

# C-ducer

## C-ducer CQ Series USER HANDBOOK



### CONTENTS

PAGE	
1	Principle of operation, the C-ducer preamplifier
2	Care of your C-ducer, the C-ducer cable
3	C-ducer adhesive tape - <b>IMPORTANT NOTES</b>
	<b>APPLICATION NOTES</b>
4	Acoustic stringed instruments
5	Piano & Harp
6	Drums & Percussion
7	Other Applications, Warranty & Service Information

### **The C-ducer *tape***

The C-ducer (*Capacitive-trans-ducer*) is a contact condenser microphone. It is light in weight so as to minimize interference with the vibration of the instrument to which it is attached, and it has a phenomenal dynamic range (the transducer itself has a dynamic capability of >155dB) and can handle the amplitudes *within* a bass drum without distortion. The frequency response of the transducer is an incredible 0.1Hz to 1MHz, although this is deliberately restricted within the preamplifier to minimize induced noise and interference.

Two lengths of C-ducer *tape* are available, 3" (7.5cm) and 8" (20cm). The shorter length is suitable for smaller instruments (violin, folk harp, banjo etc), and the longer *tape* is designed for other acoustic stringed instruments (double-bass, tello, acoustic guitar etc), drums and piano.

There are two C-ducer systems for use on piano and they both use two *tapes*; one has a mono output (the CQ2/8), and the other has stereo outputs (CQS/8). The *tapes* are applied in exactly the same position on the piano in both cases (see Page 5).

### **The C-ducer Preamplifier**

The C-ducer CQ System uses a low-noise preamplifier which has been integrated within the XLR-type connector. The output from this connector is suited to any standard 600 ohm balanced, microphone-level input and is wired with:

- Pin 1 - Ground
- Pin 2 - Signal
- Pin 3 - Return

It is also possible to connect the output from the phantom-power supply unbalanced by using Pin 2 (live) and Pin 1 (Ground) leaving Pin 3 disconnected.

**Note: The C-ducer CQ Series should not be powered with anything other than a DIN45596 48V phantom-power supply.**

## Care of your C-ducer

C-ducer is a rugged instrument; however, certain precautions should be taken to ensure the many years of trouble-free use it has been designed to give:

- The C-ducer should never be punctured or cut.
- Although the C-ducer is designed to be *splashproof*, it should not be deliberately immersed.
- Do not expose your C-ducer to heat (above normal room temperatures) or leave it in direct sunlight.
- The C-ducer should only be powered by a 48V phantom power supply that conforms to DIN 45596.
- The C-ducer should only be attached to the instrument using adhesives outline on page 3.
- If it is necessary to reduce the cable length of the C-ducer, the instructions in the following section should be noted:

## Reducing the C-ducer Cable Length

The length of the C-ducer cable is suitable for virtually all applications. However, it is permissible to reduce this cable length (for instance, to insert an in-line connector) if the following precautions are taken.

The C-ducer cable has been designed for low-noise and low-interference and includes an additional ground shield. This takes the form of a black conductive plastic layer between the outer ground braid and the clear inner insulator. **If the cable is shortened this black layer must be stripped right back to the ground braid (so it is at least ¼" (6mm) back from the signal conductor).**



If you wish to insert a miniature in-line connector in the cable it is important to use fully shielded (metal) connectors for this purpose, since hum and noise may result from not doing so (talk to your dealer/distributor if you are in doubt).

### **Attaching your C-ducer**

Your C-ducer CQ System contains a spare reel of C-ducer double-sided adhesive tape. When the adhesive on the surface of your C-ducer no longer has adequate adhesion to stick to the instrument, gently remove the old adhesive layer and replace with a new piece. It may also be necessary to replace the adhesive foam pad that is originally supplied to prevent the small plastic joining block between the C-ducer *tape* and the cable from falling off the instrument. *If this happens, distortion and noise may result.* Further supplies of adhesive tape and pads are available from your C-ducer dealer.

