SIGN. Dantoft

SIDE

Same antenna as KUV 480 but  
without toggle-joint. for  
mounting on plane surface.

Materials are reinforced glass-  
fibre and stainless steel.

MODEL: KUF 480  
ANTENNA TYPE: Stick-antenna  
FREQUENCY RANGE: 1,4-25 MHz  
INSULATION RESISTANCE:  $10^9 \Omega$   
STATIC CAPACITY: Approx. 55 pF  
MAX. HF-VOLTAGE: 9 KV  
LENGTH: 500 cm  
WEIGHT: 3500 g





1/2 S. P. RADIO  
AALBORG

EMNE

Antennebox type H 1209

KODE

DATO 6 Juni 1979

SIGN. KD

SIDE

To be grounded  
effectively.

If metal mast  
to mast.

If wooden mast  
to cu-strip (50x1)  
fastened to the  
mast.

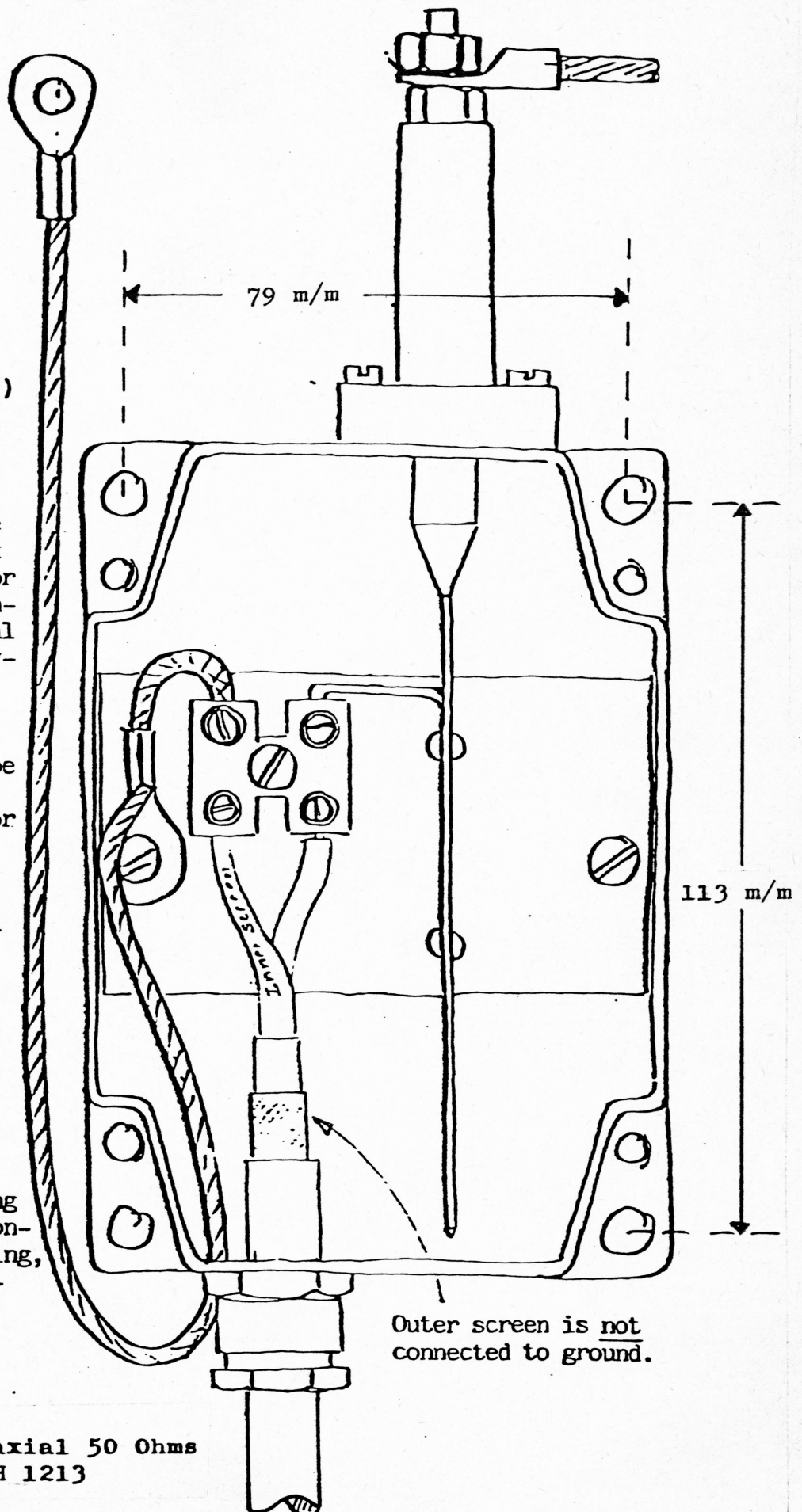
In the lower end  
the strip must be  
connected to deck  
(if metal ship) or  
to separate ground-  
ing system (equal  
to transmitter sy-  
stem) close to  
mast.

Metal mast must be  
connected to ei-  
ther metal hull or  
to grounding sy-  
stem.

All standing rig-  
ging must in top  
end be connected  
to metal mast or  
cu-strip and in  
lower end to me-  
tal mast, cu-  
strip or ground-  
ing system.

To avoid crackling  
noise make all con-  
nections by welding,  
bolting or solde-  
ring.

R.F. Cable: Triaxial 50 Ohms  
SP type H 1213



1/2 S. P. RADIO  
AALBORG

EMNE

Antenneomskifter type TEF

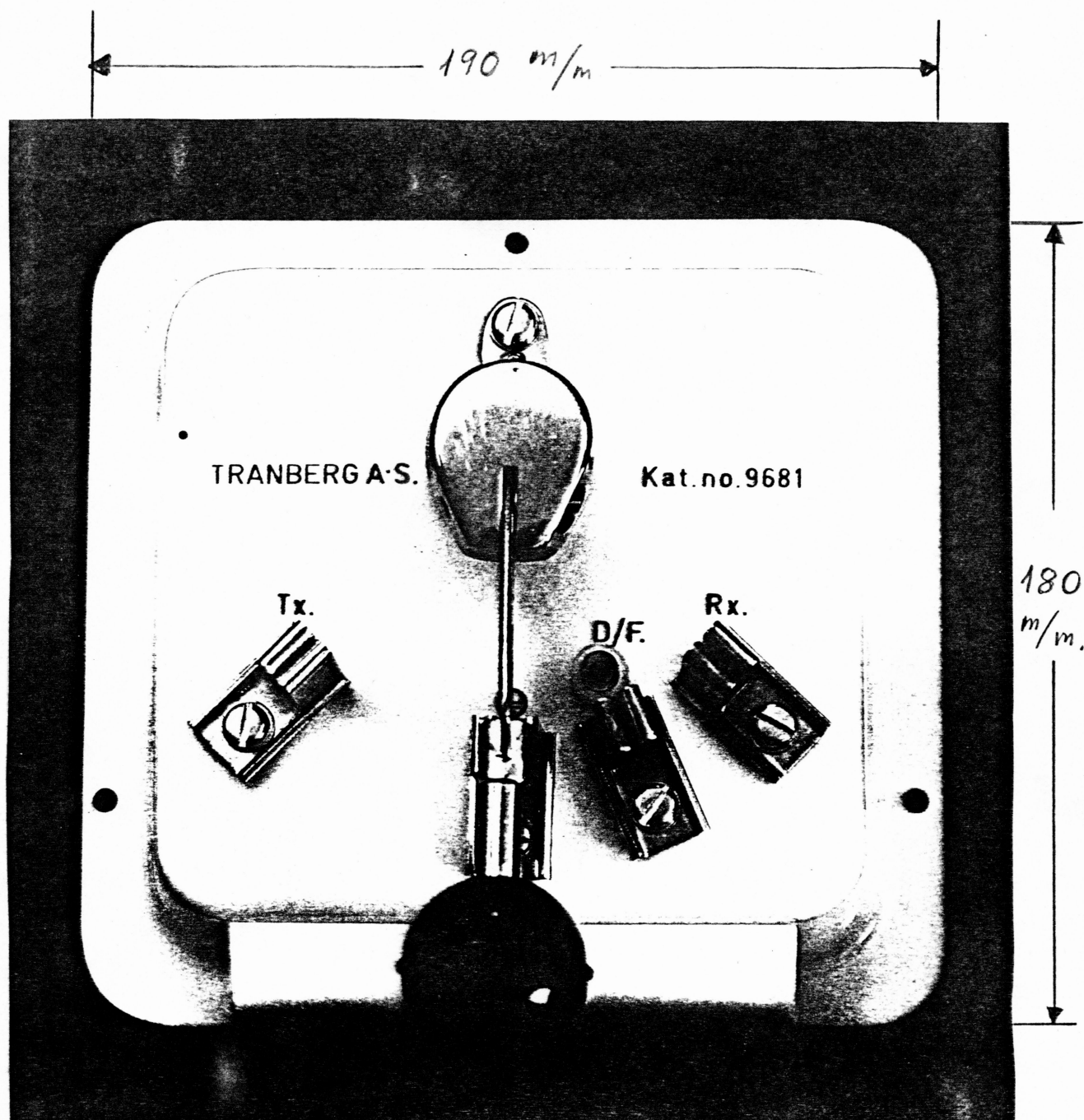
Antenna-Switch type TEF.

