

## KLIPSCHORN\*

sound reproducing systems  
feature:

Fundamental tones down to the low-C of the organ, up  
to the highest tinkle of struck metal

High power output with small amplifiers

Resonance of original sound preserved

Freedom from distortion

### GENERAL INFORMATION

The Klipschorn offers performance not approached by any other speaker system.

The system consists of two horn type speakers each operating over a part of the tonal range with an overlap or "cross-over" region. Each speaker component has been the subject of years of scientific study, both as to its own intrinsic performance and its performance relative to the other.

A horn construction in which room walls form part of the horn is one novel feature. Only by this means is it possible to reproduce the fundamental tones from a 16-foot bourdon pipe with a reproducer occupying only 20 cubic feet.

Klipschorn RE-produces all program material from single treble instruments to full orchestra and organ.

The scientific background of this reproducer system is well established. A bibliography of papers by the inventor appears on page 4 of this brochure.

### NONTECHNICAL DESCRIPTION

Using principles of large theater type speakers, the Klipschorn reproducer carries functional design to new heights by using room walls at a corner to extend the effective size of a horn structure. Thereby the tonal range is extended beyond that of any other loudspeaker, yet the size is small enough to use in any living room.

The reproducer stands 51 1/2" high, 31" wide, and 28" diagonally from the corner. Despite the small size, it is demonstrably capable of reproducing tones clear down to the low-C of the organ and of radiating fundamentals of such heavy pipes as the bourdon and tibia in the stopped diapason class. Only Klipschorn can substantiate such a claim.

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\* Trade Mark

With the extended bass range, Klipschorn offers a smooth response up to the highest audible sounds with a complete coverage of the listening area without "hot" spots or dead spots.

The Klipschorn reproduces the original sound without adding tones of its own; it reproduces the resonances of the original sound without injecting speaker resonances.

Demonstrated before crowds of laymen and technical experts, exactitude of reproduction with successive live and reproduced violin and piano has satisfied the most critical.

#### SPECIFICATIONS

The Klipschorn peak efficiency occurs at 36 cycles, with excellent remaining efficiency at 30. (The low-C of the organ is 32.7.) Trough efficiency at 57 cycles is better than 50%, to be contrasted with typical 2% to 5% efficiencies for direct radiators. The high frequency range extends past the limits of human hearing; dogs can be disturbed by oscillator tones which we mere humans cannot hear.

Power input rating of the standard system is 15 watts, affording better than 7 watts acoustic output. The best of direct radiators would require 100 watts input for comparable output. Recommended amplifiers are of only 10 watts capacity even for audiences up to 300. (Units of higher power rating for the large auditorium can be supplied on special order).

Physical dimensions: 51 1/2" high, 31" wide, 28" diagonally from corner. Occupied bulk, 20 cubic feet. (Wings on utility model extend to 42".) Overall height suitable for television screen on top for unobstructed vision.

All U. S. Klipschorns\* are solidly constructed by master craftsmen. Waterproof-bonded hardwood plywood is precision cut and joined with similar bonds and additional fastenings for ruggedness and long life commensurated with the low obsolescence of the engineering design.

The style 7 is offered in figured walnut and mahogany, in choice of shades, with lacquer rubbed to a satin finish. Upper structure is carefully designed to preserved full functionality sturdily constructed. See photo.

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\*The Klipschorn trademark is used by Vitavox of London under license; we therefore distinguish the U. S. product.

Utility models are of unfigured hardwood, natural color, economically finished in clear lacquer.

Styling has been the result of intensive study to achieve attractive lines and conservative aspect in keeping with long life expectancy and low obsolescence. A constant aim has been the highly practical one of least actual and apparent bulk, and preservation of certain fundamental principles of ancient and modern art such as the "golden mean" and "dynamic symmetry" whereby the most pleasing ratio of height to width is used. But in design styling the functional requirements have been constantly kept in mind.

