

REALISTIC

**8 Track
Cartridge**

Repair Manual



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INTRODUCTION

For years the function of an 8 track tape has been looked upon as a mystery with its secrets to be forever guarded within the cartridge. When in reality, an 8 track tape is a simple and practical mechanical device - - easy to understand and easy to repair.

In this repair manual, I have attempted to describe and illustrate the highlights of 8 track tape repairing, knowing full well it is impossible to cover every condition and fix there is. In the repair kit we've provided the hard-to-come-by items required for quality and efficient 8 track tape repairing. However, you possess the best tool of all - - good common sense — and with this you will master the art of tape repairing in no time.

Jack V. Ritter, *Author*

Before you get started, take a quick look through this book. Run down the Table of Contents and see what we cover and how we've organized the material. You probably won't want to read it all at one sitting, but rather refer to the section(s) which is most vital to you at the time.

GENERAL COMMENTS

When it becomes necessary to scrap an 8 track tape, remove the parts, clean them and keep them in boxes (identifying the contents). This applies to the cartridge also, providing it is not too badly damaged. You will soon build yourself a parts bank that in no time will become invaluable in the repair of 8 track tapes.

As we noted earlier, an 8 track tape is a practical mechanical device designed to function effortlessly. Keep this in mind -- never force the movement of tape for this will do nothing but stretch the tape and in turn destroy a portion of the recording.

An excessively damaged tape will produce a bad sound and there is nothing that can be done to correct this situation. In some instances the affected sound may not be too objectionable. In any event, it is better than losing an entire tape.

Do not attempt to cut out a section of a recorded 8 track tape thinking you will remove only A portion of A song. As you will note by the drawings showing channel changing sequence, each channel of sound recording is stacked on top of the other and if you cut out one song it will also cut out portions of three other programs on the adjacent channels.

When rewinding a tape with a Cartridge open, inspect tape for potential breaks or partial cuts. When located, place splice tab over damaged area to prevent a break at this point in the future.

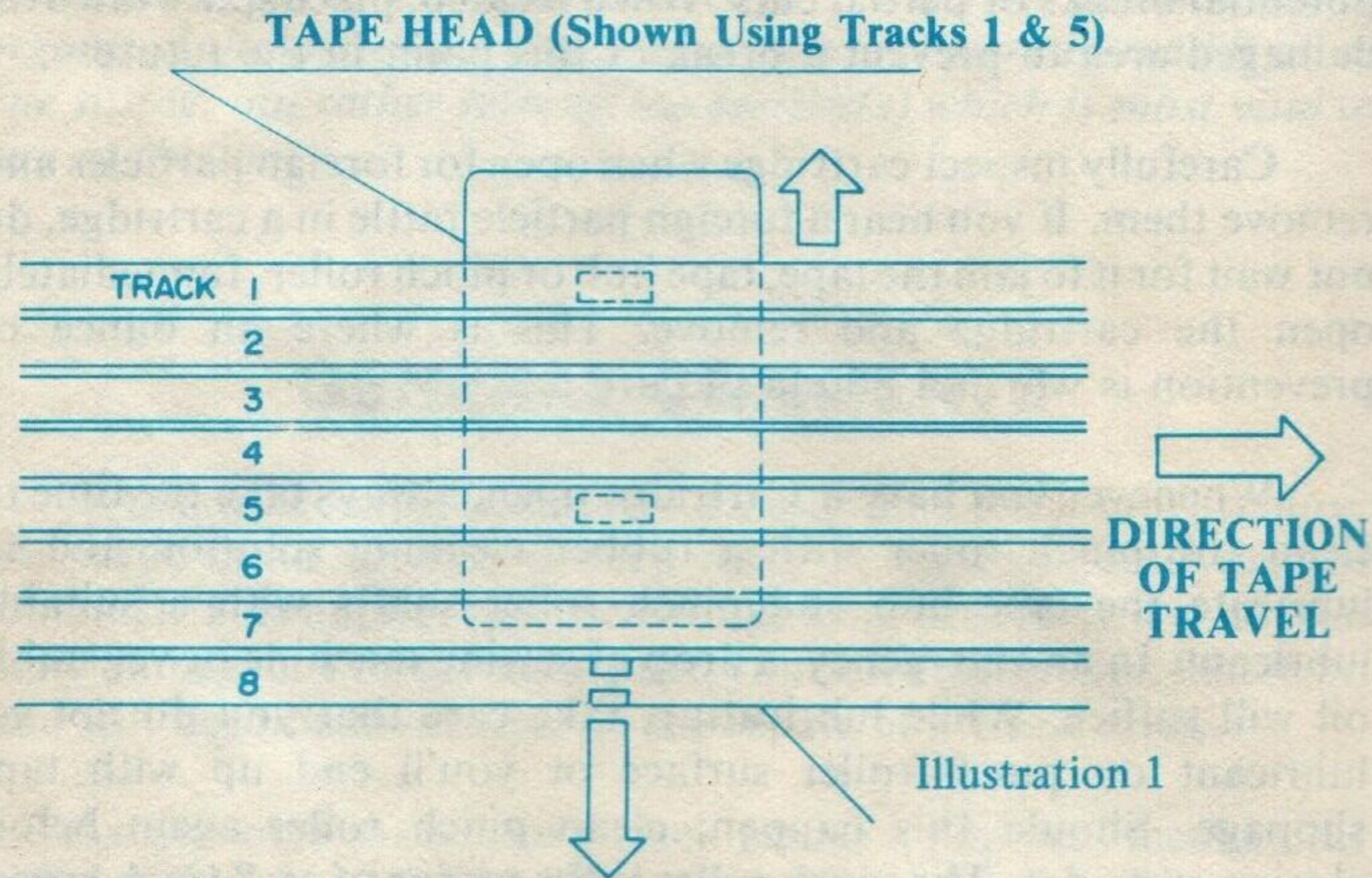
Carefully inspect cartridge when open for foreign particles and remove them. If you hear a foreign particle rattle in a cartridge, do not wait for it to jam the tape, tape hub or pinch roller. Immediately open the cartridge and remove. This is where an ounce of prevention is worth a pound of cure.

Whenever you have a Cartridge open, always take the time to clean the pinch roller with a rubber cleaning solution and to lubricate the tape hub and pinch roller shafts with a suitable lubricant. In an emergency, a drop of sewing machine or vegetable oil will suffice. While lubricating, take care that you do not get lubricant on pinch roller surface or you'll end up with tape slippage. Should this happen, clean pinch roller again before closing cartridge. **The pinch roller is the motor of an 8 track tape -- keep it clean.**

When you encounter plastic pinch rollers, should you have a spare rubber pinch roller that will fit, replace the plastic one. If you do not have a replacement unit, clean the plastic pinch roller with the rubber cleaning solution. Follow this by a slight roughing of the plastic pinch roller surface with a very fine grade of sandpaper. This treatment will help prevent slippage that is a common occurrence with plastic rollers.

After all repairs play the tape to be sure everything is ok.

CHANNEL CHANGING SEQUENCE



So that you more thoroughly understand the function of an 8 track tape in relation to playback, study this illustration. Now, let's assume your tape deck has just completed playing channel #4, at this point the metallic splice is detected by a special switch next to the tapedeck playback head which in turn automatically moves the playback head to channel #1 position. At the completion of channel #1 the metallic splice is again detected by the special switch and the head is moved to channel #2 position. This procedure is repeated until the playback head is again at the completion of channel #4. This cycle will be continually repeated until the sequence is manually over-riden or the tape removed from the tape deck. This procedure is the same for recording as for playback.

Note: Do not attempt to edit an 8 track tape. Any attempt to cut out a section of any one channel would also remove material from each of the other program-tracks.

TAPE ROTATION INSIDE AN 8 TRACK CARTRIDGE

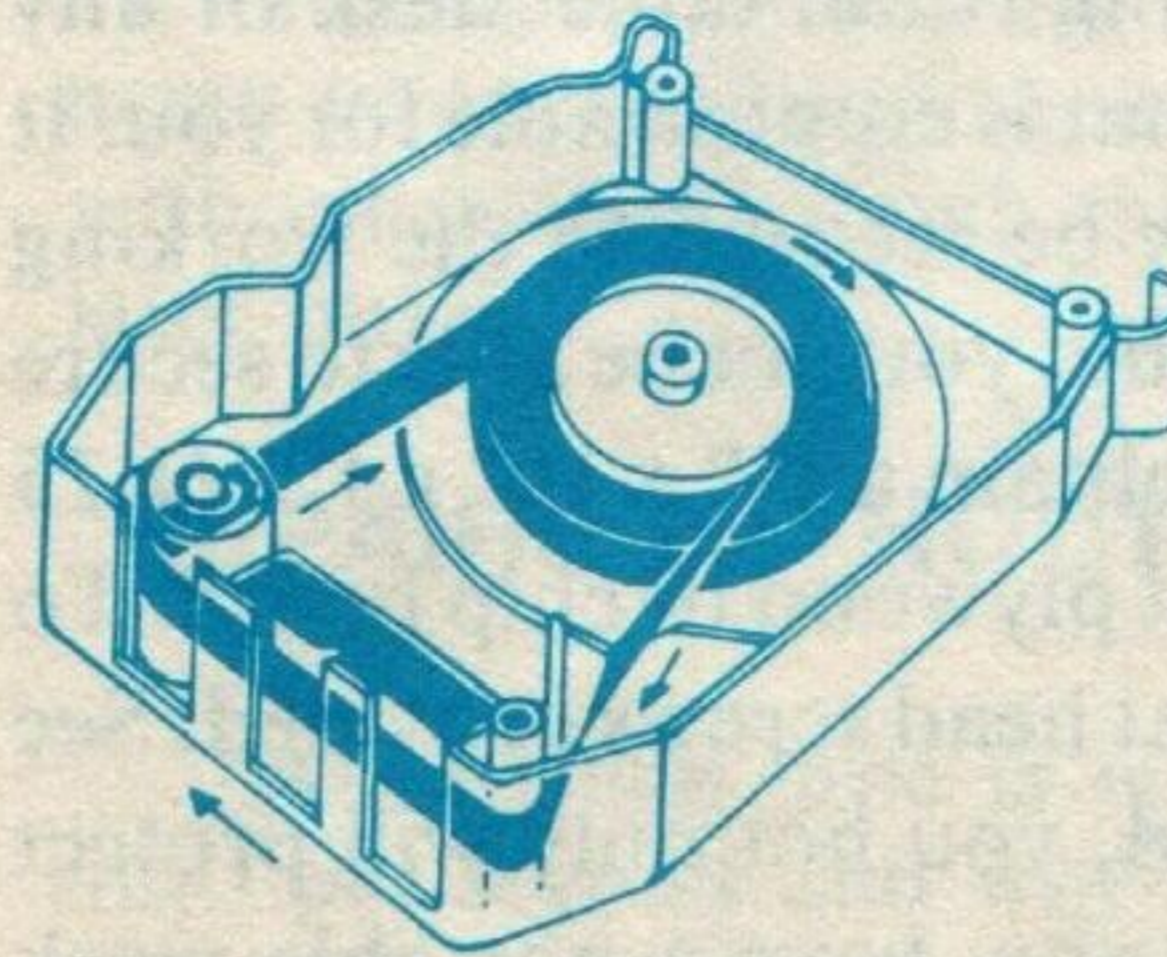
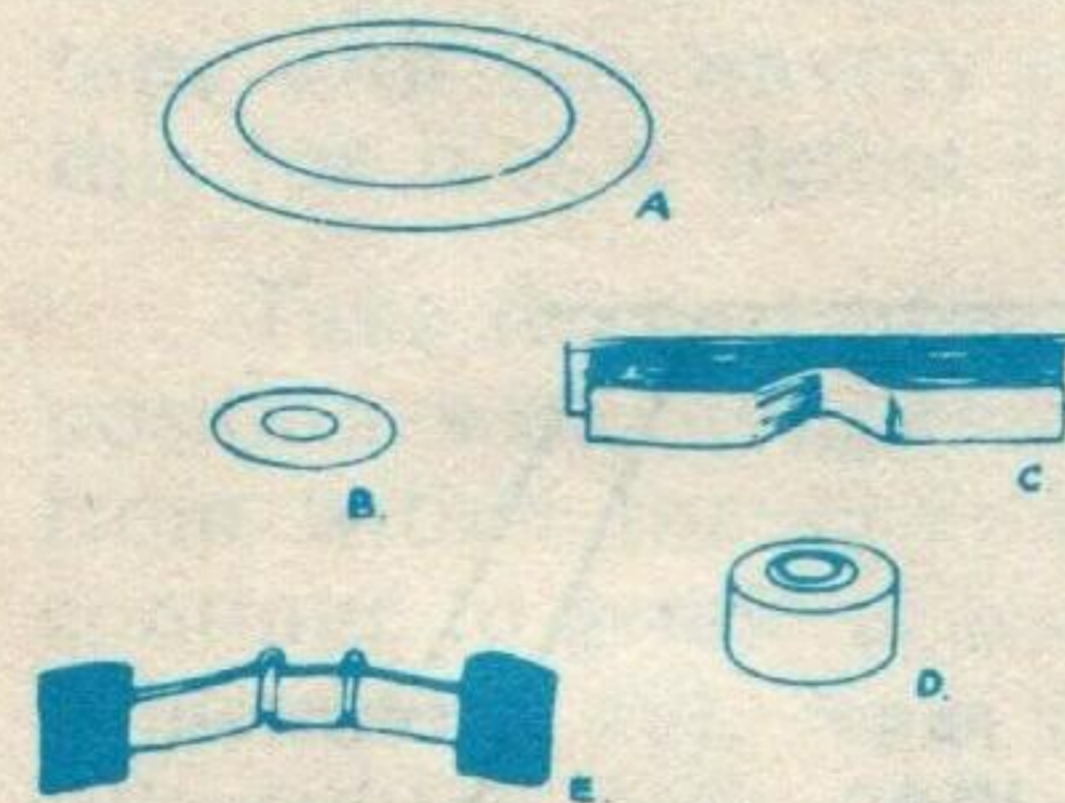


Illustration 2

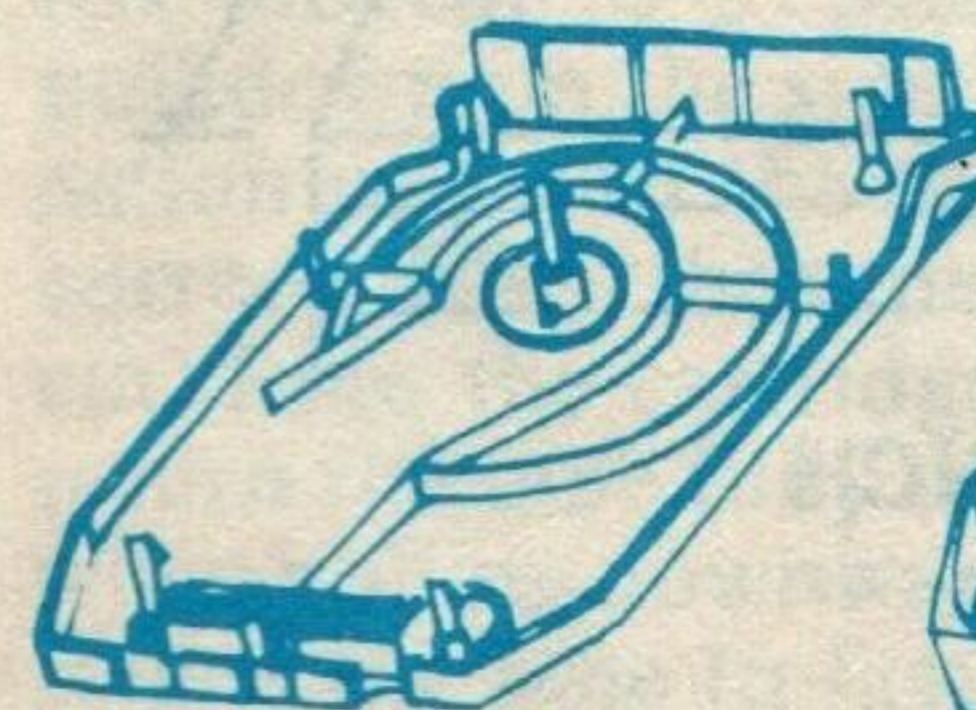
An 8 track tape rotates in clockwise direction when the pinch roller is to your left, when looking into the opening of the cartridge