KODE

DATO 5 Feb.1979

SIGN. Dantoft

SIDE



1/2 S. P. RADIO  
AALBORG

EMNE

Dæksgennemføring type H 40

Deckinsulator

" "

KODE

DATO 1 Juni 1979

SIGN. KD

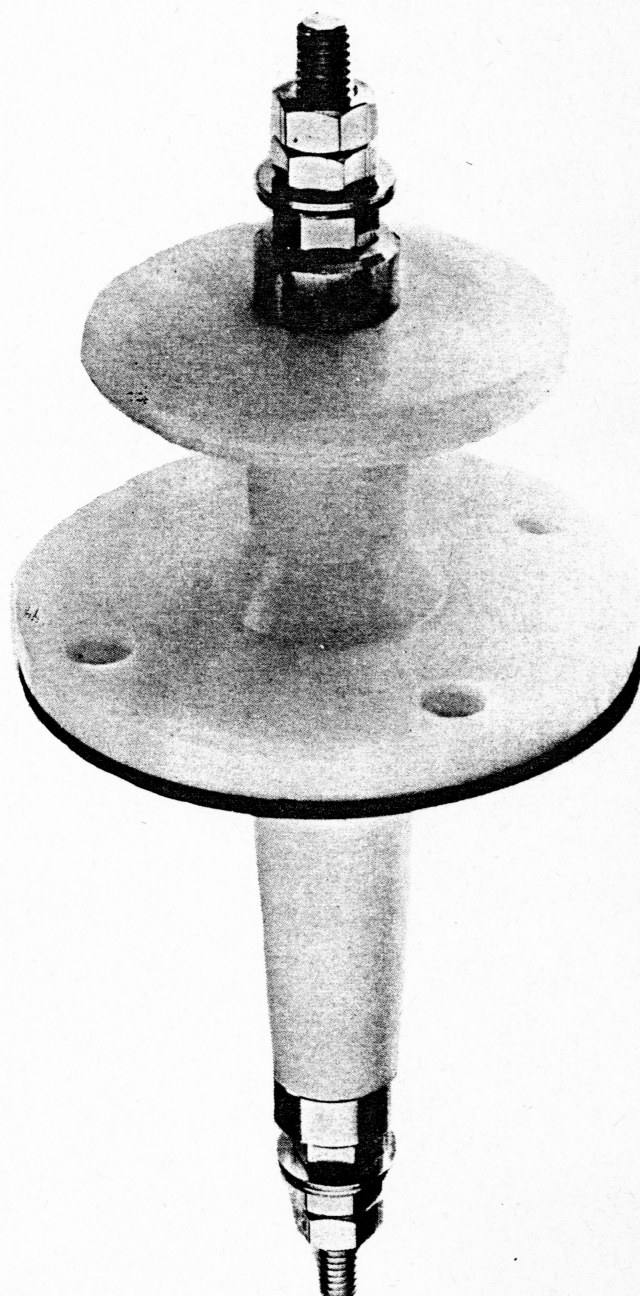
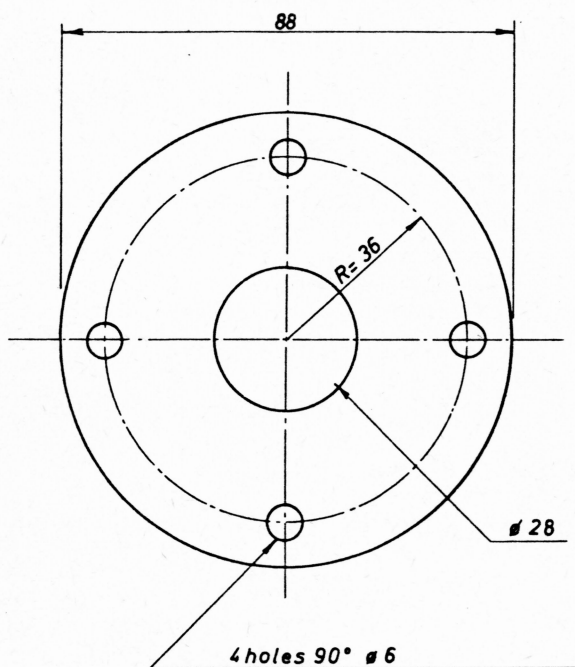
SIDE

This combined insulator/feed-through for wire antennas is made of Delrin and cro-med brass.

A Neoprene rubber packing to tighten between the feed-through and mounting surface is enclosed.

The feed-through is mainly designed for 400 Watts marine SSB equipment covering MF and HF.

### Mounting



TOTAL LENGTH: approx. 210 mm  
MAX. DIAMETER: 87,6 mm  
WEIGHT: 290 g

ORDER NO.: H 40



1/2 S. P. RADIO  
AALBORG

EMNE

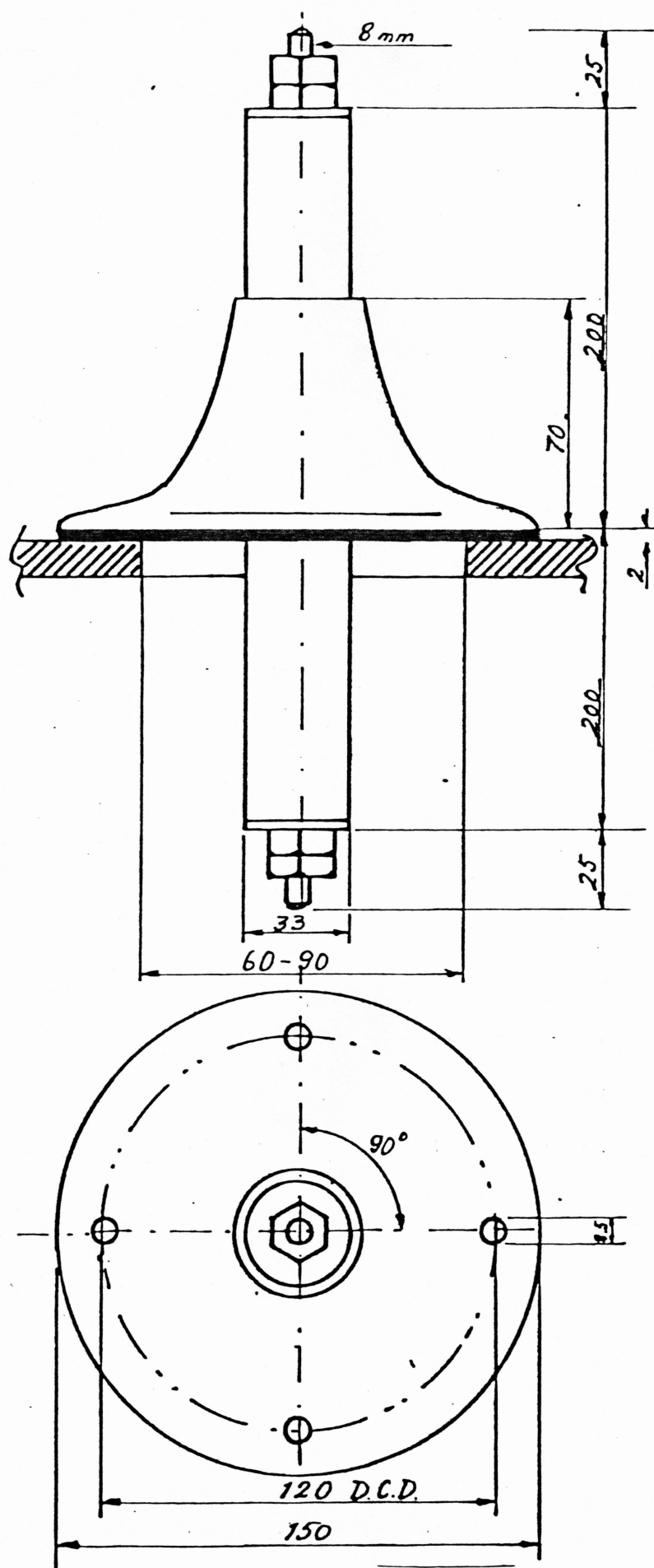
Dæksgennemføring type SG 02  
Deck-Insulator type SG 02

