

Fender

400

PEDAL STEEL GUITAR

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SANTA ANA, CALIFORNIA

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Fender

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PEDAL STEEL GUITAR

The Fender 400 Pedal Steel Guitar for professional, advanced and student musicians is yet **another instrument designed** by Fender fulfilling the changing requirements of steel guitarists brought about by the advancements in the music world. The Fender 400 is designed to make possible its inclusion in all types of musical arrangements which has not been possible in the past.

The instrument employs a 23" string length with eight strings. Only the finest metals are used in the Fender 400, and at no point have corners been cut to reduce cost at the expense of quality parts or performance. The permanent mold cast frame of aluminum alloy provides a far greater degree of rigidity and is practically indestructible. It is designed to receive the instrument in such a way that temperature changes will produce no detuning effects, and in addition, the rigidity of the frame and the design of the instrument preclude detuning when the pedals are operated.

Pulling levers, bridges and nuts and other parts subject to wear are of case-hardened steel. All metal parts exposed to the player's hands are heavily chrome plated, presenting an extremely attractive appearance. The new-type patent heads make tuning easier and more accurate, and the new case-hardened cam-action movable bridges have been incorporated for easier pedal action and to relieve string breakage.

The design of the Fender 400 is such that undue strain and sharp bends in the cables are eliminated. Cable-connecting units are made in the same manner as airplane control assemblies to assure trouble-free operation.

The versatility of tunings is made possible by the sixteen pulling levers which actuate the strings (a flattening and sharpening lever for each). Since cable hookups may be made to any of the pulling levers, and by virtue of the fact that the pedals may be used singly or in combinations, it is possible to achieve a great variety of tunings by **use of the pedals**.

There is no limitation as to the number of hookup patterns that may be used, and any change that may be desired can be easily made by repositioning the cable loops on the pulling levers.

The new type pickup employed on the Fender 400 Pedal Steel Guitar provides tonal range and harmonics far surpassing other pickups on the market, and in addition, it is easily adjusted for string balance to suit the player.

The Fender 400 is without question one of the most advanced instruments of its type on the musical market. **Every steel guitarist from professional to student will find it to be a great improvement in steel guitars, and one** which will improve playing technique and provide variety to musical arrangements. Its versatility, ease of handling and playing and numerous features contributing to its simplicity of setting up make it without equal by any other single-neck pedal guitar.

THIS MANUAL IS SUPPLIED TO ASSIST YOU TO FULLY UNDERSTAND AND ACHIEVE THE ULTIMATE IN PERFORMANCE AND SATISFACTION WITH THE LEAST POSSIBLE CHANCE FOR ERROR. IT IS IMPORTANT THAT YOU READ THE INSTRUCTIONS CAREFULLY TO BECOME FAMILIAR WITH THE MANY FEATURES OF THIS MODEL AND ENJOY THE PERFORMANCE IT OFFERS.

SETTING UP THE INSTRUMENT

The Fender 400 Pedal Steel Guitar with legs and rods is carried in one case for convenience. The guitar is set in the case upside down to facilitate inserting and removing the legs and pull-rods. The legs and the rods are placed in the plasti-leather bag preventing damaging the pedal board or instrument while being carried.

NOTE: In following the setting up instructions, it is assumed that the instrument is placed bottom side up in the case.

1. Remove the four legs from the fluted bag and note that two of these are flanged four inches from the rubber tip. Insert these two legs on the front side of the instrument which is identified as the side to which the cables extend. Insert the two remaining legs.
2. With the pedal board in an upside down position, place the "U" brackets on the two flanged legs with the flanges supporting the brackets. Slide the slotted plates over the legs as far as possible and tighten the wing nuts.
3. The pull-rods are then connected to one of the bell-crank holes located on the inside front frame. Easier pedal action will be obtained with the hole nearest the edge. As each one is inserted in the bell-crank hole, slip the ball end in the keyhole slot in the pedal. Tighten the ball-end to remove cable slack, being careful, however, not to use too much tension as the pulling levers may be unnecessarily actuated.
4. The instrument is now ready to place in playing position.

