

# *Williams*

**GUITAR COMPANY**

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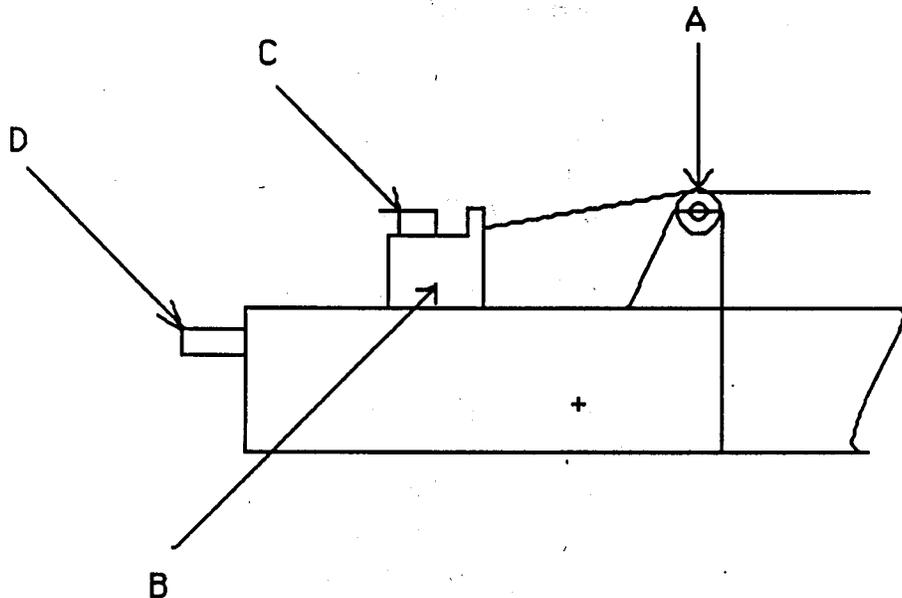
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## **OWNER'S INFORMATION**

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## Gearless Tuning Assembly:



- A. String Roller
- B. String Block
- C. String Hold-Down Screw
- D. 3/16" Hex Tuning Screw

### **Tuning & String, Replacement Information:**

#### Gearless Tuning:

1. Tune guitar open by turning hex screws on gearless tuner.
2. Tune pedals and knee levers by turning nylon hex nuts at right end.

#### Split Tuning:

1. Tune lowering knee lever 25 cents below desired note by using lowering nylon hex nut.
2. Tune lowest note by turning splitter screw on the top of the guitar at the right hand end.
3. With the knee lever engaged to lower note, also press pedal to raise note. The "split" note is then tuned by turning nylon hex nut that lowers the note.  
(See examples on the next page)

### Split Tuning Examples:

Vertical Knee Lever (VKL) = B - Bb

A pedal = B - C#

VKL + A pedal = C (split note)

B pedal = G# - A

KL=G#-F#

KL + B pedal = G (split note)