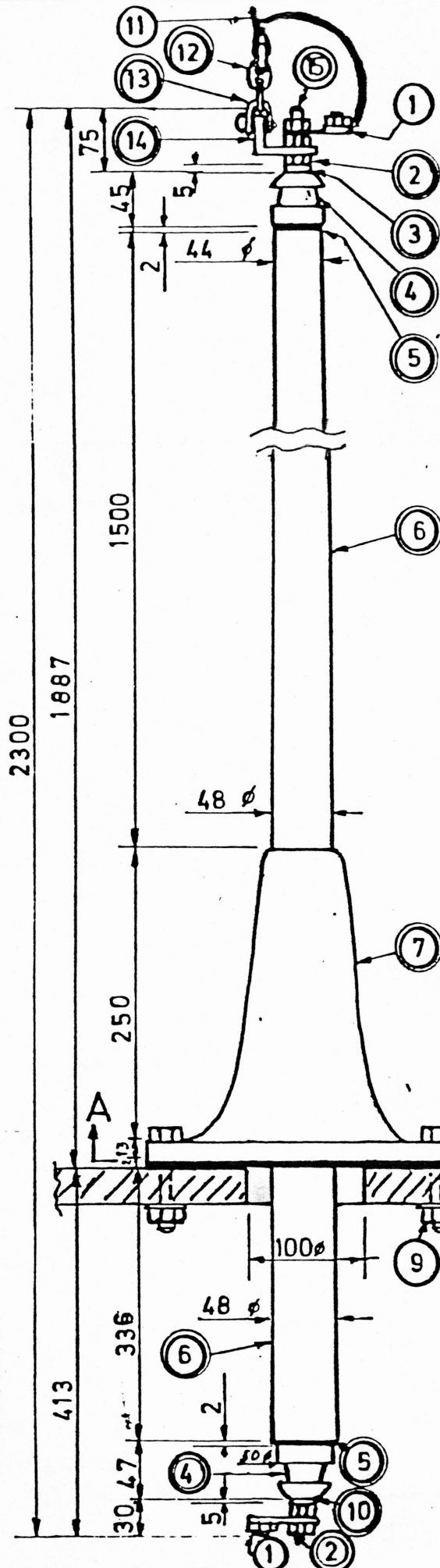
KODE

DATO 2 Feb. 1979

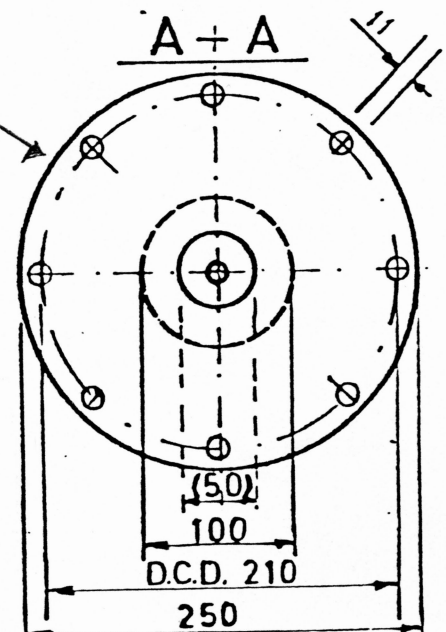
SIGN. Dantoft

SIDE





- ① Primodurekabelsko.  
Terminal tag.
- ② Mutter, messing M12.  
Nut, brass M12.
- ③ Skive messing A717 med Hatt-pakn. H043  
Washer, brass A717 with Hat Gasket H043
- ④ Isolator, porcelen 42801.  
Insulator Ceramic. 42801.
- ⑤ Neoprene-pakning 44 x 26 x 2.  
Neoprene Gasket 44 x 26 x 2.
- ⑥ Glasfiberrør A1002-25.  
Fiberglass tube A1002-25.
- ⑦ Flens press-støpt, glassfiber A211-1.  
Flange, pre-preg fiberglass, A211-1.
- ⑧ Bolt M10.
- ⑨ Mutter M10.  
Washer M10.
- ⑩ Skive, messing, A718.  
Washer, brass, A718.
- ⑪ Antennewire Isolert 7 x 7 x 0,6 mm.  
Antenna wire, Insulated 5-7 mm diam.
- ⑫ Strekkavlastningsisolator A102, nylon.  
Stretch Release Insulator A102, nylon.
- ⑬ Sjakkel, 37 mm, nylon.  
Shackle, 37 mm, nylon.
- ⑭ Feste for strekkavlastning, messing A416.  
Stretch Release Terminal, brass, A416.
- ⑮ Bolt, messing, gjennomgående A602.  
Through-bolt, brass, A602.



This mounting flange is used where a CX3 or a CX4 needs placing on a flat surface.

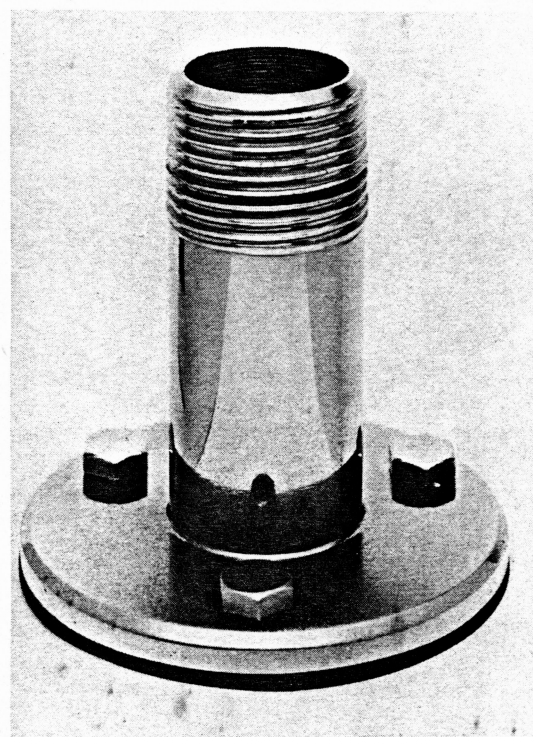
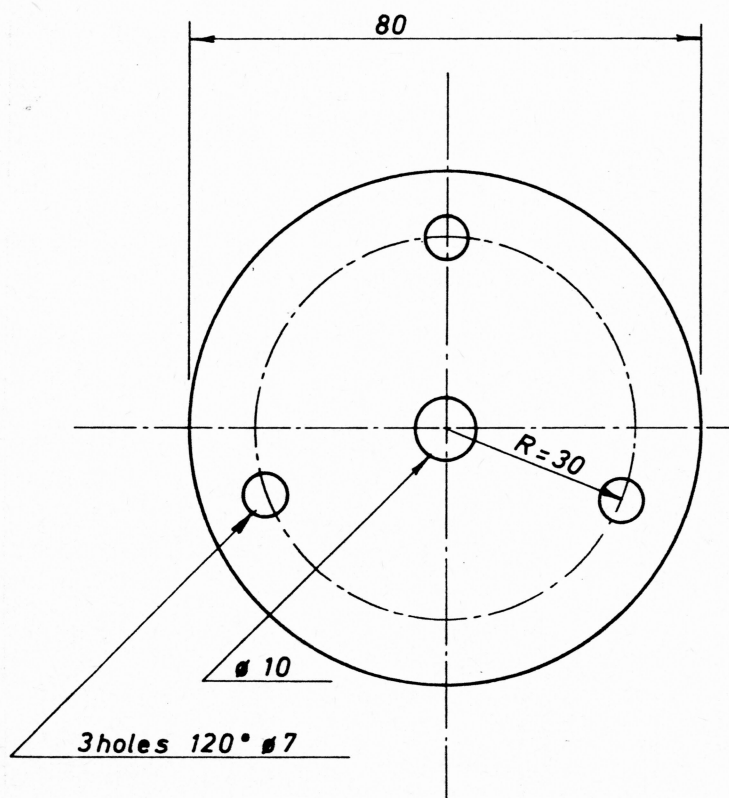
If the tiltable balljoint on a CX3K or a CX4K is not needed, this unit together with an ordinary CX3 or CX4 provides a better solution.