ADJUSTING PEDAL HEIGHT

All pedals should be checked to make certain they do not touch the floor when depressed. If a pedal need be raised, loosen the pedal stop-screw and reset the pull-rod nut.

To lower a pedal, loosen the pull-rod nut the desired amount, then reset the pedal stop-screw.

It will be helpful in playing to establish one or two reference pedals for orienting the foot. It is suggested that these reference pedals be raised slightly for this purpose.

SETTING UP THE TUNING CHANGERS

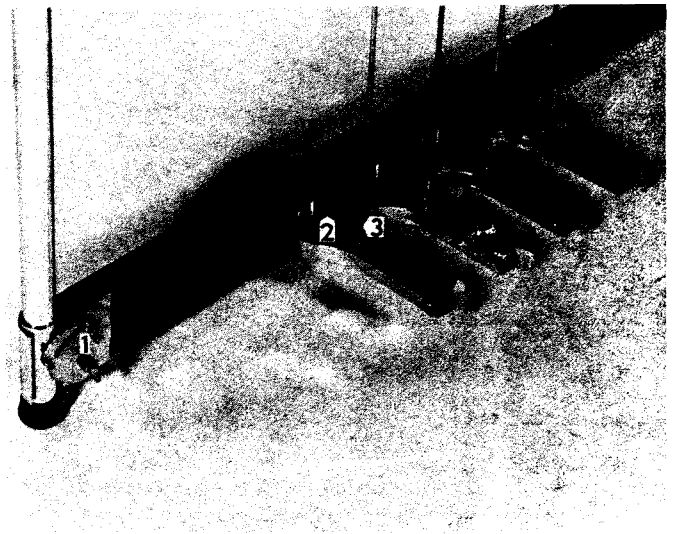
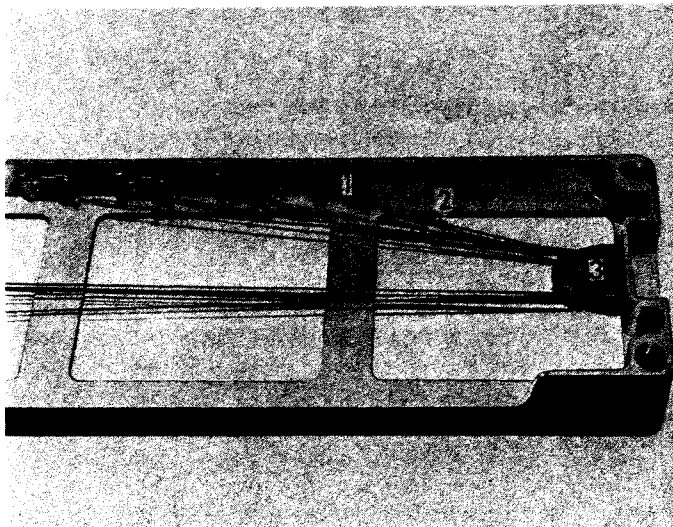
The instrument is set up at the factory with the tunings and pedal arrangements indicated on the tuning chart on page 6. Before making changes, it will be helpful to study this chart to become familiar with the method used in achieving this setup. From the illustration, you will find there are sixteen pulling levers for each string. Starting with the first string levers, you will note that the first lever has a tension spring. **THIS LEVER AND ALL SUCH LEVERS WITH TENSION SPRINGS ARE USED TO FLAT THE STRINGS. THE OTHER LEVERS ARE USED TO SHARP THE STRINGS.** Thus, there is a flat and sharp lever for each string. These levers (alternating flat and sharp) are in string-order sequence.

Pedals are numbered from left to right with the instrument in playing position.

Follow the No. 1 cable and note that the cable loops are attached to the flattening lever of the second string and the flattening lever of the third string. The chart below (first pedal) indicates a minus sign (-) for the second and third string change. A plus sign (+) indicates a sharped string change. This method of indicating desired pedal changes is used throughout. Follow up each cable hookup so as to become thoroughly acquainted with the levers. **NOTE THAT THE CABLES AT THE PULLEY BLOCK ARE IN ORDER FROM TOP TO BOTTOM PREVENTING OVERLAP AND BINDING.**

The cable turn-buckles are used to remove the slack from the cables. Just enough tension should be used to keep the cables taut. Too much tension will cause the levers to be actuated.

