

Sai or

BK 171

FERRITE - NAVIGATOR

for receivers: R 104, R 105, R 106, R 108, R 109 and R 110

Sense Aerial:

Detachable 0.5 m long sense aerial mounted on top of direction finder as shown on the photo, or alternatively an external vertical wire aerial.

RF-Amplifier:

Sense aerial amplifier and ferrite aerial amplifier built into direction finder.

Direction Finding:

On all frequencies from 150 kHz and up to 4200 kHz.

Intermediate Cable:

For connection of direction finder to receiver a single 5 m cable is provided.

Headphone:

Plug-able to direction finder.

Direction Finding Compass:

Sestrel type 90523.

The compass is of a sturdy structure, well damped and provided with prism for reading and with beta-light.

Ordinary Optical Handbearings

can also be taken with this compass.



S. P. RADIO A/S . 9000 AALBORG

Technical Data:

Frequency Range:

LW	150 - 350 kHz
NW	255 - 535 kHz
MW	525 - 1650 kHz
SW	1600 - 4200 kHz

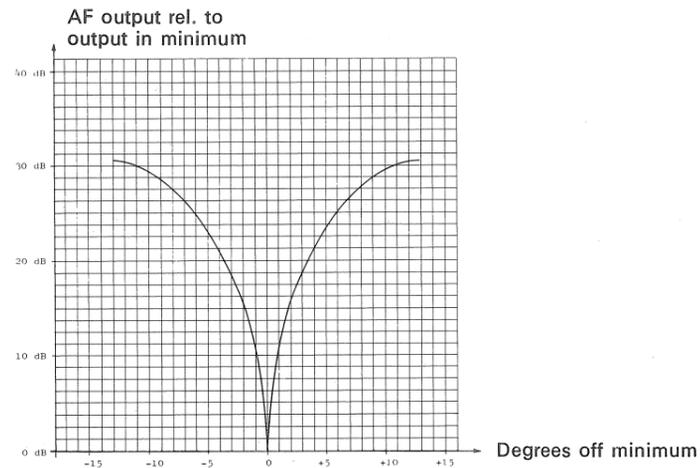
Sensitivity:

Better than 50 uV/m

Image Rejection:

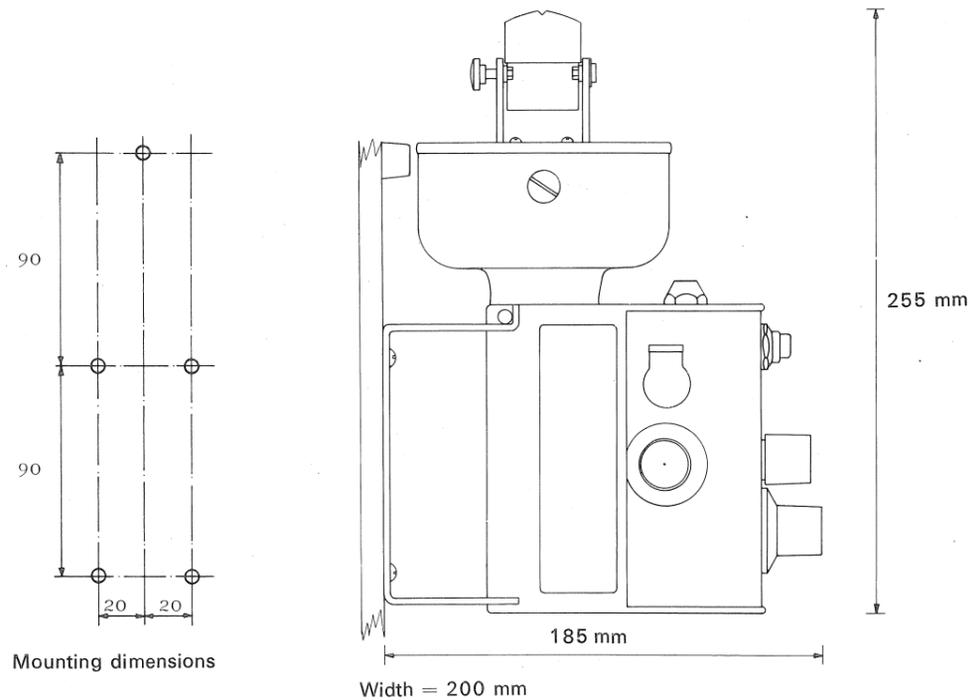
LW	100 dB
NW	100 dB
MW	85 dB
SW	55 dB

Minimum Characteristics:



Finish: Rilsan black

Instructions for Mounting:



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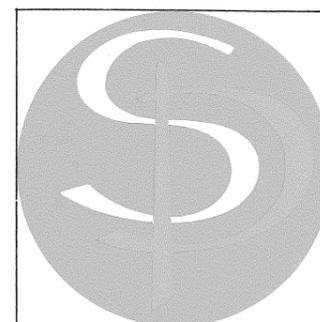
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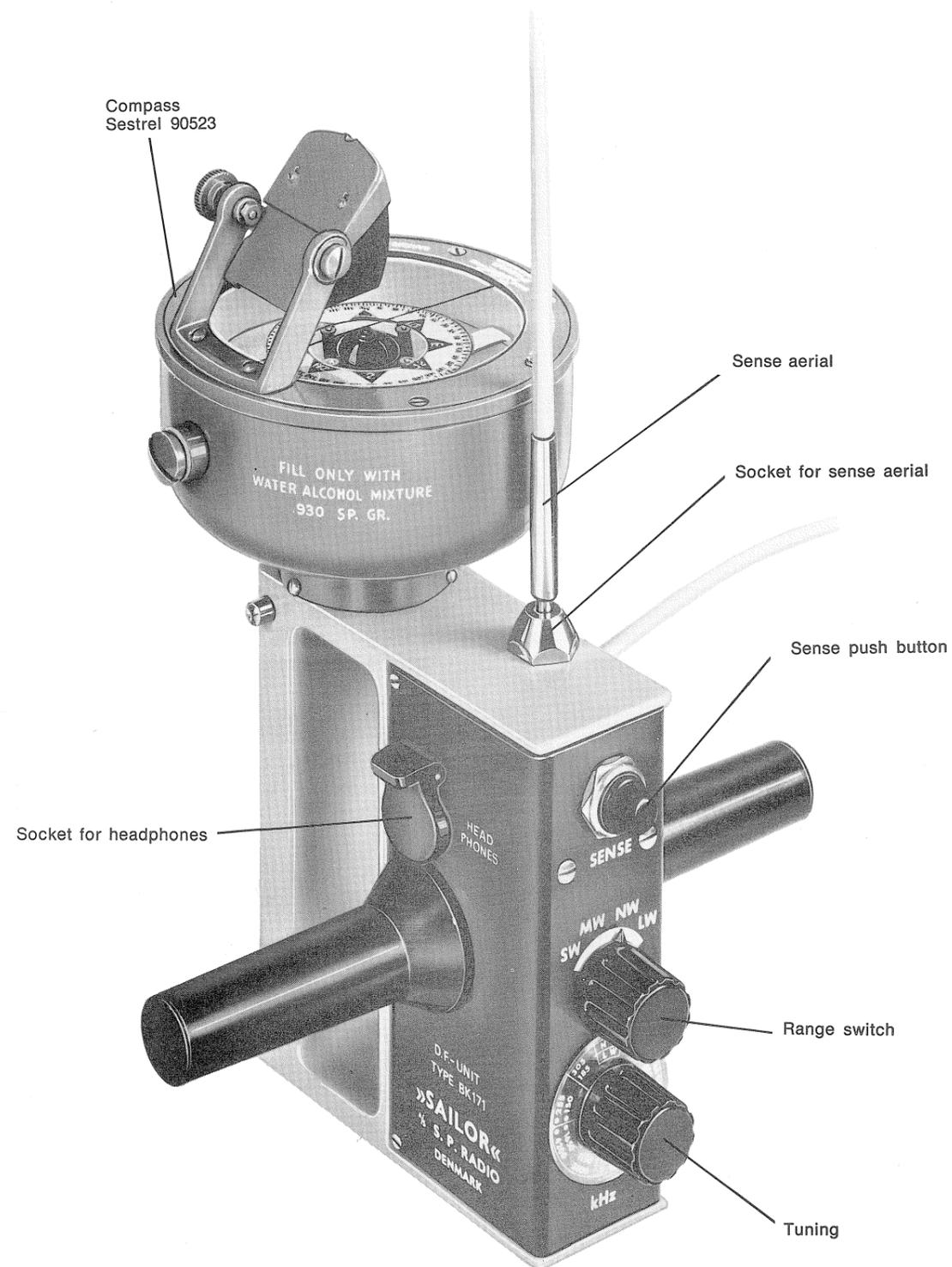
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INSTRUCTIONS:

Two terms are used in connection with direction finding, i. e. bearing line and sense-direction.

The bearing-line is the line passing through the ship and the Radio Beacon.

The sense-direction is the direction determined in relation to the Radio Beacon. The determination can be made by a sensing.

BEARING-LINE:

The bearing-line is found by following the procedure described in the instruction manual for the receiver, section: »Reception of General Radio Beacon«.

The bearing-line can be marked on the chart by drawing a line passing through the Radio Beacon at the found compass angle.

If two or more bearing-lines are found through different Radio Beacons, the position of the ship is indicated by their point of intersection.

SENSE-DIRECTION:

By a bearing as that described above, it cannot be determined, whether the ship, the position of which is on the bearing-line, is located on one or the other side of the Radio Beacon, or in other words: whether the found compass angle is the direction towards or away from the Radio Beacon.

The compass angle (the course) in relation to the Radio Beacon is determined by means of a sensing, which is performed as follows:

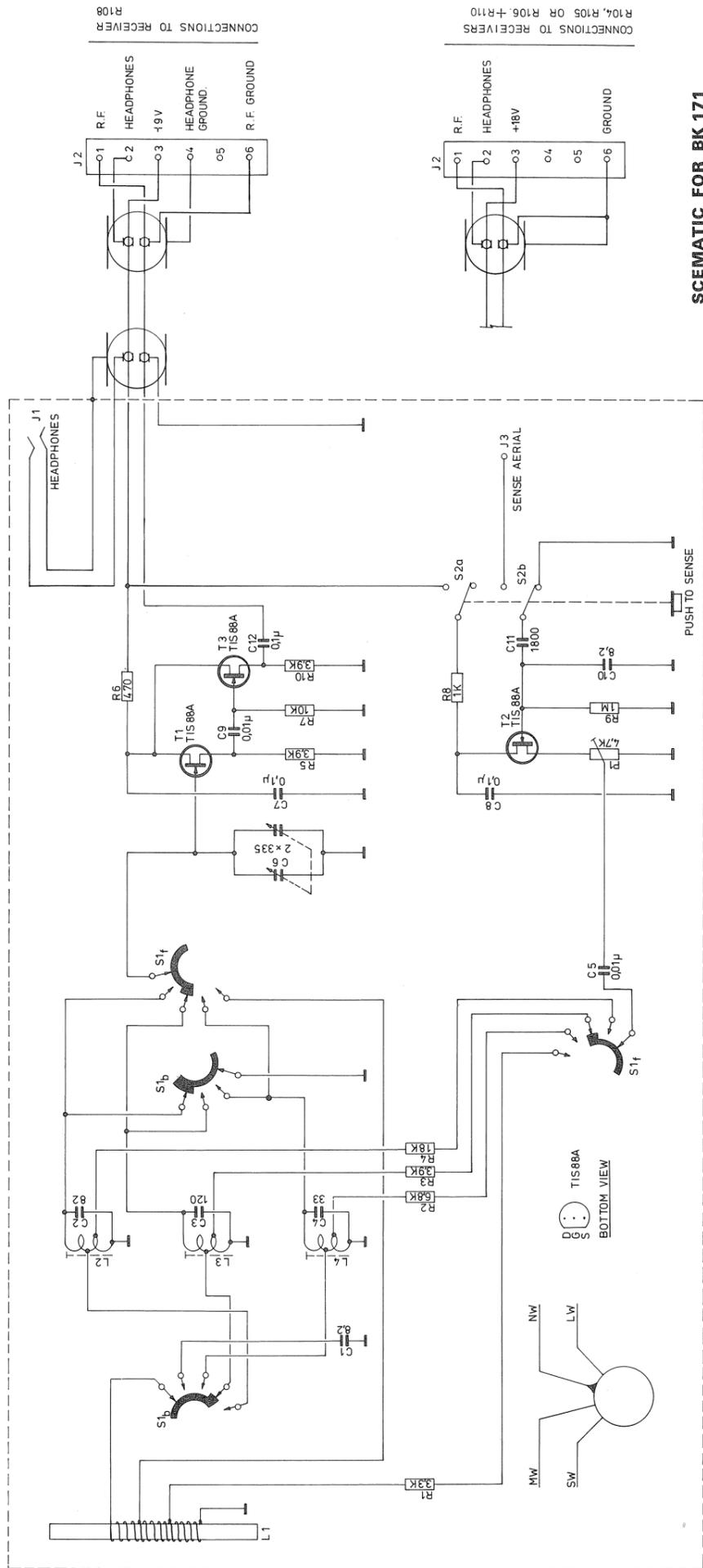
- 1) Plug the sense aerial on top of direction finder.
- 2) Turn direction finder until the Radio Beacon is in minimum and read the compass angle.
- 3) Turn the direction finder abt. 90° anticlockwise.
- 4) Press button marked SENSE and observe whether the signal received is increasing or decreasing in volume (to be heard in the headphones or to be read on the meter of the receiver).