TYPICAL INTEGRAL PARTS

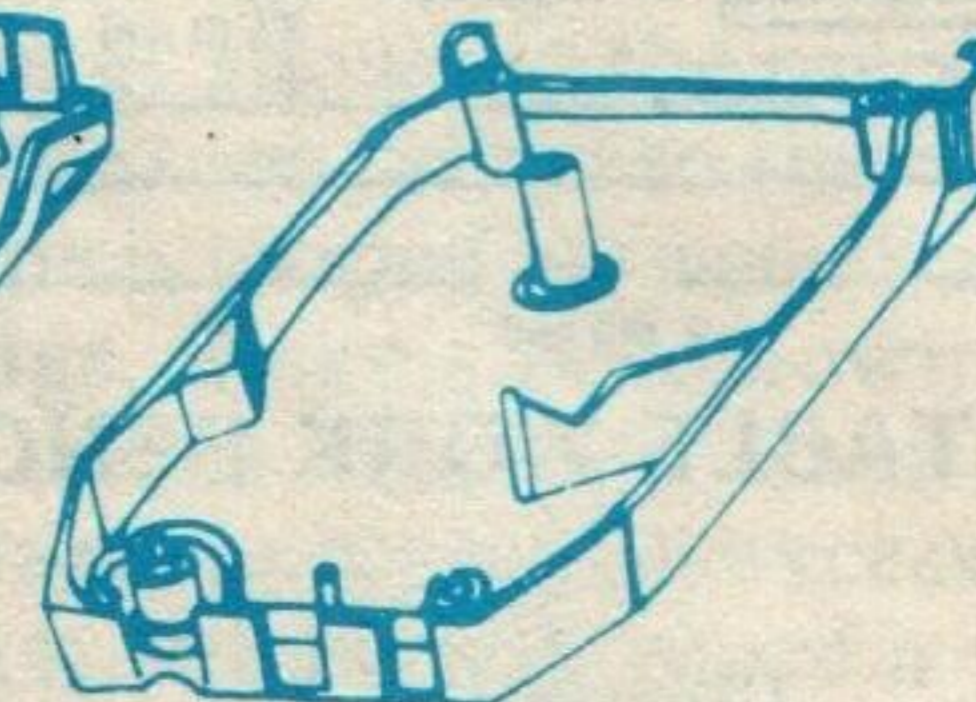


- (A) Anti Fouling Ring
- (B) Hub Assembly Teflon Bearing Ring
- (C) Pressure Pad Type "A"
- (D) Pinch Roller
- (E) Pressure Pad Type "B"

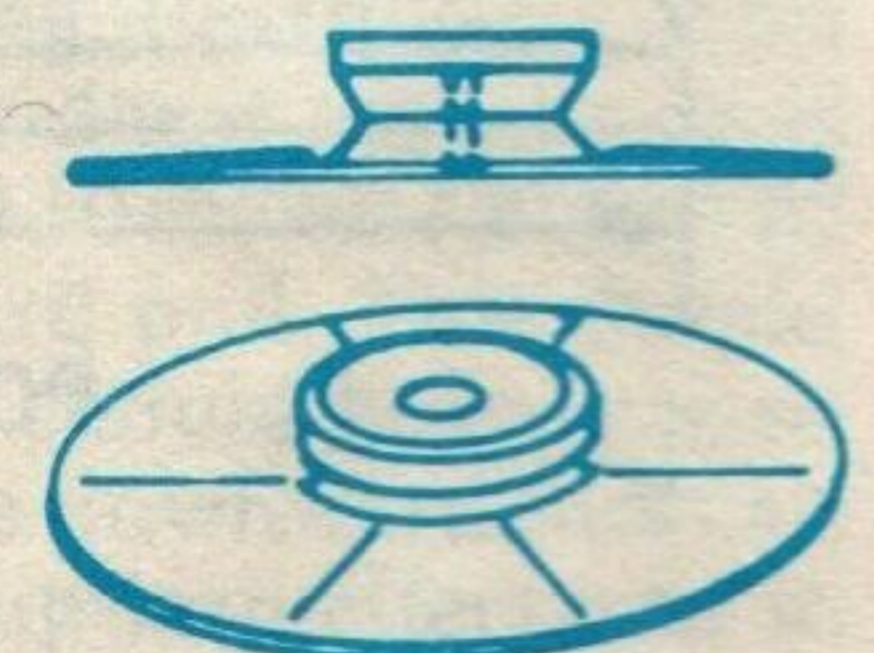
Illustration 3



Typical Bottom Half
Illustration 4



Typical Top Half
Illustration 5



Hub Assembly
Illustration 6

WORKING AREA

Working area can be a table, dining room table, desk or any other type of smooth working surface that is comfortable for you. It is recommended that the splicing block be secured to the working surface with the 2 screws provided. Should you not be able to secure direct to the working surface selected, obtain a 1/2" x 16" x 12" (1.25 x 30 x 40 cm) (approximate size) piece of plywood or chip board. To this secure the splicing block with the flat head screws provided. See illustration below. With this completed, you not only will protect the selected working surface, but you now have a portable work bench that will allow you to repair tapes anywhere. The most satisfactory working condition is with the portable working bench secured to the table so that it will not move about.

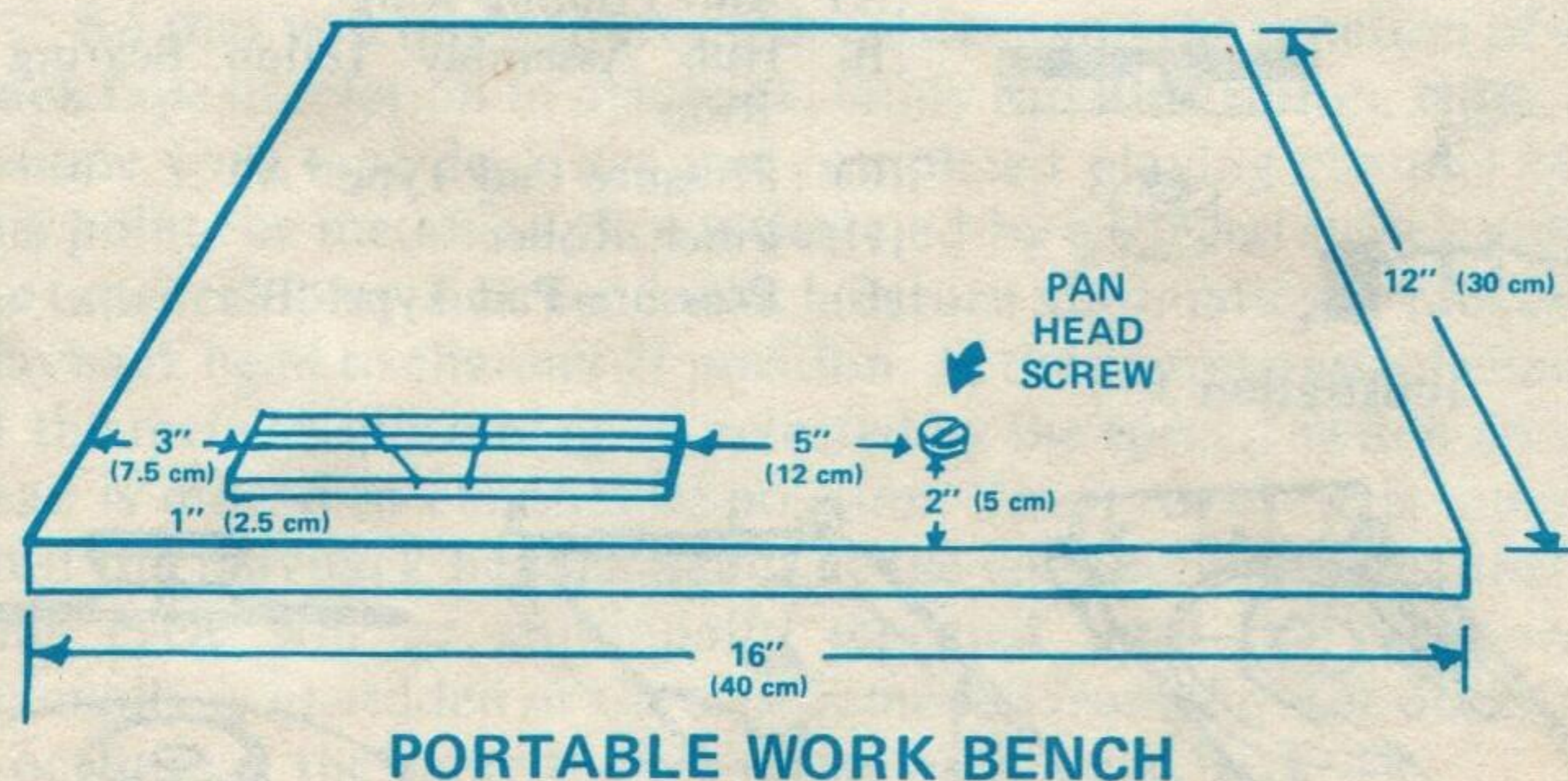


Illustration 7

REPAIRING A CARTRIDGE

Now that you know a little about how a cartridge works and what's inside one, let's get down to repairs.

Just because you are having problems does not automatically mean you **must** open the cartridge. Often you can fix the difficulty without going through that hassle (we've got lots of info on that later on).

REPAIRS WITHOUT OPENING THE CARTRIDGE (Tension)

An 8 track tape is recorded at a speed of 3 3/4 inches (95.25 mm) per second and when you encounter a varying sound, there is a tension problem which is preventing the steady smooth flow of recording tape required for proper sound. Basically, the recorded tape is passing across the play back head in spurts. Occasionally this problem can be corrected without opening the cartridge. (Note: Occasionally you will come across a brand new tape with this wavery sound; there is nothing you can do about this for it is a defect in the recording process.)

Take the cartridge in your left hand and hold it in a vertical position, with the opening facing down. With a pencil draw the tape from within the cartridge (Illustration #8). Use your finger to continue to **gently** pull out the tape till you feel a slight resistance (Illustration #9). Now rotate the cartridge to a 45 degree angle (Illustration #10) and with your finger and thumb start pulling downward to make sure there is free movement (Illustration #11). If free movement is encountered, again use your finger and thumb to pull down on the side as shown in the preceding illustrations. This action will start the the tape return to the cartridge if the tension is correct. When the tape is looped between 8 and 10 inches (20 and 25 cm) from the cartridge, make a final downward pull. This should return the tape fully to the cartridge. Caution should be exercised when pulling downward: applying an excessive downward pull can return the tape to fast, which will cause a whip-lash effect and in some cases cause the tape to foul around the hub crown.

Pinch Roller Cleaning

To clean a pinch roller without opening the cartridge, withdraw the tape from the cartridge as we've outlined under the section titled TENSION. When the recorded tape is withdrawn approximately 8 inches (20 cm) loop around the sides of the cartridge to expose the pinch roller (Illustration #12) and proceed to clean with the proper cleaning solution.

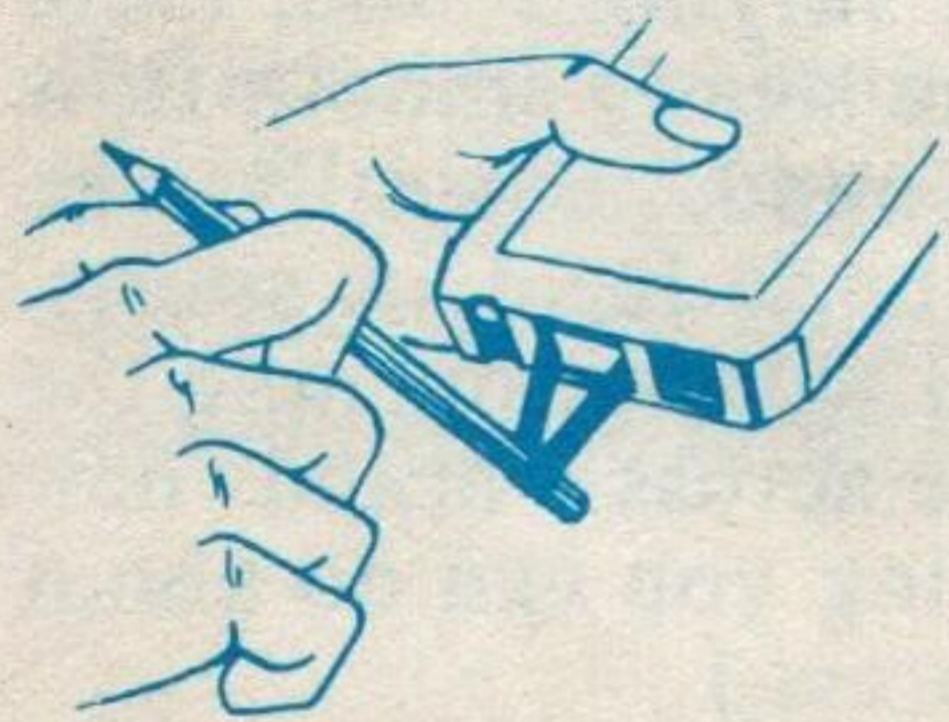


Illustration 8

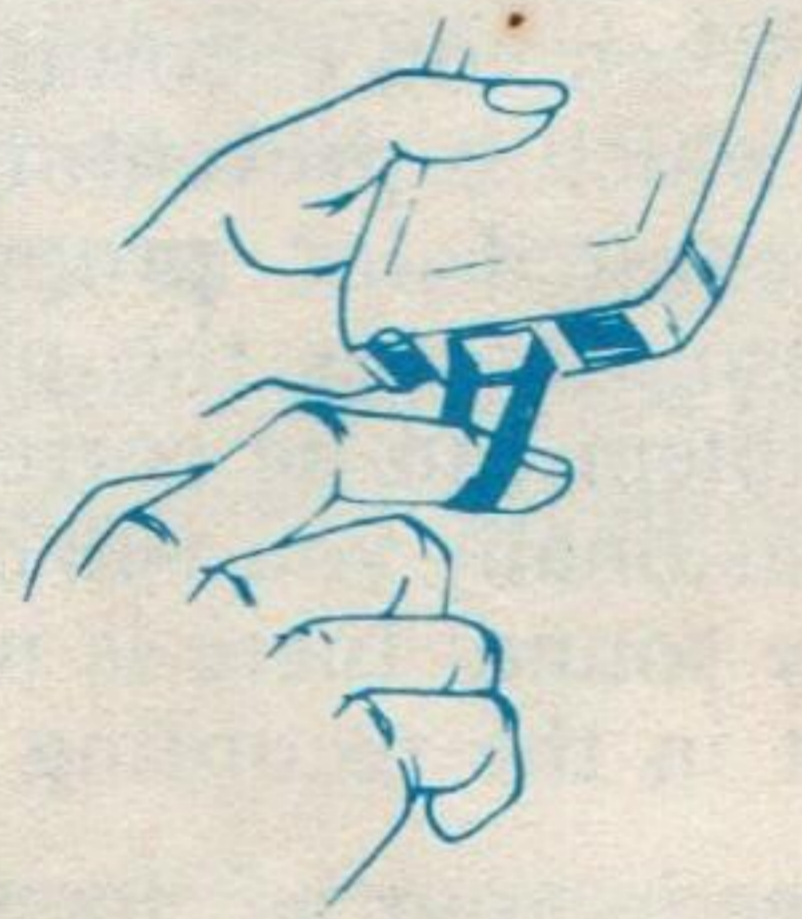


Illustration 9

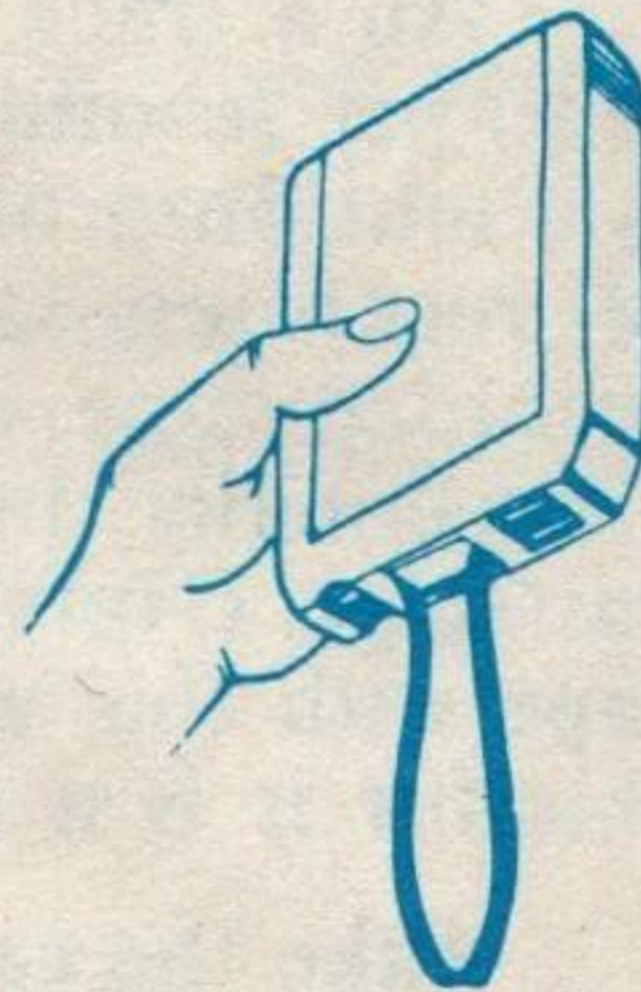


Illustration 10

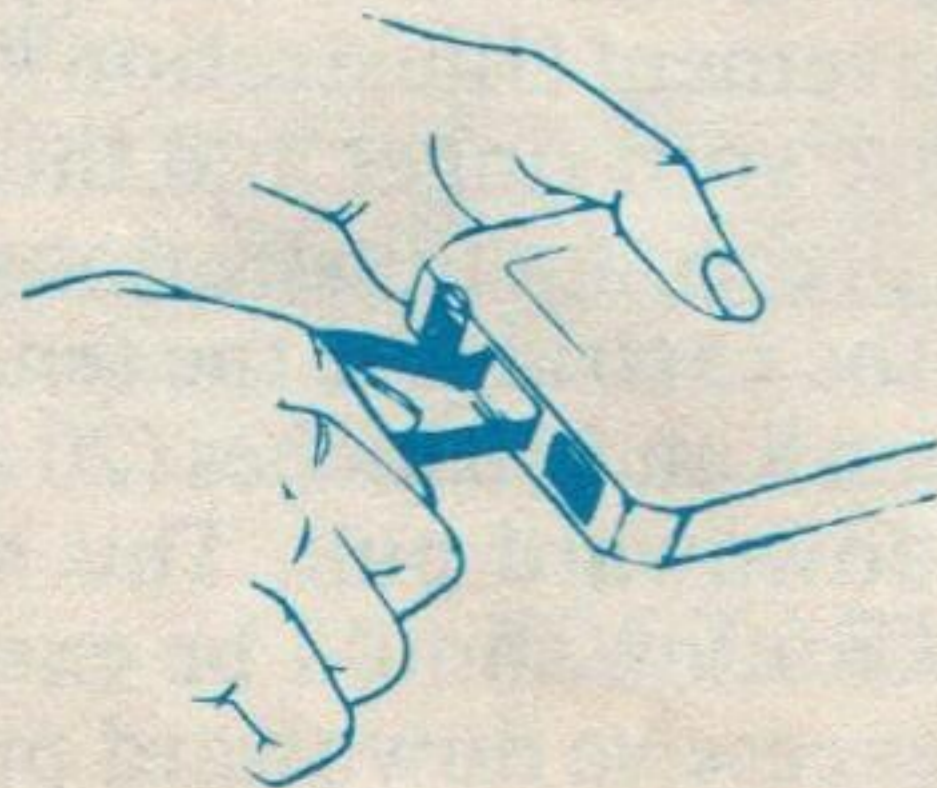


Illustration 11



Illustration 12

TAPE BREAKS

Tape breaks or separations are a common occurrence with 8 track tapes and in most cases are not the fault of the manufacturer but come from various conditions encountered during use -- improperly cared for tape machine (dirty, etc.), tape fatigue, splice separation, tape imperfection, improper tension, etc.

