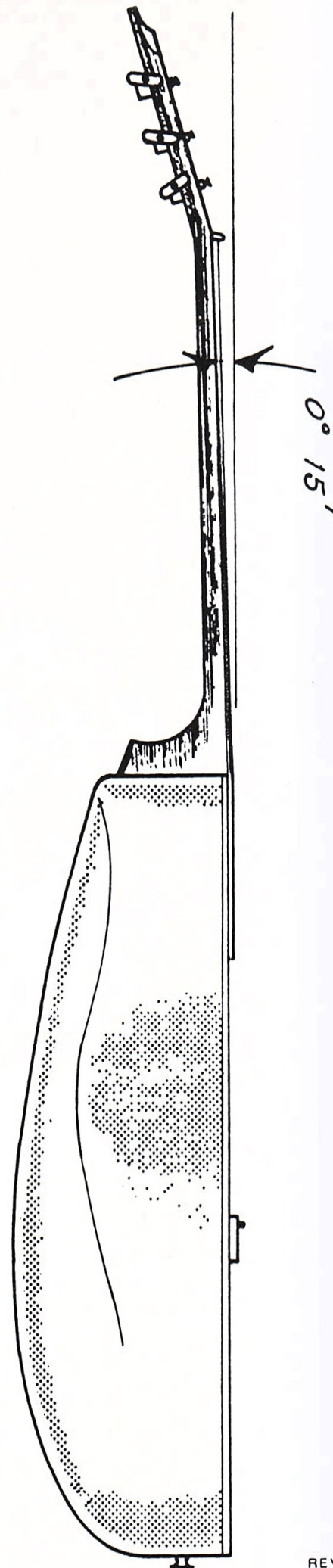




DIVISION OF **KAMAN** CORPORATION
NEW HARTFORD, CONNECTICUT 06057

OVATION INSTRUMENTS

All Ovation roundback acoustic guitars except the Classic are constructed so that the neck drops off at a slight angle ($0^{\circ}15'$) relative to the top. In sighting down the neck, it may appear to have a high point where the neck meets the body. This, however, is not true. At this point the neck merely changes direction, allowing the frets mounted on the top of the guitar to fall away. As any guitar goes through natural ageing the tension of the strings bend both the neck and body slightly upwards. This can cause the strings to buzz on the frets which lie over the body and there is no cure for this, short of removing the frets. Another problem found in older guitars is that the action cannot be set low enough because the saddle would have to be set below the top of the bridge to achieve the desired action. We feel that we have solved these problems in our Ovation roundbacks by this built in mechanical advantage.



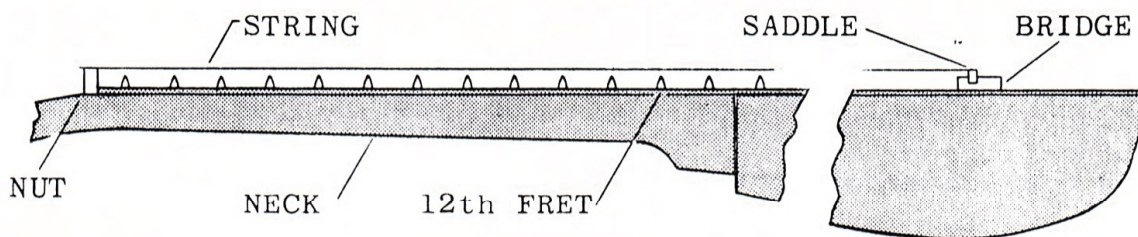
ADJUSTMENT of the STRING HEIGHT (ACTION) of the ACOUSTIC GUITAR



1. CHECK to make certain that the neck has been adjusted to the optimum desirable warp (.001 to .005).

NOTE

All string action is measured at the 12th fret. Measure in 1/32nds of an inch from the top of the 12th fret to the bottom of the string.



2. AFTER CHECKING THE WARP:

- a. If it is decided that the action is too high, or is correct (to Ovation standards), but a lower action is desired by an individual player, the string height may be lowered by equal removal of material from the bottom of the saddle.

NOTE

For every 32nd of an inch removed from the bottom of the saddle, the string action at the 12th fret will lower 1/64th of an inch.

CAUTION

DO NOT attempt to lower the string action by filing the slots in the nut.

- b. If it is decided that the action is too low, and height is required, a new saddle must be obtained and then lowered to the desired height.

RECOMMENDED STRING HEIGHTS FOR OVATION ACOUSTIC GUITARS

	Bass "E" (6th) string	Treble "E" (1st) string
Balladeers		
Standard & Deluxe	7/64	5/64
12-string	7/64	5/64
Classics	5/32	4/32



OVATION INSTRUMENTS

DIVISION OF

KAMAN

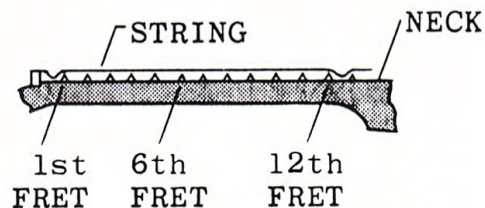
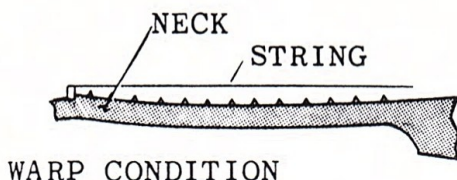
CORPORATION

NEW HARTFORD, CONNECTICUT 06057

ADJUSTMENT OF A WARP IN THE NECK



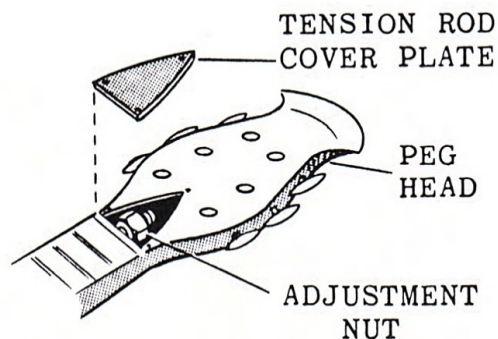
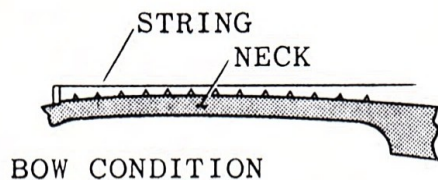
1. CHECK to make certain that the instrument does have excessive warpage of the neck.



- a. Depress the bass "E" (6th) string at the 1st and 12th fret.
- b. Sight distance between the string and the plane of the frets. Allowable distance should be under .015 (measured at the 6th fret).
- c. If distance exceeds .015, the neck does have excessive warp.

2. ADJUSTMENT PROCEDURE

- a. Remove the tension rod cover plate on the peg head.
- b. Insert a $\frac{1}{4}$ -inch hex drive and tighten the nut (clockwise).
- c. Depress the bass "E" (6th) string at the 1st and 12th fret.
- d. Sight distance between the string and the plane of the frets. Allowable distance should be under .015 (measured at the 6th fret).
- e. Average desirable warp should be .001 and .005.



CAUTION

DO NOT over-adjust, or a bow condition will result in the neck.

- d. Replace the tension rod cover plate.



OVATION INSTRUMENTS

DIVISION OF

KAMAN

CORPORATION

NEW HARTFORD, CONNECTICUT 06057