Flange is made from cromed brass with a rubber plate between base and unit.

The packaging contains 3 bolts and rubber packing.

HEIGHT: 85 mm  
DIA. OF FLANGE: 80 mm  
WEIGHT: 470 g

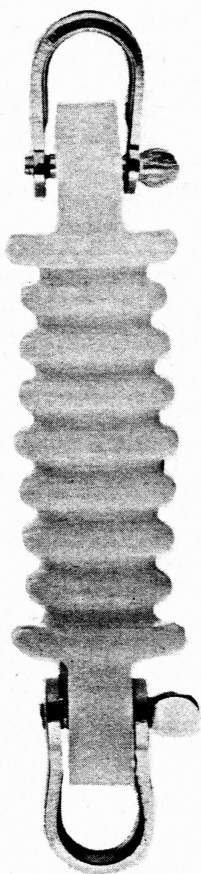
### *Mounting*



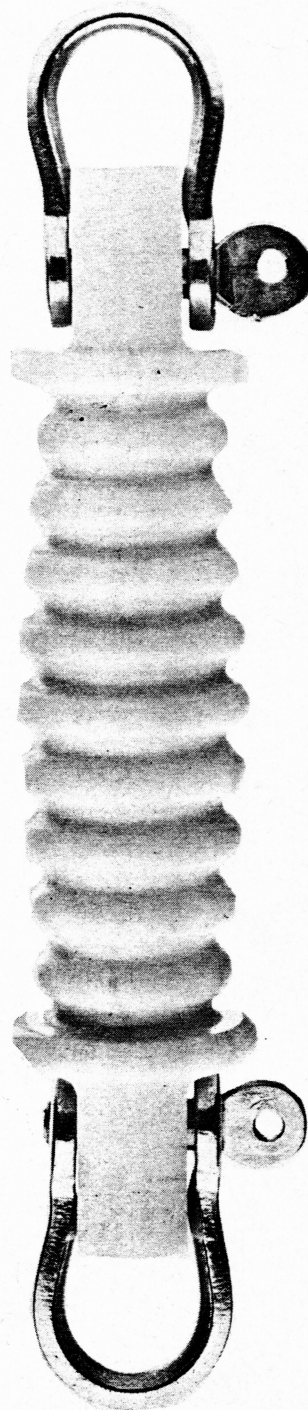
Order no.: E 179

Delrin insulators for wire antennas are especially used on board ships where outstanding high voltage insulating characteristics and high tensile strength are combined with rough resistance against highly corrosive environments.

The shackles are either hot galvanized or stainless steel. Please specify the wanted type when ordering.



Order no:  
H 25 galvanized  
H 26 stainless steel



Order no:  
H 20 galvanized

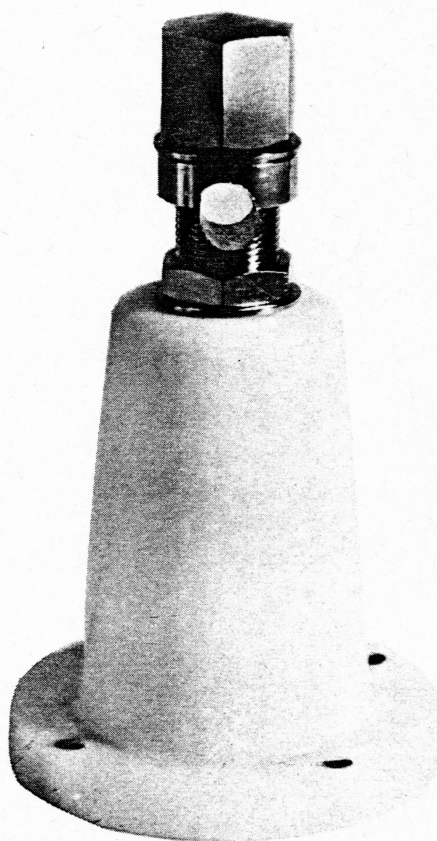
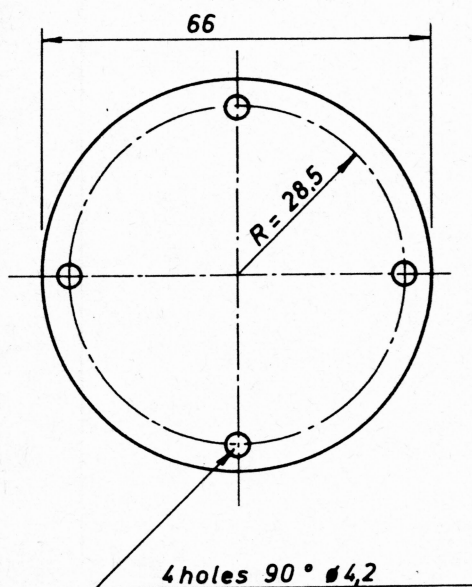


Stand-off for inside mounting in wheel house to avoid parasitic capacities on the feeder and to avoid flashover due to high voltage on the feeder.

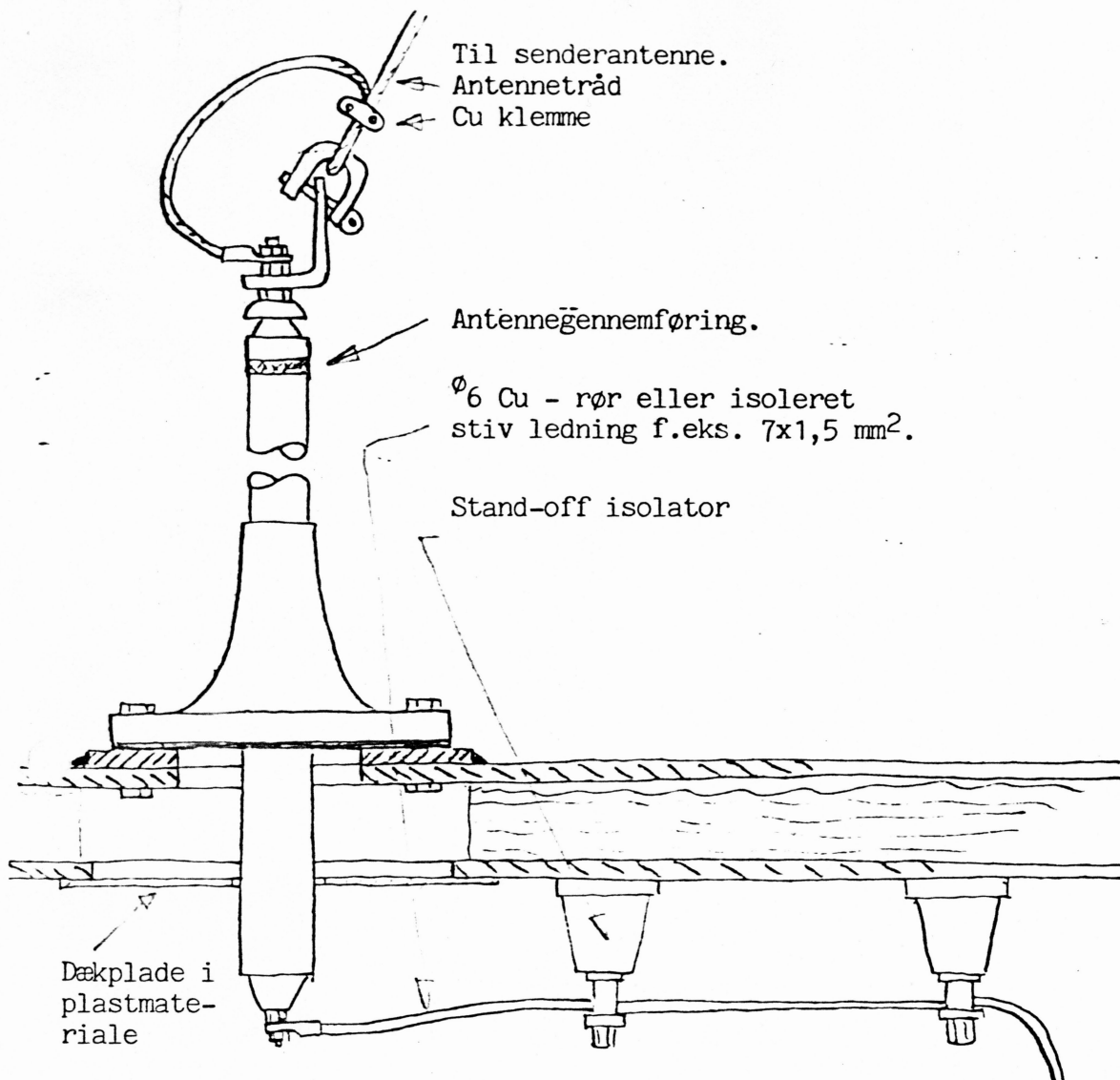
The insulator is made of Delrin and the fastening is made of cromed brass.