Sometimes you'll get lucky with a tape break and both ends are still protruding from the cartridge, which will allow you to splice the tape ends together without opening the cartridge. Before you make this splice, place the cartridge behind the splicing block, with a tape end in each hand and without applying excessive force, pull back and forth to check that the tape is not jammed within the cartridge (Illustration #13). If you get a free and easy movement, chances are the tape is not jammed and only will require splicing. Make your splice, return the tape to its cartridge as described under TENSION.

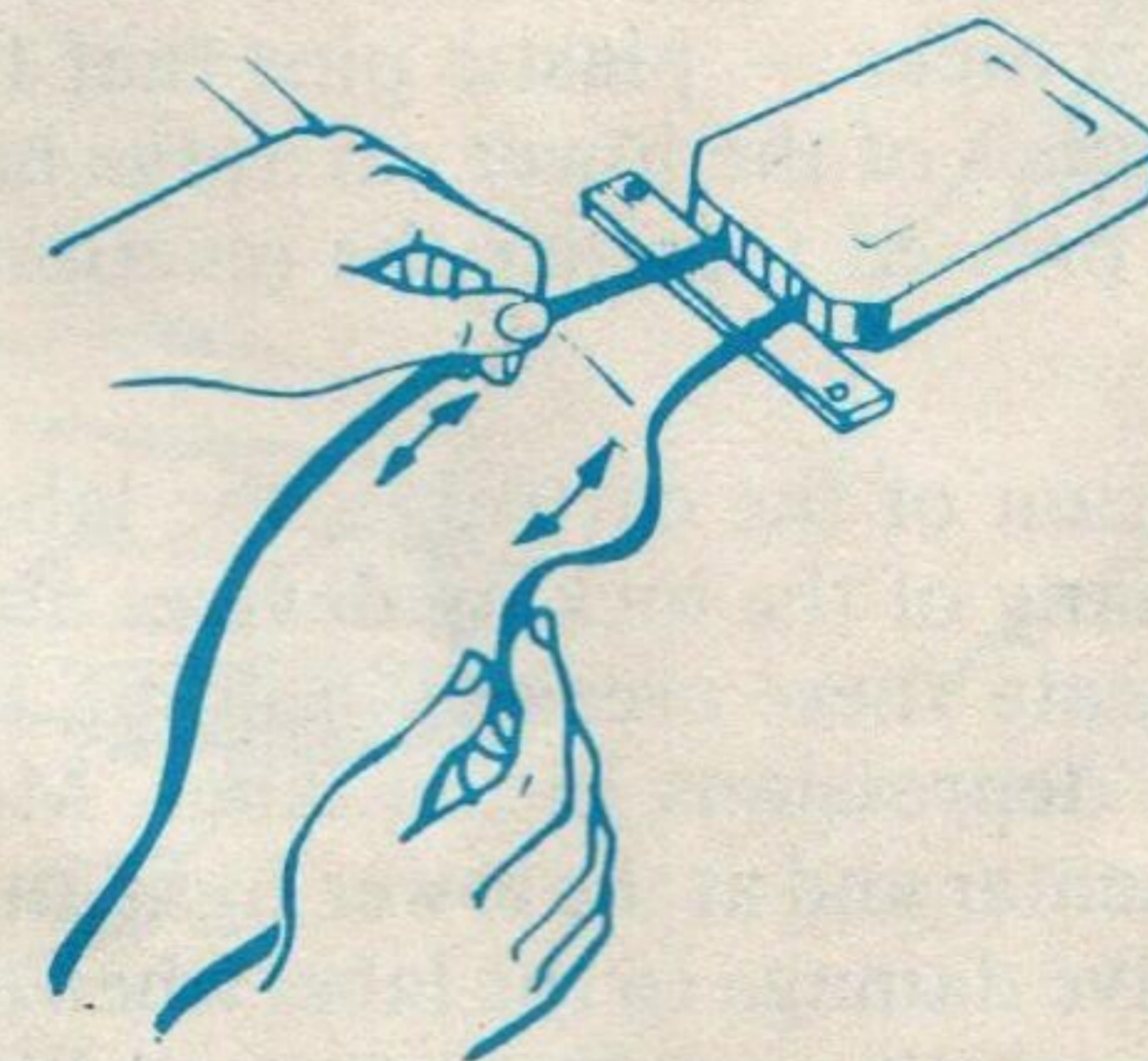


Illustration 13

You must realize that often tape breaks can only be fixed by opening the cartridge -- but sometimes you'll be lucky. If you need to open the cartridge, just proceed to the next section.

OPENING A CARTRIDGE

General Information

When you have determined that you must open the cartridge to fix it, carefully study the type you have. There are many different types of cartridges and they use many different types of locking devices. If you just "attack" the cartridge without studying it carefully, you may ruin it permanently (as well as the tape inside). So, we strongly recommend that you read over the following pages of information till you identify your cartridge type.

As you will learn, there are almost as many locking devices and combination of locking devices as there are manufacturers of 8 track cartridges. The following are the most common types:

1. Snap locks
2. Snap locks with center located removable screw
3. Pressure inserted non-removable screw lock
4. Interference locks — plastic pins that fit tight in the matching holes of the lower cartridge half. When the two halves are pressed together the reaction is that of a weld.

In the inspection of the cartridge, the label area must not be overlooked, for many of the locking devices are located under the label. You can locate these areas by holding the cartridge at eye level, looking for depressions in the label. Most hidden locking devices are in the center and at the lower right and left hand corners. To prevent excessive damage to the label when the hidden locks are found, make a cross slit over the area and lift the corners up to expose the lock (Illustration #14) (When done, press the slit section back down). After locks are released, place the cartridge on the work bench (be sure that the bottom of the cartridge opening under the pan head screw. With a large screwdriver pry open the cartridge, moving side to side while prying. (Illustration 15)

If the label wraps around the cartridge end, slit it with the razor blade. (Illustration #16).