In preparing your own tuning chart, it is suggested that the form for the tuning charts on pages 6 and 7 be followed. It gives the basic tunings, the pedal number and the two strings to be changed by that pedal. Also, the chord notation for that pedal is helpful for reference.



1 - Bellcranks. 2 - Turnbuckles. 3 - Pulley block.

Completed setup of pedal board and pull rods. 1 - Pedal board mounting plate. 2 - Pedal stop screw for pedal height adjustments. 3 - Pull rod outs.

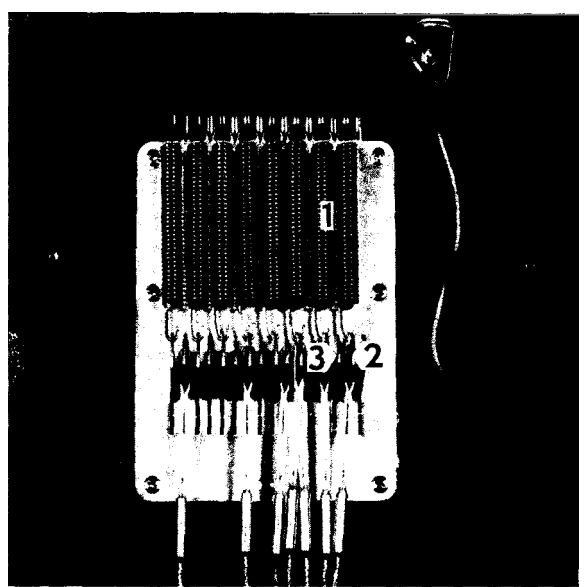
Bottom view of instrument showing pulling lever assembly and cable loop hookups.

1. Tension springs attach to all flattening levers. 2. First string flattening lever
3. First string sharpening lever

INSTRUCTIONS FOR MAKING THE CABLE HOOKUPS

Study the tuning charts carefully, noting the cable hookups on the pulling levers under the instrument. Each cable controls two cable loops. These loops are placed over the ends of the pulling levers. The pulling lever assembly for each neck consists of sixteen levers, eight of which have springs attached. These levers are used to flat the string tones. The adjacent levers are used to sharp the string tones.

NOTE: The pulling levers are in sequence for each string. Starting with the first string, the first lever has a spring attached. This lever and all such levers with tension springs are used for flattening string tone. The next lever, without the tension spring, and all such levers, are used to sharp the string tones.



1. After completing your tuning chart, determine which pedals are to be affected. Loosen the turn-buckle on the lowest numbered cable to be changed.
2. Remove the loops from the levers and lay the cable aside.
3. Loosen and remove the loops on the next cable to be changed and lay aside, being sure it is separate from the first cable removed.
4. Remove the balance of the cables to be changed in this manner.
5. Starting with the first cable, or lowest numbered cable, place the two loops on the pulling levers as indicated by your tuning chart.
6. hook up the other cable:: in the same manner **MAKING CERTAIN THIS IS DONE STARTING WITH THE LOWEST NUMBERED CABLES.**
7. After all the cable loops have been attached to the pulling levers to be used, check to make sure that the cables at the pulley block are in order and do not bind.
8. Make sure the hookup is accurate, then tighten the turn-buckles on the cables. Take up just enough to remove the slack-too much tension may actuate the pulling levers.
9. Tune the pedal-actuated strings in the procedure a described below.

