

# Stop Wishing— It's Here!

All NATIONAL HiFi Speakers are produced by highly skilled artisans in addition to mass production device.

Our laboratory research has continued ranging from creating newer cone paper to tone sensitivity survey for audience.

Examine and listen to our newly developed speakers and you will discover an excellent realistic sound superior to all others.

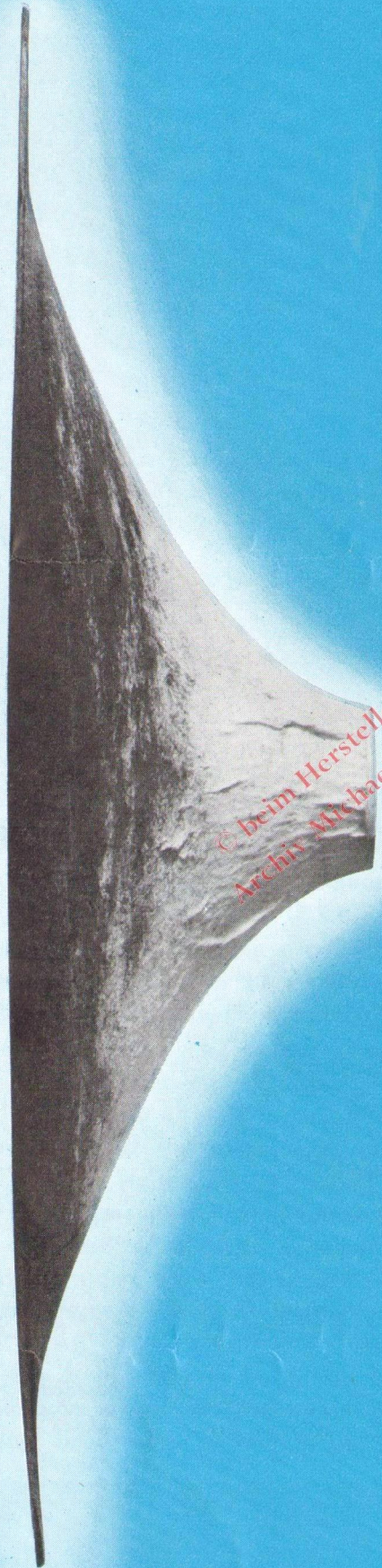


## NATIONAL HiFi SPEAKERS

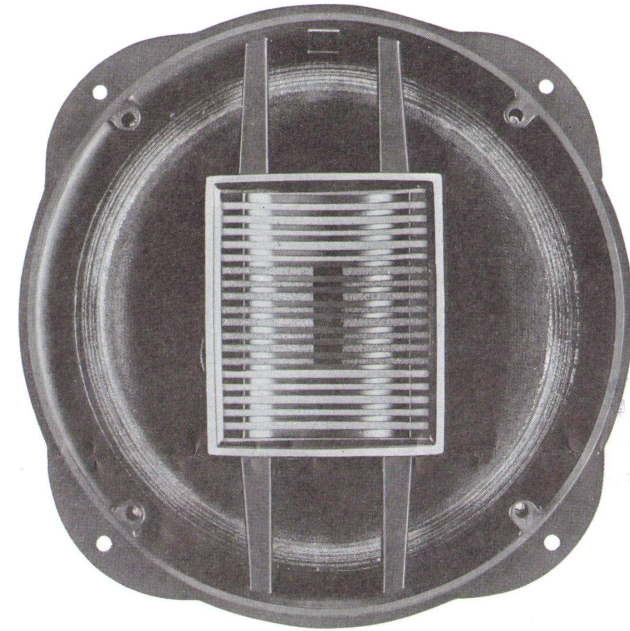
 **PANASONIC** "PANASONIC" in U.S.A and Canada

eller  
Michael Otto

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Archiv Michael Otto



# Impossible to find a better 8" two-way speaker than **EAS-20PX50**



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As sound reproducing equipment in stereo becomes more popular, a trend to a HiFi speaker with an outstanding directivity characteristic has been in big demand everywhere.