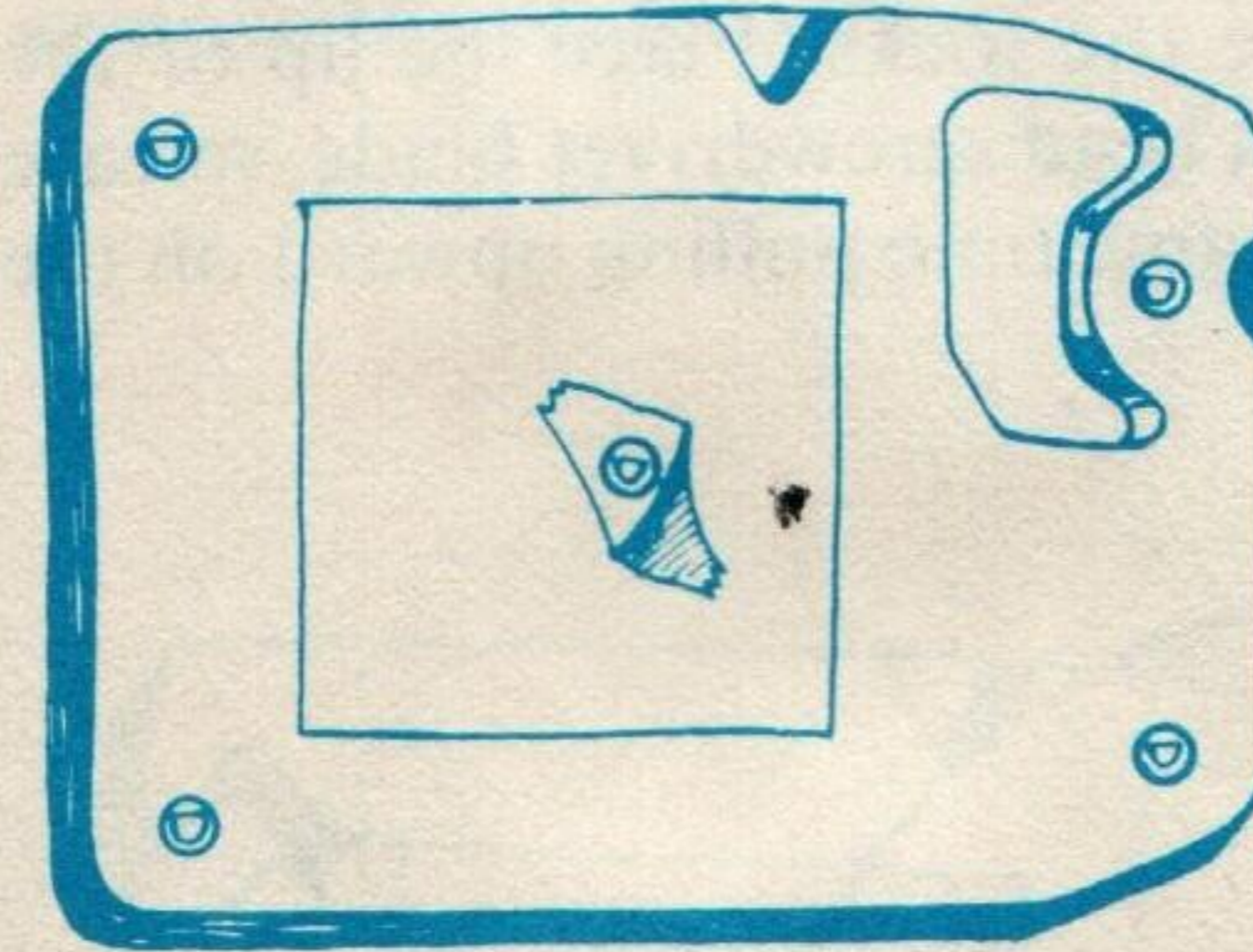


Illustration 14

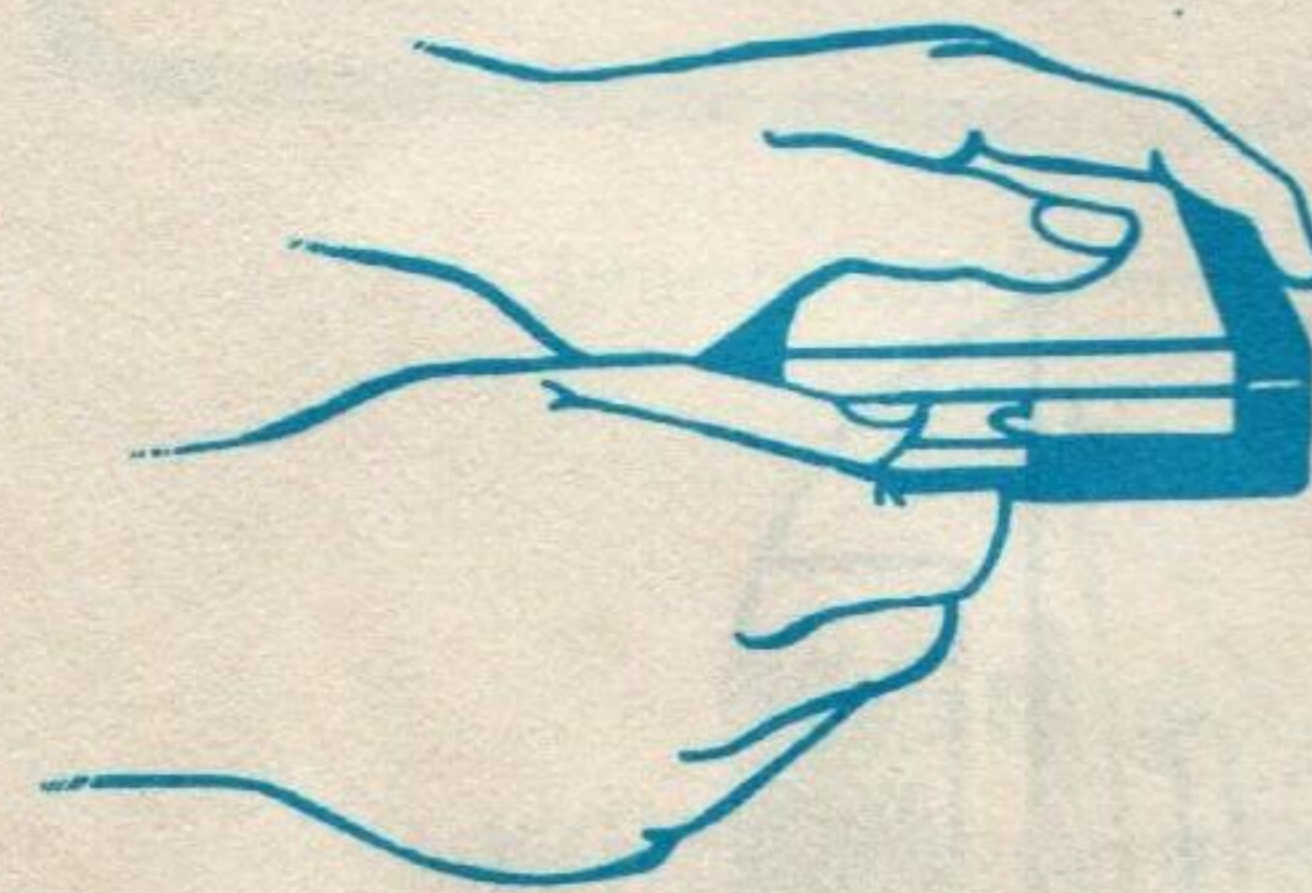


Illustration 16

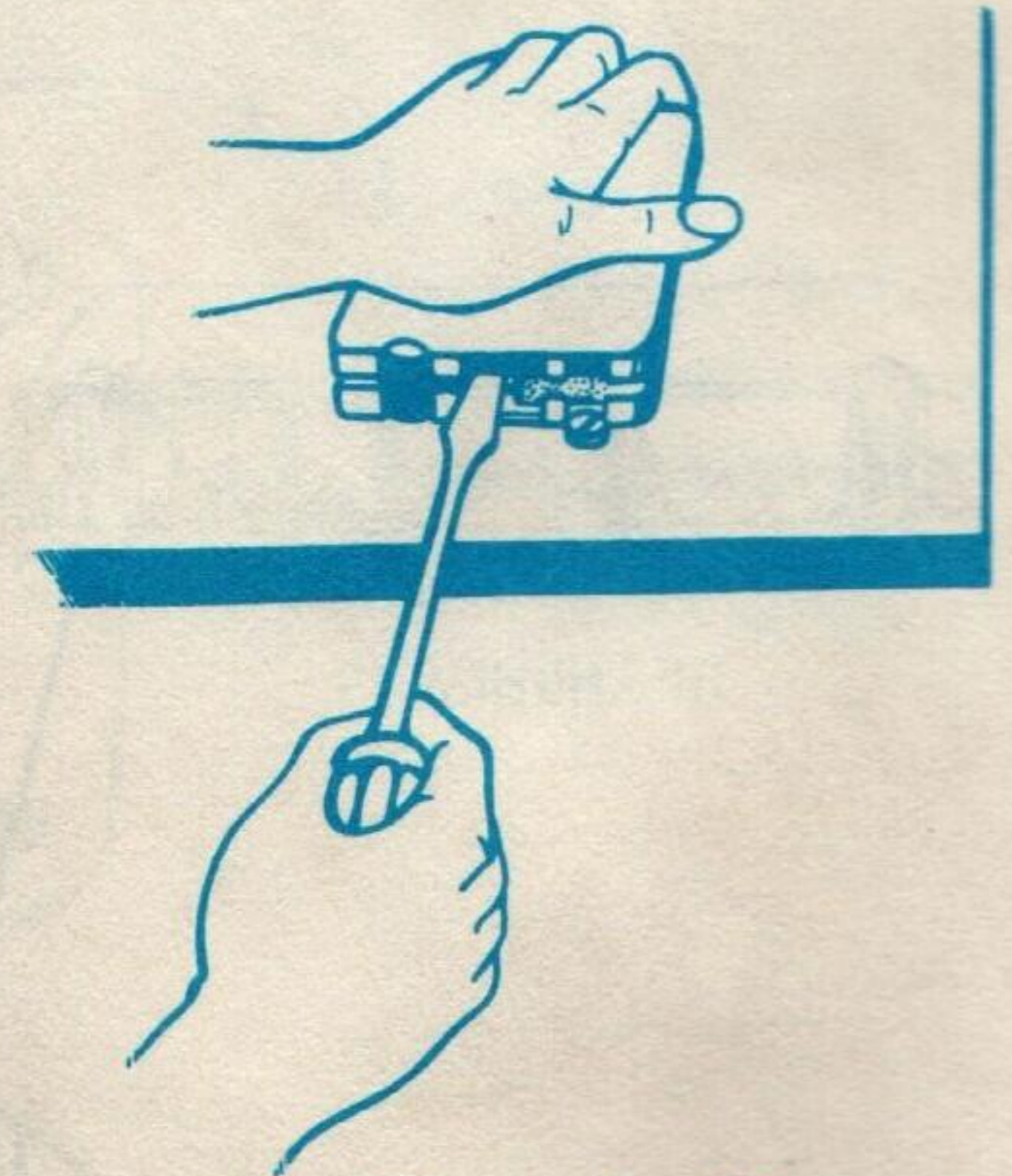
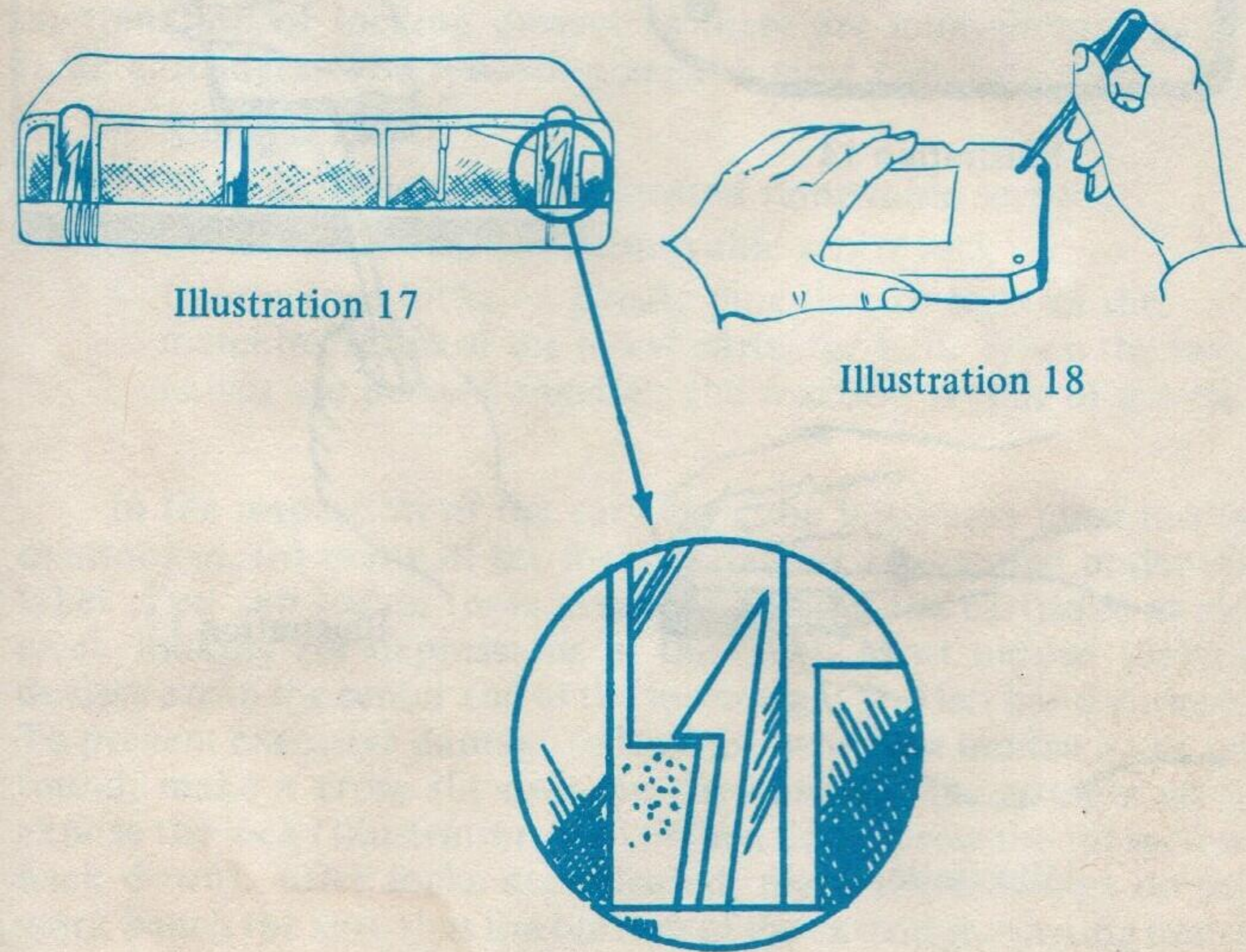


Illustration 15

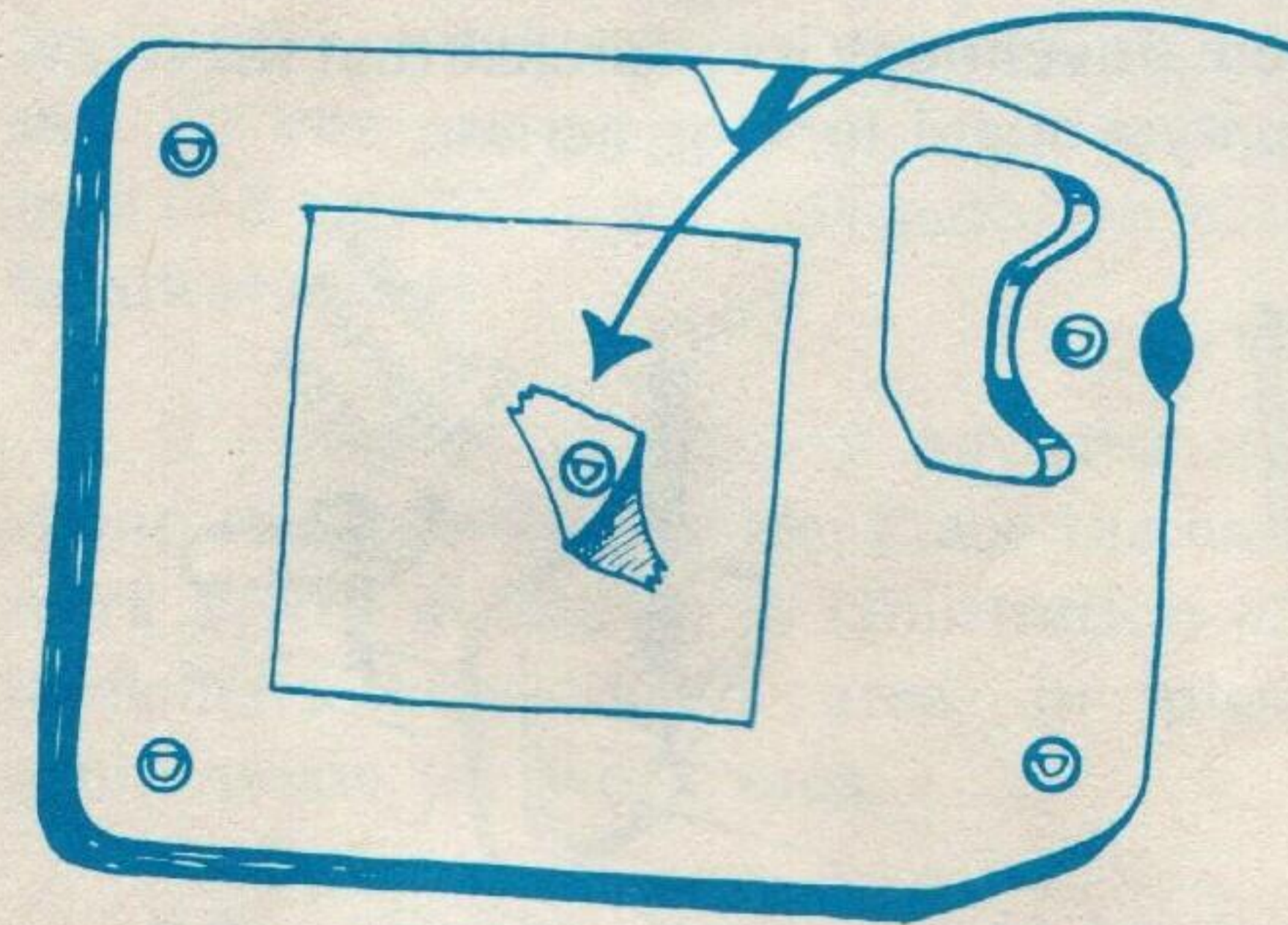
Snap Lock Type

(Illustration #17). The snap lock cartridge works on a spring action principle. To open, first place cartridge on the working area with the side facing up that allows you to place a small screw driver blade into the openings to release the locks. Place the lip of the cartridge under the head of the pan head screwdriver blade, release the locks (Illustration #18) at the same time pulling upward on the top half of the cartridge.



Snap Lock Type With Removable Screw

(Illustration #19) This cartridge is locked in the same manner as the straight snap lock cartridge plus a removable screw located in the center of the cartridge. To open, unlock the front snap locks and remove the center screw.



Cut label over hidden screw head and peel back paper. Press back in place after repairs are completed.

Illustration 19

Snap Lock Type With Pressure-Inserted Screw

(Illustration #20) To remove a pressure-inserted locking screw you will need a 3/16 inch (4.762 mm) inexpensive drill bit and drill. An electric drill is best for the job. However, a hand powered drill will do the job nicely.

Interference Locking Type

Secure the cartridge so both hands are free. You can lock the cartridge in a vice (careful not to apply too much pressure) -- apply just enough so that the cartridge will not slip. Or you can clamp the cartridge to a working area with a 3 inch (4.762 mm) "C" Clamp (Illustration #21) which is available at any hardware store.

If you use an electric powered drill you do not need to clamp the cartridge down. Place the cartridge, bottom up, on a work bench or on a board as shown (Illustration #22). Drill until the metal screw head is removed as shown (Illustration #23). The cartridge will now open with little effort. Leave the screw shank in place. Sometimes, there remains enough interference that the screw shank will continue to apply a slight locking action.

