

SPECS

PEAVEY ELECTRONICS

44XT™ Titanium Compression Driver

(Patent Pending)

SPECIFICATIONS:

Throat Diameter:

Standard: 2" (50.8 mm)
Optional: 1.6" (40.6 mm)
supplied without throat
extension

Nominal Impedance:

8 ohms

Minimum Impedance:

7.1 ohms

DC Resistance:

6.8 ohms

Power Capacity 1,000 Hz to 20,000 Hz:

320 watts peak power
160 watts program
80 watts continuous using pink
noise band limited from
1,000 Hz to 20 kHz (AES
2-1984)

Power Capacity 500 Hz to 20,000 Hz:

200 watts peak power
100 watts program
50 watts continuous

Sensitivity:

111 dB SPL 1 watt at 1 meter
on-axis on a 80° H x 40° V horn

Nominal Efficiency:

30%

Frequency Response:

500 Hz to 20,000 Hz

Lowest Recommended Cross- over:

500 Hz at 12 dB/Octave

Diaphragm:

Commercially pure titanium

Voice Coil Diameter:

4" (101 mm)



Voice Coil Material:

Edge-wound aluminum ribbon
with a composite bobbin

Flux Density:

19000 Gauss (1.9T)

Dimensions:

Standard: 8.388" (213mm)
D x 6.05" (154 mm) H
Optional: 8.388" (213mm)
D x 3.63" (92 mm) H

Mounting:

Standard: Four 5/16" (7.93mm)
thru holes 90 degrees apart on
a 4" (101.6mm) bolt circle
Optional: w/out throat exten-
sion - four 1/4-20 threaded
holes 90 degrees apart on 5"
(127 mm) bolt circle

Net Weight:

Standard: 21 lbs. (9.5 kg)
Optional: 20 lbs. (9.1 kg)

Shipping Weight:

Standard: 25 lbs.
(11.4 kg)
Optional: 24 lbs.
(10.9 kg)

Features:

- * Radialinear™ phase plug
(patent pending)
- * One-piece titanium
diaphragm/suspension
- * Ferrofluid technology
- * Smoother/extended high
frequency response
- * Edge-wound aluminum
voice coil
- * Composite bobbin

DESCRIPTION:

The all-new Peavey Model 44XT is a large format titanium compression driver of professional quality. The 44XT compression driver has been designed to meet the requirements set forth by LucasFilm for THX® approval. The 44XT meets all THX requirements and may be used for all THX installations.

The 44XT is a high performance, high power compression driver with

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a smoother and extended high frequency response. It consists of our newly developed Radialinear™ phase plug (patent pending), one-piece titanium diaphragm and ferrofluid.

The new Radialinear™ phase plug construction was developed for a smoother, more linear frequency response with less distortion.

High frequency extension is achieved by focusing the acoustical energy of the diaphragm to a central point within the throat of the horn. By focusing the acoustical energy we can reduce the amount of high frequency cancellations and diffraction that is present in most other phase plug designs.

The diaphragm is constructed of an integral one-piece titanium diaphragm/suspension assembly while the voice coil is constructed of a new high-temperature composite coil former. The one-piece titanium diaphragm reduces the amount of moving mass, increasing the high frequency response of the driver.

The 44XT incorporates the latest in ferrofluid technology. Ferrofluid is a thin, synthetic oil-based liquid holding billions of submicroscopic magnetic particles in suspension. It surrounds the voice coil for controlled heat transfer. It essentially pulls the heat away from the voice coil, transferring it into the surrounding metal of the magnet structure. This in turn reduces the amount of power compression by lowering the voice coil temperature and improves the life of the 44XT compression driver. One key characteristic of ferrofluid is its ability to dampen resonance modes within speaker systems. The dampening of resonances improves performance and sound quality.

Every 44XT compression driver is tested with a series of performance measurements, mechanical and thermal tests. This gives you the confidence needed for real-world applications. As demanding as the sound reinforcement industry is, we have learned through the years that we must rely on quality as well as high performance.

The 44XT compression driver will bolt to most horns with a 2" throat and a 4" bolt pattern. If you are relying on a horn to support the driver, it is recommended to consult a structural engineer or use one of Peavey's CH®-6 or CH®-7 horns. The CH-6 and CH-7 have been optimized for use with the 44XT compression driver. Note: if the CH-6 is used, the adapter is not needed on the 44XT. Contact your local Peavey dealer for future horns soon to be available from Peavey.

The 44XT driver is designed for easy repair. In the unlikely event of failure, simply remove three screws from the back cover, disconnect the lead wires from the diaphragm, remove all screws from the diaphragm, and remove the diaphragm. Before you install the new diaphragm on the structure, the old ferrofluid will have to be removed and the gap must be cleaned.