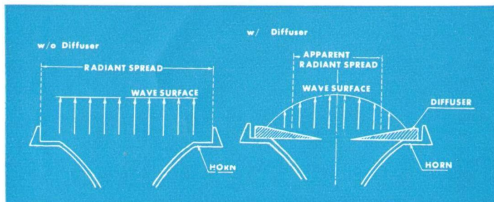
EAS-20PX50 is a deluxe 8" 2-way speaker especially designed for the HiFi system. To cope with this problem, we have created a completely new concept in a "Diffuser" and a horn type tweeter applying newer technique in design and material.

Listen the tone quality of this speaker to realize the difference.

## Features

### 1. Advanced directivity characteristic by our unique "Diffuser"

Generally, high frequency sound radiated from a speaker is strongest on the center line and becomes weaker as the sound angle spreads. This tendency is contrary to realistic reproduction. In order to correct this characteristic, the "Diffuser" made of porous plastic is attached to the tweeter. Sound attenuation changes according to the thickness of a "Diffuser" when sound passes through it.



Therefore, by using a concave diffuser, ideal distribution of high frequency is obtained with the concentric semicircle.

### 2. Horn type tweeter of high efficiency and performance

A polyester diaphragm and a high magnetic flux density of 12,000 gauss result in flat frequency response.

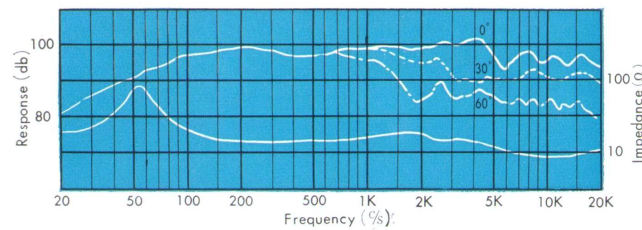
### 3. Cloth cone edge improves low frequency characteristic

The resonant frequency is moved down to a value that is comparable to the 10"~12" woofers 40~60c/s, by using cloth cone edge.

### 4. Strong magnetic circuit

Minimum distortion and excellent transient characteristic in low frequency owes the strong 1.6"φ × 1" magnet and the thickest 0.32" yoke of 8" class.

## Frequency Characteristic



### 5. Improved frame rim

Differing from the conventional speaker which is fixed on the back of the baffle, our speaker has a new type rim which moves the speaker out flush with the baffle surface, thus eliminating cavity effect.

### 6. Crossover network

Crossover network is built-in and lower frequency than 3,500 c/s of input signal to the tweeter is cut in 12 db/oct, while the woofer is designed to attenuate rapidly higher frequency than 3,500 c/s. By this design, an extremely flat response is attained.

## Specifications

|                         |                                     |
|-------------------------|-------------------------------------|
| Power Handling Capacity | 10W                                 |
| Resonant Frequency      | 40~60c/s                            |
| Frequency Response      | 40~20,000c/s                        |
| Crossover Frequency     | 3,500c/s                            |
| Sound Pressure Level    | 99db                                |
| Voice Coil Impedance    | 16Ω                                 |
| Magnetic Flux Density   |                                     |
| Woofer                  | 7,500gauss                          |
| Tweeter                 | 12,000gauss                         |
| Effective Mass          | 11.7g (0.351oz)                     |
| Q <sub>o</sub>          | 0.55 (45c/s)                        |
| Net Weight              | 2.77kg (6.09lb)                     |
| Dimensions              |                                     |
| Diameter                | 242mm(9.53ins)                      |
| Mounting Diameter       |                                     |
| Inside                  | 193mm (7.59ins)                     |
| Outside                 | 226mm (8.89ins)                     |
| Baffle Opening Diameter |                                     |
| Inside                  | 180mm (7.08ins)                     |
| Outside                 | 215mm (8.46ins)                     |
| Approximate Volume      | 1,000cm <sup>3</sup> (61.2 cu. ins) |

# 8" MFB WOOFER EAS-20PZ33



MFB (Motional Feed Back) is the newest engineering that brought literally a revolution in sound reproduction.

The feed back technology has made a great contribution to reduce the distortion and has resulted in many excellent amplifiers.