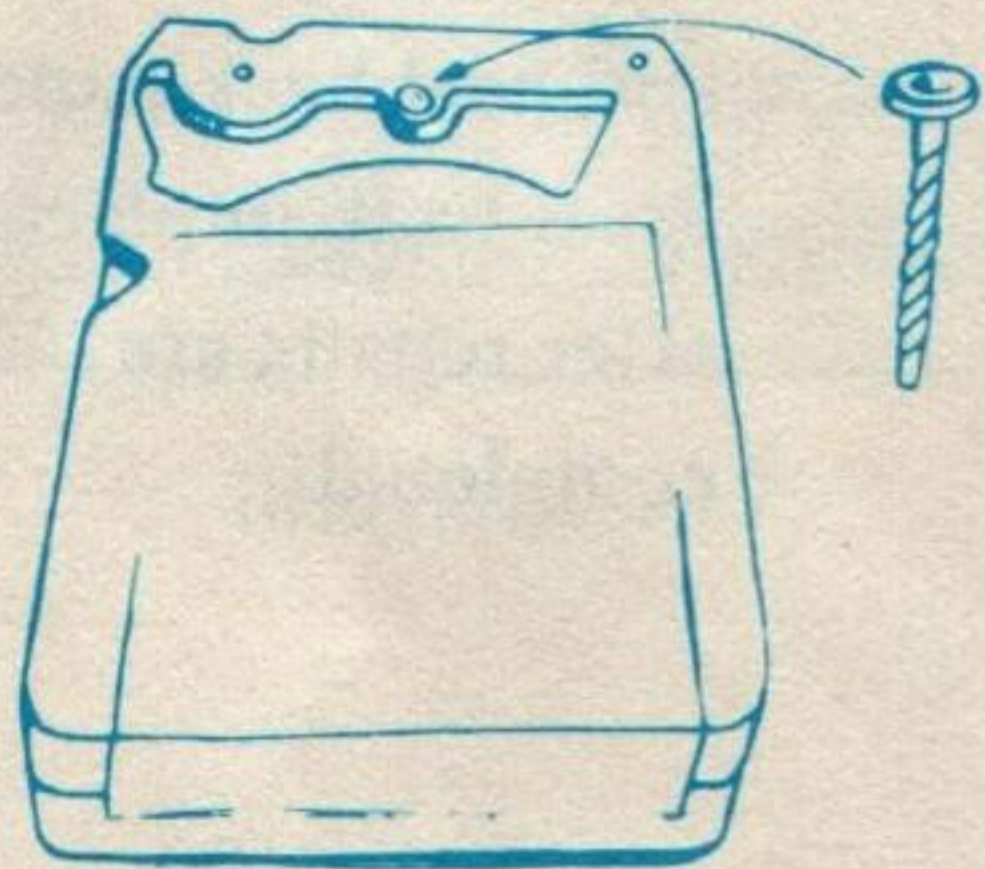


Illustration 20

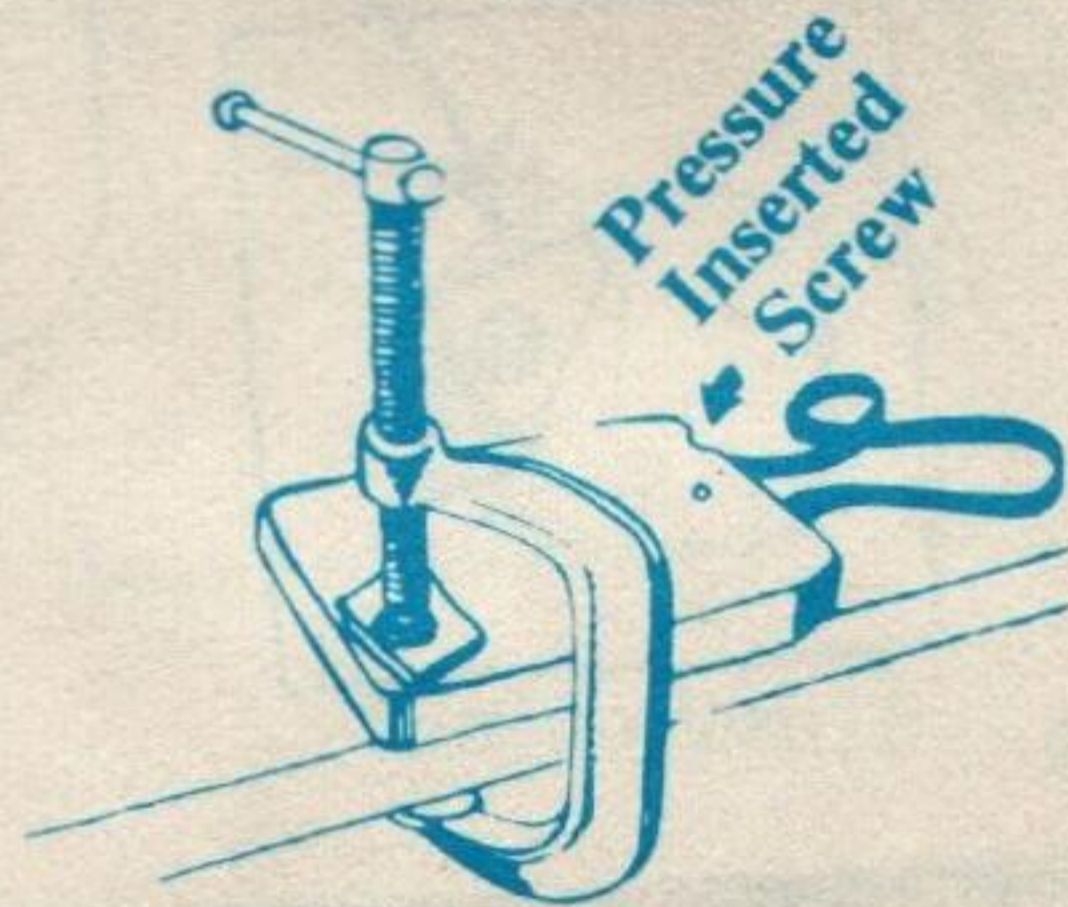


Illustration 21

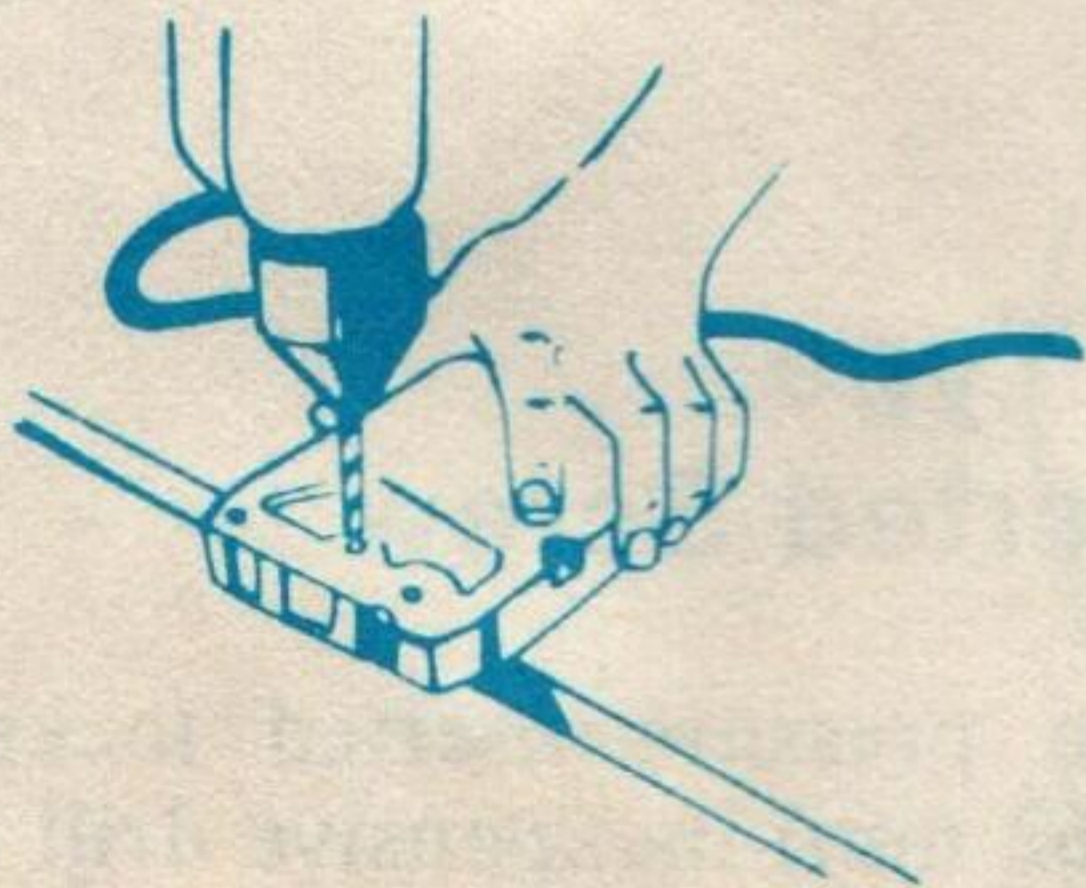


Illustration 22

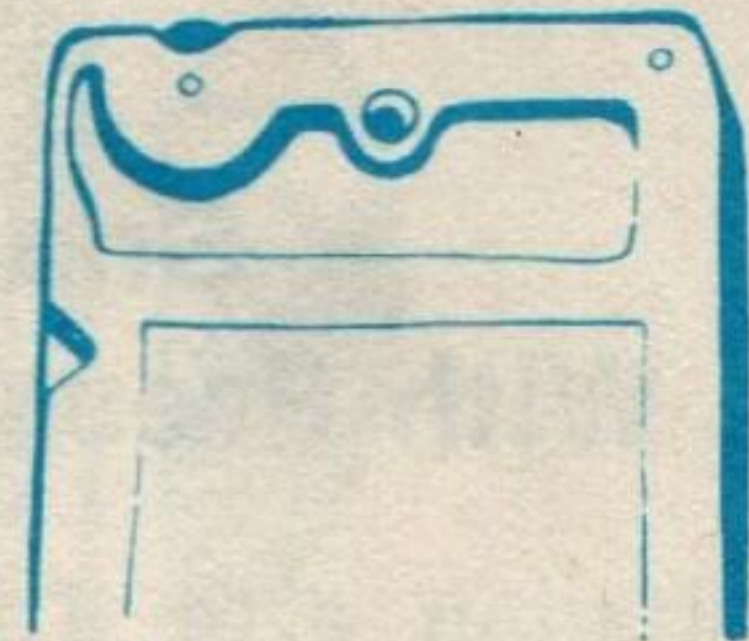


Illustration 23

(Illustration #24). To open an interference locking type cartridge you will need a 3/16 inch (4.762 mm) inexpensive drill bit and drill. An electric drill is best suited for the job. However, a hand powered drill will do the job nicely.

Secure the cartridge so both hands are free. You can lock the cartridge in a vice (being careful not to apply too much pressure) -- applying just enough so that the cartridge will not slip. Or you can clamp the cartridge to the work bench with a 3 inch (7-8 cm) "C" Clamp (Illustration #25) which is available at any hardware store.

If you use an electric powered drill you do not need to clamp the cartridge down. Place the cartridge, bottom up, on a work board as shown in (Illustration #26). Do not drill in the immediate tape repair area, or plastic drill shavings will contaminate the work area.

When using an electric powered drill, hold the drill in a vertical position while grasping the cartridge with your hand. Start the drilling by applying a slight downward pressure. As you carefully drill you will feel the interference lock release -- at this time stop drilling and move to the next lock. However, should you make a mistake and drill all the way through the cartridge, there is no harm done as long as you have drilled in the designated locations. There are times when the "Do not drill area #5" will prevent the cartridge from opening. When you encounter this situation, do not force the cartridge open. Instead, replace the 3/16 inch (4.762 mm) drill bit with a 1/8 inch (3.175 mm) drill bit and drill out the #5 location and proceed to open the cartridge.

Note: An interference cartridge in most cases will retain sufficient interference to re-lock the cartridge with a light tapping, using the handle of a large screw driver (Illustration #27)

Do Not Drill

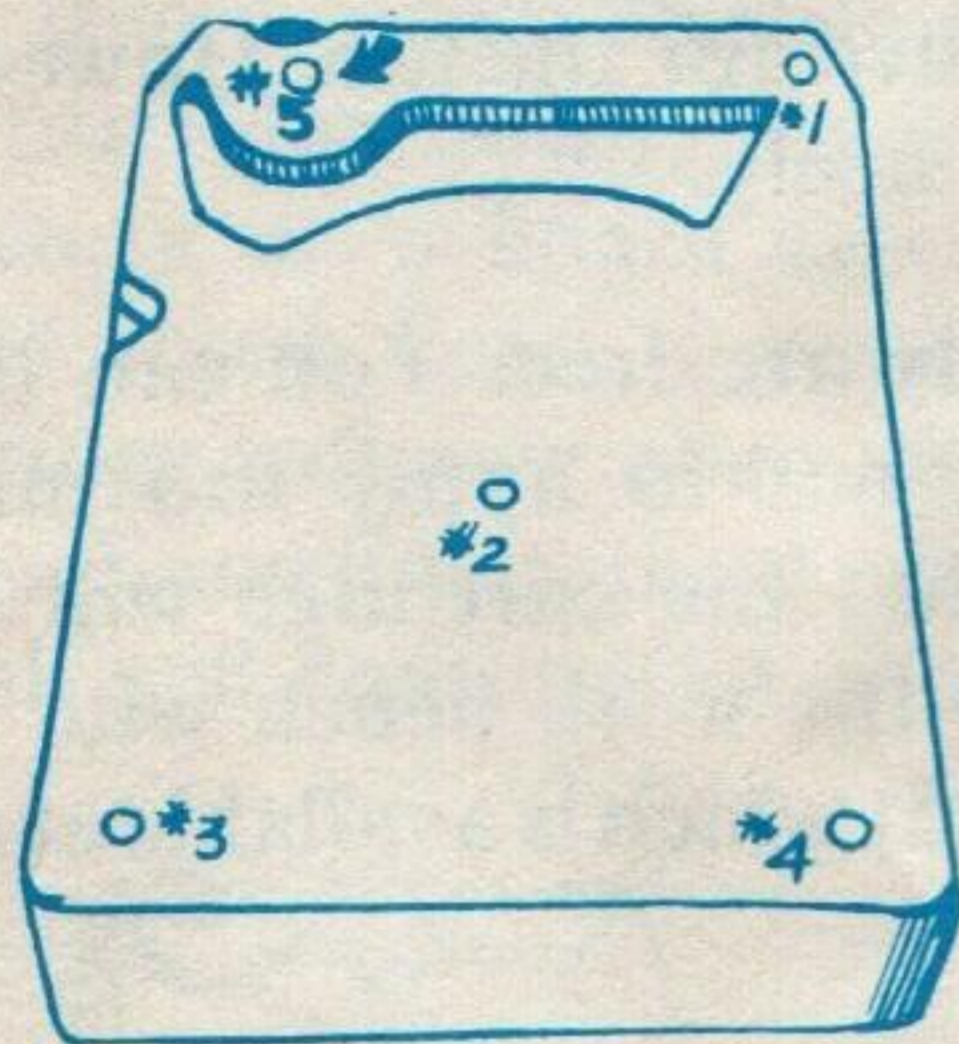


Illustration 24

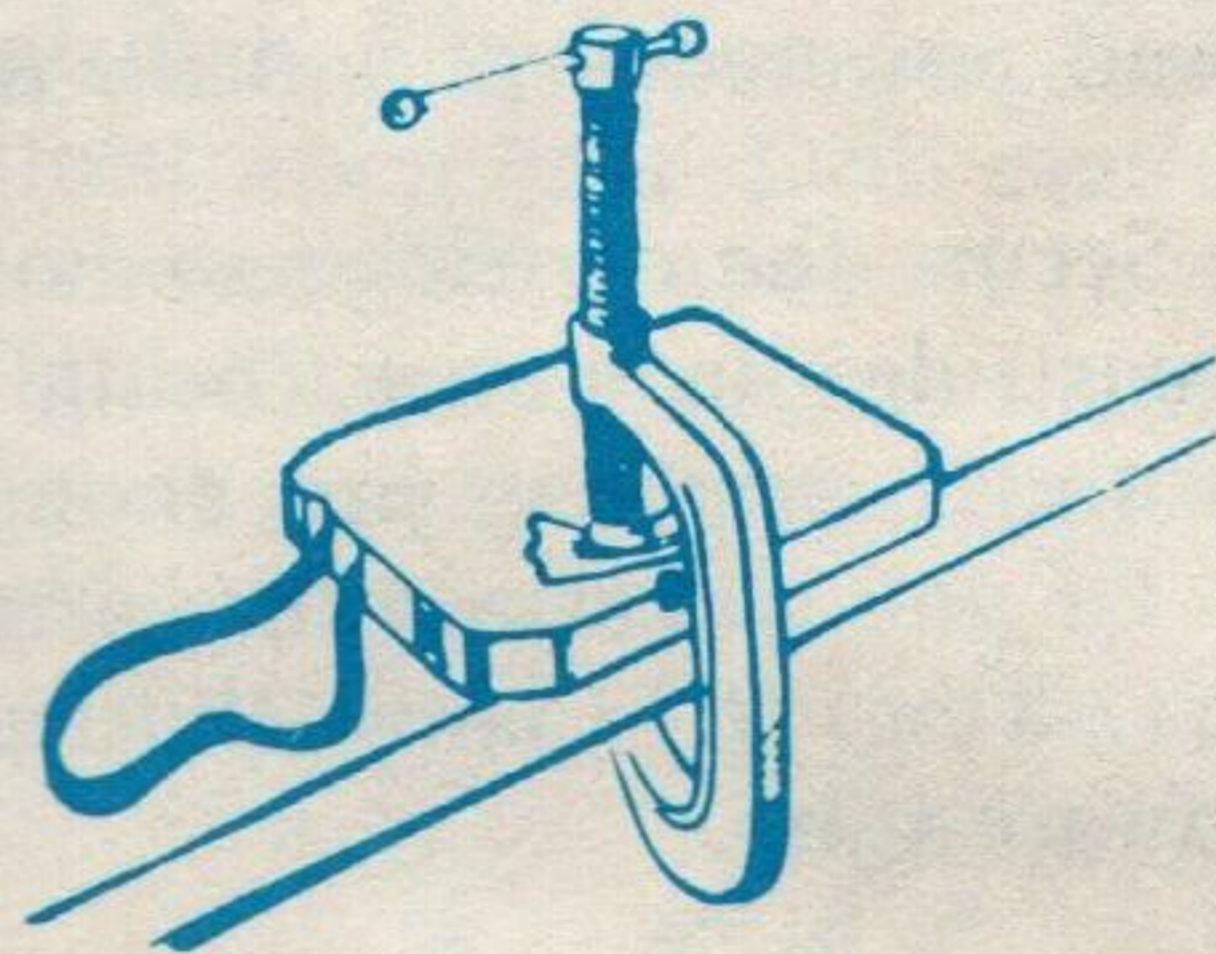


Illustration 25

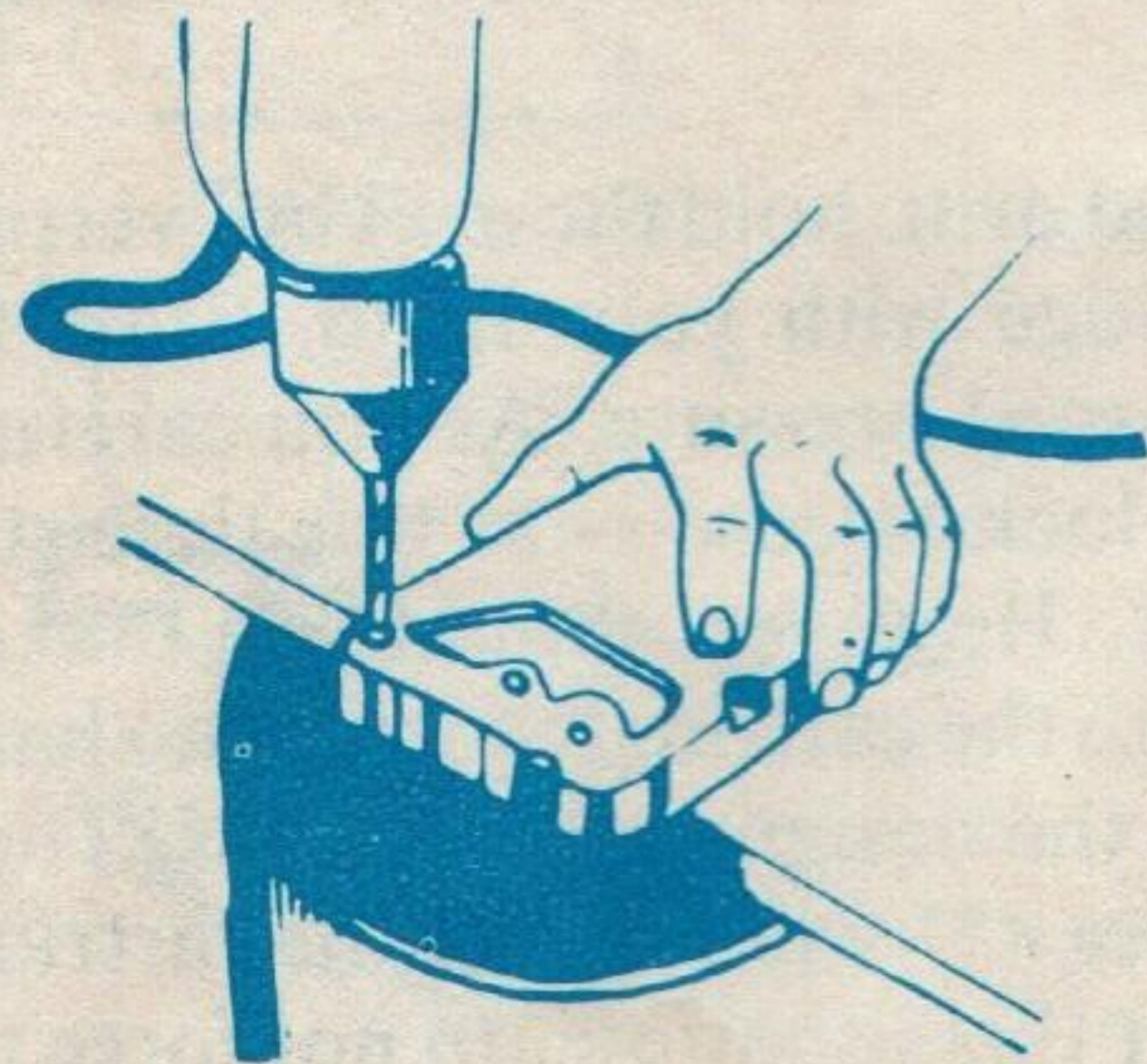


Illustration 26

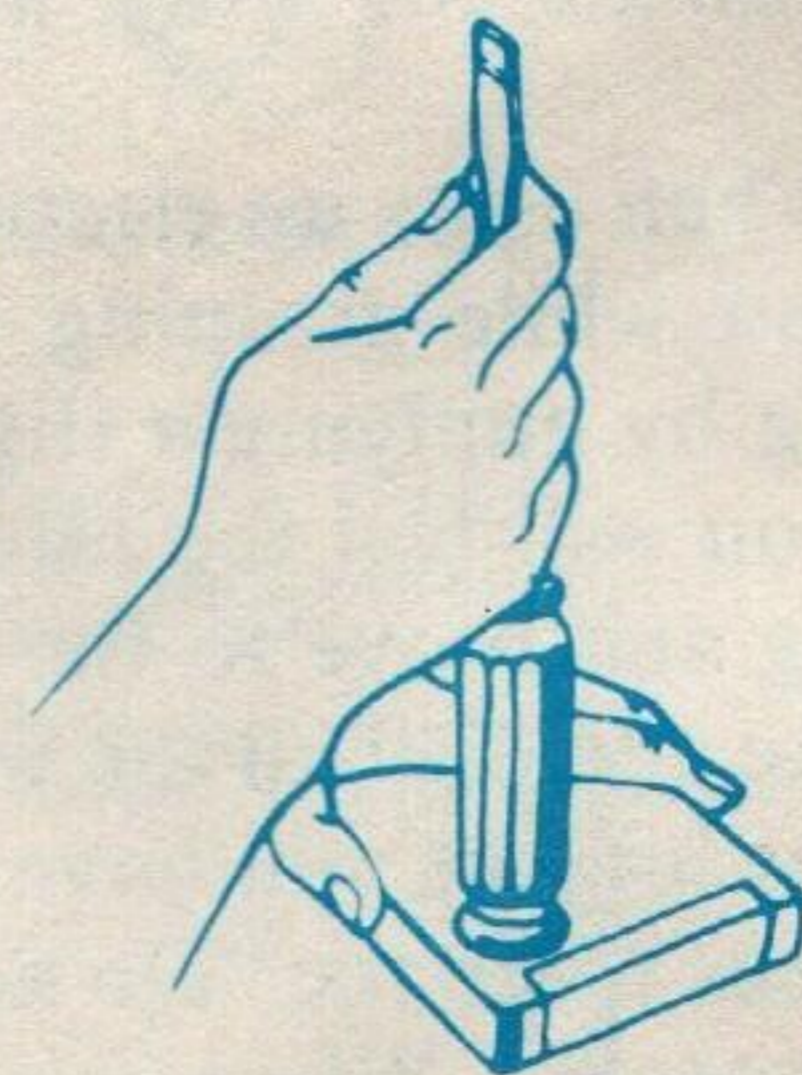


Illustration 27

REPAIRING AN OPEN CARTRIDGE

OK, now you know how to open a cartridge (at least we hope you do), now lets fix it.

