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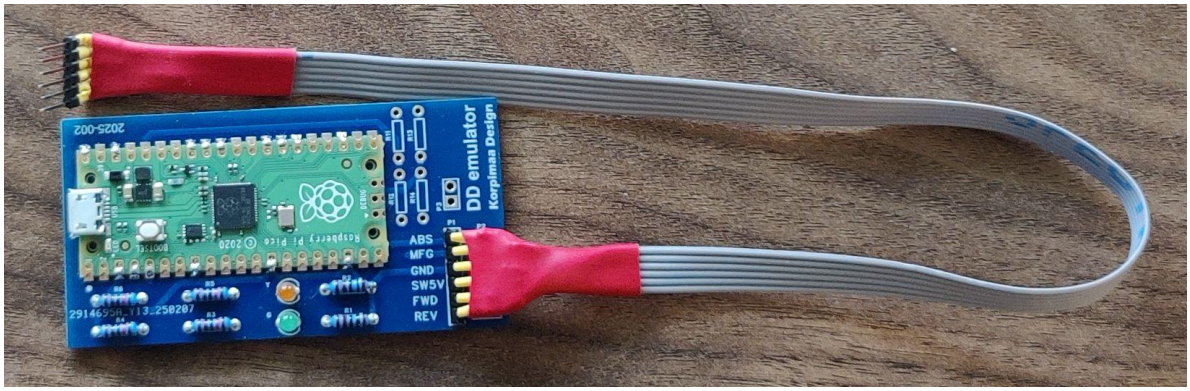
DD emulator – quick installation guide

Bypassing the 1st generation Dynamic Drum system

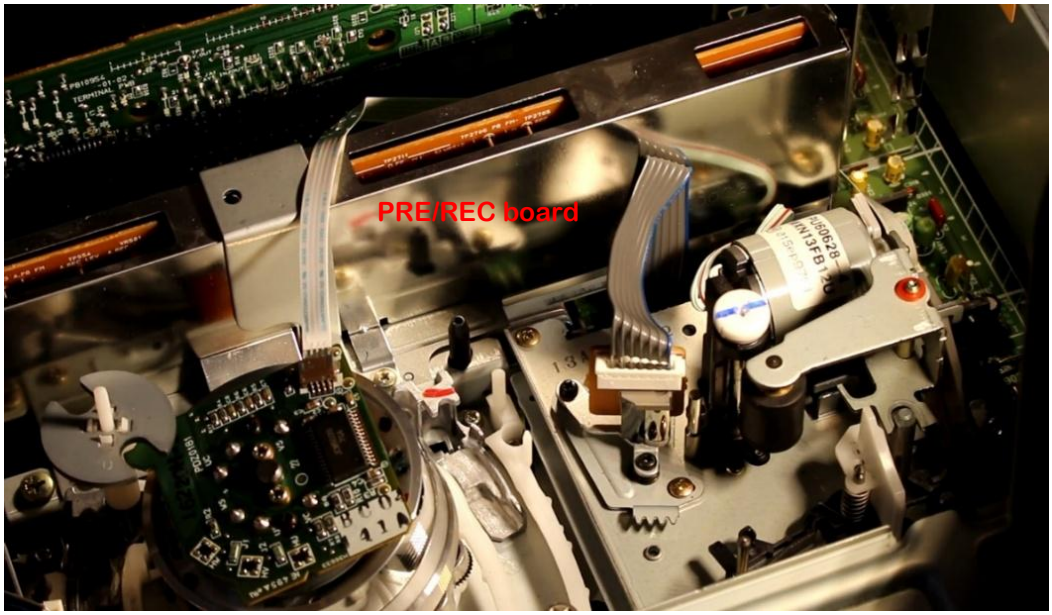
Example device: JVC HR-S9400

Compared to 2nd generation devices (e.g. HR-S7600U, HR-S8600, HR-S9600, HR-S9700, HR-S9800.), installing the DD emulator is simpler because the DD system connector on main board, CN801, is not under the mechanism, but behind it under the “PRE/REC board”.

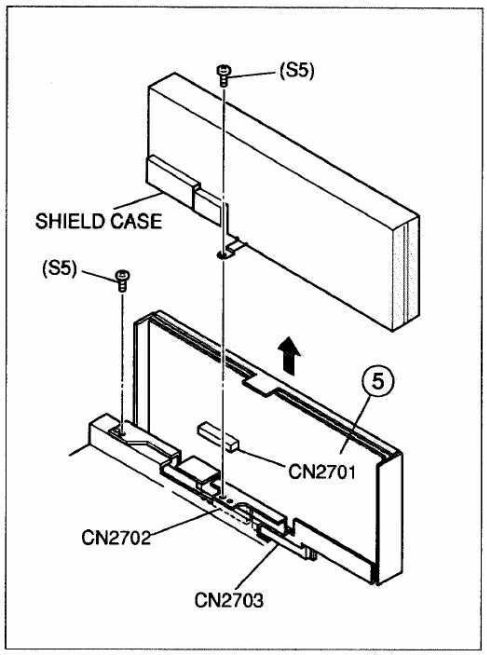


STEP BY STEP installation:

1. Disconnect the VCR from the power supply by unplugging it from the wall plug.
2. Remove the case cover.
3. View of the mechanism and the head drum and the “PRE/REC board” behind the mechanism:



4. To install the DD emulator, simply remove the “PRE/REC board” shown in the picture according to the instructions below:



   Remove the screws (S5), which will allow the SHIELD CASE to be removed. The flat cable going to the head drum must be disconnected from connector CN2701. Do this carefully, because depending on how the almost 30-year-old device has been stored, the flat cables may be fragile.

   Do not use metal-coated pliers to remove the flat cable. If you use pliers, their tips must be padded with rubber or even a heat shrink tube, which will provide a gentle friction grip.

   The “PRE/REC board” connects to the Main Board via connectors CN2702 and CN2703. Lift the card up and gently rock it back and forth, which will release it from the connectors. The connectors may be tight, as in the video:

   https://youtu.be/JguLqWQ6lJ0

   In the video, the mechanism has also been removed because the card was stuck. Normally, however, removing the mechanism is unnecessary.

5. Once you have removed the “PRE/REC board”, the DD system connector CN801 will be exposed underneath it. Remove the DD system flat cable from connector CN801 and attach it to a suitable location with the cable end taped. It is no longer needed.

6. Next, install the DD emulator cable to connector CN801. Make sure that the cable fits well in the connector and that the pins of the cable connector make good contact with CN801.
7. Route the DD emulator cable to the left, parallel to the rear edge of the mechanism.
8. Reinstall the “PRE/REC board” according to the instruction picture in section 4 and before installing the SHIELD CASE, reconnect the flat cable of the head drum to the CN2701 connector.
9. The installation of the DD emulator is now complete. Find a suitable mounting point for it on the left side of the device and secure it with e.g. double-sided tape and/or cable ties. Make sure that the contacts of the circuit board do not come into contact with other components or the mechanism body.

The original Dynamic Drum system with its gears is left in place under the head drum and its settings should not be touched if the image quality (tape alignment) is in order.

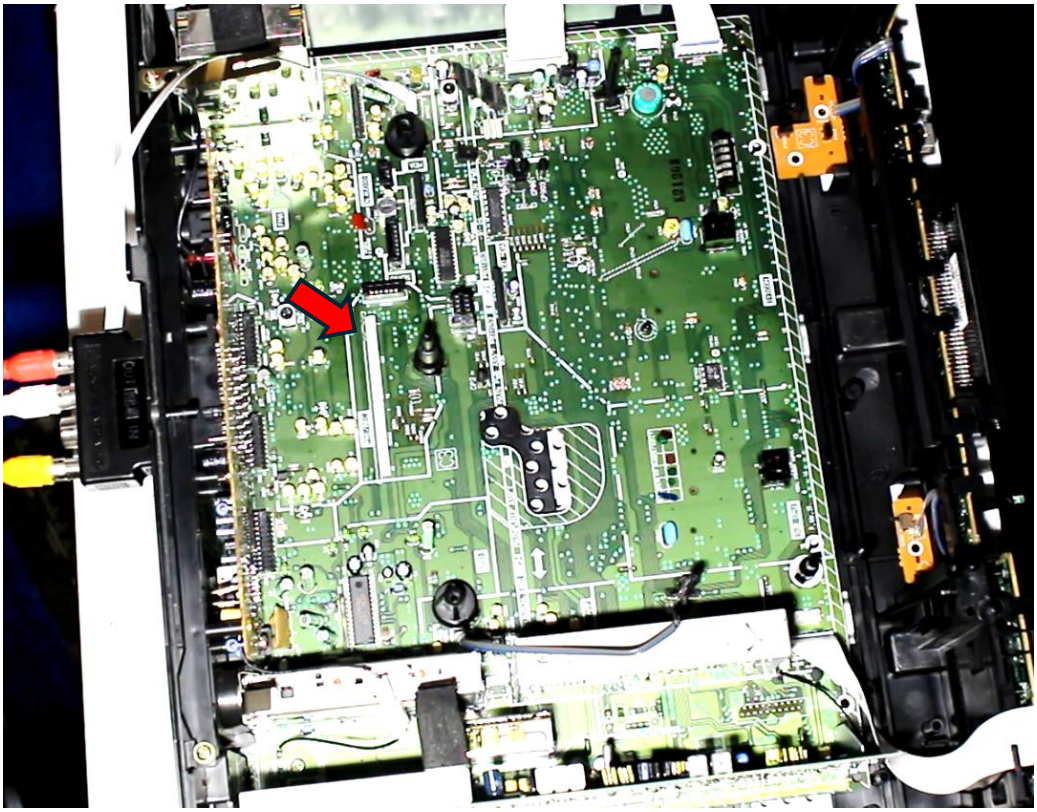
Connect the power plug to the wall outlet and test the operation of the video recorder.

When you turn on the power with the ON/OFF button, the DD emulator supplies the video recorder’s ‘system control processor’ with a start-up signal (fast sequence YELLOW – GREEN – YELLOW) and if the ‘system control processor’ accepts it, the device remains on in standby mode. If the startup signal fails, as happens when the original DD system has failed, the device turns off after 3...4 seconds. See the attached fault diagnosis table:

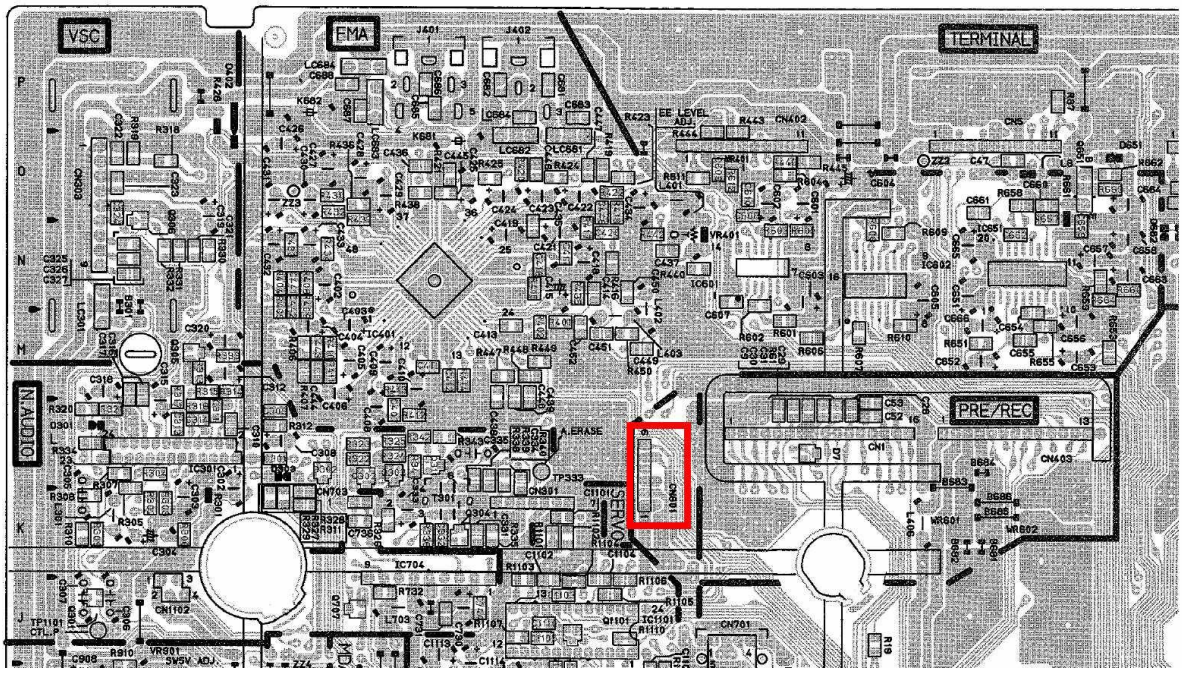
1.7.2 Detail of emergency faults

FDP	Symptom	Detect mode	Resulting mode
E : 01	Loading motor rotates for more than 8 Sec without shift to next mode.	Loading	POWER OFF
E : 02	Loading motor rotates for more than 8 Sec without shift to next mode.	Unloading	POWER OFF
E : 03	SUP or TU REEL FG input is absent (for more than 4 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 04	DRUM FF input is absent(for more than 3 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP
E : 06	CAPSTAN FG input is absent(for more than 1 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 07	No SWD5V/12V	POWER ON	POWER OFF
E : 08	Initialized action of DD (Dynamic Drum) is not complete for less than 4 seconds.	Connect VCR to AC	STOP
E : 09	DD drive motor is not rorate for more than 2.5 seconds.	on TIME SCAN	STOP

Table 1-7-1 EMERGENCY FAULTS

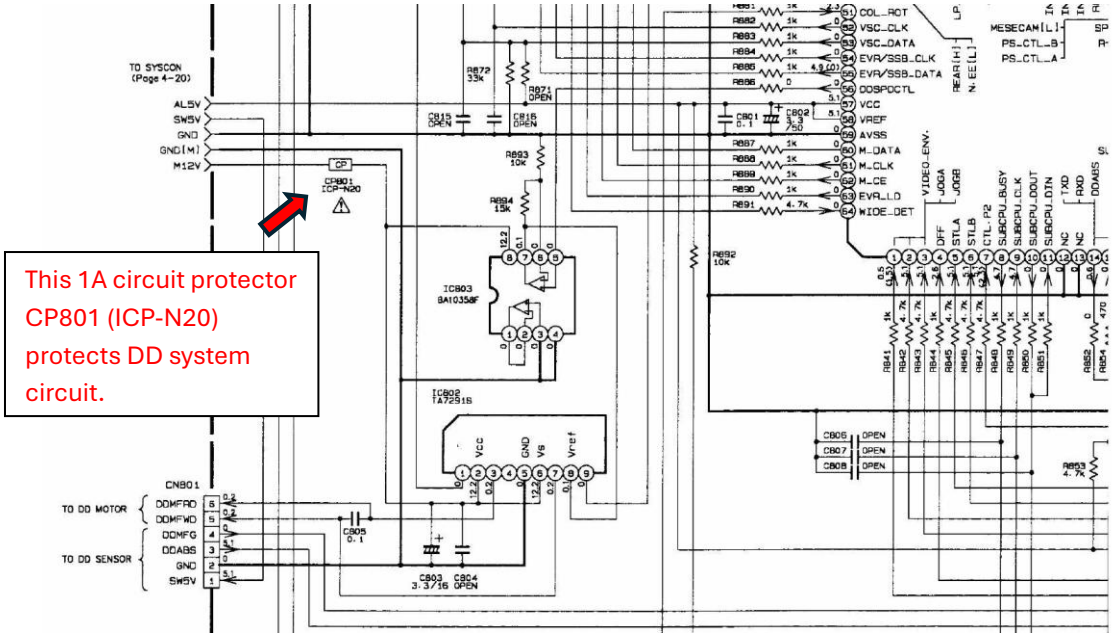


CN801 location on the Main Board circuit board.

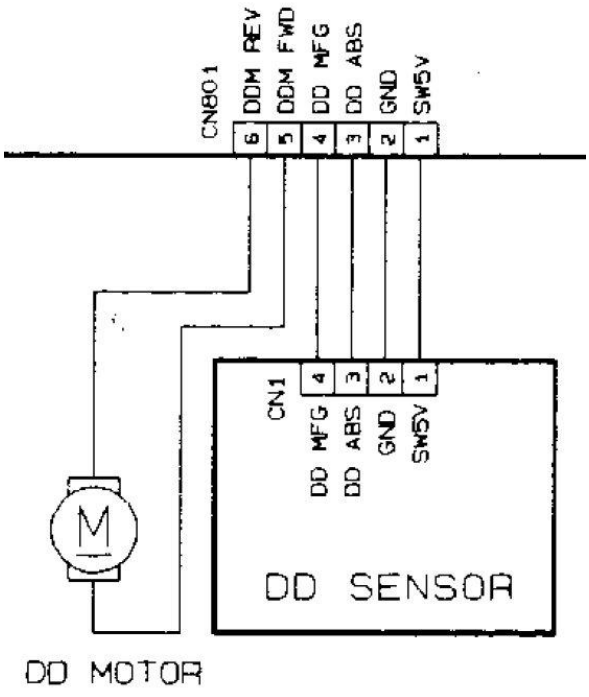


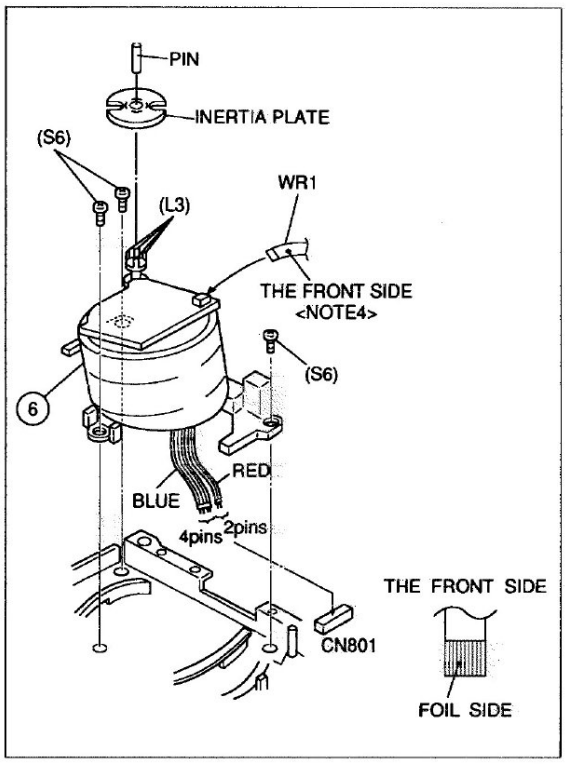
CN801 location on the Main Board circuit board viewed from below.

The video recorder's processors and DD system are protected by fast semiconductor fuses, e.g. CP801 (ICP-N20, 1 A) protects the DD system and its controller. In the event of a power failure or other short circuit, it is worth checking the status of these CP (circuit protector) components first: measured with a resistance measurement, it should be 0 ohms., if open, the circuit is broken.

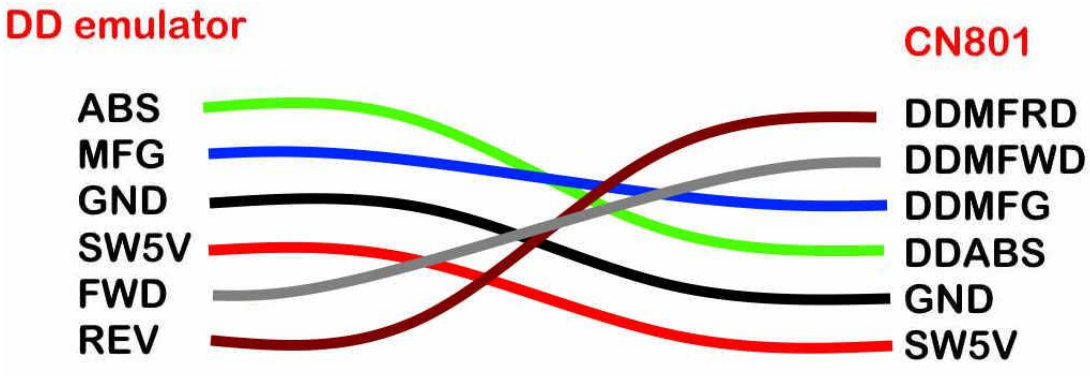


DD system protection: CP801, ICP-N20, 1 amp circuit protector.

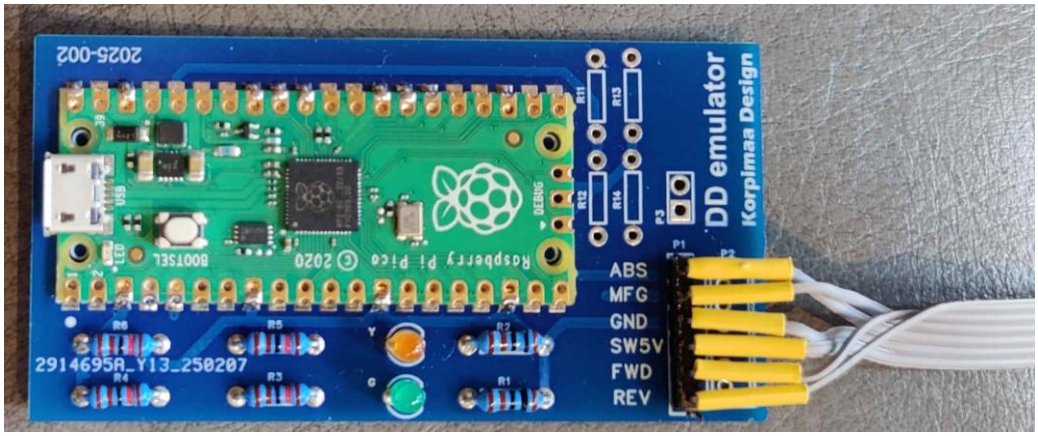




DD system wiring diagram and cable from under the image drum to the CN801 connector.



DD emulator ribbon cable cross-connection, 1st generation DD system.



DD emulator ribbon cable cross-connection, 1st generation DD system.