

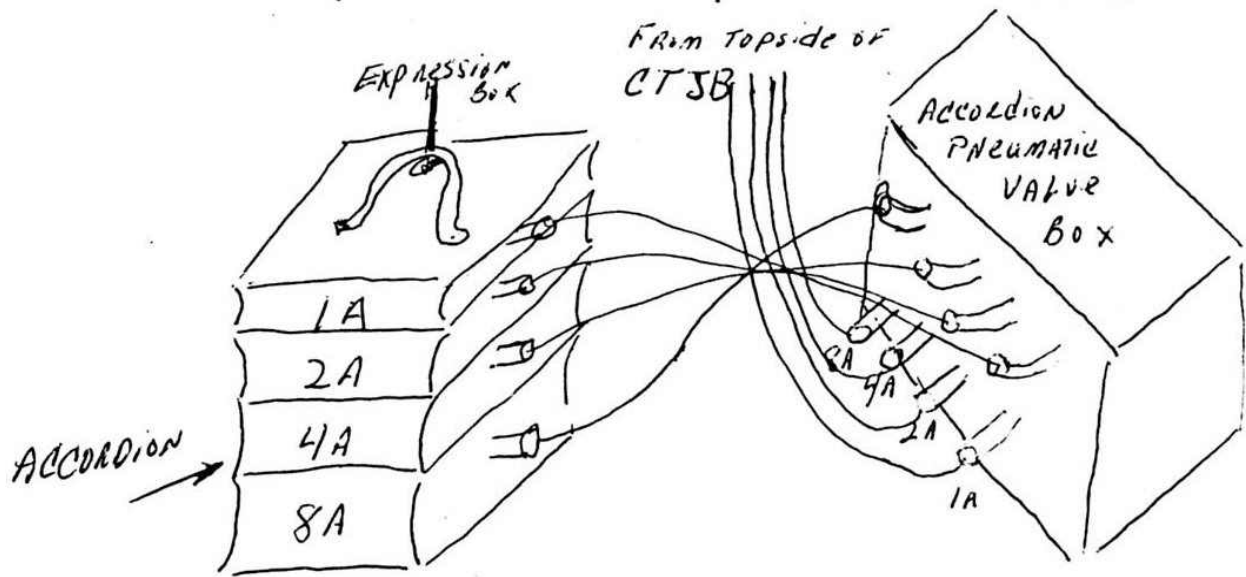
## THE 'HALF' DUO-ART EXPRESSION SYSTEM

The two boxes on the top right of the diagram are found on the rear of the spoolbox. The top nipples run to the tracker bar. The bottom nipples run to the stack end notes, and to the underside of the control tube junction block, which is found on the bass end of the spoolbox shelf. These boxes function by means of the 3/16" vacuum tubes to the Duo-Art switch on the upper left of the spoolbox, to allow communication from the normal tracker bar holes to either the last four notes on either end of the stack, for playing regular rolls (when switch is at 'Off'), or to allow communication from the expression holes 1a, 2a, 4a, and 8a on the tracker bar to the accordion pneumatic valve box (when switch is at 'On').

Note that at each position of the switch, one set of holes are shut off. If your Duo-Art switch has a 'in the center', between the 'On' and 'Off' positions, setting the lever to this arrow allows the shutoff of both sets of holes, so that you have the option of playing Duo-Art rolls while imparting to the selection, with your own expression, with the two levers labeled Bass and Treble, near the locking lever.

### CONTROL TUBE JUNCTION BLOCK (or CTJB)

It is used in conjunction with the valve box, which is between the control tube junction block and the left side of the spoolbox. Note on the diagram, looking at the valve box, from the front side, it is a see thru view. On the CTJB, nipples 1 and 2 probably don't exist, on some pianos. Nipples 3, 4, 5, and 6 terminate from tubes coming from the bottom rear row of the Bass tracker tube junction block. Tubes from nipples 3, 4, 5, and 6 travel off topside and down to the nipples on accordion pneumatic valve box. When tubing, keep the proper order of the tubes from the tracker bar 1a, 2a, 4a, and 8a from getting mixed up, as they run to the underside of the CTJB and then off topside to the accordion pneumatic valve box.



The A nipple on the CTJB terminates from the tube coming from the valve box. A tube connected to A travels off topside and leads to a nipple on back side of pump bellows, or exhauster assembly. This is the way the tracker valves in the valve box are supplied with vacuum. The B & C nipples terminate from tubes leading from connections to the Theme primary valves in the valve box. From topside of the CTJB, tubes off B and C nipples travel down to connections on the Duo-Art expression box that operate the Theme (and Accompaniment) control valves inside.

The D and E nipples on the CTJB terminate from tubes connected to the underside of the LOUD PEDAL SWITCH, on left side of the spoolbox. From topside of the CTJB, tubes from D and E travel down and connect onto the nipples that operate valves in the pedal valve box or pedal regulator.

How the pedal switch works is self explanatory. The F nipple on the CTJB terminates from a tube connected to backside of valve box, which is to supply suction to The Duo-Art switch and Theme primary valves in the valve box.

A tube from topside of F nipple leads down to a large nipple coming off the Bass side of the Duo-Art expression box to the top, into the suction supply. The tracker pneumatics connections and connections to left and right tracking ears on valve box are self explanatory.

It will be noticed on the diagram on the end of the Duo-Art 'On-Off' switch, a nipple marked as tees into 5 on block. It is only present in some pianos, and if present would tee into the line that runs between the bass tracker tube cutout block nipple No. 5 and number 5 nipple on the bottom of the control tube junction block. Its purpose would be to allow atmosphere to enter the tube to the valve that causes the 4a section of the accordion to collapse when the Duo-Art lever is switched to the 'Off' position, thereby stepping up the lowest volume of playing for normal rolls, and volume increases would come through the operation of pallet levers (circled on the diagram) which are not present on most players, but are replaced by the two volume levers, and locking lever. On most players, full volume is available at all times for normal rolls when Duo-Art lever is switched to the 'Off' position. To play Duo-Art rolls, the lever is placed in 'On' position and the locking lever is used to lock the Bass and Treble volume control levers to "soft" position thereby allowing all volume increases to be done by the dynamic holes 1a, 2a, 4a, and 8a in various combinations.

This of course actuates the various sections of the accordion pneumatic to collapse, which in turn causes varying degrees of suction to reach the stack, by pulling down the linkage from the accordion, to the arm on the Duo-Art expression box which moves the knife valve inside the expression box, thereby regulating suction flow.

The overall operation of the Duo-Art is the same as a normal player, with the exception of the ability of the Duo-Art to control the suction level to both sides of the split stack simultaneously. In a full Duo-Art, there is an accordion for each side of the stack; to regulate the theme (melody) volume and accompaniment volume separately. In the 1/2 system, one accordion can only regulate one volume, so Duo-Art chose to have it connected to the accompaniment expression holes of the tracker bar. The theme expression holes on the bar are unused in the 1/2 system. In this manner there is never a possibility that the melody of a selection would be overshadowed by the accompaniment because the rolls are always programmed such that whenever the theme notes are on the keyboard, they are

always being played louder than the level of the accompaniment.

Whether the accordion pneumatic is operating to regulate the accompaniment level in either the bass or treble half of the keyboard (which the valves in the expression box enable it to do, the melody (theme) will always be played louder, or at least as loud as the accompaniment level at any given time. A constantly regulated melody (theme) level of volume (as is possible in the two accordion system) is what is sacrificed by having only one accordion available.

The expression, while not as dramatic as in the two accordion system, is nevertheless very impressive.