Incorrect Tension

When varying sound is heard, improper tape tension is the problem 99% of the time. An 8 track tape cartridge is designed to allow a smooth and continuous flow of recording tape to pass over the play back head (and not in spurts as it is doing under this condition). The other 1% is due to excessively damaged recording tape -- creased, wrinkled, etc. and for this 1% there is no fix.

For loose tension indicated by spacing or gapping in the tape winding (Illustration #28), lock the hub assembly with your left forefinger (Illustration #29) and take hold of the recording tape with your right hand and pull until the gap has closed and you feel a slight resistance. Now check for proper snugness on the hub by pulling tape from hub assembly (Illustration #30). If tape unwinds from hub assembly with ease and just a slight resistance, tension is correct. If you encounter excessive resistance, remove 2 or 3 loops from around the hub (Illustration #31) and repeat the procedure as many times as it requires to obtain the correct tension. Once you are satisfied you have the correct tension, take a sharp pair of scissors and cut the tape at a 45 degree angle approximately 2 inches from the hub crown (Illustration #32). Remove the plastic anti-fouling ring, replacing it after rewind and before splicing. To rewind, a pencil is one of the best tools available, using the eraser for the smoother surface and the opposite end for the non smooth surface (Illustration #33). In a clockwise rotation, rewind the tape to a point where there is approximately 6 inches of tape remaining outside the cartridge (Illustration #34). Now pull from the hub sufficient tape to allow both ends to meet in the splicing block (Illustration #35) making sure butted ends are positioned over the 45 degree cutting slot. See SPLICING info later on.

Occasionally you will encounter a locked tape (tape that will not move). Looking at the tape where it passes over the pinch roller you will see a burnished spot (Illustration #36). This burnishing is caused from the capstan in your tape deck revolving on a non-moving tape.

Note: It is recommended that you do not attempt to free a locked tape by pulling on it, for all you will do is stretch the tape and ruin a section of the recorded tape.



Illustration 28

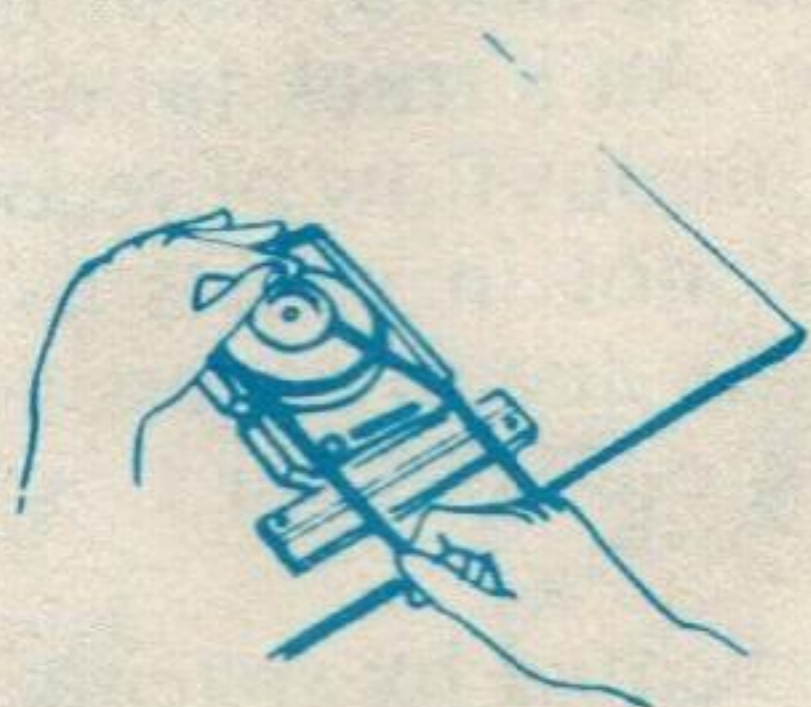


Illustration 29

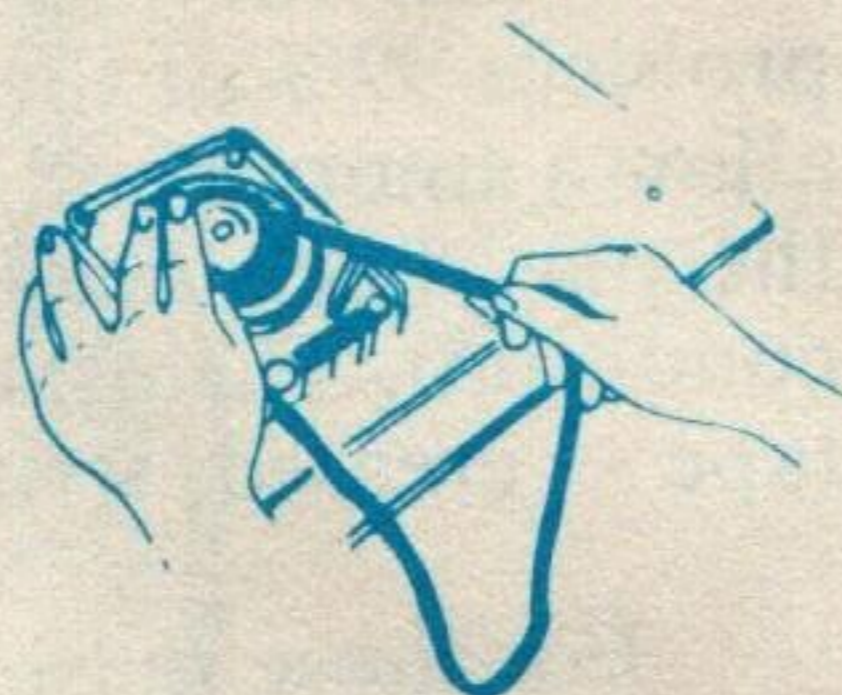


Illustration 30

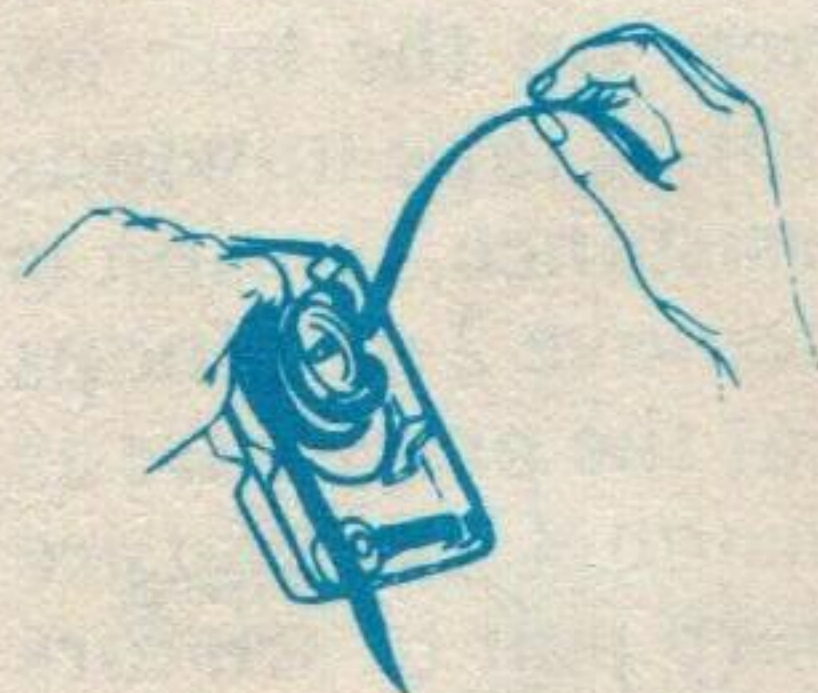


Illustration 31

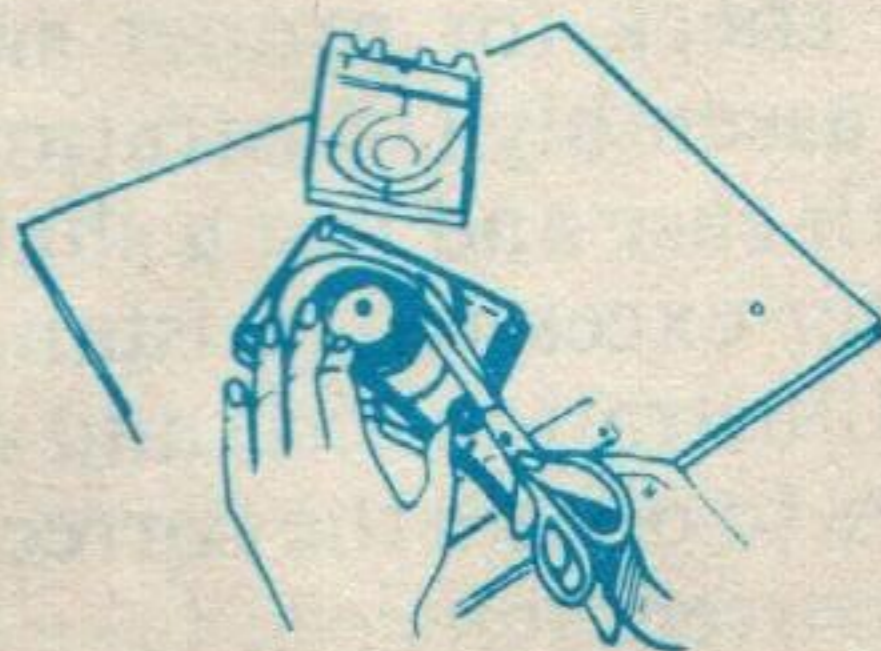


Illustration 32

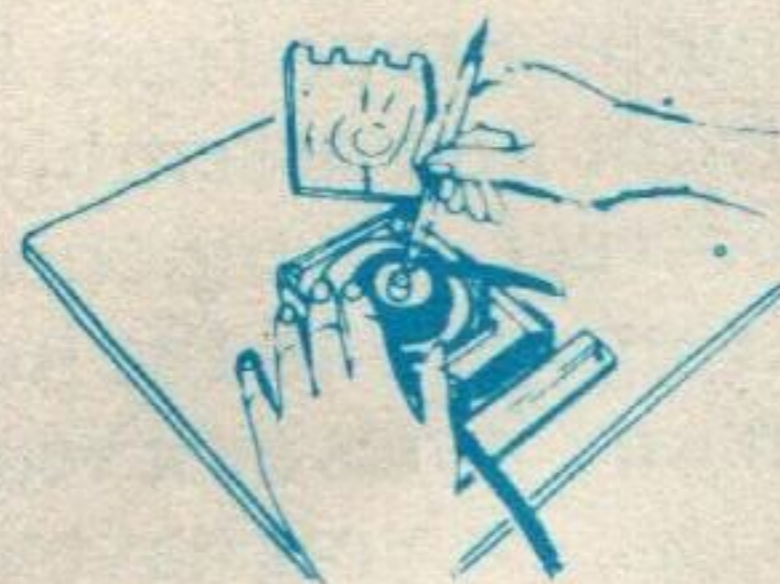


Illustration 33



Illustration 34



Illustration 35

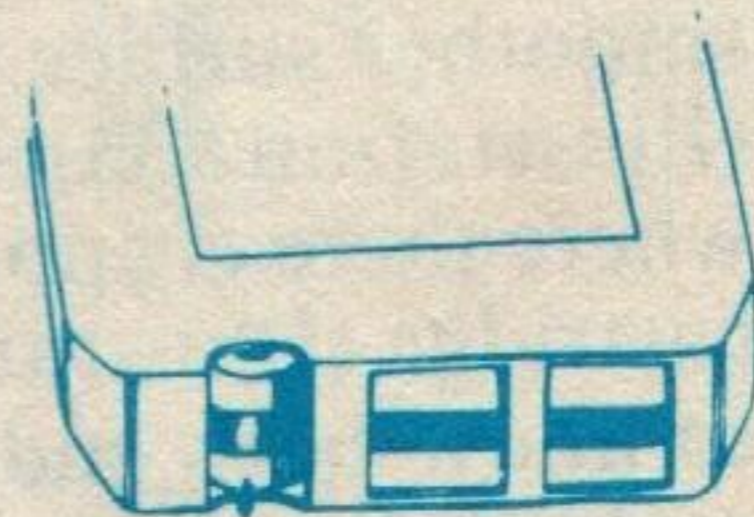


Illustration 36

BASIC TAPE SPLICING

Tape splicing is the method used to join together broken or cut recording tape. The best method of splicing is by using a tape splicing block and pressure sensitive splicing tape such as provided in your tape repair kit. Splicing tape has been developed to the point where you can use a spliced tape over and over again not only on pre-recorded tape, but on blank tape that is being readied for recording. A properly made splice will leave no gap between the jointed tape ends and thus no adhesive will creep out between the splice joint.

Good adhesive for tape splicing requires several qualities to provide a top quality splice. The splicing tabs provided in your tape repair kit contain all the top qualities required for a splice that will in most cases outlast the tape it is used on.

There are two types of splicing tabs in your repair kit. One is the non-metallic type and the other is metallic. The non-metallic is used on the back side of the recording tape, whereas the metallic type is used on the recording side.

After the tape has been cut on the diagonal and butted together firmly, the tape should be pushed together until a slight bulge appears at the butt joint. This is done so that when the splice is applied, the downward pressure will not part the butted joint.

In repairing a tape break, it is recommended that you exercise caution when attempting to match ends. In most cases the ends will curl making it almost impossible to splice the ends together without a gap which will allow adhesive leakage. In this case, it is recommended that you trim at the recommended angle, taking care not to remove more tape than necessary to smooth the edges.

The splicing tabs provided are scientifically designed to provide you with one of the best splicing capabilities available. As you can readily see (Illustration #37), it is a simple die cut splicing tab adhering to a die cut guide which keeps the tab edge away from the edges of the recording tape, and it is temporarily adhered to a release paper.

To remove splice tab from backing paper, hold down release strip on a working surface and with your left hand gently peel off splice tab (see Illustration #37). With your recording tape properly aligned over the 45 degree cutting slot, place the splice tab over the butted ends of the recording tape with the upper right point of the splice tab aligned with the point of the raised arrow head marked (R) (see Illustration #38). The splicing tab will now be correctly positioned over the cut and butted ends. With your left forefinger, press down on the left half of splice tab, grasp the carrier strip with your right hand and gently but firmly pull to your right to remove from splice tab (a slight snapping sound will be heard when carrier strip releases). Smooth down the splice tab using your thumb nail (Illustration #39). Repeat this action two or three times to obtain a weld-like splice.

Note: The raised arrow head marked (L) is for a left hand die cut splice tab. Illustration #38 shows the right hand die cut splice tab.