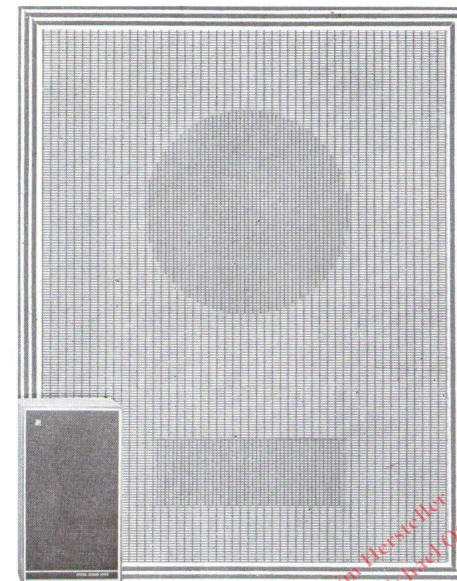
Previously, the speaker outside the amplifier did not share in the benefit of the technology but MFB has enabled the speaker to share, thus eliminating the electric distortion in the amp and the mechanical distortion in the speaker at the same time.

Moreover, by choosing the adequate feed back method, it is possible to improve the damping factor in low frequency and to move fundamental resonance down. This means that as low frequency as by the larger size speaker is gained by the smaller enclosure.

For MFB, a speaker which has the pickup mechanism that converts the mechanical cone vibration to the electrical signal is required.

The NATIONAL MFB WOOFER EAS-20 PZ 33 is the very best designed exclusively for this purpose.

# Electronics realizes miracle..... Banishes the old big box !



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## Features

### 1. High pickup voltage

As very high pickup voltage is generated by the special pickup coil, it is very easy to design the MFB amplifier of the acceleration type.

### 2. Minimum distortion pickup part

The distortion in the pickup part is very little as the pickup coil is wound longer than the thickness of yoke. Therefore, it greatly reduces distortion.

### 3. Strong magnetic circuit

It uses a strong magnetic circuit comparable to the 10" ~ 12" woofer. Since the efficiency and damping in the low frequency are improved, stable motional feed back is effective even in a small enclosure.

### 4. Strong moving parts

By the superior voice coil and cone, the distortion of the moving parts is reduced and the effect of motional feed back can be remarkably attained.

## Specifications

|                         |                                   |
|-------------------------|-----------------------------------|
| Power Handling Capacity | 10W                               |
| Resonant Frequency      | 30~50c/s                          |
| Frequency Response      | 40~4,000c/s                       |
| Sound Pressure Level    | 98db                              |
| Voice Coil Impedance    | 8 or 300Ω                         |
| Pickup Method           | Dynamic Type                      |
| Pickup Voltage          | 0.9V (at 1W, 200c/s)              |
| Magnetic Flux Density   | 9,400gauss                        |
| Qo                      | 0.65                              |
| Effective Mass          | 10.5g (0.315oz)                   |
| Net Weight              | 2,07kg (4.55lb)                   |
| Dimensions              |                                   |
| Diameter                | 207mm (8.15ins)                   |
| Mounting Diameter       | 193mm (7.59ins)                   |
| Baffle Opening Diameter | 180mm (7.08ins)                   |
| Depth                   | 121mm (4.37ins)                   |
| Approximate Volume      | 900cm <sup>3</sup> (54.9 cu. ins) |

## MFB Amp EAA-2000



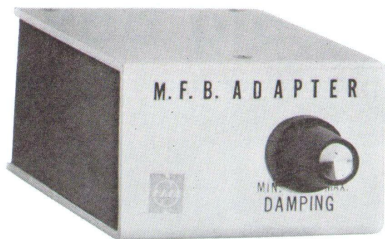
It is a complete amplifier for motional feed back designed for use with MFB speaker.

The low frequency characteristic is changeable optionally according to the room condition and the program sources. In addition, the semifixed bias output circuit, the DC heater supply to top tubes and the functional panel layout give you the pleasure of having the best HiFi amplifier, we believe.