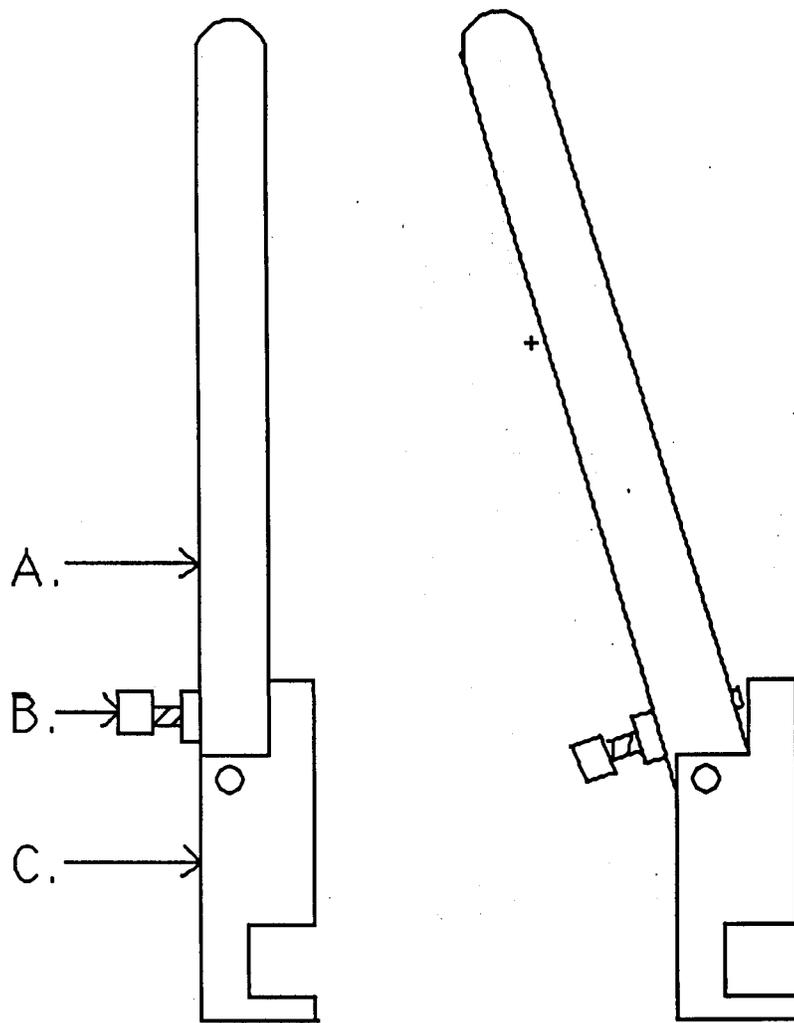
### String Replacement on Gearless Tuner:

1. Back off hex screw at gearless tuner assembly until string can be released from changer lever.
2. Loosen string hold down screw on string block.
3. Thread string end through eyelet of string block.
4. Hook spool onto changer lever and pull the string end tight around the rear portion of the string hold down screw.
5. Tighten the hold down screw.
6. Wiggle string tail until it breaks off.
7. Cut off heavy gauge wound strings with wire cutters. .

### *Important:*

String blocks should be approximately alongside each other on the gearless tuner assembly. In addition, the "floating" 3/16" hex tuning screws should be pushed or tapped back, into position before restringing.

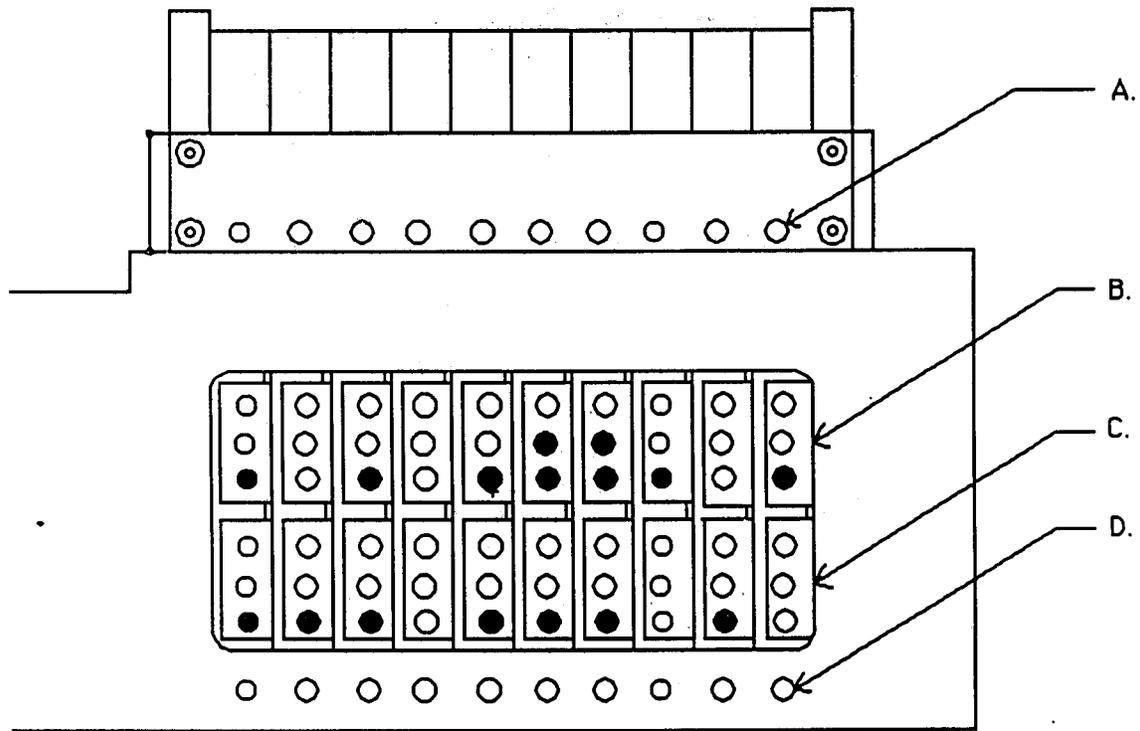
## Knee Lever Assembly:



- A. Knee Lever
- B. Angle adjusting screw
- C. Knee lever mount

Knee lever slant adjustment may be made by simply loosening nut on angle adjusting screw and turning the adjusting screw in or out for the desired angle.

## End View:

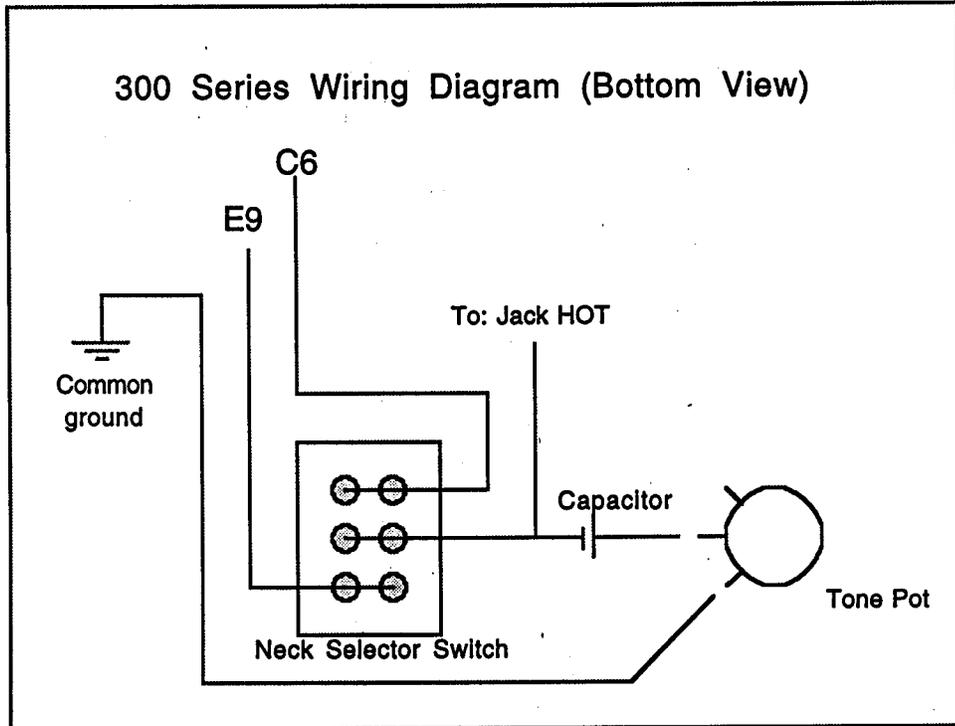


- A. Splitter Screws
- B. Raising Changer Arm
- C. Lowering Changer Arm
- D. Changer Return Spring Adjusting Screw