YOUR REPLACEMENT KIT WILL CONSIST OF THE FOLLOWING:

1. Two packets of ferrofluid
2. Strips of absorbent filter paper
3. One replacement diaphragm
4. This instruction sheet/Material Safety Data Sheet

REPLACEMENT OF DIAPHRAGM

1. Remove the diaphragm assembly from the driver.
2. Remove the old ferrofluid by inserting a strip of filter paper into

the gap, allowing it to sit for one minute. Remove the strip and repeat the process, using fresh pieces of paper until no ferrofluid remains in the gap. If you run out of filter paper, any absorbent paper can be used. Repeat this process for both sections of the gap.

3. Inspect the magnetic gap for the presence of any debris. If necessary, clean the gap with a piece of folded masking tape (sticky side out).
4. Using the notch in the side of the packet as a locating guide, snip off the tip of the fluid-filled packet. Insert the tip into the gap and squeeze out the contents of the packet. The gap is broken into two sections, separated by broches in the front plate. Empty one complete packet per side.
5. Replace the diaphragm. It is **IMPORTANT** that the voice coil leads are aligned with the two broches in the front plate. (See Figure 4.)

Note: It is not necessary to rotate the magnet as you squeeze the packet; the ferrofluid is self-distributing. However, it is necessary to empty the contents of one packet into each half of the gap. The gap is broken into sections separated by two broches in the front plate. After the discharge of fluid, a small amount will remain in the packet. This was taken into consideration when the packet was filled to dispense the precise quantity required for your driver. Attempting to dispense the remaining ferrofluid may overflow the air gap, which has no benefit.

THX® is a registered trademark of Lucas Arts Entertainment Co.

