

1 ZÖLLNER Zet-Horn 90 AC

- BSH Class I - DHI 49/02 P/01/78 -

design to print SW 85 e
operating on AC 3phase

intensity in 1/3rd-octave band level
at 1 metre 143 dB

fundamental frequency 90 Hz

comprising:

1 electric motor, 5.5 kw
with corrosion resistant cylinder
suspended vertically for
complete water drainage

1 sound horn: aluminum - RFG

approx. net weight: 100 kg

1 Control 4476

with anti-condensation heating,
casing and bimetal relay
for above Zet-Horn
design to drawing SP 4476
main tension: AC 3phase
control tension: AC 1phase
approx. net weight: 13.5 kg

1 Set of Spare Parts for above Zet-Horn 90 AC

according to list Li 144
approx. net weight 0.6 kg

ZÖLLNER



ENGINE TEST BED DYNAMOMETERS
SOUND SIGNAL EQUIPMENT

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ELECTRIC ZET-HORN 90 AC for ships ≥ 200 m in length

General Features

The ZÖLLNER Zet-Horn was the first piston type whistle on the world market driven by a three-phase AC motor. The standard version covers voltages from 220 to 460 V, 50/60 Hz, special versions for other voltages and "EX"-design are available on request. An essential component is the piston inside the cylinder, driven by a three-phase AC motor, via connecting rod, crankshaft and one-stage toothed wheel gearing of upgraded steel (not plastic!). The piston oscillates with a certain frequency which makes the air inside the sound projector (sea aluminum) vibrate in resonance to produce a clean sound audible over a wide range.

ZÖLLNER Zet-Horns of worldwide application have a broad frequency spectrum with many harmonics. Signals with strong overtones penetrate noises more efficiently. Even when a background noise covers the actual basic frequency, the residual tone forms a parent frequency in the human hearing. Two or three harmonics are sufficient for the hearing to perceive the basic frequency.

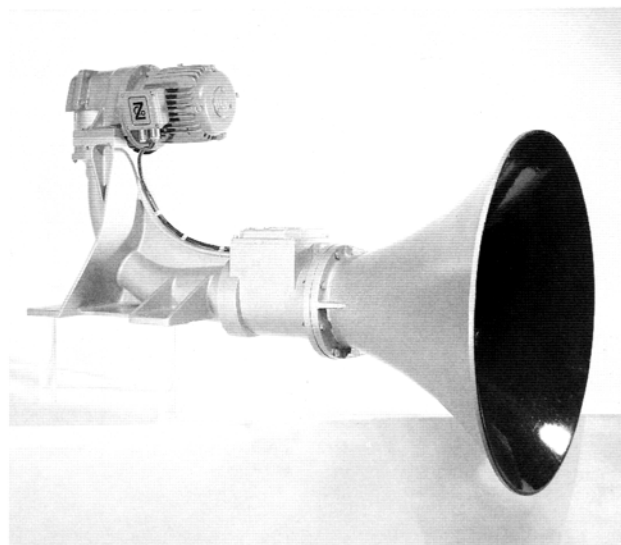
The standard version includes thermal overcurrent (bimetal) relay and heating for motor protection (up to 250 W). For operation in extremely cold areas (North Atlantic, North Pacific and all other winter seasonal zones) an additional heating for the aluminum horn can be supplied to avoid collection of snow.

Certificates: DHI-BSH, DOT without extra cost.

Certificates of ABS, BV, GL, LR, NV, BV, RINA, USCG GUS-Register, CCS, etc. Military design can be provided on request.

It is worthwhile to mention that Zet-Horns, in the past mainly used on ships, are now applied quite frequently as warning systems on bunker stations, oil refineries, airports, power plants, factories, handling areas of dangerous goods (poison, acid and other chemicals), etc. as well.

Subject to alteration!



ZET-HORN® 90 AC

Decades of experience have rendered the following advantages:

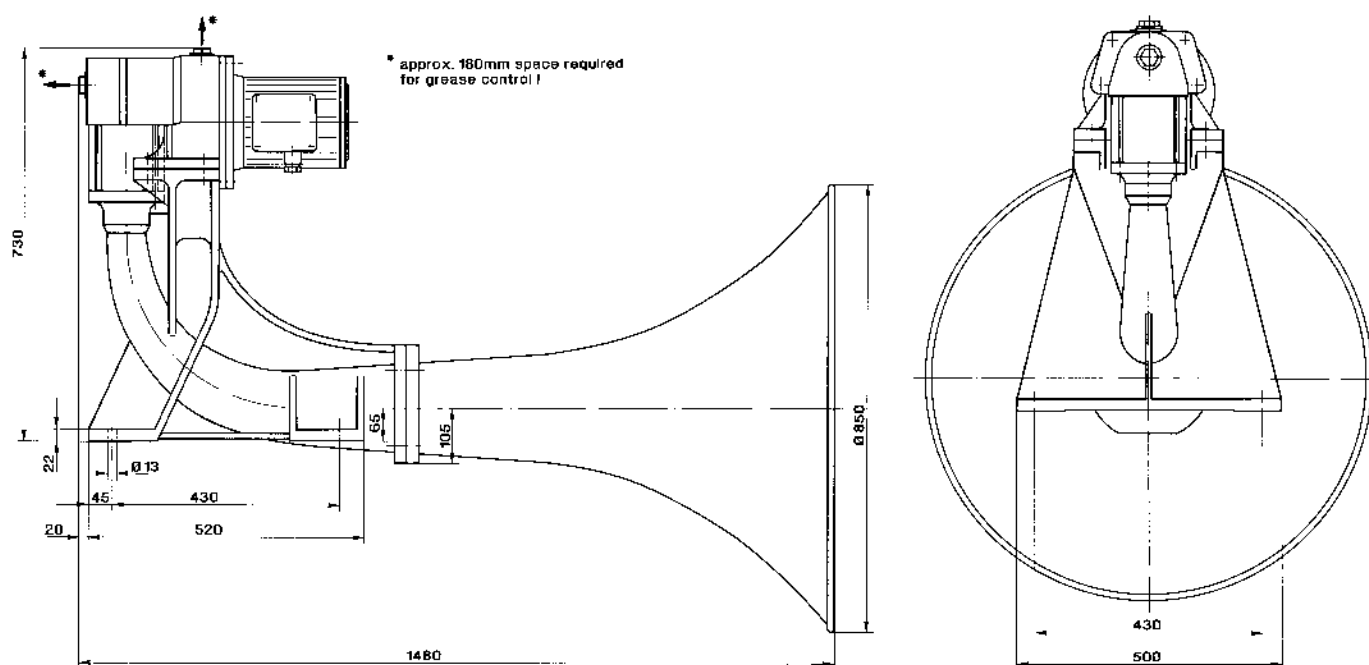
1. Full compliance with the International Regulations for Preventing Collisions at Sea (IMO 1972).
2. All components made of corrosion-resistant material.
3. Cylinder suspended in vertical position to allow optimum discharge of spray, flood, condensation water or melted snow (advantage against standing or horizontal cylinders!).
4. **Condensed water avoided by motor heating.**
5. Steady lubrication with standard grease – no oil! Maintenance only every 2 years necessary.
6. Simple but matured design!
Easy exchange of all parts with onboard tools.
7. Easy installation. Just one triple-core cable required (motor heating is included.)!
8. Not affected by voltage and frequency fluctuations which use to occur in board mains.
9. High sound intensity at low frequency, broad harmonic spectrum.
10. Heating for horn available to prevent snow and ice collection on vessels going in arctic seas.

Marine Application according to IMO-Regulations

Ships of 200 metres or more in length (IMO-Class I)

According to the International Regulations for Preventing Collisions at Sea of 1972, Annex III entitled 'Technical Details of Sound Signal Appliances', paragraph 1, the basic frequency of the ZET-HORN shall lie within a range of 70 to 200 Hz. The sound pressure level in 1/3rd-octave band level at 1 m distance shall be 143 dB referred to $2 \times 10^{-5} \text{ N/m}^2$.

These conditions are fully met by ZÖLLNER ZET-HORN 90 AC.

