WARRANTY

This warranty has a term of two (2) years from the manufacturing date or one (1) year from the date of the dealer's invoice, whichever expires first. It covers manufacturing defects that may arise during this period.

When verifying some manufacturing defect, you should take the product along with its purchasing invoice to the store where you bought it, so that, after the dealer's analysis, your product can be either repaired or replaced free of cost, except for any other freight expenses to the dealer store.

We do not accept complaints within the warranty term if:

a) The product has been installed without observing the **INSTALLATION INSTRUCTIONS** provided in this manual;

b) The loudspeaker presents defect like torn, perforated or wet cone; installation in improper place; distorted or smashed basket; moving coil burned due to use out of the specifications;

c) After being inspected, the product shows evidences of modifications or repairs made by unauthorized personnel;

d) There is evidence that chemicals were used on the loudspeaker components;

e) The loudspeaker has been burned due to the use of amplifiers (power modules) not having protective under-voltage (Battery voltage drop) circuit.

This warranty applies only to the first purchaser so that there is no conflict with the current law.

Should HINOR decide to modify the design and/or to make technical improvements on this product, it shall not be obliged to include such changes in any product manufactured before.

The warranty offered herein covers only the repair or replacement of the product, and HINOR does not take responsibility for any claim for indemnification of any kind.

NH INDÚSTRIA E COMÉRCIO LTDA ROD. BR 470, km140, 5640 - VALADA ITOUPAVA 89.160-000 RIO DO SUL (SC) - BRAZIL - PHONE: (47) 3531-8800 CNPJ 85776466/0001-36 - I.E.250170515 INDÚSTRIA BRASILEIRA - MADE IN BRAZIL



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COD: 18.495

INSTRUCTION MANUAL



Features



Performance Graphs

-> Frequency response

The frequency response expresses the sensibility curve of the loudspeaker in all of its audible frequency. The data shown on the following graphs was obtained in an anechoic chamber with the help of imported dedicated software and hardware.







This range of loudspeakers has been developed to reproduce low frequencies with high sound pressure free of distortion. These are essential features when the reproduction of bass and sub-bass frequencies is required.

→ Features

High power

- 4-inch coil with imported Copper Cladded wire y Till-sheet body;
- Vented pole and cone ring to better cool the coil;
- Bracing Neck;
- Metallic rope with silver alloy and silicone coating for higher resistance and electric conductibility;

Optimized magnetic assembly

- Magnetic assembly optimized by means of MEF (Finite Element Method) software, providing the moving assembly with high linearity;
- Barium ferrite of diameter 220mm and 25 mm of thickness;
- Large baskets with 210 mm of outer diameter

High linearity

- Impregnated and compacted fabrics to provide for a highly stiff centering;
- Optimized magnetic assembly with extended pole capable of assuring an even magnetic field;
- Fabric suspension capable of better responses in sub-bass and bass frequencies;

Sturdy design

- Zinc-plated Basket and poles in order to prevent oxidation;
- Polished and vanished casing ring;
- Highly stiff cast aluminum basket;
- Reflective adhesive tape;
- White color Wave Sound sewing.





Installation Details



Technical Specifications



→ Connection arrangements for single-coil loudspeakers

The loudspeaker has been developed with a single coil for a perfect compatibility with the different amplifier modules available in the market. The following figure shows the possible way of connecting the coil and the resulting impedance.



\rightarrow Other details

- Use MDF or navy plywood of not less than 18 mm thick;
- Use white glue for wood in order to glue the box walls together;
- Seal all joints with a mixture of glue and sawdust;
- Use screws for MDF or plywood;
- Whenever possible, lock the box walls;
- Insulate the inside of the walls with a blanket of acrylic fiber or automotive felt;
- Weld the cable ends with tin and avoid making amendments.