**Note: It is the User's responsibility to ensure that the surface of the instrument will not be damaged by the C-ducer adhesive. While every care has been taken to design this adhesive so as not to cause damage to the surface of an instrument, Audio Marketing Group and its distributors accept no responsibility for such damage, and strongly recommend that you gently test the adhesive on a small area of the instrument that is not normally visible prior to mounting the C-ducer in its final position.**

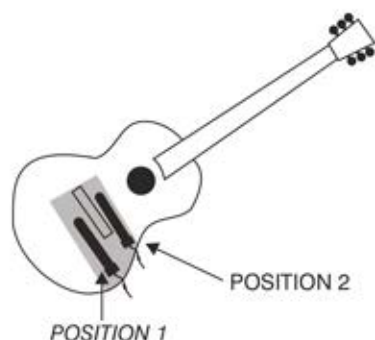
Delicate surfaces can sometimes be protected by first applying a piece of "Clingwrap" or "Clingfilm" type material to the surface of the instrument before attaching the C-ducer *tape*. There are also various types of low-adhesive plastic films available from most book stores and hardware stores that may be suitable. *In all cases gently apply the material to a discreet part of the instrument before applying it in the final position.*

In some cases (when attached to the underside of a piano, for example) the weight of the cable may tend to pull the C-ducer *tape* off the instrument despite the adhesive foam pad. The use of adhesive-backed cable clip as a strain-relief solves this problem.

**Note: The C-ducer should not be covered with duct tape, gaffers tape or similar. The surface of the C-ducer that is not stuck to the instrument should be allowed to *breathe*.**

## APPLICATION NOTES

Remove the protective backing from the C-ducer *tape* and carefully attach it to your instrument in the position shown. Attach the C-ducer lightly at first, this will enable you to experiment with the exact position that best suits your instrument, ear and sound equipment. **Experimentation around the approximate position shown is the key to getting the perfect sound for you.**



### STRINGED INSTRUMENTS

**Guitar:** Two positions are shown, position 1 has been found suitable for larger, more resonant instruments or when enhanced bass is desired. Position 2 provides a natural balance on Classical and Spanish-style instruments. In both cases the *tape* should be mounted close and parallel to the bridge.



**Violin, Cello and Bass:** Position the tape over the sound post initially and move it in small increments until the desired sound is found. On Bass and 'Cello (particularly those instruments of heavier construction) success can sometimes also be found with the C-ducer mounted near the *f*-holes.

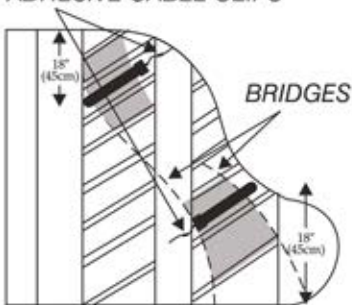


**Banjo:** Depending on the type of instrument and the style of play, the C-ducer can either be mounted with the adhesive foam pad stuck to the rim and just the tape portion attached to the skin. When percussive effects are used (ie tapping the skin) the position of the *tape* will alter the level of the effect.

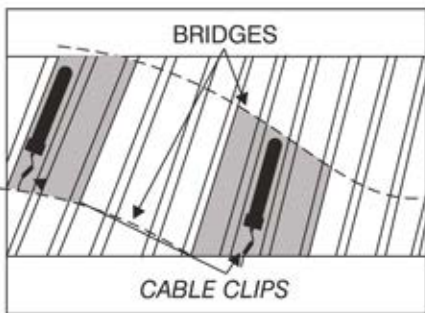
**Harp:** Two *tapes* are used on harp, CQ2 for Mono or CQS for Stereo use. Two 3" (8cm) *tapes* should be used on smaller harps (ie CQ2/3 or CQS/3) and two 8" (20cm) *tapes* on concert harp (ie CQ2/8 or CQS/8). Attach *tapes* in positions shown, parallel and close to the strings. **Important:** Where the harp is decorated with gold leaf or similar decoration, great care should be taken to protect the finish before applying the C-ducer (see Page 3). Where the Stereo C-ducer system is used (CQS/8 or CQS/3) it will be found that the lower *tape* responds predominantly to the bass strings and the higher *tape* to the treble.