## Specifications

|                       |  |
|-----------------------|--|
| Tubes                 | 12AX7 × 3<br>6AN8 × 2<br>6BQ5 × 4<br>5AR4              |
| Diodes                | OA70 × 2   |
| Input Terminals       | AUX, MAG, TUNER, X'TAL                                 |
| Input Impedance       | 1MΩ (X'TAL, TUNER, AUX)<br>50KΩ (MAG)                  |
| Sensitivity (1000c/s) | 10W/250mV(X'TAL, TUNER, AUX)<br>10W/4.5mV (MAG)        |
| Output                | Max 15W-15W<br>Normal 13W-13W                          |
| S/N Ratio             | More than 55db   |
| Tone Control          | NF type, ±16db   |
| Power Source          | 117V 50~60c/s 115W<br>100-200-225-250V " "<br>100V " " |

## MFB Adapter *converts your amp into MFB amp*



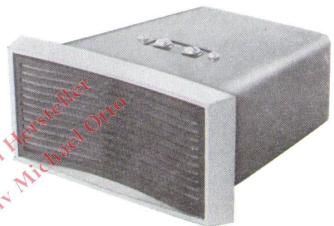
**EUA-201**

MFB requires a particular amplifier. But by connecting several lead wires of this adapter to your present amp immediately converts it to MFB amp. Provided with a controller for velocity type MFB.

### Specifications

Applicable speaker EAS-20PZ33N-A (8Ω)  
 Amplifier gain required:  
     Input 5 to 50 mV at output 1 watt  
 Acceleration type feed back factor: 6db  
 Velocity type feed back factor:  
     0 to 10db, continuously variable.

## Horn Tweeter with "Diffuser"



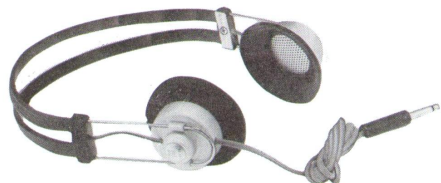
**EAS-12HH30**

This tweeter is a newcomer with good directivity characteristic exceeding the conventional tweeter with the aid of a creative diffuser, an aluminum voice coil and a special diaphragm.

### Specifications

Frequency Response 3,000~16,000c/s  
 Power Handling Capacity 20W  
 Voice Coil Impedance 16Ω at 5000c/s, 20°C  
 Sound Pressure Level 102db  
 Crossover Frequency Higher than 3000c/s  
 Net Weight 870g (26.1oz)  
 Magnetic Flux Density 11,000gauss

## Headphone *for self enjoyment*



**EAH-14**

The headphone of good sound quality has become popular for individually listening without worry of disturbing others.

You can enjoy rich, realistic HiFi sound with this headphone.

1. Tireless for a long time use as it is designed to be light, small sized, and with a flexible head spring.
2. Utilizes exclusively designed HiFi speakers.
3. Unnecessary bass noise is cut by the noisequenching resistor.

### Specifications

Frequency Response Audio Frequency  
 Impedance 16Ω  
 Matching Impedance 3~16Ω  
 Power Handling Capacity 0.2W  
 Speaker used 4.5cm permanent dynamic  
 Weight 340g (10.2oz)

## ANY CHOICE of NATIONAL HiFi SPEAKERS

The specifications below are in this order: Diameter, Power Handling Capacity Voice Coil Impedance, Frequency Response, Resonant Frequency, Magnetic Flux Density.

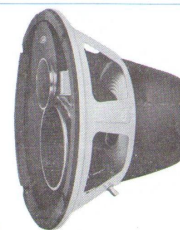
### Complex



**EAS-30PX11**  
 12" 3-way w/Tweeter Baffle  
 20W  
 16Ω  
 30~16,000c/s  
 35~50c/s  
 Woofer 9,500 gauss  
 Mid Range (Cone) 10,500 "  
 Tweeter (Cone) 10,500 "



**EAS-30PX14**  
 12" 3-way w/Tweeter Baffle  
 20W  
 16Ω  
 30~20,000c/s  
 30~50c/s  
 Woofer 9,500gauss  
 Mid Range (Horn) 10,500 "  
 Tweeter (Horn) 12,000 "



**EAS-25PX13**  
 10" 3-way w/Tweeter Baffle  
 12W  
 16Ω  
 30~16,000c/s  
 35~60c/s  
 Woofer 9,000gauss  
 Mid Range (Cone) 10,500 "  
 Tweeter (Cone) 10,500 "



**EAS-20PX24**  
 8" 2-way w/Tweeter Baffle  
 10W  
 8Ω  
 40~16,000c/s  
 45~65c/s  
 Woofer 10,500gauss  
 Tweeter (Cone) 10,500 "