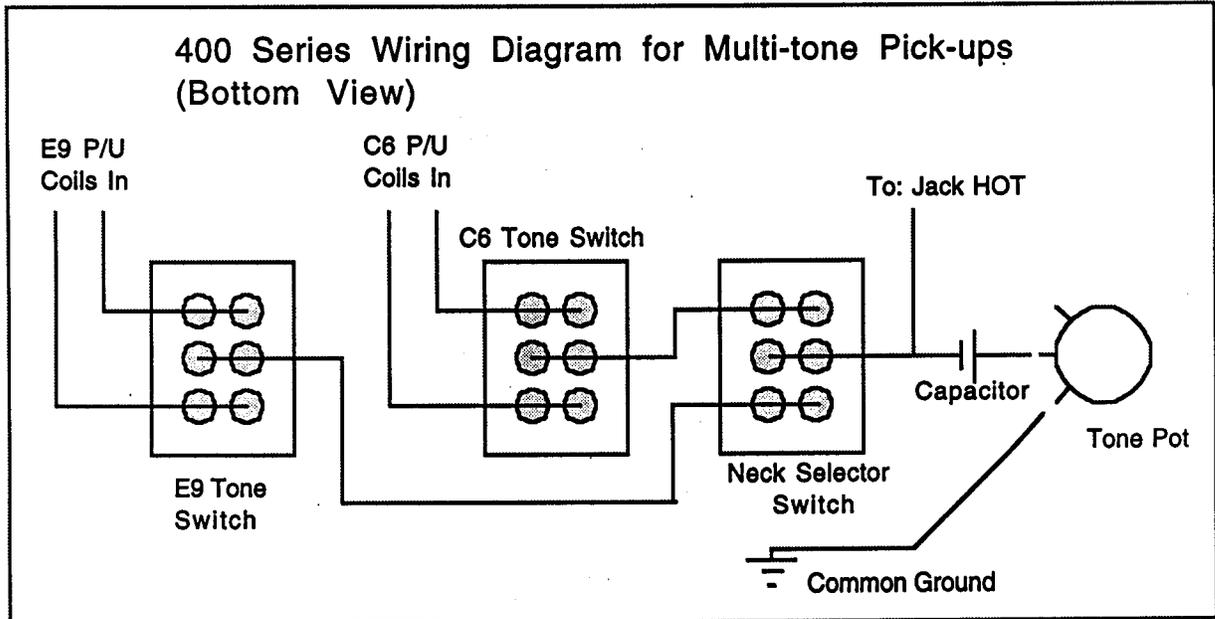
## Tuning Information:

1. Tune the guitar open using tuning gears or gearless 3/16" hex tuning screws.
2. Tune pedals and knee levers by tuning the nylon hex nuts at right hand end-plate window.

### 300 Series Wiring Diagram (Bottom View)



### 400 Series Wiring Diagram for Multi-tone Pick-ups (Bottom View)



## General Information:

- Changer return arms should "bottom out" against the changer plate beneath the springs (bottom side) when the guitar is in "neutral" or is not being played.

For Example:

Engaged E - Eb knee lever. Strings 4 & 8 are lowered by changer lowering arm. When the knee lever is released, the changer arms should bottom out on the plate. If the arms don't bottom out against the plate the changer springs should be tightened slightly or the nylon tuning nuts should be backed out and the knee lever retuned.

- The string changer pulling rods should have a small amount "play" or movement when the guitar is in neutral. If the rods are tight the nylon tuning nuts should be adjusted to loosen the rods.

Then retune the guitar.

- Lube all pivot points with 3-in-1 oil or chain and cable lube or other quality lubricant. String changer arms and levers, as well as string rollers should be lubed often.

***Important:*** do NOT allow oil or lube onto string levers under the strings. This will result in *hysteresis* (imperfect pitch return).

### **Warranty Information:**

Williams Guitars are covered under a one year unlimited warranty for parts and labor covering any malfunctions during normal use. Williams Guitar Company reserves the right to determine what can be deemed "normal use." Lacquer checks and wood cracks are not covered under this warranty.