MAX. HEIGHT: 110 mm  
MAX. DIAMETER: 66 mm  
WEIGHT: 140 g

Mounting



Order no.: H 30



### Antenneomskifter

#### Pos. Rx.

Tilsluttes eventuel  
ekstra modtager. Coax.  
kabel, skærmen jordes  
kun ved modtager.

#### Pos. DF

Tilsluttes ikke. Mikro-  
switch aktiveres, når  
denne pos. benyttes og  
hæver blokering af DF  
modtager.

#### Pos. T

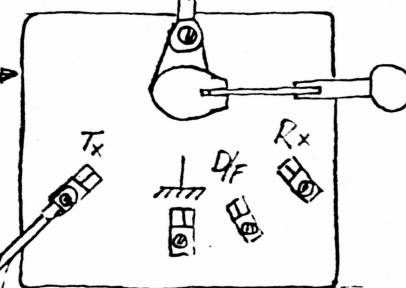
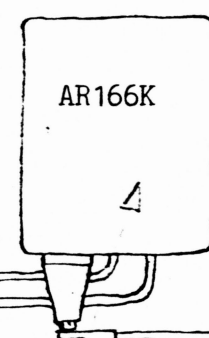
Tilsluttes senderens  
jordsystem.

Tilsluttes klemmerne  
mærket aerial relay  
på monteringspladen

Til modtager antenne-  
tilslutning på mon-  
teringsplade.

Antennerelæ AR166K benyttes  
kun ved simplex (én antenne)  
installationer.

### ANTENNE OMSKIFTER



OBS! Samlet feederlængde mellem  
senderudgang og antenne-  
gennemføring max. 15% af den  
samlede antennelængde målt  
fra sender.

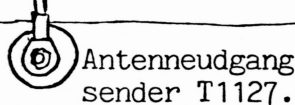


Fig. 2.

SENDER MONTERET MED ANTENNEOMSKIFTER.

SIMPLEX ELLER DUPLEX (KORTBØLGE).

(Ved Duplex se også fig. 3 og 4)



½ S. P. RADIO  
AALBORG

EMNE

Målskitse for SSB-Anlæg  
type T 126 / R 104/5/6

KODE

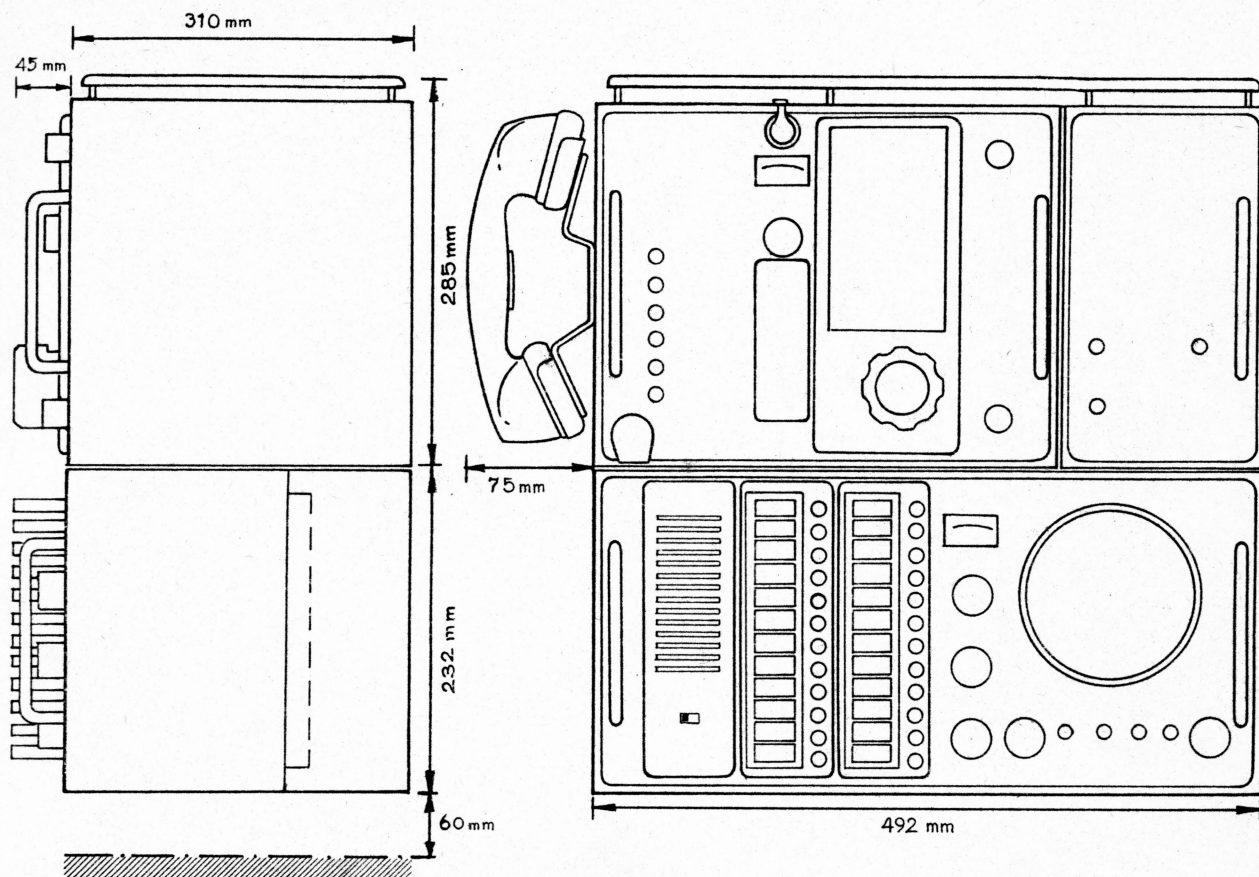
DATO 15 Feb 1979

SIGN.