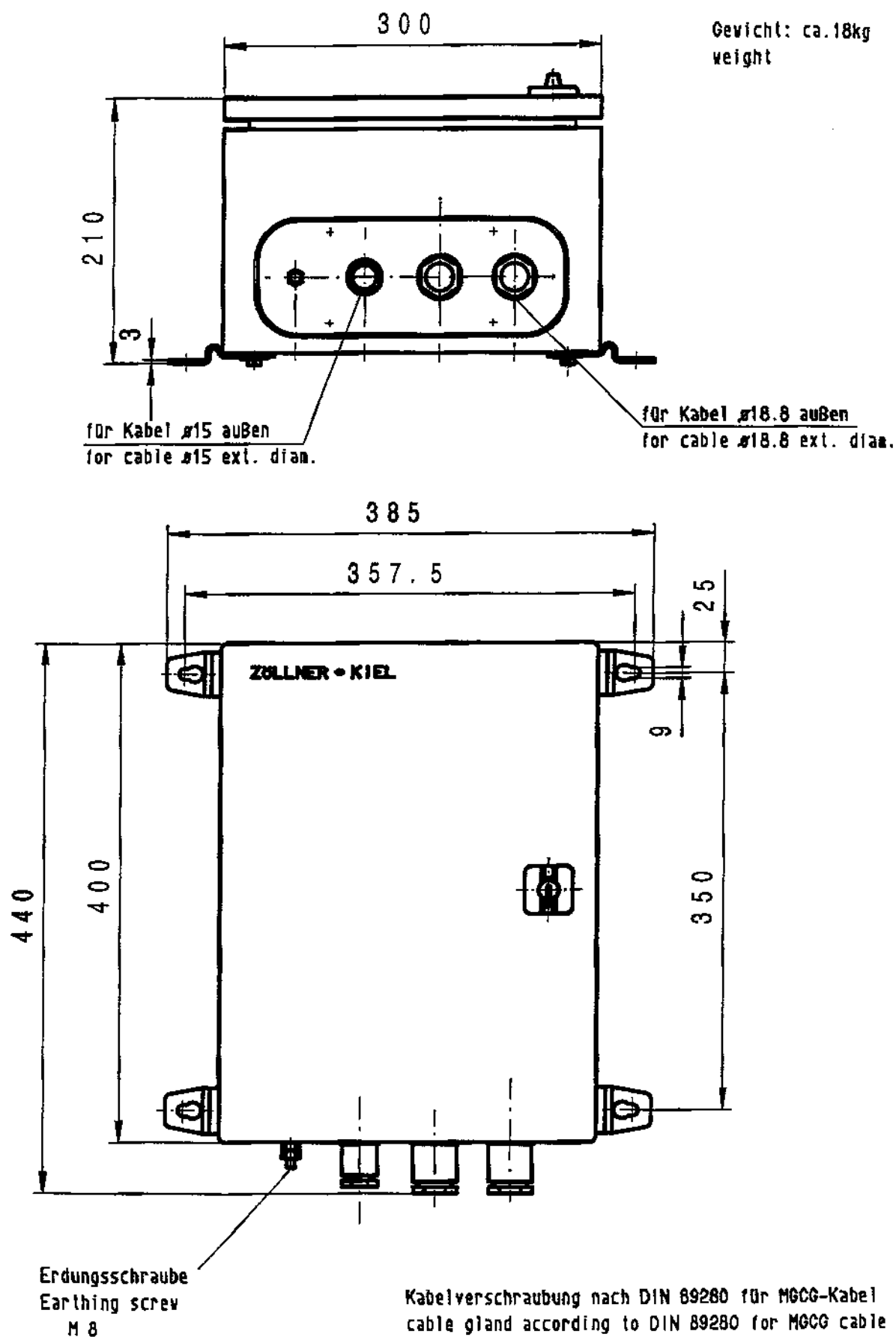


Type	current frequency		basic frequency	sound intensity at 1 m distance		motor output	motor heating up to	weight	type-test DHI-No. (BSH)
	50 Hz	60 Hz		dB (A)	min. IMO 1/3rd-octave				
90 AC	.../5	.../6	90	143	143	5,5	250 W	90	49/02P/01/78



Zet-Horn Steuergerät (Stillstandsheizung mit Bi-metall)
Zet-Horn Control (Motor Heating with Bimetal Protection)

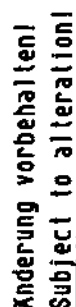
SP
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Änderungen vorbehalten! Subject to alteration!

12.01.95 Sch.

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Ersatzteilsatz für Zet-Horn
Set of spare parts for Zet-Horn

90-141AC

Stck. Qty.	Zeichnung Drawing	Benennung/techn.Daten Designation/techn.Data	Teil Nr. Part no.	Bestell-Nr. Order no.	Gewicht Weight kg
1		Rillenkugellager Grooved ball bearing 6206-2 RS1	8503-220	251062061	0,200
1		Rillenkugellager Grooved ball bearing 6207-2 RS1	8503-250	251062071	0,280
2		Kolbenring m. Wellfeder piston ring w. spring #120/110x8	8503-440 8503-441	0105069 0104757	0,075

Änderung vorbehalten!
Subject to alteration!

29.06.95 Sch.
16.05.00 Sch.

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