ADHESIVE CABLE CLIPS



VIEW FROM UNDERNEATH



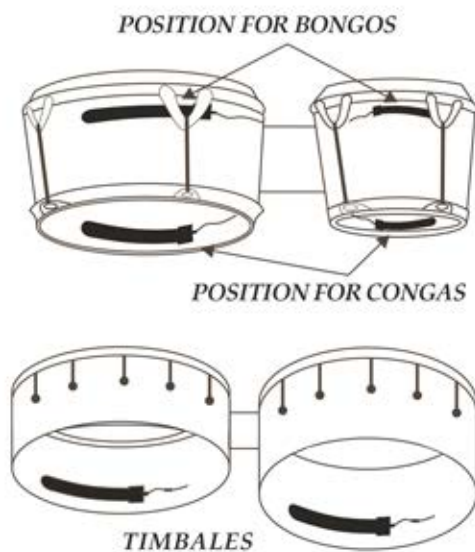
VIEW FROM THE BACK

**Acoustic Keyboards** require two C-ducer *tapes* for maximum performance. The smaller members of the family (Celeste, Clavicord etc) require two 3" (8cm) *tapes* and others use two 8" (20cm) *tapes*. Where Stereo is desired, the CQS system should be used (ie CQS/3 or CQS/8). *Tapes* should be attached in the positions shown in the diagrams; experimentation is recommended for optimum results, however, it has been found that best results are generally obtained mounting the *tapes* directly under the bridges and between the ribs. When the stereo C-ducer is used (CQS), the *tape* under the bass string bridge will carry

predominantly bass notes, and the *tape* beneath the treble string bridge will carry mainly treble notes. In all cases mount the *tapes* between the soundboard struts and start experimentation from a position of around 18" (45cm) in from the edge of the soundboard. If an unnatural degree of treble 'bite' is required interesting effects can be obtained by mounting one of the *tapes* directly onto the metal harp on the inside of the piano.

Adhesive cable clips should be used if problems are found attaching the *tapes* securely, since the plastic moulding at the cable end of the *tape* must not be allowed to rattle or move and should be flat against the soundboard. Under no circumstances should any kind of tape be applied to the outer (brown) surface of the C-ducer *tape*.

**Drums & Percussion:** There is a complete range of C-ducer systems for drums and percussion, including the C-ducer Drum Wizard which incorporates MIDI and Trigger outputs as well as balanced and unbalanced audio. Detailed information is available within a separate Application Note for these uses.



**Latin Percussion:** The C-ducer CQS/8 produces excellent results when used on Latin drums such as Bongos and Congas.

Two *tape* positions are suitable: wrapped inside the lower rim of the drum (particularly suited to Congas and Timbales) or wrapped around the outer, upper rim (particularly recommended for use on Bongos). Experimentation is recommended for optimum performance.

**Sound Effects:** C-ducer is a very useful tool in the sound effects department. It is easily stuck to a creaky door, floorboards (for picking-up footsteps), a typewriter or virtually anything that makes a sound.

**Under Water:** C-ducer makes an excellent hydrophone. It does however, require a waterproof coating or sheath if prolonged immersion is anticipated.

**Industrial & Mechanical Vibration:** The sound emitted by worn bearings in an engine or gear train can be readily detected by attaching the C-ducer to the engine block or transmission case. Where excessive heat prevents direct contact, C-ducer can be wrapped around a rod or screwdriver, the end of which is pressed against the block or case. An industrial preamplifier is available for use when frequency response beyond that of audio is required.

**Electric Instruments:** An interesting and appealing sound can be obtained by putting a C-ducer on the headstock of a guitar or electric bass. This sound can then be mixed with the signal from the electric pickups if desired. Parts of the body on electric instruments also frequently produce appealing sounds. Using this acoustic signal for one half of a stereo sound can be very interesting.

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#### LIMITED WARRANTY

This product is warranted for one year from the date of original purchase against defects in workmanship and materials. At the option of the distributor or manufacturer, parts that prove defective will either be repaired or replaced or the whole product will be replaced. The manufacturer and distributor(s) accept no responsibility for incidental or consequential loss or damage from any cause whatsoever.

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**Service:** Warranty and non-warranty service may be obtained from your authorised C-ducer distributor or national service centre.

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