\rightarrow	Table 01 Technical specifications	Power ra	ate	Z Ohms)	SPL (dB@1W/m)	(dB@	SPL 02,83V/m)	Freq (Hz@-10d	b)		
	15 LINE 18 LINE	2500 2500		4 9 4 9		9	7,12 9,15	35-2500 25-2500			
\rightarrow	Table 02 Loudspeaker dimensions	A (cm)	B (cm)	C (cm))	D (cm)	E (cm)	F (cm	n)		
	15 LINE 18 LINE	39,0 46,0	37,5 44,0	36,0 43,5	5	22,0 22,0	17,0 19,5	1,3 1,3			
\rightarrow	Table 03 Thiele-Small parameters	Fs \	/as Qts	Qes	Qms	η ₀ (%)	Sd (m²)	Vd (L)	Xmax (mm)		
	15 LINE 18 LINE	46,63 62 40,41 13	2,39 0,43 31,2 0,37	1 0,470 3 0,404	5,211 5,010	1,291 2,058	0,0855 0,1195	0,509 0,711	6,0 6,0		
\rightarrow	Table 04 Additional parameters	BL (Tm)	Re (Ohms)	Mms (g)	(Cms ^{mm/N)}	Rms (kg/s)	Vo (L)	Ι		
	15 LINE 18 LINE	20,38 22,10	3,3 3,3	190,6 235,5	i (0,061 0,065	10,72 11,93	8,1 11,0	6		
WARNING											

WARNING

*Requires the use of the REAR output of the CD/DVD player with the HPF filter enabled for 50 Hz or higher.

NOTE

*The loudspeaker is supplied by the amplifier with electric power, which is converted in sound by the vibration of its moving parts. Hinor shall not be hold responsible for any injuries involving electric shocks produced by the system.



WARNING: Adjustment of the air duct length

For OUTWARD SOUND, use the P-length For INWARD SOUND, use the Pmax-length

INSTALLATION INSTRUCTIONS

*Requires the use of the REAR output of the CD/DVD player with the HPF filter enabled for 50 Hz or higher.

- 1 Select the type of air duct (rectangular or cylindrical);
- 2 Select the type of box (Rectangular o trapezoidal);
 - 3 Adjust the length of the air duct.

All measurements recommended here are INTERNAL to generate the total volume specified in the tables.

Woofers y sub-woofers need to be installed in acoustic boxes in order to work properly. An acoustic box allows for the operation of a loudspeaker in optimal conditions for it to reproduce sounds effectively and with quality, without incurring in damages due to excess of excursion.

Vented Boxes (Boxes with air ducts)

Good response to transients;

Frequency response adjustable by the air duct;

Good bass boost;

Low distortion in tuning frequency;

Recommended for sound tracks containing attack bass like: Rave music, Funk, Rock, country music...



For the 15 and 18-line loudspeakers, only vented boxes are recommended.

	Table 05 Box with cylindrical air ducts	Vt (L)	BOX TYPE RECTANGULAR TRAPEZE					AIR DUCTS Recommended			Recommended RESPONSE		
~			A (cm)	L (cm)	P (cm)	P1 (cm)	P2 (cm)	QTD	Diam (pol)	P (cm)	F3 (Hz)	Fp (Hz)	G (dB)
	15 Line	60	52,0	40,0	29,0	24,0	34,0	3	4	13,0	60	85	5,5
	18 Line	75	59,0	47,0	27,5	22,5	32,5	3	4	15,0	57	84	4,4
	15 Line	75	52,0	40,0	36,0	31,0	41,0	3	4	7,0	59	85	6,5
	18 Line	100	59,0	47,0	36,0	31,0	41,0	3	4	5,0	57	81	4,8

RESPONSE	E	
RESPONSE		
F3 Fp G	G	
(Hz) (Hz) (dF	dB)	
61 90 5,6	5,6	
60 90 4,0	1,0	
61 85 6,7	5,7	
59 85 5,0	5,0	
(Hz) (Hz) (0 61 90 5 60 90 4 61 85 6 59 85 5	

This manual contains four (4) box projects for each loudspeaker. If you already have a box but it has a different internal volume, please call us through our toll-free phone at 0800-47-8002, so that we can calculate new air ducts for your box.

\rightarrow Understand the meaning of the initials given in the above tables.

Data for the Construction of Acoustic Boxes