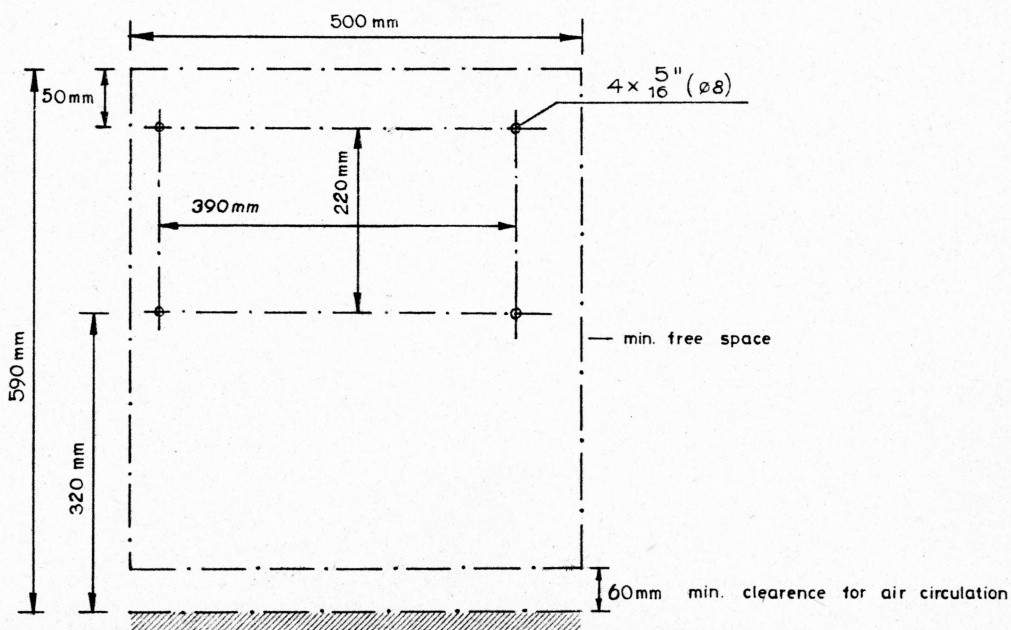
*Okun*

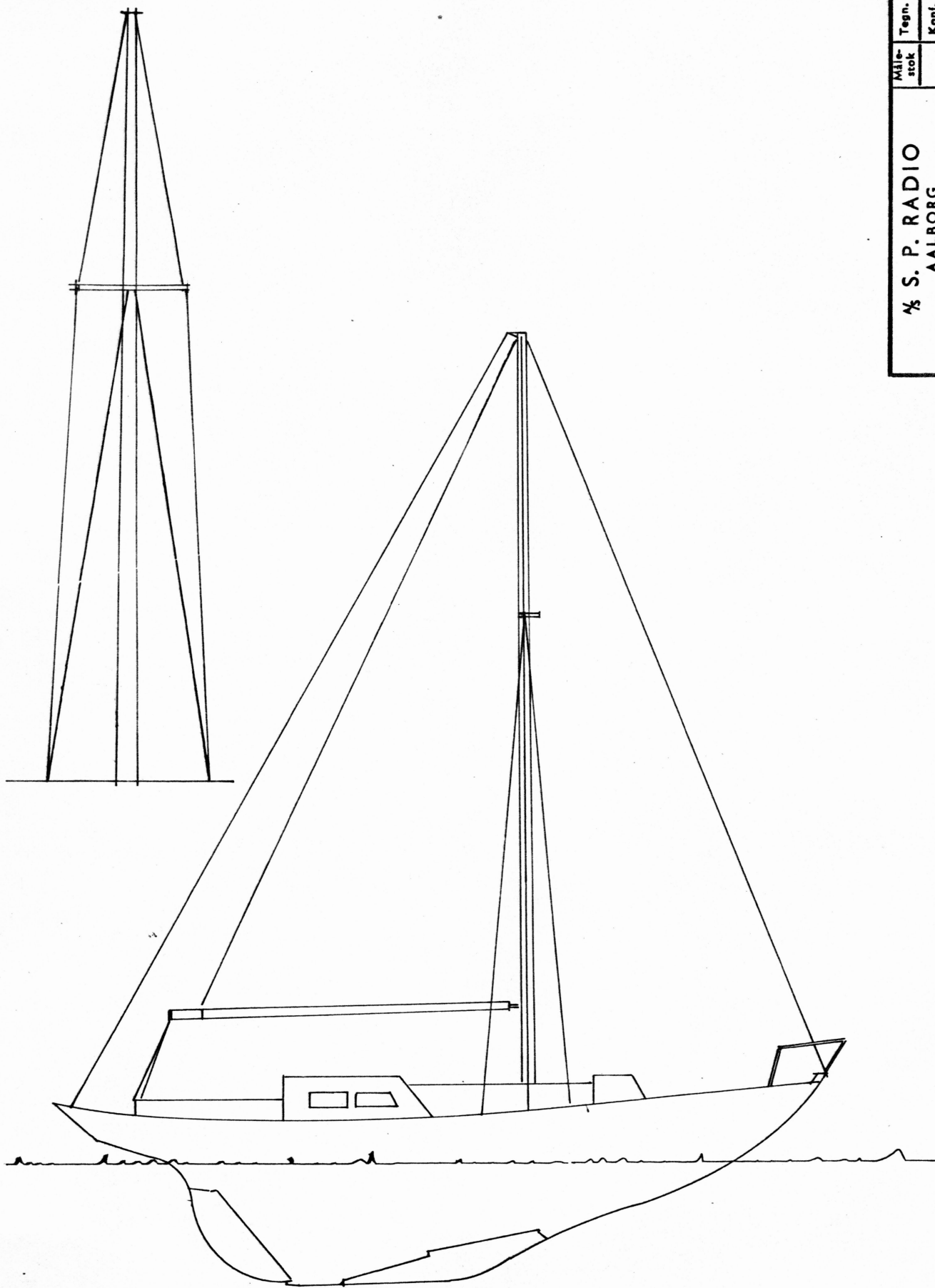
SIDE

Overall dimensions T126/R105 or  
T126/R106 or  
T126/R104 + L167



Mounting holes on bulkhead



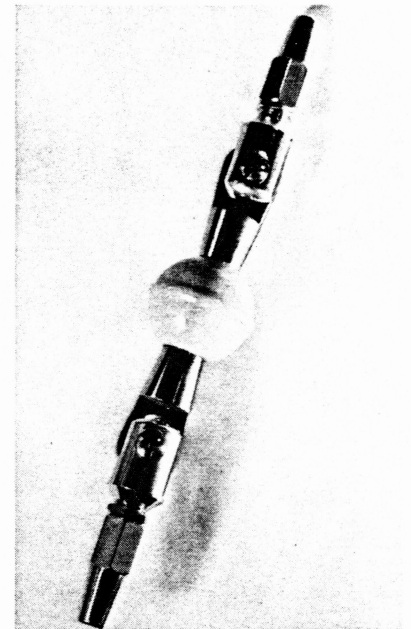
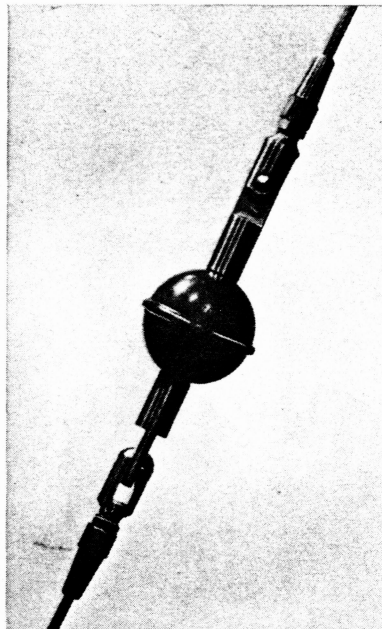
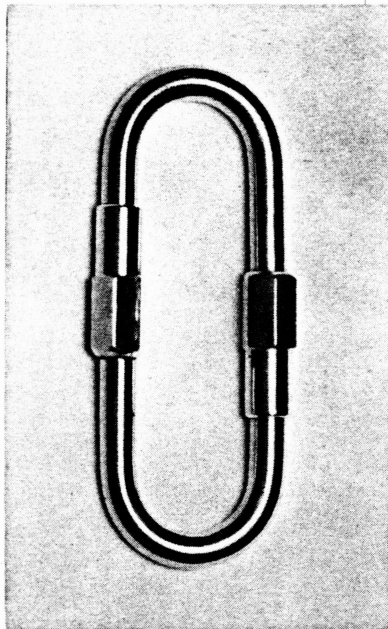


Måle- stok	Tegn.	204	F-
	Konf.	64	
Erstatning for:			
Erstatet af:			

1/2 S. P. RADIO  
AALBORG

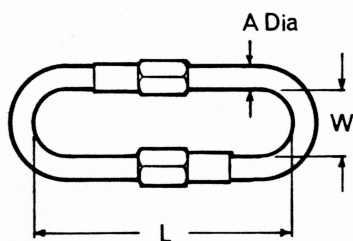
HAVKRYDSE

# rigging services



## Norselink

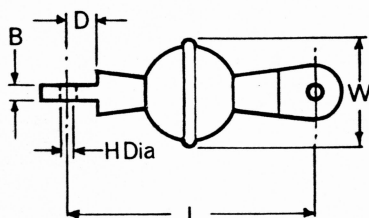
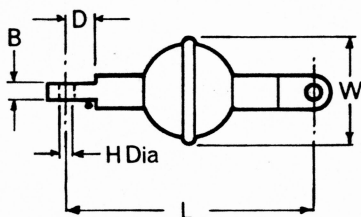
A very strong stainless steel link which can pivot through 360° on either arm for easy access. No protruding parts to foul ropes and gear, and no losable parts. Designed for single handed operation.



Size	A		L		W		Min. B/L × 1000		Shipping Weight	
	mm.	in.	mm.	in.	mm.	in.	kilo	lb.	kg.	lb.
5	4.76	0.188	62	2.44	15	.59	1.8	4	.03	.065
6	6.35	0.25	68	2.69	16.5	.65	2.7	6	.05	.115
8	7.93	0.312	82	3.25	23	.93	4.8	10	.10	.22
10	9.52	0.375	105	4.13	28	1.12	9.0	20	.18	.39

## Norseman-Tufnol Rigging insulators

Rigging insulators with stainless steel eye ends to match Norseman Mk. III fork terminals. They are neat in appearance, very strong, and smooth for minimum windage.