- 5) If the signal received is decreasing, when the push button SENSE is pressed, the compass angle found in (2) is the direction towards the Radio Beacon.
- 6) If the signal received is increasing, when the push button SENSE is pressed, the compass angle found in (2) is the direction away from the Radio Beacon.

SENSE AERIAL:

Normally it will be advantageous to use the detachable sense aerial accompanying the direction finder, when delivered from the factory. Under certain circumstances it may be preferable to use an external fixed sense aerial, which aerial should be a *vertical* wire- or whip-aerial of one to ten meter length. The aerial down-lead ends in a banana plug to be plugged into the socket for the sense aerial on top of the direction finder.

If an external sense aerial is used instead of that delivered from the factory, the sense-sensitivity for the direction finder will have to be adjusted, which is done in the following way:

- 1) Remove the plastic blind cover on side of the direction finder.
- 2) Turn by means of an insulated screw-driver the potentiometer clockwise.
- 3) Tune in the direction finder to a true sea Radio Beacon (in range 285–315 kHz).
- 4) Turn the direction finder until maximum signal is heard and press the button marked SENSE and turn the potentiometer anticlockwise, until the signal is as low as possible.
- 5) If the signal is increasing, when the potentiometer is turned anticlockwise, the direction finder is to be turned 180°, and (2) and (4) must be repeated.



