INSTRUCTIONS

CARTRIDGE MOUNT ASSEMBLIES

TABLE 1. HEAD TYPES AVAILABLE FOR USE IN QK-114, 115, 117

<table>
<thead>
<tr>
<th>QK-114 WITH THESE NORTRONICS &quot;B&quot; SIZE HEADS:</th>
<th>1000 thru 1649, 1200 thru 1249, 1800 thru 1649, 2000 thru 2649</th>
</tr>
</thead>
<tbody>
<tr>
<td>4100 thru 4149, 5600 thru 5649, 5700 thru 5749</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QK-115 WITH THESE NORTRONICS &quot;G&quot; SIZE HEADS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000 thru 3049, 3200 thru 3249</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QK-117 WITH ONE NORTRONICS &quot;G&quot; SIZE HEAD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 thru 1649, 1200 thru 1249, 1800 thru 1649, 2000 thru 2649</td>
</tr>
<tr>
<td>4100 thru 4149, 5600 thru 5649, 5700 thru 5749</td>
</tr>
<tr>
<td>AND ONE NORTRONICS &quot;G&quot; SIZE HEAD:</td>
</tr>
<tr>
<td>3000 thru 3049, 3200 thru 3249</td>
</tr>
</tbody>
</table>

Adjust the head height and face perpendicularity using the alignment guide. Nortronics Form No. 7195 provided with the kit. Using the Allen wrench provided, raise or lower the head bracket height adjustment screws until the head tracks are in proper alignment with the tape track on the card and the face of the head is parallel to the vertical edge of the card.

Loosen azimuth lock screw, and if necessary, adjust the azimuth screw so that the head sets square in the assembly.

REMOVING OLD HEAD ASSEMBLY — **See note below for Collins.**

Disconnect or unsolder the leads to the old head assembly. Remove the screws which secure the head to the deck plate, and discard the old head.

INSTALLING NEW CARTRIDGE MOUNT

Several machines have a micro switch mounted just to the rear of the capstan. On these models it is necessary to raise the micro switch by approximately 3/32in. Remove the screws holding the switch to the deck plate and insert two space washers under each screw. Secure the switch to the deck plate by reinserting the two screws.

Place the template card, Form No. 7204, on the deck plate with the right hand edge of the card aligned with the cartridge guide rail and the capstan centered on the capstan center line marking on the guide. Holding the template securely, center punch the three holes to be drilled as indicated on the template. Drill the three holes using a 33 drill. CAUTION: Be careful not to damage the mechanism beneath the deck surface by allowing the drill to penetrate too deeply.

Install the new head bracket assembly using the 6-32 self tapping screws and washers provided. Do not tighten screws.

Insert a cartridge into the machine tight against the guide rail and position it so there is approximately 1/32in. clearance between the cartridge and the capstan. Tighten the cartridge firmly in this position, align the bracket assembly so it is parallel to the front edge of the cartridge, the stop on the fork guide is touching the cartridge, and the head and fork side are approximately centered in the cartridge windows. Make certain the fork does not hit the plastic boss inside the Fidelpac cartridges. With the head bracket properly positioned, tighten the self tapping screws.

**The Collins Models 642-A1 and 642-A2 cartridge tape transports have a mu-metal shield plate mounted on the deck surface. The rear edge of this shield is turned up to form a vertical panel on which the rear-mount heads are installed. In order to mount the QK-114 or 117 on these Collins units, it is necessary to cut away a portion of the turned-up shield plate to prevent interference with the Quick-Kit.**

*First, remove the rear-mount heads and their mounting channel, MP-133. Use tin snips to cut out that portion of the vertical panel of the shield plate which lies between the two angle brackets which support the plate on either side of the front assembly. The shield plate should then be re-installed on the deck, again using the angle brackets to support the vertical panel. The Quick-Kit should now fit into the cut away area. Make certain that the forward edge of the Quick-Kit base does not rest on a ragged edge of the mu-metal plate.*