TUNING THE PEDAL-ACTUATED STRINGS

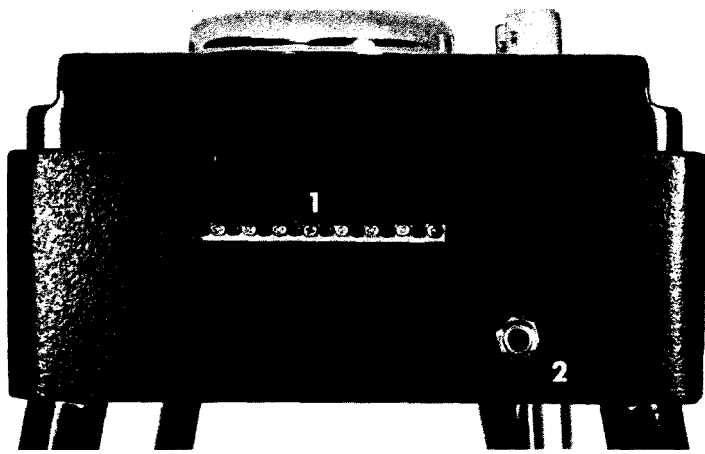
The sixteen black and polished stop-screws, located at the bridge end of the instrument, regulate the tuning adjustment of the pulling levers. Commencing with the first string or treble side, the screws are alternately black and polished. **THE FIRST BLACK SCREW ADJUSTS THE FIRST STRING FLATTENING-LEVER, AND THE ADJACENT POLISHED SCREW ADJUSTS THE FIRST STRING SHARPENING-LEVER.** The next two screws (black and polished) regulate the second string levers, and so on.

NOTE: Turning these screws (both black and polished) counter-clockwise will increase the amount of flattening and sharpening of the respective levers. Clockwise adjustments will reverse this effect.

1. **Tune** the instrument to the basic tuning. Pull the strings to take the stretch out, then retune the basic tunings.
2. Locate the first stop-screw to be regulated. Depress the actuating pedal, and adjust the stop-screw until proper pitch is attained. **CHECK BASIC TUNING.**
3. Locate the stop-screw which regulates the other string affected by the pedal. Depress the pedal again and adjust to proper pitch.
4. Pump the pedal several times and retune the basic tuning, if necessary. **5.**

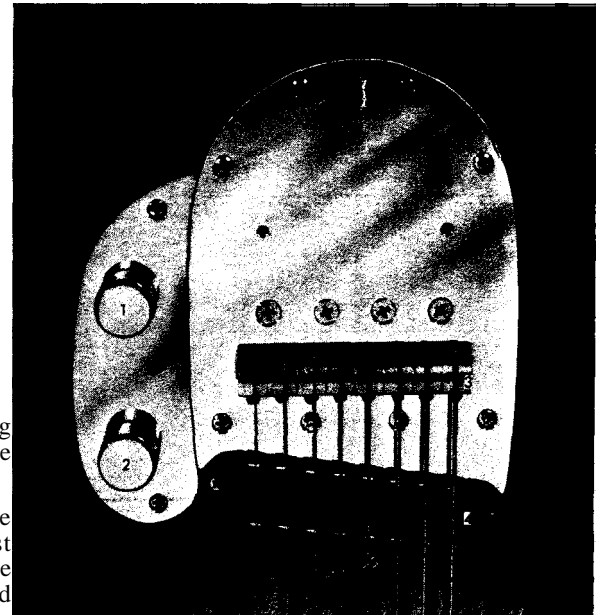
RECHECK the pedal tuning and adjust the stop-screw as necessary. 6. Follow this procedure with each string that is to be pedal-actuated.

Once the stretch has been taken out of the strings, it will only be necessary to check the basic tuning, which is normal with all instruments. The stop-screws, once properly regulated, should not require further adjustment.



1 - Tuning stop screws - Black screws adjust flattening levers; Polished screws adjust sharpening levers. 2 - Cord jack in this position.

1. Tone Control
2. Volume Control
3. Case hardened cam-action individual bridges
4. New pickups providing extended tone range and harmonic response.



RESTRINGING THE INSTRUMENT

Strings should be changed at regular intervals for fine tone and playing action. Thread each string through the bridge from the direction of the nut so that the ball end faces the nut.

It is suggested that only Fender Electric Pedal Steel Guitar strings be used with this instrument as they have been found to be the finest available for use with pedal type instruments. These strings are available in various gauges to match all basic tuning requirements and may be ordered from your local dealer.