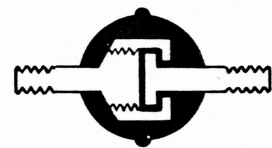


(Interior design)

Size  
4-8

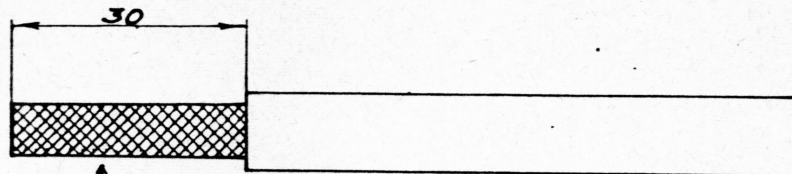


Size  
10

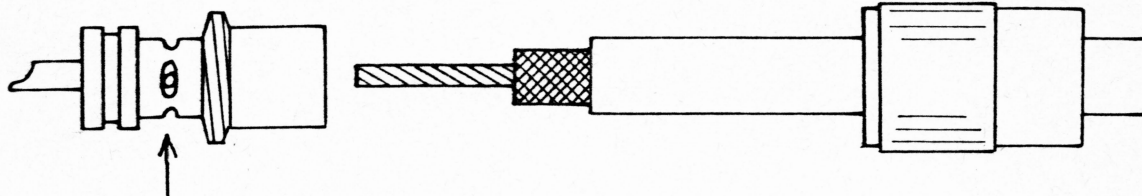
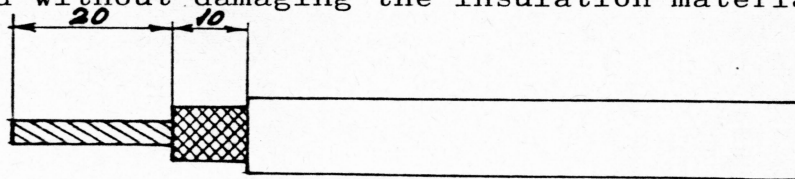


Size*	B		H		D		L		W		Min. B/L × 1000		Shipping Weight	
	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	kilo	lb.	kg.	lb.
4	6.35	.250	6.35	.25	16	.63	121	4.75	51	2.0	1.6	3.5	.23	.5
5	7.93	.312	7.93	.313	18	.69	127	5.00	51	2.0	2.3	5.0	.24	.52
6	9.52	.375	11.11	.438	24	.94	152	6.00	51	2.0	3.6	8.0	.50	1.1
7	9.52	.375	12.70	.50	24	.94	165	6.50	64	2.5	5.0	11.0	.91	2.0
8	11.1	.437	14.28	.562	25	1.00	172	6.75	64	2.5	6.5	14.0	.95	2.1
10	12.7	.500	15.87	.625	25	1.00	172	6.75	64	2.5	9.0	20.0	1.20	2.6

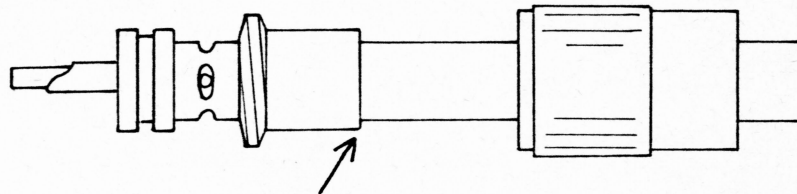
\*Equivalent mating Norseman terminal sizes.



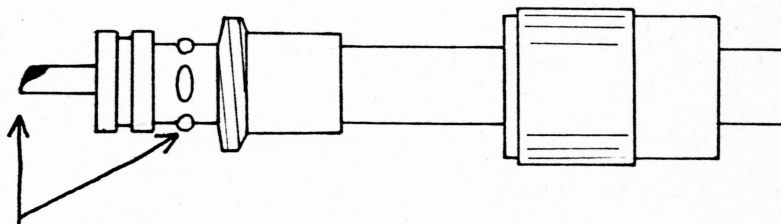
to be tinned without damaging the insulation material



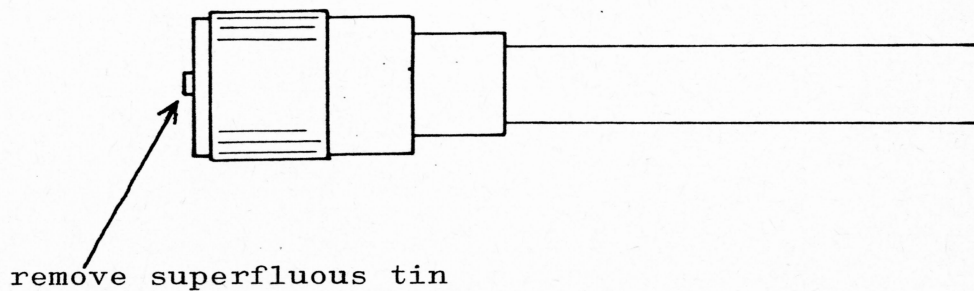
all 4 holes are slotted by a round-file



to be screwed tightly



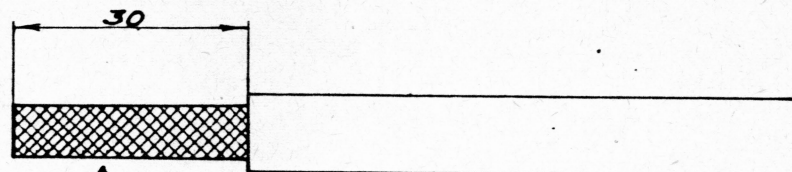
to be soldered-cooled in spirits after each soldering



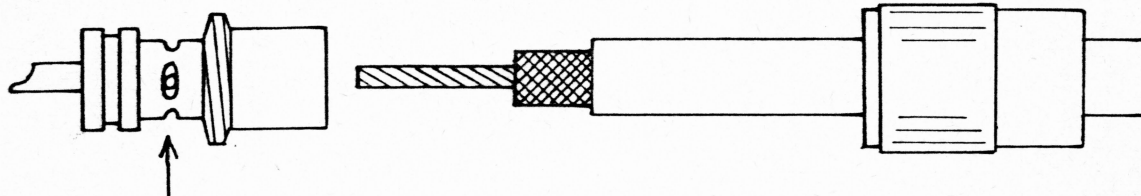
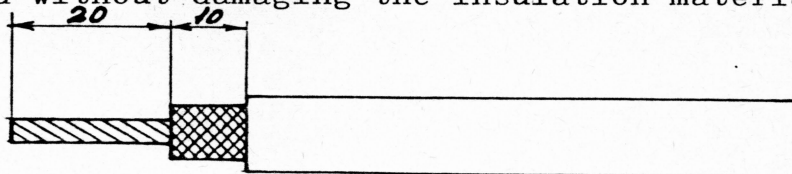
remove superfluous tin

Rettelser	<b>½ S. P. RADIO AALBORG</b>  mounting of PL259 on cable RG213U	Tegn.	
		Kont.	
		Målestok	

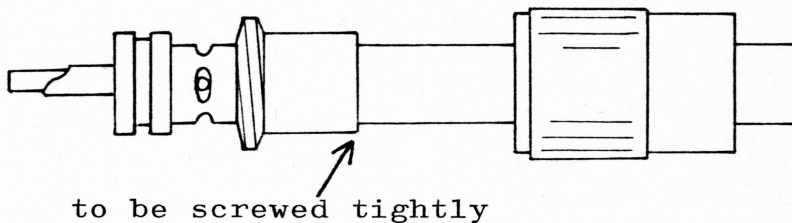




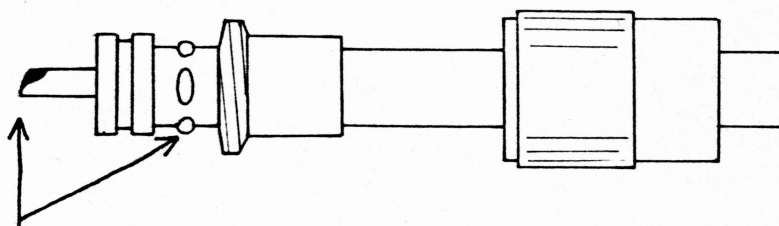
to be tinned without damaging the insulation material