**EAS-20PX27**  
 8" 2-way Economy  
 10W  
 8Ω  
 45~16,000c/s  
 50~70c/s  
 Woofer 10,000gauss  
 Tweeter (Cone) 9,200 "



**EAS-16PX40**  
 6.5" 2-way  
 3W  
 8Ω  
 50~20,000c/s  
 65~85c/s  
 Woofer 9,000gauss  
 Tweeter (Cone) 9,200 "

### Woofers



**EAS-38PLO8**  
 15"  
 25W  
 16Ω  
 20~1,500c/s  
 25~50c/s  
 9,600gauss



**EAS-30PLO4**  
 12" w/Acoustic Filter  
 20W  
 16Ω  
 30~3,000c/s  
 50~80c/s  
 9,800gauss



**EAS-25PL10**  
 10"  
 15W  
 16Ω  
 35~3,000c/s  
 40~60c/s  
 9,600gauss

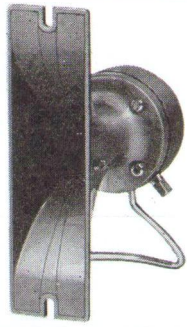


**EAS-20PL22**  
 8"  
 10W  
 8Ω  
 35~5,000c/s  
 40~60c/s  
 10,000gauss

# Tweeters

TRANSONIC  
Elektrohandelsenges. m. b. H. & Co.  
2 Hamburg 1

Schmilinskystraße 22



## EAS-15HH06

20W Horn Type  
16Ω  
3,000~16,000c/s  
11,000gauss



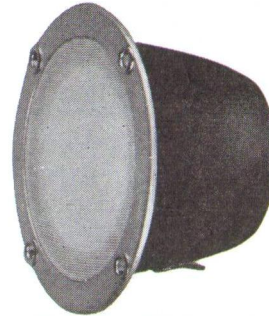
## EAS-8HH15

10W Horn Type  
8 or 16Ω  
2,000~16,000c/s  
10,000gauss



## EAS-65PH08

12W Cone Type  
8 or 16Ω  
2,000~16,000c/s  
11,500gauss



## EAS-65PH09N

10W Cone Type  
8 or 16Ω  
2,000~16,000c/s  
9,300gauss

# Single HiFi Speakers W/O Output Transformer

# W/Output Transformer



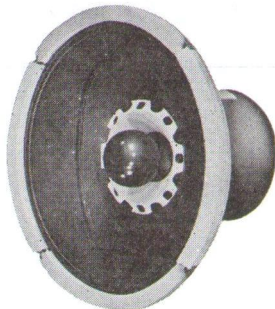
## EAS-25PW06

10" Double Cone  
12W  
6~8Ω  
35~16,000c/s  
11,000gauss



## EAS-30PW06

12" "DU" Cone  
12W  
6~8Ω  
35~13,000c/s  
11,000gauss  
OPT Prim. Imp. 10KΩPP



## EAS-20PW09

8" Double Cone  
8W  
6~8Ω  
40~16,000c/s  
10,500gauss



## EAS-25PW07

10" "DU" Cone  
12W  
6~8Ω  
35~16,000c/s  
10,500gauss  
OPT Prim. Imp. 10KΩPP



## EAS-16PW19

6" "DU" Cone  
4W  
6~8Ω  
55~16,000c/s  
10,000gauss



## EAS-20PW11

8" "DU" Cone  
8W  
6~8Ω  
40~16,000c/s  
10,500gauss  
OPT Prim. Imp. 5K~7KΩS

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Schmalkaldener Str. 55

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HAMBURG 1,  
SCHMILINSKYSTR. 22

3.12.64

wi-se

11. Dezember 1964

Betr: Prospekt NATIONAL HiFi Speakers

Sehr geehrter Herr Dr. Hantsche!

Wir danken Ihnen sehr für Ihr Schreiben vom 3.d.M. und das Interesse, das Sie unseren NATIONAL Lautsprechern entgegenbringen.

Wir erlauben uns daher, Ihnen in der Anlage den Lautsprecher-Prospekt und unsere neueste Preisliste zuzusenden.

In der Hoffnung Ihnen hiermit gedient zu haben, verbleiben wir

mit freundlichen Grüßen

T R A N S O N I C

Elektrohandelsges. mbH. & Co.