New strings may have a tendency to raise slightly at the nut resulting in buzz or rattle. To prevent this, apply pressure at the nut to each high string. This will level all strings and eliminate the string buzz.

When using the A or G high tuning such as the C6th, the Fender 1009G string should be used. This ring may be pulled as high as Bb, however, when it is strung use the second string tuning key, putting the second string on the first string key. This provides a more direct string pull.

To raise the pitch to A or Bb tune the string gradually over a period of fifteen to twenty-five minutes, using the tuning key rather than the pedal to bring it up.

After it is tuned to the highest pitch, lower the string and reset the tuning stop-screw as described.

A small drop of light machine oil under each string at the nut and bridge will permit the strings to move evenly when tension is increased or decreased.

LUBRICATION

Moving parts of the instrument have been sufficiently lubricated at the factory. Additional lubrication will not be necessary except at very infrequent intervals.

CASE-HARDENED LEVERS

Extending up through the bridge mounting plate are the sixteen pedal-actuated levers. These pulling levers are of case-hardened steel preventing wear and assuring trouble-free action. The strings are inserted through the appropriate levers from the player's side with the ball-end holes parallel to the instrument.

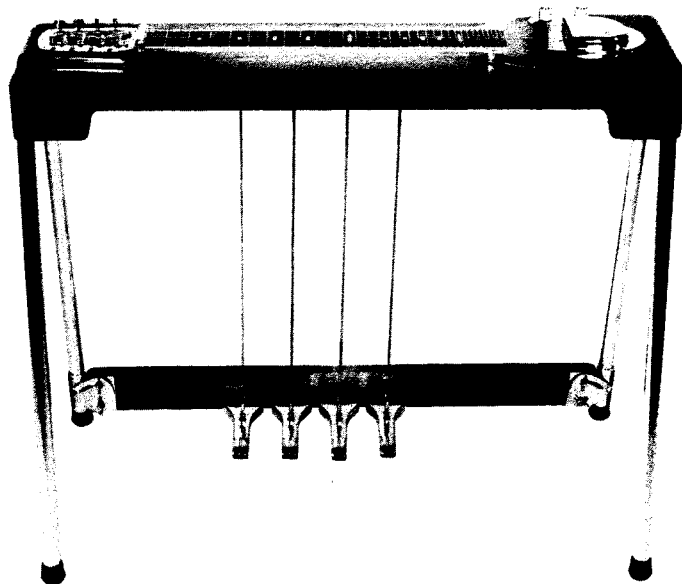
NEW FENDER PICKUP DESIGN

The extended tone range of the new Fender pickup employed on this instrument will be readily noticed. The frequency range of this pickup is such that not only are the low notes reproduced with greater fidelity, but in addition, the high frequency response reproduces harmonics of extremely high pitch, surpassing the response of other types of units. Adjustment of the pickups is accomplished with the two mounting screws, permitting any string balance desired by the player.

CASE-HARDENED INDIVIDUAL BRIDGES

Case-hardened steel is used in the "cam-action" individually movable bridges preventing wear caused by the strings, eliminating string rattle and to resist string breakage. In addition, easier pedal action is achieved through the use of these bridges.

Viewing the instrument from the player's side, the pedals are numbered from left to right. The pedal board and instrument frame are designed to accommodate up to ten pedals.



CASES

Fender 400 Pedal Steel Guitar cases are of the finest materials and are built to take hard use. Case interiors are lined with beautifully textured plush lining, and the case covering material of vinyl "Tolex" is scuff and abrasion resistant. The case is partitioned to accommodate the instrument in one section, and the pedal board and legs and rods in the other section. This separation prevents any possible damage to the finish of the instrument and pedal board.

The case is extremely rigid and employs heavy-duty hardware giving added protection to the instrument at all times.

ORDERING ADDITIONAL PEDALS FOR THE FENDER 400 PEDAL GUITAR

The Fender 400 Pedal Steel Guitar is available with any number of pedals — from four to ten. Pedals may be added to the instrument if it has less than ten. Information on the addition of pedals may be obtained by contacting your dealer or writing to Fender Sales, Inc.