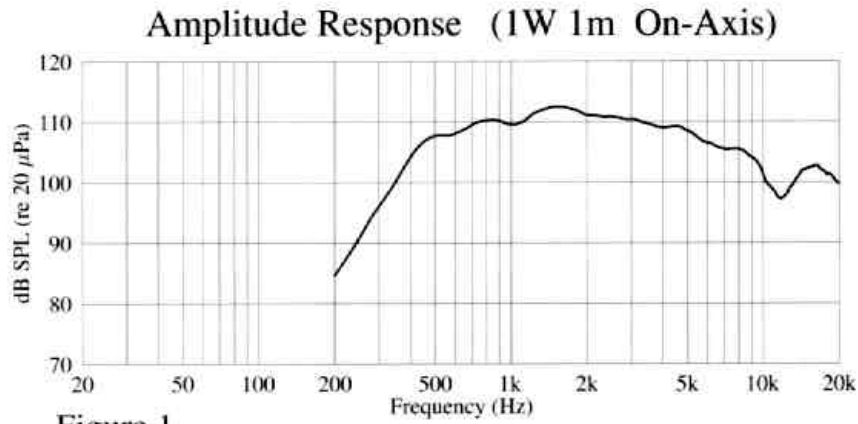


Figure 1

Amplitude response (1W 1m On-Axis) measured on a CH-7 constant directivity horn

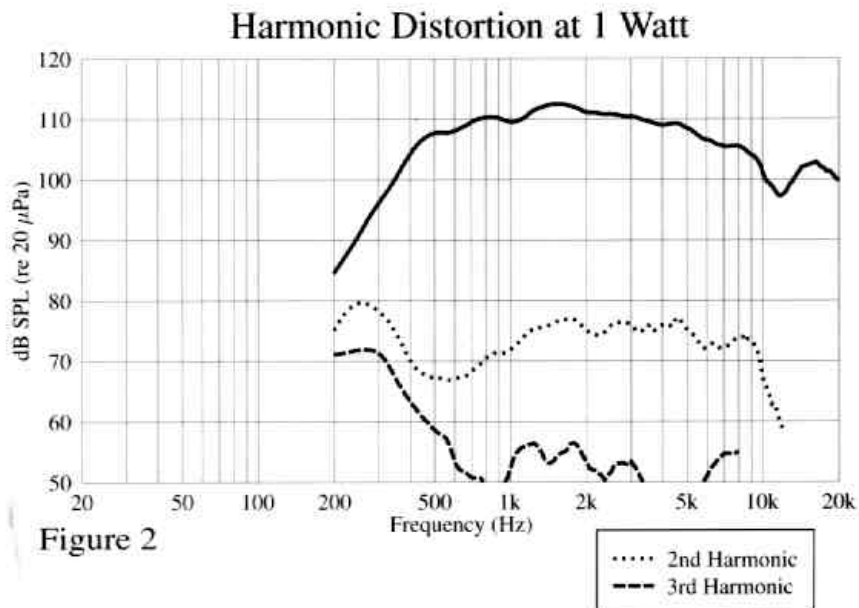


Figure 2

Harmonic distortion at 1 Watt measured on a CH-7 constant directivity horn

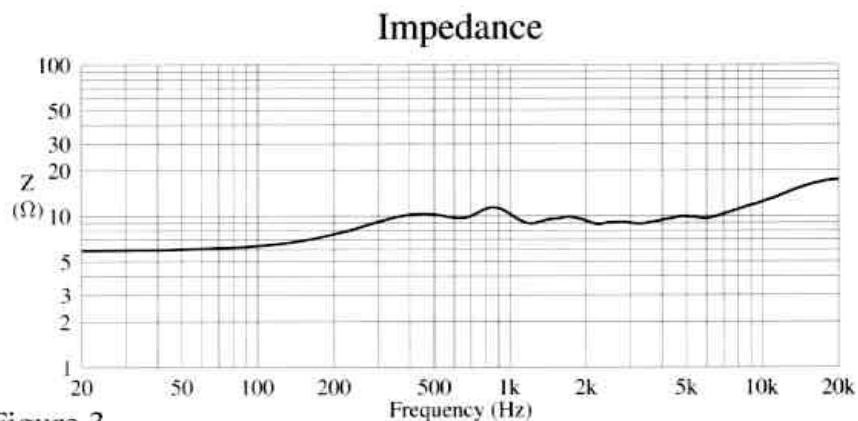


Figure 3

Impedance measured on a Plane-wave terminated tube

Voice coil leads must be aligned with notch located in the gap

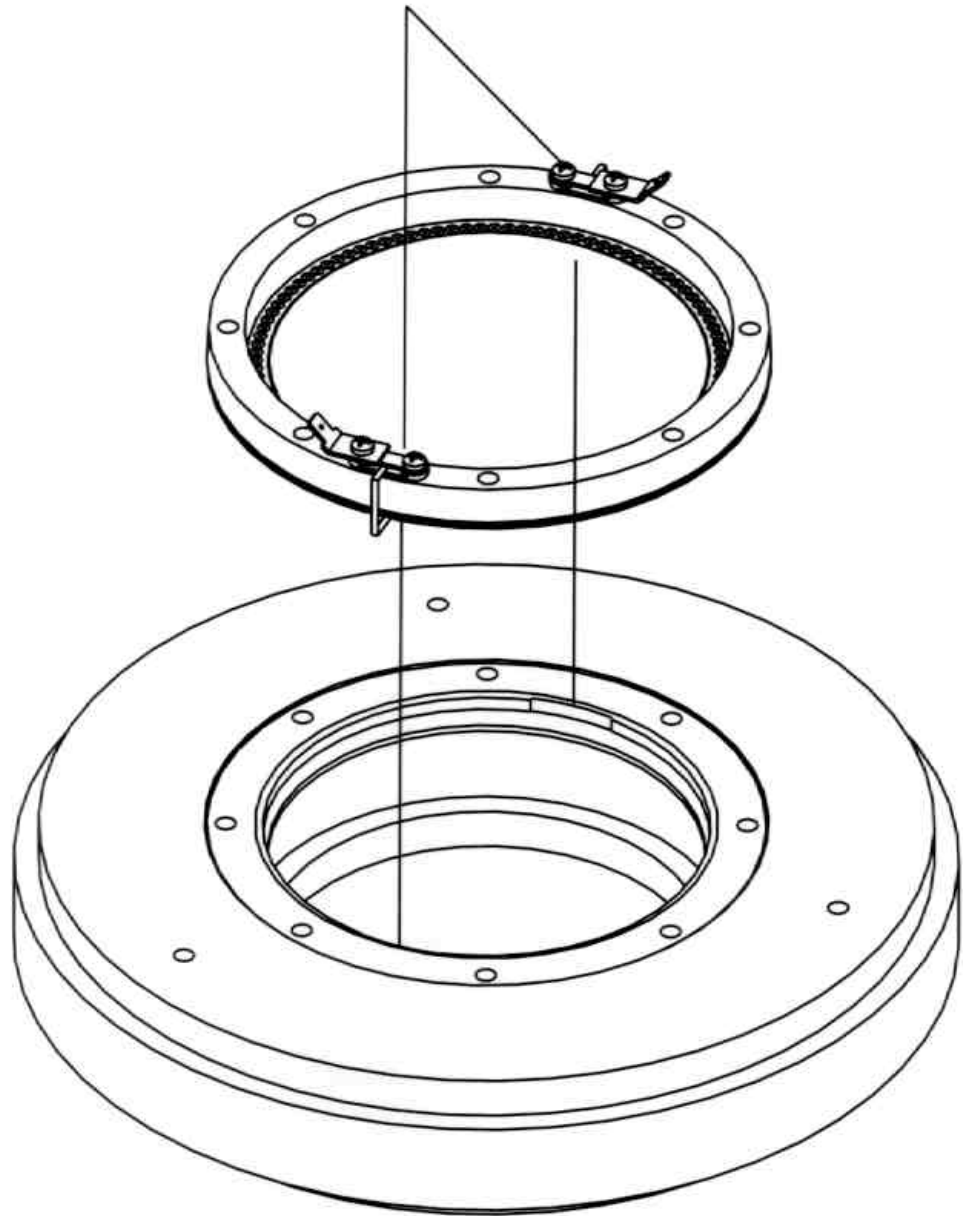


Figure 4 Assembly

Ferrofluid
MATERIAL SAFETY DATA SHEET (AUGUST 1997)

1. PRODUCT IDENTIFICATION

Manufactured by: Ferrofluidics Corporation
40 Simon St.
Nashua, NH 03061

Emergency Telephone: (603) 883-9800 (x212)

Chemical Name: Proprietary Product
Trade Name and Synonyms: APG S SERIES

Chemical Family: Colloidal Dispersion

Formula: Mixture

2. COMPONENTS - The precise nature of this mixture is proprietary information. A more complete disclosure will be provided to a physician or nurse in the event of a medical emergency.

Magnetite: 1 - 7% by volume
Oil Soluble Dispersant: 7 - 50% by volume
Carrier Liquid: 41 - 92% by volume
Aromatic Amine: 0 - 2% by volume

3. CHEMICAL AND PHYSICAL PROPERTIES

- **Boiling Point (° F)** >300 with decomposition
- **Specific Gravity** 1.0 to 1.4
- **Vapor Pressure (mm Hg.)** Negligible at 20°C
- **% Volatile by Volume** Negligible
- **Vapor Density (Air = 1)** >Air
- **Solubility in Water** Negligible
- **Evaporation Rate (175°C)** $1.5 \times 2.8 \times 10^{-7}$ gm/cm² sec
- **Appearance and Odor** Black fluid-Mild Odor

4. FIRE AND EXPLOSION HAZARD AREA

Flash Point: >200°F
Method: PMCC

Flammable Limits: uel Not Determined
lel Not Determined

Extinguishing Media: CO₂, Foam Dry Chemical,
Water Spray

Special Fire Fighting Procedure: Avoid smoke inhalation,
Water spray may cause frothing.

Unusual Fire or Explosion Hazard: None

5. HEALTH HAZARD AREA

Threshold Limit Value: 5 mg/M³ for oil mist in air (OSHA Regulations 29 CFR 1910-1000).

Effects of Overexposure: No experience with overexposure. Prolonged or repeated contact with skin or eye contact may cause irritation. Inhalation of mist or vapor at high temperature may irritate respiratory passages.

5. HEALTH HAZARD AREA (Cont.)