*H. Greiffenberger*  
(Greiffenberger)

Anlagen

NATIONAL speaker prospect  
price-list no. 6403



# Verkaufsinformation

16. 11. 1964

Preisliste Nr. 6403  
Für NATIONAL HiFi-Lautsprecher

| <u>Type</u>                        | <u>Preis</u><br>D M | <u>Verpackungseinheit</u><br>(+ bto.-Gewicht) |
|------------------------------------|---------------------|---|
| EAS-20 PX 50                       | 139,--              | 10 Stück = 52 kg                              |
| EAS-20 PZ 33                       | 93,50               | 20 Stück = 71 kg                              |
| EAS-12 HH 30 (Horn Tweeter)        | 88,50               | 30 Stück = 40 kg                              |
| EAS-30 PX 11 ( 12 PX 3)            | 255,--              | 4 Stück = 46 kg                               |
| EAS-30 PX 14 (12 PX 10)            | 351,--              | 4 Stück = 43 kg                               |
| EAS-25 PX 13 (10 PX 1)             | 133,--              | 10 Stück = 61 kg                              |
| EAS-20 PX 24 (8 PX 1)              | 79,50               | 20 Stück = 65 kg                              |
| EAS-20 PX 27 (8 PX 2)              | 51,--               | 20 Stück = 50 kg                              |
| EAS-16 PX 40 (6 PX 2)              | 45,50               | 30 Stück = 44 kg                              |
| EAS-38 PL 08 (Woofer 15-PL 02)     | 378,--              | 2 Stück = 47 kg                               |
| EAS-30 PL 04 (Woofer 12-PL 1)      | 210,50              | 4 Stück = 45 kg                               |
| EAS-25 PL 10 (Woofer 10-PL 1)      | 70,50               | 12 Stück = 57 kg                              |
| EAS-20 PL 22 (Woofer)              | 32,--               | 20 Stück = 43 kg                              |
| EAS-15 HH 06 (Tweeter HT 33)       | 45,--               | 48 Stück = 61 kg                              |
| EAS-8 HH 15 (Tweeter HP-311)       | 14,--               | 50 Stück = 24 kg                              |
| EAS-65 PH 08 NB ( Tweeter HT 37 B) | 23,--               | 100 Stück = 67 kg                             |
| EAS-65 PH 09 NA ( Tweeter HT 38 B) | 12,50               | 180 Stück = 53 kg                             |
| EAS-25 PW 06 (10 P 1) w/out O.P.T. | 80,50               | 10 Stück = 53 kg                              |
| EAS-20 PW 09 (8 P 1) w/out O.P.T.  | 53,--               | 12 Stück = 42 kg                              |
| EAS-16 PW 19 (6 PW 1) w/out O.P.T. | 32,--               | 20 Stück = 33 kg                              |
| EAS-30 PW 06 (12 PW 2) with O.P.T. | 108,50              | 5 Stück = 38 kg                               |
| EAS-25 PW 07 (10 PW 2) with O.P.T. | 68,--               | 10 Stück = 50 kg                              |
| EAS-20 PW 11 ( 8 PW 2) with O.P.T. | 59,--               | 20 Stück = 56 kg                              |
| Kopfhörer EAH-14                   | 51,--               | 20 Stück = 15 kg                              |

Archiv beim Hersteller  
Michael Otto

Wußten Sie schon? — daß unter der Marke NATIONAL jährlich 1 Million Fernsehgeräte, 2,5 Millionen Radios, 108.000 Tonbandgeräte, 700.000 Waschmaschinen und 560.000 Kühlschränke in über 50 Werken von 40.000 Mitarbeitern hergestellt werden, und Matsushita Electric damit Japans größter Hersteller für Fernseh-, Rundfunk- und Elektrogeräte ist — daß NATIONAL-Produkte in mehr als 120 Ländern vertrieben werden, wobei ein erstklassiger Service gewährleistet ist — daß die amerikanische Zeitschrift „Fortune“ Matsushita Electric 1963 auf den 37. Platz in einer Tabelle für die 100 größten außeramerikanischen Unternehmen der Welt gesetzt hat, während sie 1962 noch den 56. Platz (!) einnahmen.

Generalvertr. für Deutschland: **TRANSONIC** Elektrohandelsges. mbH. & Co., 2000 Hamburg