It is necessary to return both the pedal board and instrument to the factory for making the addition of pedals, however it is not necessary to return the four legs or the pull-rods.

Caution should be used in returning the instrument. A strong shipping carton should be used with adequate padding used around the case.

PEDAL TUNING CHART FOR FENDER 400 PEDAL GUITARS AS SET BY THE MANUFACTURER

These tunings may be varied to suit the player's requirements. Please refer to the instructions for making new tuning setup. Additional tuning arrangements are given below.

BASIC TUNING	FIRST PEDAL	SECOND PEDAL	THIRD PEDAL	FOURTH PEDAL	FIFTH PEDAL	SIXTH PEDAL	SEVENTH PEDAL	EIGHTH PEDAL	
E	E	E	E	-D#	E	E	E	+F	
C#	-B	C#	C#	C#	+D	C#	C#	C#	
A	-G#	-G#	A	A	A	A	+A#	A	
F#	F#	F#	+G	F#	F#	-F	F#	F#	
E	E	E	E	-D#	E	E	E	-D#	
C#	C#	C#	C#	C#	-C	C#	C#	C#	
A	A	A	A	A	A	A	+A#	A	
F#	F#	F#	+G	F#	F#	-F	F#	F#	
A6	E major "Isaacs" A6 maj 7-9	C#min	A7	B9(a6— b5) Emin 6	D7	F aug A aug C# aug Db aug	F#7	F#mi6 (ma 14) B9 (aug 11)	
1 - 3 PEDALS	1 - 4 PEDALS	1 - 5 PEDALS	3 - 4 PEDALS	3 - 5 PEDALS	3 - 8 PEDALS	4 - 5 PEDALS	5 - 8 PEDALS	3 - 4 - 5 PEDALS	3 - 5 - 8 PEDALS
E	-D#	+F	-D#	E	+F	-D#	+F	-Eb	+F
-B	-B	-B	C#	+D	C#	+D	+D	+D	+D
-G#	-G#	-G#	A	A	A	A	A	A	A
+G	F#	F#	+G	+G	+G	F#	F#	+G	+G
E	-D#	-D#	-D#	E	-D#	-D#	-D#	-Eb	-D#
C#	C#	C#	C#	-C	C#	-C	-C	+C	-C
A	A	A	A	A	A	A	A	A	A
+G	F#	F#	+G	+G	+G	F#	F#	+G	+G
A9 omit 3rd str.	B13	B13(aug11)	A7 b5 Eb7 b5	Ami7(11) C6(9)	A7 b5 (aug 12)	D7 (aug root omit 1st str.) C dim 9 (omit 1st str.)	F# dim mi 13, ma 14	F13	F13

ADDITIONAL PEDAL TUNING VARIATIONS FOR THE A6TH

EIGHT PEDAL GUITAR — o=Omit String

BASIC TUNING	FIRST PEDAL	SECOND PEDAL	THIRD PEDAL	FOURTH PEDAL	FIFTH PEDAL	SIXTH PEDAL	SEVENTH PEDAL	EIGHTH PEDAL
E	E	E	E	E	E	E	oE	—D#
C#	C#	C#	C#	C#	—B	C#	oC#	—B
A	A	A	+A#	A	—G#	—G#	oA	A
F#	—F	F#	F#	+G	F#	F#	oF#	F#
E	oE	E	E	E	E	—D	E	E
C#	—B	C#	C#	C#	C#	oC#	—B	C#
A	A	+A#	+A#	A	A	oA	—G#	A
F#	F#	o+G	F#	—E	F#	oF#	oF#	F#
A6	C#aug7	Dim7	F#7	A7	A6maj7 Isaacs	E13	Emaj.	A6(9+11)

1 & 2 PEDALS	3 & 4 PEDALS	4 & 5 PEDALS	5 & 6 PEDALS	6 & 7 PEDALS	3 & 8 PEDALS	4 & 8 PEDALS	4, 5 & 7 PEDALS
E	E	E	E	E	—D#	—D#	E
C#	C#	—B	—B	C#	—B	—B	—B
A	+A#	o—G#	—G#	—G#	o+A#	A	—G#
—F	+G	+G	F#	F#	F#	+G	o+G
oE	E	E	—D	—D	E	E	E
—B	C#	C#	oC#	—B	C#	C#	—B
o+A#	+A#	A	oA	—G#	+A#	A	—G#
+G	—E	—E	oF#	F#	F#	—E	—E
G13 aug11	dim7	A7(9&12)	E7(2)	E13	F#13	A7(9&11)	E major