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact: Wash with soap and water.
Eyes: Flush with water, consult physician for treatment.
Inhalation of Smoke or Mist: Move to fresh air and refer to physician for treatment.

6. REACTIVITY DATA

Stability: Stable
Conditions to avoid: Pyrolysis
Incompatibility (materials to avoid): Strong oxidizing materials, heat, and flame.
Hazardous Decomposition Products: Burning may produce carbon monoxide and nitrogen oxides.
Hazardous Polymerization: Will not occur.

7. SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Remove free liquid. Add absorbent (sand, earth, sawdust) to spill area. After removing absorbent, wash surface with soap and water to reduce possible slipping hazard.

Waste Disposal Method: Consult federal, state, and local regulations applicable to disposal of waste oils.

8. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type): None required unless smoke, mists or vapors are produced.
Ventilation: No special ventilation required.
Protective gloves: If required to prevent prolonged or repeated skin contact.
Eye protection: Safety glasses, if splash is possible.
Other protective equipment: Not needed.

9. SPECIAL PRECAUTIONS

Precautions to be taken in handling and storing: Ordinary care in handling chemicals. Wash hands after handling.
Other precautions: Avoid contamination of tobacco products. Users should be aware that a very small percentage of the population may display unexpected allergic skin reactions to otherwise innocuous industrial chemicals and raw materials.

10. COMMENTS

- This product **DOES NOT** contain any materials considered to be carcinogenic by any recognized sources.
- This material is not sold for use in products for which prolonged contact with skin or implantation in the human body is intended. Ferrofluidics Corporation does not recommend this material as safe and effective for such uses and assumes no liability for any such use.
- This product does not contain any chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

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Features and specifications subject to change without notice.

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