**FIG. 2. QK-114, WITH HEADS MOUNTED AND WITH SPRING CLIP**
FIG. 3. REAR VIEW, INSTALLED BRACKET

WIRING THE HEADS
Connector plugs are provided for installation on the head cables, and if the instructions are followed using a pencil type iron with a small sharpened tip, no serious difficulty should be encountered in soldering the cable leads to the plugs. DO NOT SOLDER LEADS DIRECTLY TO THE HEAD PINIS! First, cut the plug leads from the cables and then strip and tin about 1/4 inch of the ends of the leads. Then, clamp the plug in a small vise or C-clamp so that the terminal tabs are pointing up and the back surface of the plug is horizontal. Next, carefully flow a small amount of solder onto each of the two right-hand terminal tabs when the plug is oriented so that the end with the notch is facing the operator. This will ensure that the leads are connected to the correct plug terminals for the mono heads with two pins. Plugs for the 4-pin stereo heads should have all four terminals tinned. Finally, tack the tinned head ends to the plug terminals.

THREE-CHANNEL HEADS There is no connector plug for the three-channel 5700 series heads used with the QK-114 on the stereo cartridge machines. Instead, the individual #106-94 terminal clips must be soldered to the ends of the cable leads. See Nor-Form No. 7677 packed with each Neotronics head.

AZIMUTH ALIGNMENT
Insert a standard alignment test tape into the machine and play the high frequency azimuth alignment tone. Loosen the azimuth lock screws (No. 5 Fig. 3), adjust azimuth screw (No. 4 Fig. 3) for maximum output on the VU meter, tighten azimuth lock screw and freeze adjustments. By plugging the cue head output into the program input jack, the above procedure can be repeated to azimuth the cue head. On machines using a separate head for recording, the procedure is performed for the play head only. To azimuth the record head, insert a fully erased cartridge into the unit, engage the record mode and feed a 10 KC signal into the recording amplifier. The record head is then azimuthed to provide maximum signal from the playback head as shown by the VU meter monitoring the playback amplifier.

PLAYBACK EQUALIZATION
Use a standard alignment tape to check the playback equalization. If Neotronics laminated core playback heads are being used to replace non-laminated heads, it is recommended that the new heads be 1/8 inch behind the old ones. If the new heads are used directly on the old heads, greater care must be exercised to avoid damage to the heads and to the tape. Optimum equalization is obtained when the tape passes over the head at the correct speed and under the correct tension.

BIAS CURRENT ADJUSTMENT
To realize as high a quality recording as possible with minimum distortion and maximum signal to noise ratio, the bias current used during recording must be adjusted to an optimum value for each given tape head and tape combination. Optimum or peak bias must be re-established for the equipment whenever a tape head is replaced as well as periodically during the life of the head. On machines using separate record and playback heads, this is simply done. Feed a constant 1 KC signal into the recording amplifier at normal program level and adjust the bias current potentiometer until a maximum or peak signal level is noted on playback. On machines which use the one head for recording as well as playback, this same procedure may often-times be used by inverting the cue head and temporarily using it for monitoring or playback. See owners service manual for more detailed information on each individual machine.

NOTE: On certain machines which were equipped with the older type solid core heads, it may be difficult to gain sufficient bias current to achieve peak bias. Refer to Neotronics Form No. 7213 Cartridge Machine Technical Data for circuit modifications to provide increased bias current.

CARTRIDGE GUIDE RAIL (Use when none is provided)
An aluminum guide rail is included in each kit, installed on the deck plate to the left of the cartridge. It provides correct and positive guiding, eliminating the possibility of damage to the heads by careless insertion or removal of the cartridge (see Fig. 5). With a cartridge in the play position, place the guide rail against it and mark the mounting holes on the deck plate. Center punch and drill the mounting holes using a #23 drill. Mount the guide rail using the washers and the 5-32 self tapping screws provided. Adjust the rail for proper clearance before tightening mounting screws.

PRESSURE PADS
It is important that when the tape heads enter the cartridge as it is inserted into the operating position, the pressure pads are depressed just sufficiently to insure good tape to head contact. Excessive pressure causes rapid deterioration of both the head and the tape and may introduce wow and flutter due to excessive tape drag. This is particularly true of the newer polyurethane pressure pads. Check several cartridges to determine the pressure pad engagement with the operating position. Adjust the heads forward or backward in the head bracket to achieve minimum pressure consistent with good high frequency response. Individual cartridges may require adjustment of the pressure pad assembly to conform to the standard selected.

PRINTED IN USA JANUARY, 1965 FORM NO. 7194