C1	Capacitor, ceramic	8,2pF	$\pm 0,5\%$	400V	Ferroperm	9/0112,9
C2	Capacitor, ceramic	82 pF	$\pm 10\%$	63V	Ferroperm	9/0121,8
C3	Capacitor, ceramic	120pF	$\pm 10\%$	63V	Ferroperm	9/0121,8
C4	Capacitor, ceramic	33pF	$\pm 5\%$	63V	Ferroperm	9/0116,8
C5	Capacitor, ceramic	10nF	-20/+80%	30V	Ferroperm	9/0145,9
C6	Capacitor, variable	2x335pF			Mitsumi	PVC-2K20T-1
C7	Capacitor, polyester	0,1uF	$\pm 10\%$	100V	Philips	2222 344 24104
C8	Capacitor, polyester	0,1uF	$\pm 10\%$	100V	Philips	2222 344 24104
C9	Capacitor, ceramic	10nF	-20/+80%	30V	Ferroperm	MKT 1822-410/0
C10	Capacitor, ceramic	8,2pF	$\pm 0,5\%$	400V	Ferroperm	9/0112,9
C11	Capacitor, ceramic	1,8nF	-20/+80%	400V	Ferroperm	9/0141,9
C12	Capacitor, polyester	0,1uF	$\pm 10\%$	100V	Philips	2222 344 24104
					Roederstein	MKT 1822-410/0
J1	Headphone socket				Cliff	S1
J2	Output plug				Hirschmann	MES 60Bz
J3	Sense aerial socket				S.P.	Tg.nr.2-0-20210
L1	Ferrite aerial coil				S.P.	Tg.nr.6-0-20206
L2	Aerial transformer, LW				S.P.	Tg.nr.6-0-20207
L3	Aerial transformer, NW				S.P.	Tg.nr.6-0-20208
L4	Aerial transformer, MW				S.P.	Tg.nr.6-0-20209
P1	Resistor, variable	4,7k ohm		0,1W	Philips	2322 410 05006
R1	Resistor	3,3k ohm		0,33W	Philips	2322 106 33332
R2	Resistor	1,8k ohm		0,33W	Philips	2322 106 33182
R3	Resistor	3,9k ohm		0,33W	Philips	2322 106 33392
R4	Resistor	18 k ohm		0,33W	Philips	2322 106 33183
R5	Resistor	3,9k ohm		0,33W	Philips	2322 106 33392
R6	Resistor	470 ohm		0,33W	Philips	2322 101 33471
R7	Resistor	10 k ohm		0,33W	Philips	2322 106 33103
R8	Resistor	1 k ohm		0,33W	Philips	2322 106 33102
R9	Resistor	1 M ohm		0,33W	Philips	2322 106 33105
R10	Resistor	3,9k ohm		0,33W	Philips	2322 106 33392
S1	Range switch	4x4 pos.			MEC	Tg.nr.7-3-20253
S2	Sense switch	uden lås			Shadow	ZD-DG -rø.2u0.A
T1	Transistor	TIS 88A			Texas	TIS 88A
T2	Transistor	TIS 88A			Texas	TIS 88A
T3	Transistor	TIS 88A			Texas	TIS 88A

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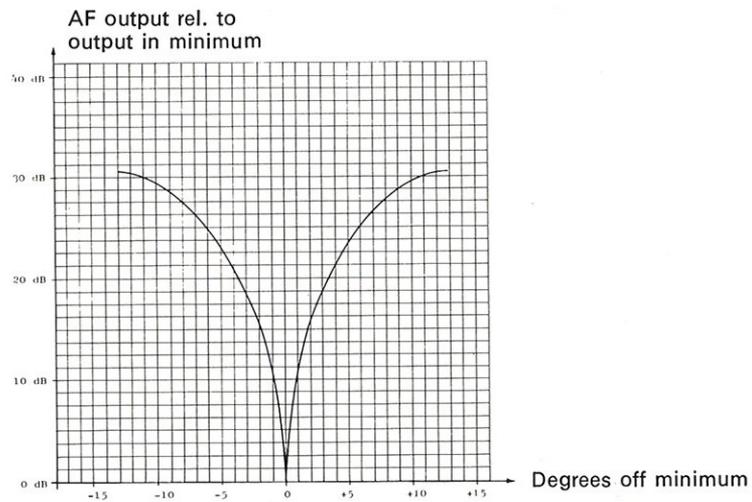
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Image Rejection:

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MW	85 dB
SW	55 dB

Minimum Characteristics:



Finish: Rilsan black **g:** Rilsan sort



S. P. RADIO A/S · 9200 AALBORG SV · DENMARK · TLF. (08) 18 09 99

DEALER: