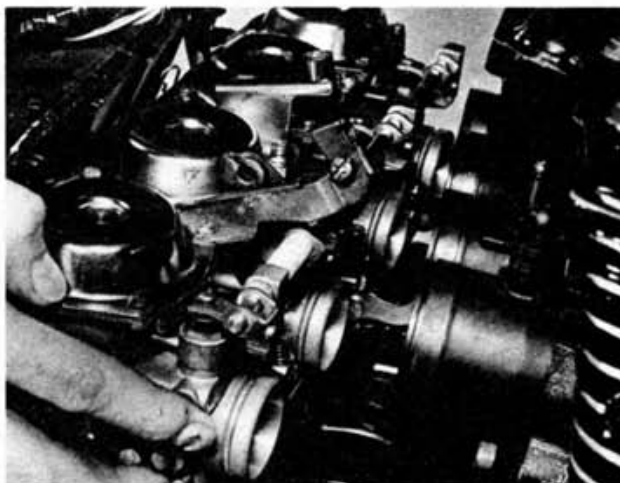




6.3c Unhook and disengage throttle cable



6.4 The carburettor assembly can now be removed

## 7 Carburettors: dismantling, overhaul and reassembly

1 Most of the dismantling work that is likely to be required can be undertaken without the need for separating the instruments. This is a rather laborious task which is best avoided if at all possible. Should the need arise, however, details are given later in this section. It should be noted that Yamaha advise that separation of the individual instruments should be avoided since it can lead to misalignment of the operating linkages. Whilst separation may prove inevitable in some instances it should, therefore, be avoided where possible.

2 To gain access to the float chamber components, namely the float assembly and jets, the float bowl concerned is removed after its four retaining screws have been released. It is recommended that one instrument at a time should be dealt with to preclude any possibility of parts becoming interchanged. Note that it is not necessary to remove the connecting bracket.

3 Using a small piece of wire or a pair of pointed-nose pliers displace the headed pivot pin which locates the twin float assembly and lift the float from position. This will expose the float needle. The needle is very small and should be put away in a safe place so that it is not misplaced. Make sure that the float chamber gasket is in good condition. Do not disturb the gasket unless leakage has occurred or it appears damaged.

4 Check that the twin floats are in good condition and not punctured. Any leakage will allow fuel to find its way into the float making it less buoyant than normal and upsetting the fuel level in the float chamber concerned. A quick check can be made by shaking the float and listening for signs of fuel inside it. A more reliable method is to hold the suspect float under hot water. This will cause the air inside it to expand, and if a leak exists, to be expelled as small bubbles. Repairing a damaged float is not a practicable proposition and renewal is the best course of action.

5 Examine the float needle, checking for a wear ridge at the point where it contacts the seat face. Once this has worn badly leakage can occur causing flooding of the carburettor float bowl. The resulting over-rich mixture will make normal running impossible and will be especially noticeable at idle speed. Less severe wear may not be so obvious but may cause excessive fuel consumption. If the needle is worn it must be renewed, together with the seat if this is also worn or scored. It should be noted that if these components are not functioning correctly it will not be possible to adjust the carburettors since the flooding

will mask the effects of such adjustment. The brass seat has a hexagon head and may be unscrewed if required. It incorporates a fine gauze filter, which should be checked and cleaned.

6 The cold start mechanism, which is generally and incorrectly known as a 'choke', consists of a fuel enriching circuit built into each carburettor and is controlled by a spring-loaded plunger valve in each body. These are opened or closed in unison by rocker arms secured by grub screws to the operating shaft which runs across the bank of instruments. To remove the shaft, slacken the screws which secure each rocker arm and the operating lever. Slide the shaft clear of the carburettors lifting away each component as it is freed. Lay out the arms, bushes and lever in the exact order of removal to ensure that they are refitted in the same sequence. If required, each plunger valve can now be unscrewed for inspection. Wear or damage is not likely, but if discovered will necessitate the renewal of the valve. The vulnerable area is the valve tip and the corresponding seating face in the carburettor body.

7 Each diaphragm chamber cover is retained by four screws and can be lifted clear once these have been removed. The diaphragm will normally remain in the carburettor body but take care when lifting the cover in case part of it sticks to the underside. Lift out the return spring, then carefully ease the edge of the diaphragm away from the carburettor body taking care not to damage it. The diaphragm can now be removed together with the valve and needle.

8 The jet needle is retained by a spring and an Allen-headed plastic plug. The latter should be unscrewed to allow the needle and spring to be displaced. The valve body and diaphragm are not available separately and should be examined as a unit. Check the diaphragm carefully for any signs of splitting or tearing. The valve surface should be smooth and free from scoring. If either part is defective the assembly must be renewed. Check that the jet needle is straight and undamaged, noting that close scrutiny will be necessary. Even light scoring or wear will upset fuel metering, and examination should be carried out in conjunction with the needle jet. If any wear is found renew **both** components, since needle jet wear is difficult to assess visually.

9 The main air jet and pilot air jet are located in bores below the diaphragm, and are covered by a retainer plate. This can be removed by unscrewing its single retaining screw. When unscrewing the jets note their position in the carburettor as a guide to reassembly. The main and pilot (fuel) jets are located on the underside of the instrument, in casting extensions which

project into the float bowl. The longer, pilot, jet screws directly into the carburettor casting, whilst the shorter main jet screws into the bottom of the needle jet. Once the main jet has been unscrewed the instrument can be inverted and the needle jet tipped out.

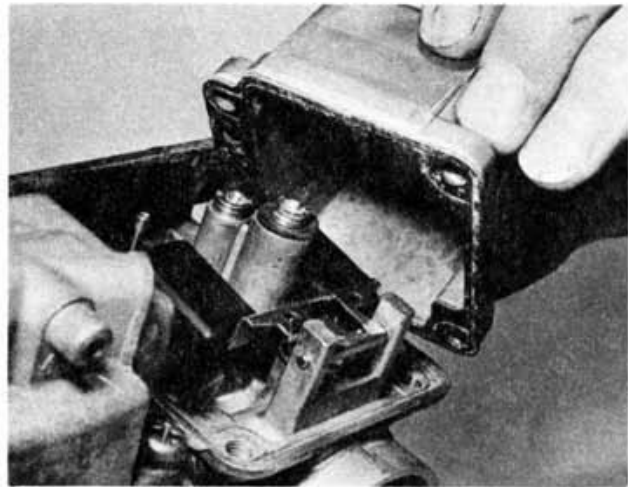
10 Examine the main and pilot jet bores, looking for debris or water droplets which may have obstructed them. Such obstructions can be removed by blowing the jets through with compressed air, or as a last resort, by cleaning them with a fine nylon bristle. On no account should wire be used to clear a jet because it can enlarge or score the orifice, either of which will upset its fuel metering rate. The air jets should be checked in a similar manner, although their comparatively large size and the fact that the air is unlikely to contain any large particles means that obstructions should not be common. The starter jet, where fitted, meters fuel to the cold start circuit, and is screwed into the top edge of the float bowl. The machine featured in this manual also had a pair of air compensator jets which are screwed into drillings on the air cleaner side of the main choke. These will not normally require attention and can be left undisturbed. Note that in the official service literature Yamaha do not make any mention of these jets and in consequence no sizes are given.

11 As mentioned earlier in this Section, there are few occasions where it is advantageous to separate the individual instruments, and unless it proves essential to do so this should be avoided. Before commencing separation, note that a surface plate or a sheet of plate glass will be required during reassembly, to ensure alignment.

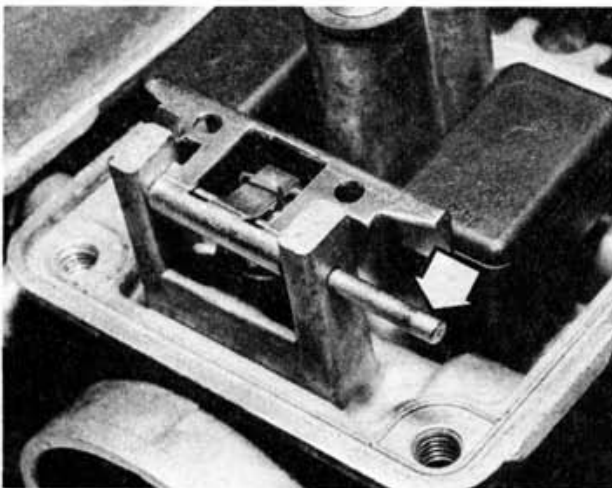
12 Start by removing the cold start operating shaft as described in paragraph 6. Slacken the screws which secure the carburettors to the two support brackets. These will invariably be tight due to the use of Loctite on their threads, and it is advisable to use an impact driver to loosen them. Once the support brackets have been freed the instruments will be held together only by fuel connections and the throttle linkages, and may be eased apart. The throttles are connected by spring-loaded links which incorporate the synchronising adjustment screws and these will pull free as each instrument is displaced. 13 When reassembling the bank of instruments, check that the fuel stub O-rings are in good condition and renew any which appear suspect. As each instrument is joined, make sure that the fuel stubs seat correctly in their bores, and that the tang of each throttle link engages between the corresponding spring-loaded pin and adjustment screw. Fit the mounting brackets

and screw the retaining screws **loosely** home, having coated the threads with Loctite. Place the assembly on the surface plate or plate glass sheet with the air cleaner side of the main chokes downward. Holding the assembly flat, tighten the retaining screws. This procedure will ensure accurate alignment.

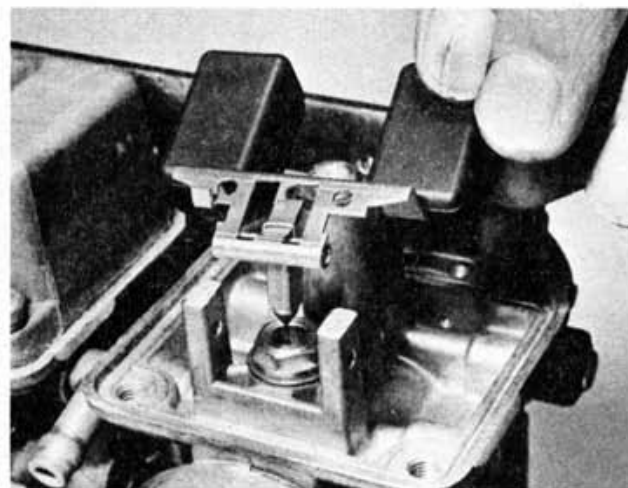
14 Assemble the remaining carburettor parts by reversing the dismantling sequence. Note that each diaphragm has a small locating tab which should be aligned to fit in the cutout in the carburettor casting. When installing the carburettor jets, remember that brass is soft and will strip or shear easily if excessive force is employed. It is best to renew the float bowl gasket as a matter of course, though it is permissible to re-use the old one if necessary, assuming that it is in serviceable condition. Before the carburettors are refitted, check that the cold start and throttle linkages work smoothly. If the carburettor synchronising screws were disturbed for any reason, check that all four throttle butterflies move in unison and are as accurately synchronised as possible. It will, of course, be necessary to check this more accurately when assembly is complete (see Section 10 or 11).



7.2 The float bowl is retained by four screws



7.3a Displace pivot pin (arrowed) with a piece of wire



7.3b Lift away the float and needle assembly