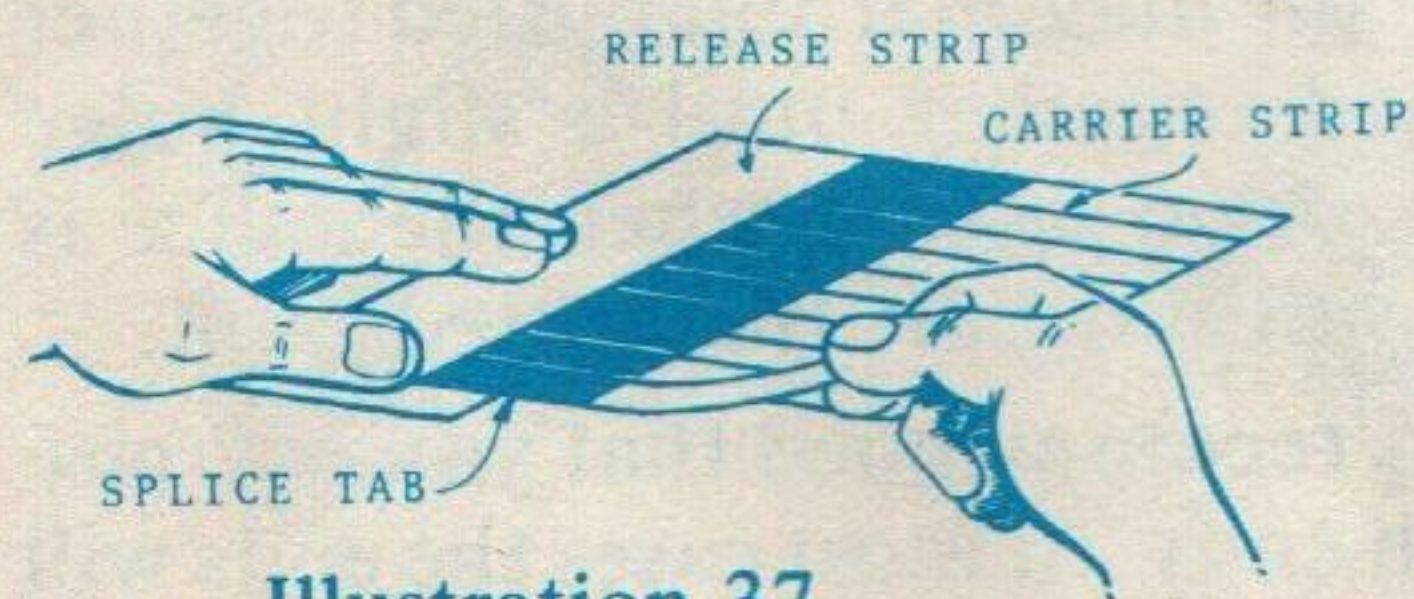


Illustration 37

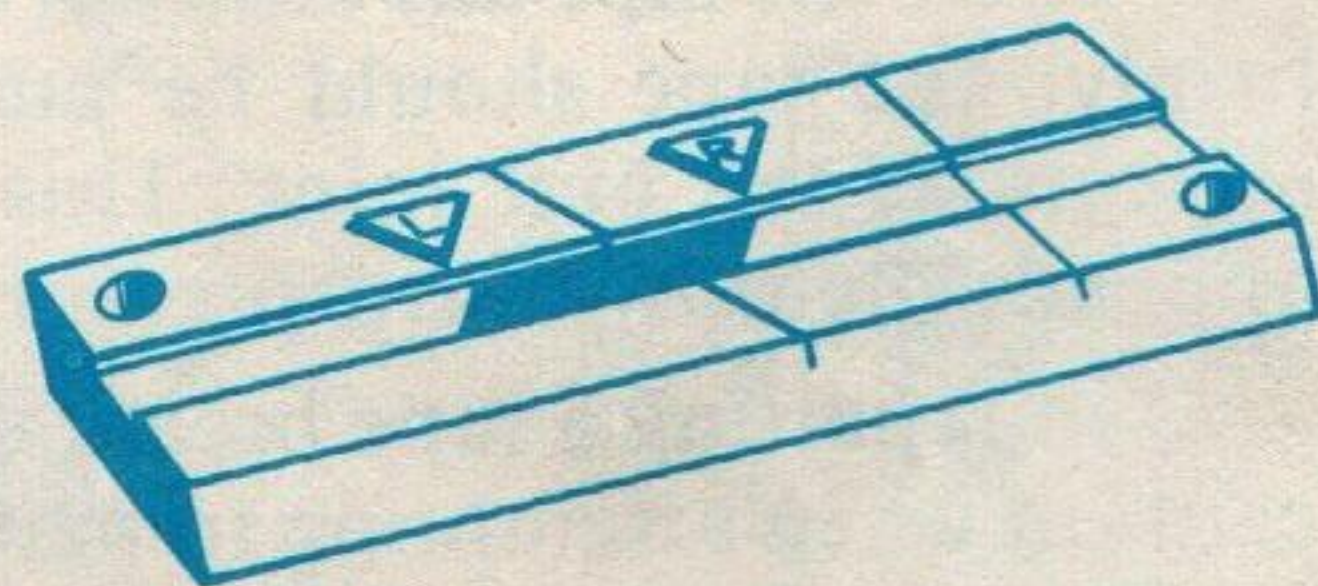


Illustration 38

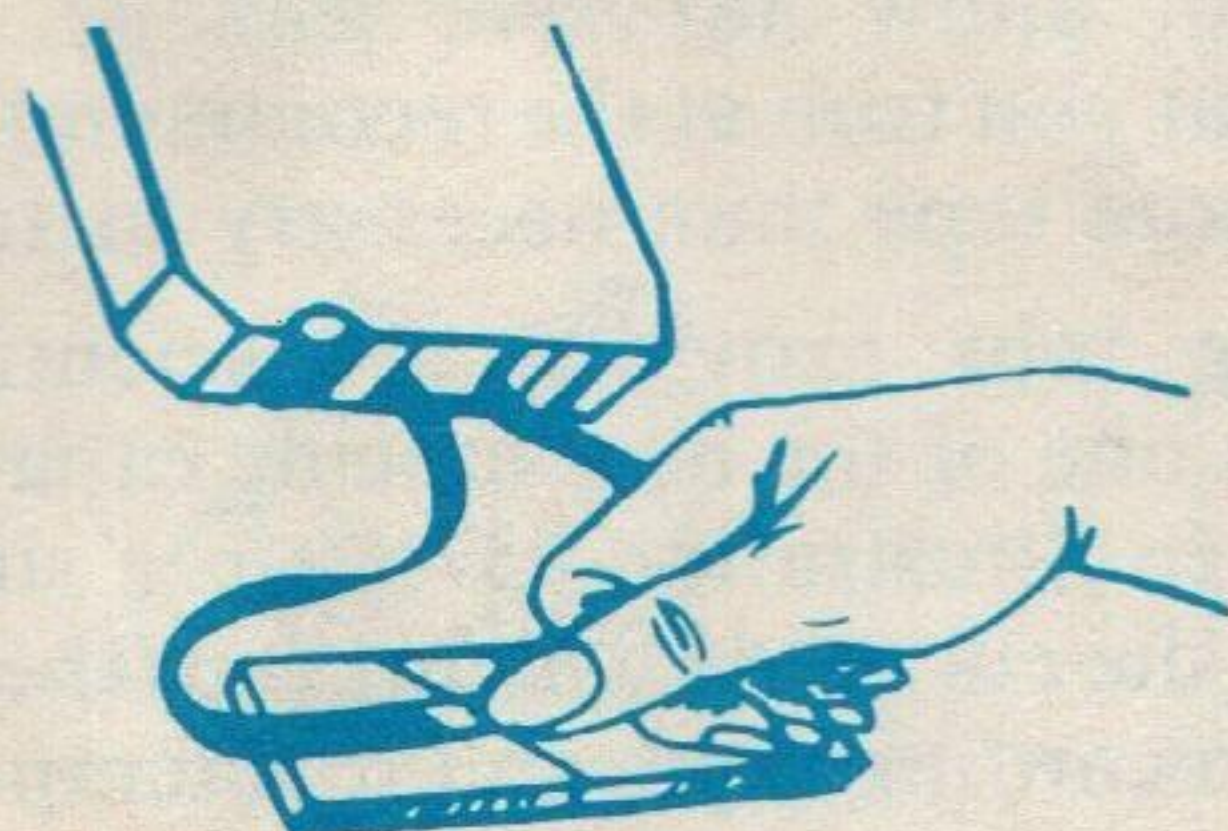


Illustration 39

SPLICING REMINDER

As we noted earlier, there are two types of splicing tabs. One is metallic, which is used as a sensing splice for automatic stop, reverse and channel change. When replacing the factory splice, which is the metallic splice tab, **be sure to place it on the recorded side of the tape** (Illustration #40) and not on the under side.

Note: In an emergency the metallized splicing tab can be used on the back side of the tape for a regular repair splice. The automatic channel switching circuitry of your tape deck will not sense the metallic splice tab through the recording tape.

(The recorded side of the tape is the side facing outward from the cartridge and is a semi gloss surface.)

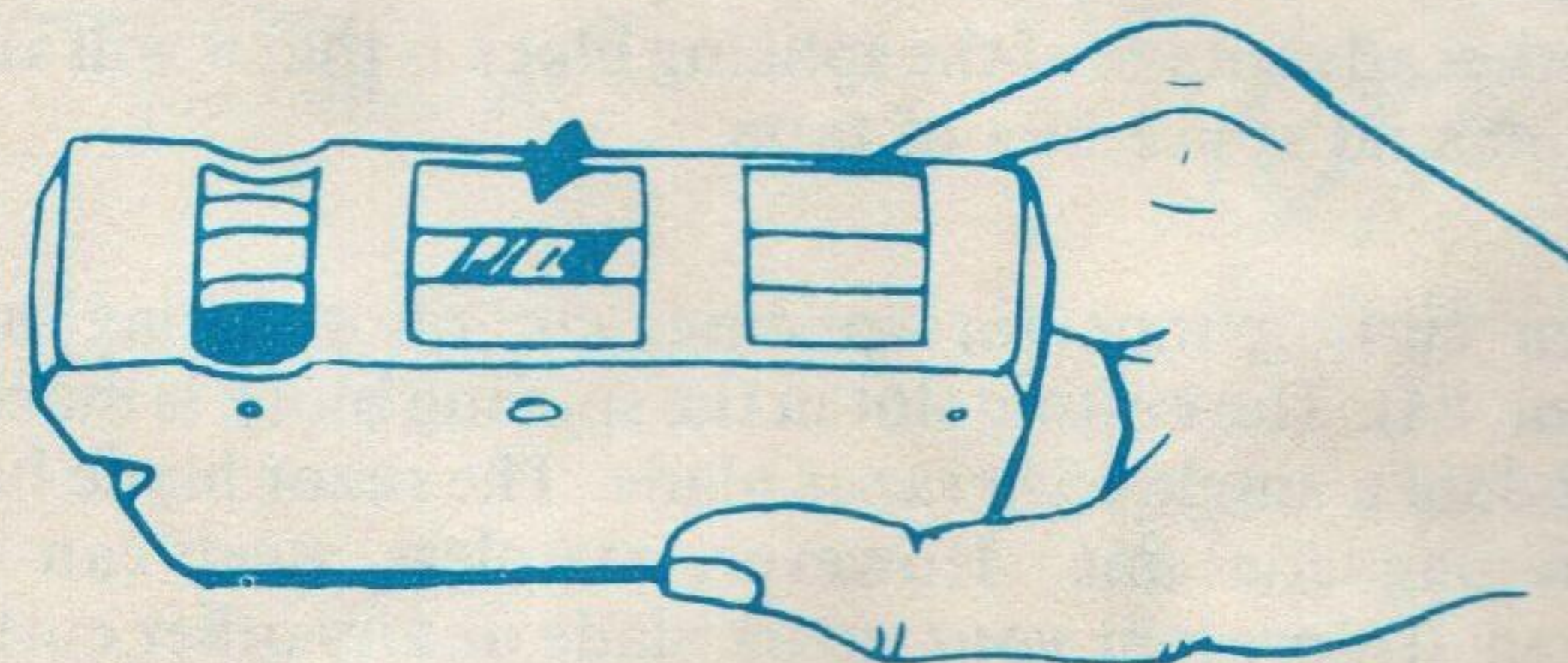


Illustration 40

MAKING THE SPLICE AND USING THE SPLICING BLOCK

The splicing block provided in your tape repair kit is made with slightly curved tape holding grooves, dovetailed at the top to prevent the tape from slipping once properly seated in the block. To seat the tape properly, press down slightly (but firmly) into the block. As you will note, tape can be moved back and forth once in the groove. We have found the rubber eraser end of a pencil makes an ideal tool for performing this function.

Tape that is accurately split by the manufacturer to the proper width, will fit perfectly in the splicing block (a stretched or oversize tape will not fit precisely). A stretched or oversize tape does not prevent you from using the splicing block; just exercise additional caution when splicing to compensate for the tape not being locked into position.

Another advantage of the splicing block is that it will allow you to assemble and splice bits of tape.

When cutting tape for splicing, cut on the diagonal. (See Illustration #4). The cutting slot in the splicing block is machined to accommodate a single edge razor blade. The razor blade furnished is a non-magnetic one. However, stainless steel can become magnetized. To prevent your razor blade or any other cutting tool (such as scissors) from becoming magnetized, use a tape demagnetizer such as Radio Shack sells. As an additional matter of precaution, we suggest that you make it a practice of demagnetizing your cutting tool(s) on a regular basis. A magnetized cutting tool will rearrange some of the magnetic particles on the tape every time a cut is made and on playback you'll hear an annoying click on the tape at that point.

Steps to Making a Good Splice

1. Determine how and where to make the splice.
 - A. Front side of Tape (metal foil for program/track switching)OR
 - B. Back side of Tape (to hold tape together)
 - C. Remove excessively damaged tape.
2. Place tape ends in groove of splicing block **letting ends overlap slightly.** (Illustration #41)
3. Cut through both thicknesses **on an angle.** (Illustration #42)
4. Be sure ends are butted tightly together.
5. Press tape splice down over the butted tape ends and burnish firmly in place. (Illustration #43)
6. Pull tape from groove in splicing block. (Illustration #44)