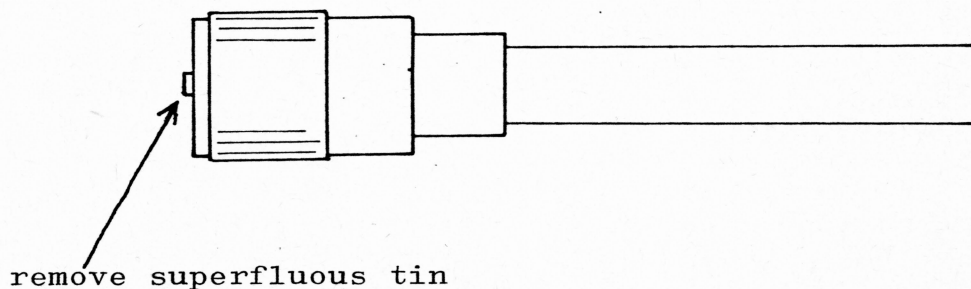
all 4 holes are slotted by a round-file



to be screwed tightly

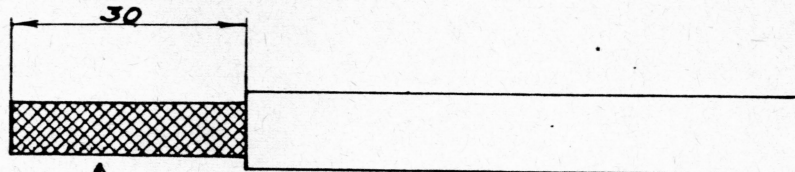


to be soldered-cooled in spirits after each soldering

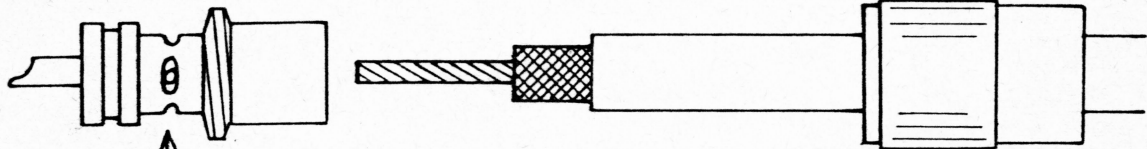
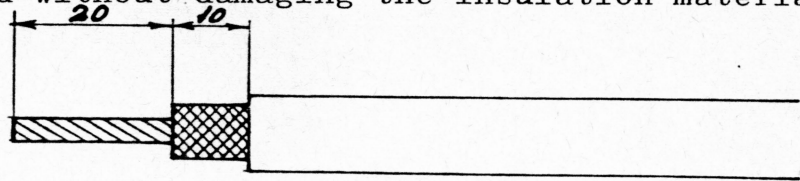


remove superfluous tin

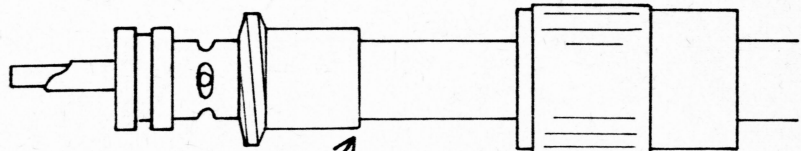
Rettelser	<b>½ S. P. RADIO AALBORG</b>  mounting of PL259 on cable RG213U	Tegn.	
		Kont.	
		Målestok	



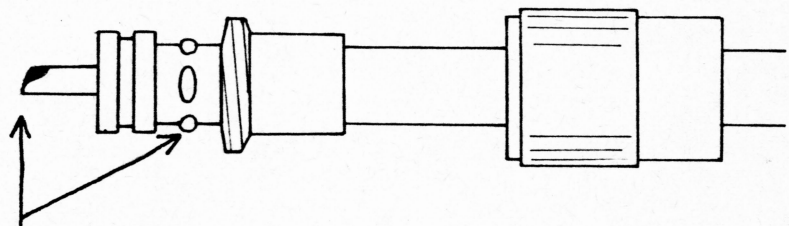
to be tinned without damaging the insulation material



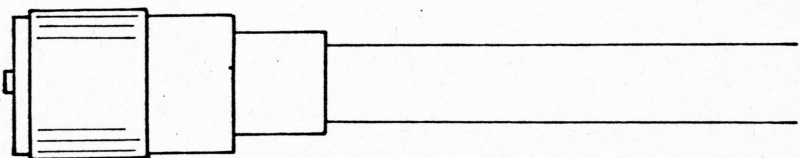
all 4 holes are slotted by a round-file



to be screwed tightly



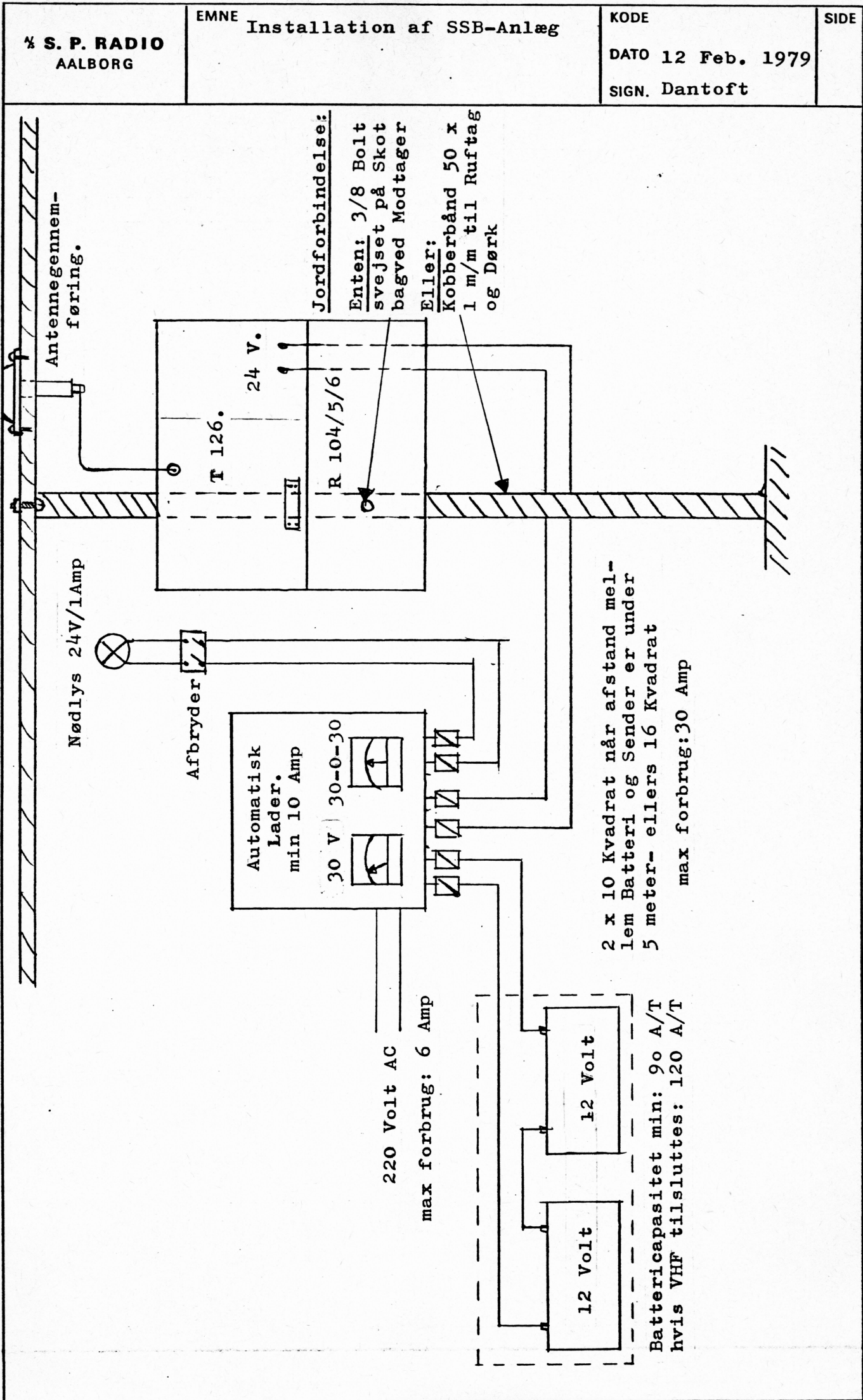
to be soldered-cooled in spirits after each soldering



remove superfluous tin

Rettelser	S. P. RADIO AALBORG	Tegn.	
		Kont.	
	mounting of PL259 on cable RG213U	Målestok	





½ S. P. RADIO  
AALBORG

EMNE

KODE

SIDE

DATO

SIGN.