FIRST NECK — A6th Basic

STRING NUMBER	BASIC TUNING	FIRST PEDAL	SECOND PEDAL	THIRD PEDAL	FOURTH PEDAL	FIFTH PEDAL	SIXTH PEDAL	1 & 2 PEDALS
1	E	+F	E	E	E	—D#	E	+F
2	C#	C#	C#	C#	+D	C#	—B	C#
3	A	A	+A#	A	A	A	—G#	+A#
4	F#	F#	F#	F#	F#	F#	F#	F#
5	E	—D#	E	+G	E	—D#	E	—D#
6	C#	C#	C#	C#	C#	C#	C#	C#
7	A	A	+A#	A	A	A	A	+A#
8	F#	F#	F#	—E	F#	F#	F#	F#
	A6th F#mi7	F#mi6(ma14) B9(aug11)	F#7	A7	D7(9)	B9(A6-b5) F#mi6	A6(ma7, 9)	F#6(ma14)

FIRST NECK (Continued)

2 & 3 PEDALS	3 & 4 PEDALS	4 & 5 PEDALS	5 & 6 PEDALS	1 & 4 PEDALS	1 & 6 PEDALS	2 & 4 PEDALS	2 & 5 PEDALS	1 & 3 PEDALS
E	E	—D#	—D#	+F	+F	E	—D#	+F
D _b	+D	+D	—B	+D	—B	+D	C#	C#
+B _b	A	A	—G#	A	—G#	+A#	+A#	A
+G	+G	F#	F#	F#	F#	F#	F#	+G
E	E	—D#	—D#	—D#	—D#	E	—D#	—D#
D _b	—C	—C	C#	—C	C#	—C	C#	C#
+B _b	A	A	A	A	A	+A#	+A#	A
—E	—E	F#	F#	F#	F#	F#	F#	—E
B _b dim7 D _b dim7 E dim7 G dim7	Ami7(11) C6(9)	D7(aug. root omit 1st str.) Cdim (9, omit 1st string)	B13(2)	F#dim(mi 13, ma14)	B13(aug11)	Daug in 2nds & ma 3rds	F#6	A7(b5, aug12)

FIRST NECK (Continued)

3 & 5 PEDALS	3 & 6 PEDALS	1, 2 & 3 PEDALS	1, 2 & 4 PEDALS	1, 3 & 4 PEDALS	1, 2, 3 & 4 PEDALS	2, 3 & 5 PEDALS	2, 3, 4 & 5 PEDALS	2, 4 & 5 PEDALS	3, 4 & 5 PEDALS
—D#	E	+F	+F	+F	+F	—E _b	—E _b	—E _b	—E _b
C#	—B	D _b	+D	+D	+D	D _b	+D	+D	+D
A	—G#	+B _b	+B _b	A	+B _b	+B _b	+B _b	+B _b	A
+G	+G	+G	G _b	+G	+G	+G	+G	G _b	+G
—D#	E	—E _b	—E _b	—E _b	—E _b	—E _b	—E _b	—E _b	—E _b
C#	C#	D _b	—C	—C	—C	D _b	—C	—C	—C
A	A	+B _b	+B _b	A	+B _b	+B _b	+B _b	—B _b	A
—E	—E	—E	G _b	—E	—E	—E	—E	G _b	—E
A7(b5) E _b 7(b5, omit 8th str.)	A9(omit 3rd str.)	E _b 9(omit 8th str.)	A _b 13(aug11)	F13(omit 8th str.)	E _b 6(ma7, 9, omit 8th str.)	E _b 7 (aug. root)	E _b 6(ma7, 8)	E _b mi6 (ma7, 8)	F13(mi 14, omit 8th str.)