Illustration 41

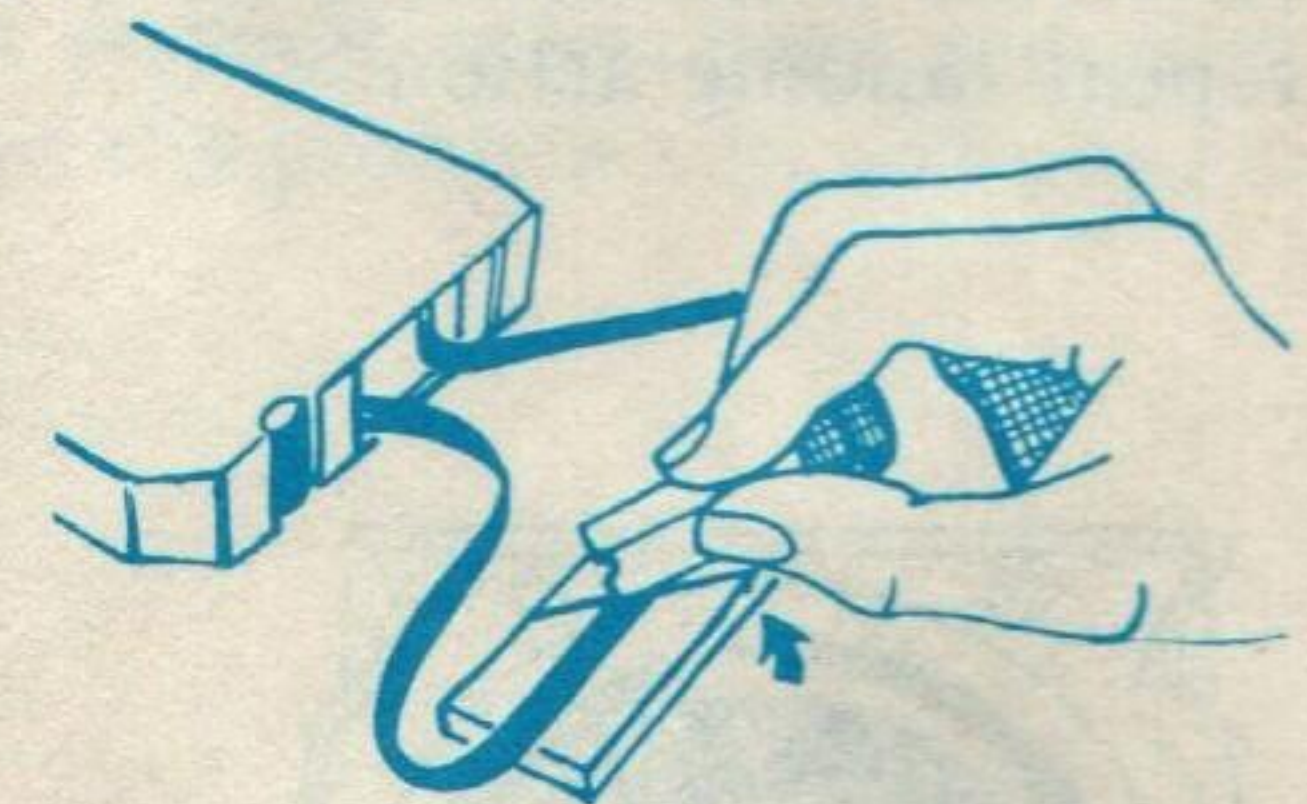


Illustration 42

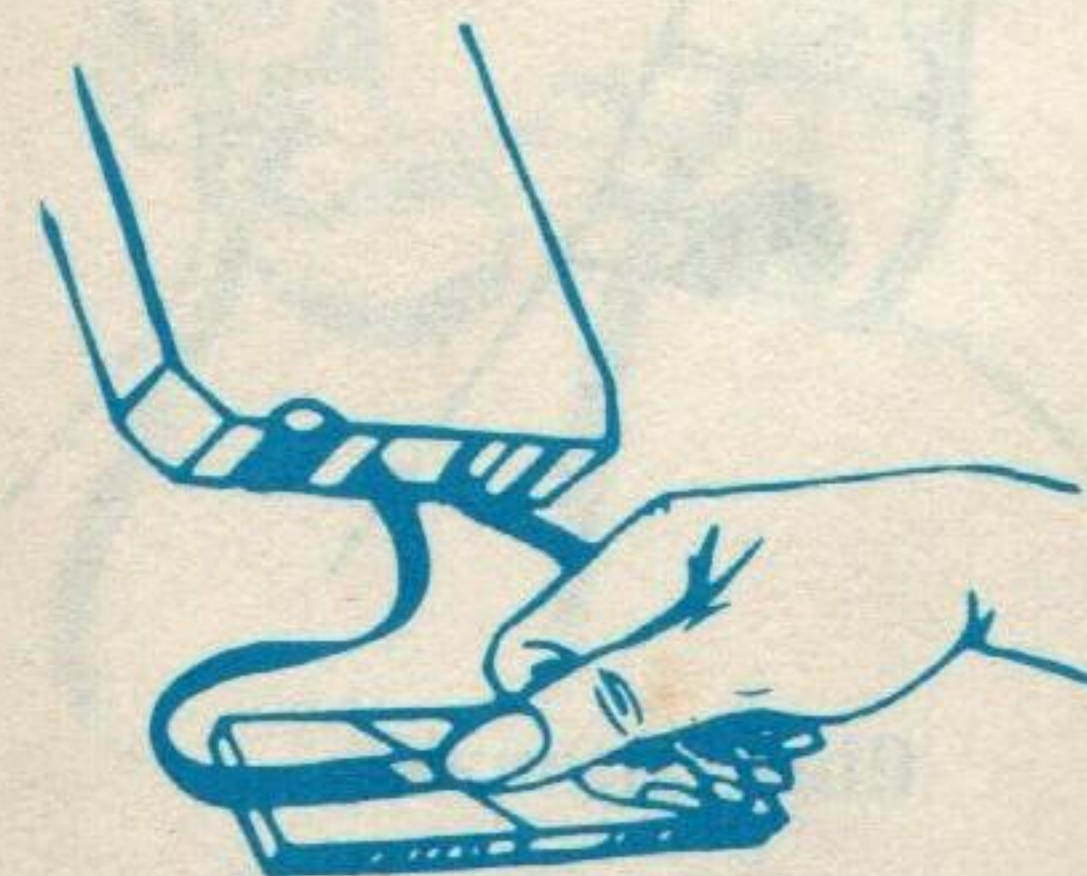


Illustration 43

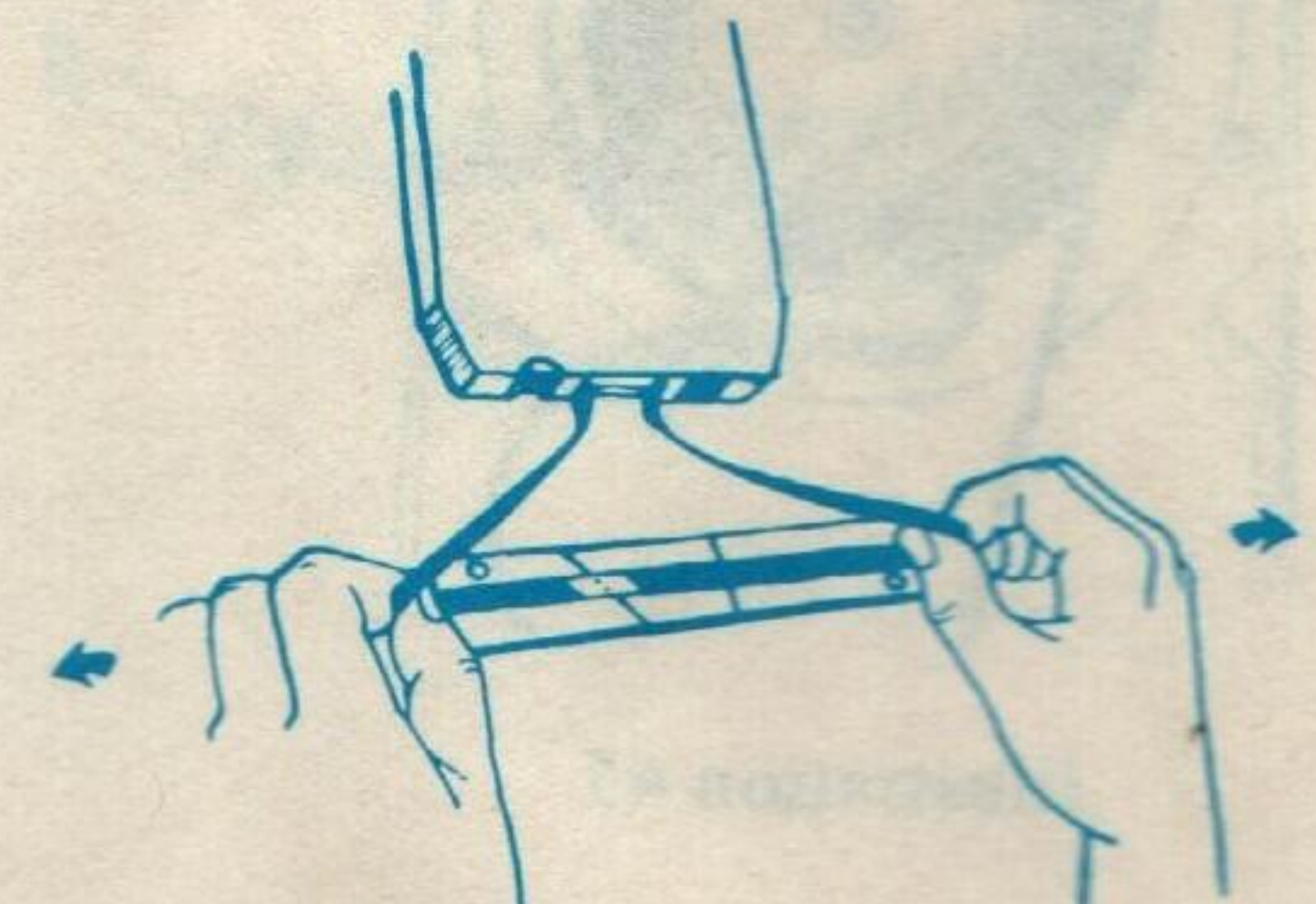


Illustration 44

MISCELLANEOUS PROBLEMS AND SOLUTIONS

Fouled tape around hub (Illustration #45). Unloop tape. Tension will now be incorrect due to excessive gap between tape and hub. Refer to section on TENSION for corrective action.

Hub assembly will not rotate. Remove hub assembly from shaft being careful not to dump tape winding from hub assembly. Inspect to make sure a plastic particle is not lodged under the hub assembly plate. If no foreign particles are found, take a fine grade of sand paper and make 5 or 6 twisting actions around the shaft to remove interference (Illustration #46). Replace hub assembly, check for free movement. If still locked or does not move freely, repeat sanding action.



Illustration 45

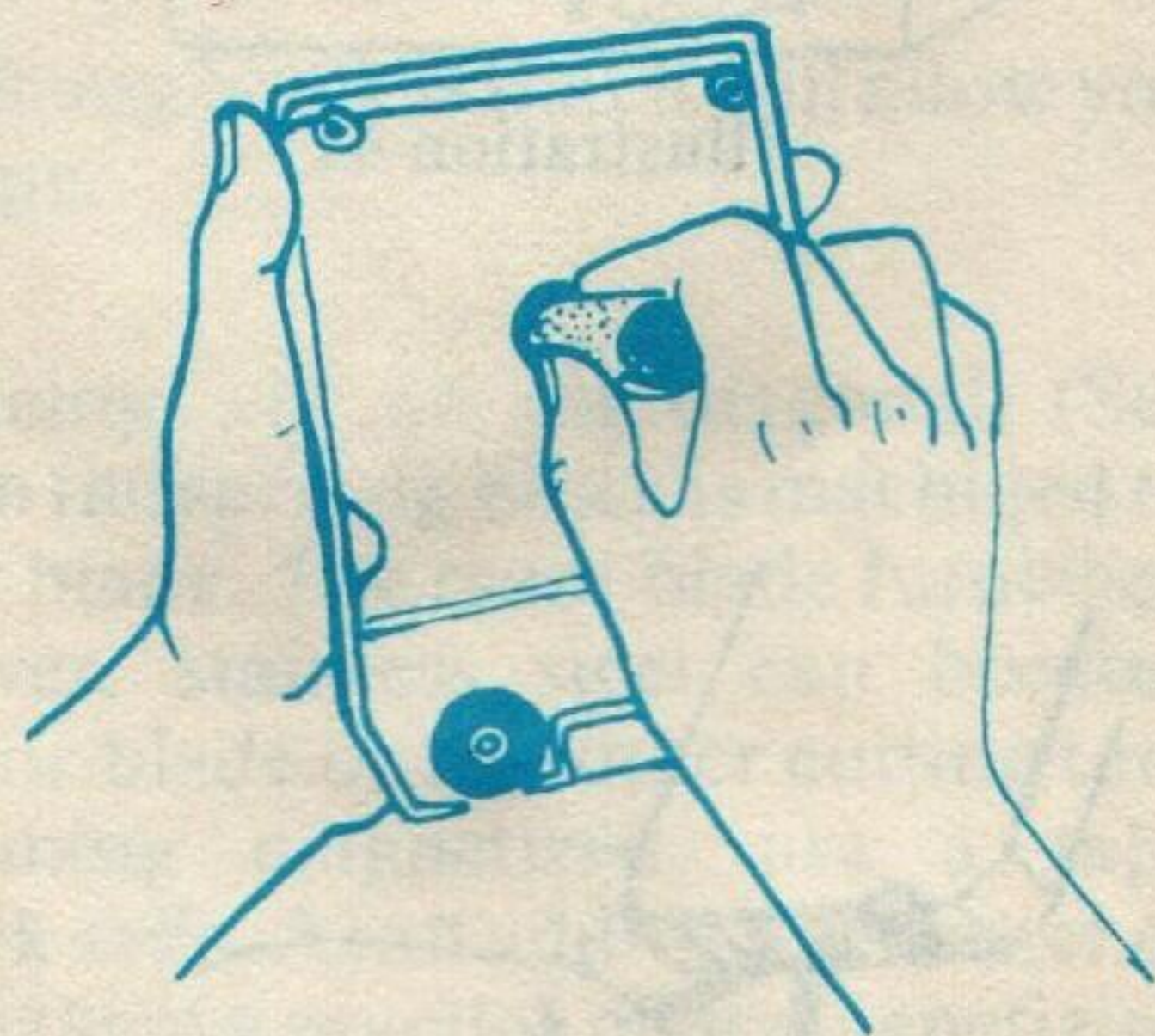


Illustration 46

Fouling of tape at pinch roller (Illustration #47). This can be caused by tape sticking to pinch roller or by the pinch roller not revolving on its shaft. For the first condition, remove pinch roller from the cartridge and clean surface with a cleaning solution. For the second condition, remove the pinch roller from the cartridge, clean surface with a cleaning solution and with a fine grade of sand paper make 5 or 6 twisting actions around the shaft. Replace pinch roller, check for free movement. If still locked or does not rotate freely, repeat sanding action. When problem is resolved, recheck tension.

Accordioned tape at pinch roller (Illustration #48). This is caused by pinch roller not revolving. Remove pinch roller from shaft and twist a fine grade of sand paper around the shaft 4 - 6 times. Clean surface of pinch roller with a cleaning solution and replace on shaft checking to see if restriction has been removed. When corrective action has resolved the problem you will need to recheck tape tension.

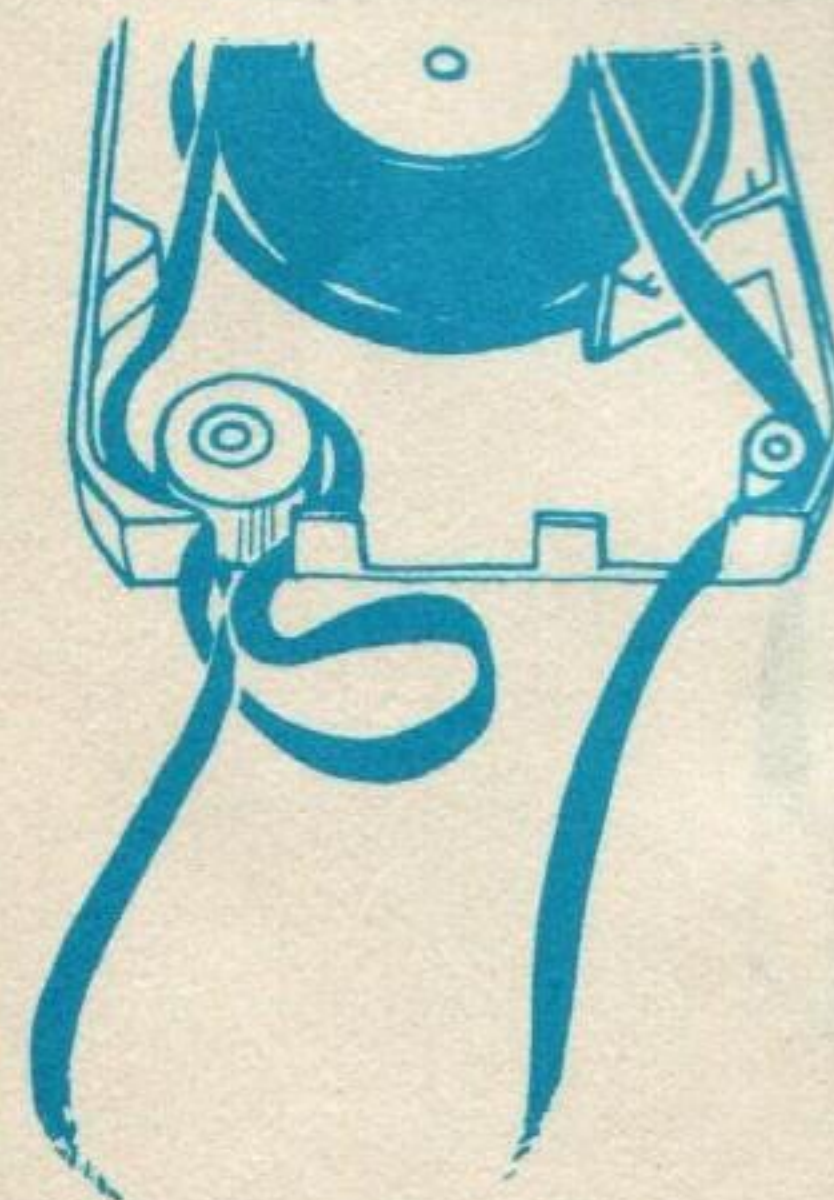


Illustration 47



Illustration 48

To rewind tape on the hub. Place the dark non-glossy side against the hub with approximately 2 inches protruding (Illustration #49). Rewind the tape using a pencil as described in the section on Tension; to further assist in the rewind, use the pinch roller and cartridge.

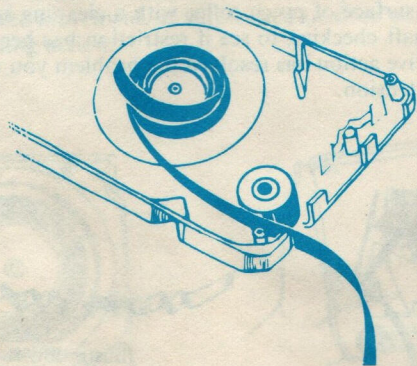


Illustration 49

Hub crown separated from the hub (Illustration #50). Occasionally the hub crown can be replaced on the hub without the total removal of the tape. Should you not be able to accomplish this, remove the tape in total from the hub assembly. Prior to removing the tape from the hub place a clothes pin on tape end (Illustration #51) to indicate which end of tape does not go on the hub should you accidentally mix the tape up. When tape is removed snap the hub crown back onto the hub. Rewind and splice.

Foreign particles such as plastic particles lodged in tape winding (Illustration #52) must be removed and recheck tension.

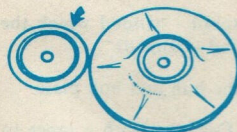


Illustration 50

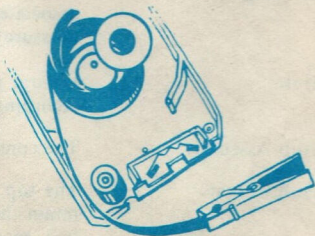


Illustration 51

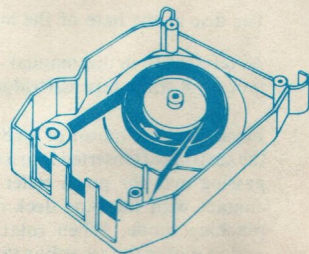


Illustration 52

GLOSSARY OF TERMS

- Anti Fouling Ring:** A thin plastic ring placed over the spooled tape. Its prime purpose, to prevent tape from fouling around the hub crown.
- Burnish:** To make rub down firmly (to press tightly together, typically with a tool or finger nail).
- Capstan Drive:** The vertical drive shaft in tape decks that provides power to move tape over pinch rollers.
- Cartridge:** The housing that contains recording tape and associated parts such as pinch roller, hub, pressure pad and anti fouling ring.
- Hub:** Central part of the spool - around which the recording tape is wound (spooled).
- Hub Assembly:** The combination of the hub and hub plate.
- Hub Crown:** The top of the hub. Designed with a taper to retain the spooled recording tape and to allow free movement of recording tape from the spooling around the hub.
- Hub Plate:** The disc at the base of the hub.
- Locking Devices:** As referred to in this manual, any device used to lock an 8 track tape cartridge closed.
- Pinch Roller:** In essence, the motor of an 8 track tape. When the cartridge is inserted into a tape deck, the tape passing over the pinch roller is placed in direct contact with the tape deck drive capstan in a pinching mode. When rotating, this pinching action moves the recording tape in a continuously smooth flow at a rate of $3\frac{3}{4}$ inches per second.

Post aud Channel Guides:

Integral parts of an 8 track tape cartridge. Purpose: to guide the recording tape passage.

Pressure Pad:

An oblong plastic sponge mounted on both ends of a spring metal strip. Purpose: to exert sufficient pressure against the back side of the recording tape to hold it against the play and / or recording head.

Shafts:

Integral parts of an 8 track tape cartridge on which the wheel and pinch roller rotate.

Splice Tab Assembly:

Alignment & guide, splice tab and backing.

NOTES