#### APPLICATIONS

The Klipschorn has found wide application for phonograph and radio reproduction. Studio monitor and audition room applications are growing. As a sound generator for the electric organ it has no peer. Psychological-acoustic research, musical education, speech correction, and other fields are served by the new corner sound reproducers.

#### ASSOCIATED APPARATUS

Because "the better the speaker the worse it sounds" unless and until all sources of noise and distortion are minimized, the Klipschorn imposes severe demands on associated apparatus such as amplifiers, pickups, turntables, and tuners.

Recommended for use with the Klipschorn is the Brook 10-watt amplifier, either the remote 12A3 or the integral 12A2. This amplifier is modified by Klipsch and Associates to the extent of altering the response below 60 cycles to take full advantage of the Klipschorn performance in the low bass range. Rated at 10 watts, this amplifier delivers 9.5 watts at 30 cycles.

The best pickup arrangement tested to date is the GE head in the Gray arm. The Gray 106SP arm with interchangeability of heads is the most convenient and economical. When these are obtained through Klipsch and Associates, head slides will be so weighted that proper pressure is applied for either regular or LP pickups.

Complete phono consoles featuring the modified Brook, GE-Gray pickups, and suitable tables are offered as custom-built equipments, and individual components are offered.

Many existing tuners can be modified slightly to provide output satisfactory to feed the Brook-Klipschorn channel. Frequently it suffices to change the output circuit of the tuner to a cathode follower to derive a low-distortion radio source. Specific advice can be obtained on this subject by writing Klipsch and Associates.

## TECHNICAL BIBLIOGRAPHY

The following is a list of the more important papers by Paul W. Klipsch, inventor of the Klipschorn, relating to horn loudspeakers. Reference 2 is a comprehensive treatment which also reviews the related art including an extensive bibliography.

1. "A Low Frequency Horn of Small Dimensions", Journal of the Acoustical Society of America, Vol. 13, No. 2, Oct. 1941
2. "A High Quality Loudspeaker of Small Dimensions", Jour. Acous. Soc. Am., Vol 17, No. 3, Jan. 1946
3. "The Klipsch Sound Reproducer", FM and Television, Sept 1947
4. "Progress in Klipsch Speakers", FM and Television, Nov. 1948
5. "Developments in Corner Horn Systems", FM and Television, Aug. 1949.
6. U. S. Patents 2,310,243 and 2,373,692.

## Price List

Effective 2 December 1949  
(subject to change without  
notice)

All Prices FOB Hope, Arkansas

Klipschorn, K35D-15-7, style 7 mahogany, walnut, choice of colors rubbed lacquer finish	\$690.00 list
Klipschorn, K35D-15-7B, style 7B solid enamel finish, sprayed lacquer, choice of any non-luminescence Acme Automotive Chart colors	\$595.00 list
Klipschorn, K35C-15-U, utility clear lacquer on unfigured hardwood	\$515.00 list
Brook amplifier, 10 watt (modified for Klipschorn), model 12A2-K-1 and model 12A3-K-1	\$179.50 net
Gray arm, 106SP for interchangeable heads, including weighted slides for 1 regular, 1 LP head	\$ 45.15 net
G. E. heads, sapphire, professional quality	\$ 14.95 list
Turntable, K-201, shock-suspended, 2-speed, low rumble and wow	\$ 45.00 net

Custom built phono consoles, with radio-input jack, with or without radio, designed and constructed for operation with the Klipschorns, feature Brook Amplifiers, Gray arms, suspended tables, and are priced at \$450 up depending on type and number of tables, cabinetry, choice of radio, etc. Our K-201 table is recommended as a component of such console for most applications; where professional class equipment is desired we recommend the Rek-o-kut table for which we build a suspension. For information and prices, write, stating any special consideration to be met.

For systems of higher power ratings than the above listed 15-watt systems, Klipsch and Associates is prepared to design and quote. Woofers with 2 and 3 drivers have been designed for input ratings up to 50 and 60 watts. Standard systems can be altered for rating up to 60 input watts. At present the multible driver woofer units and systems are offered only in utility type.

Klipsch and Associates  
Hope, Arkansas