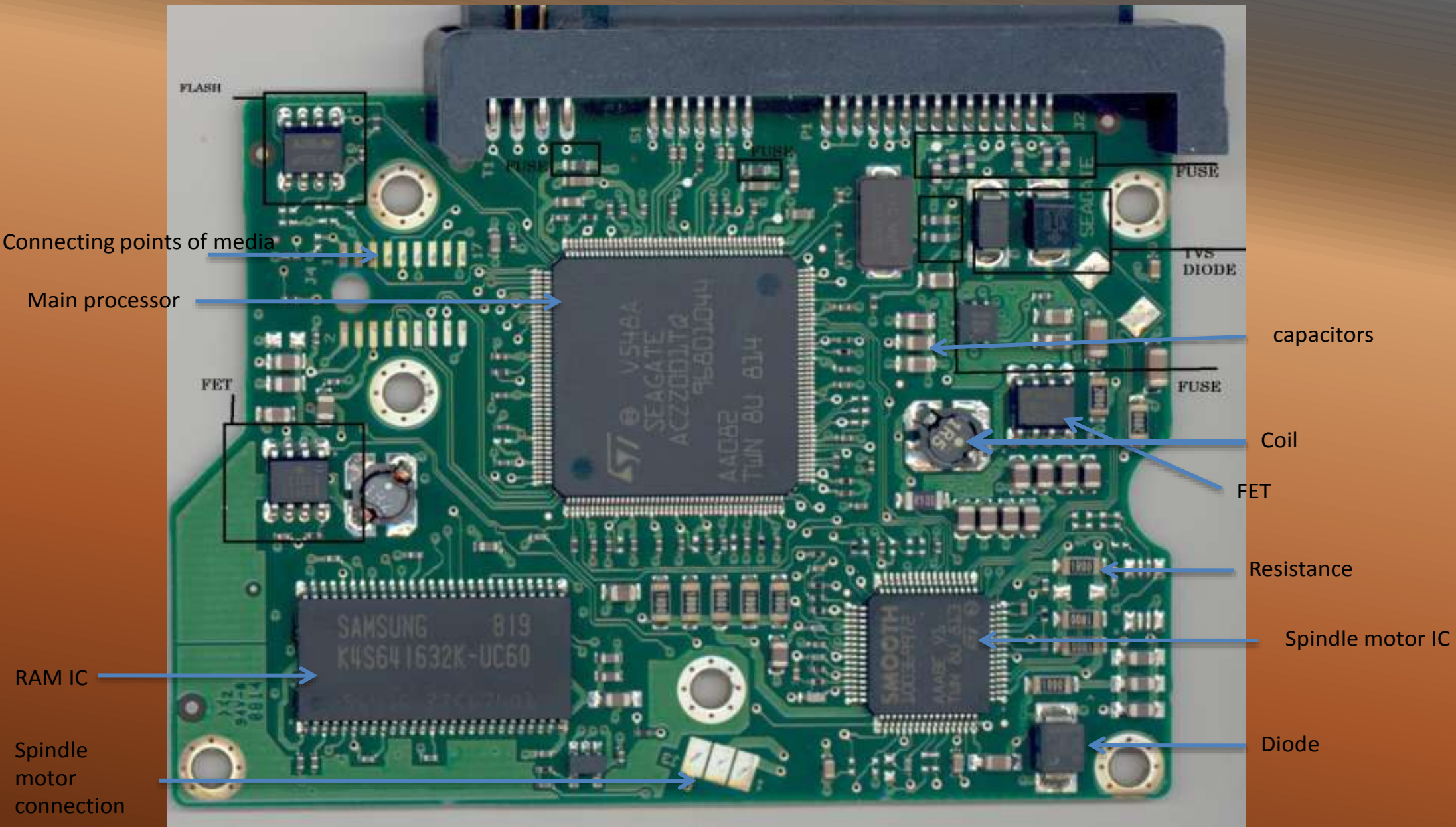


- This document teach you the repairing of hard disk circuit with soldering station and hot air gun .

1. In this class we learn about circuit burn causes and why TVs diode burn .
2. Basic parts of the circuit.
3. How can we check TVs diode either it is ok or not.
4. Some common faults and there solution .
5. What kinds of instrument do you need for this purpose.
6. How to change spindle motor IC with hot air gun .
7. How to change circuit if u don't find the fully matched circuit.
8. I will show u how to change IC of circuit practically with hot air gun.
And other parts of the hard disk.
9. Seagate 7200.11 and 7200.12 HDD circuit repairing.
10. have you any question in your mind about this lecture? If u have then ask or mail me waqasali766@hotmail.com
11. FINISH.

Basic part of the circuit.



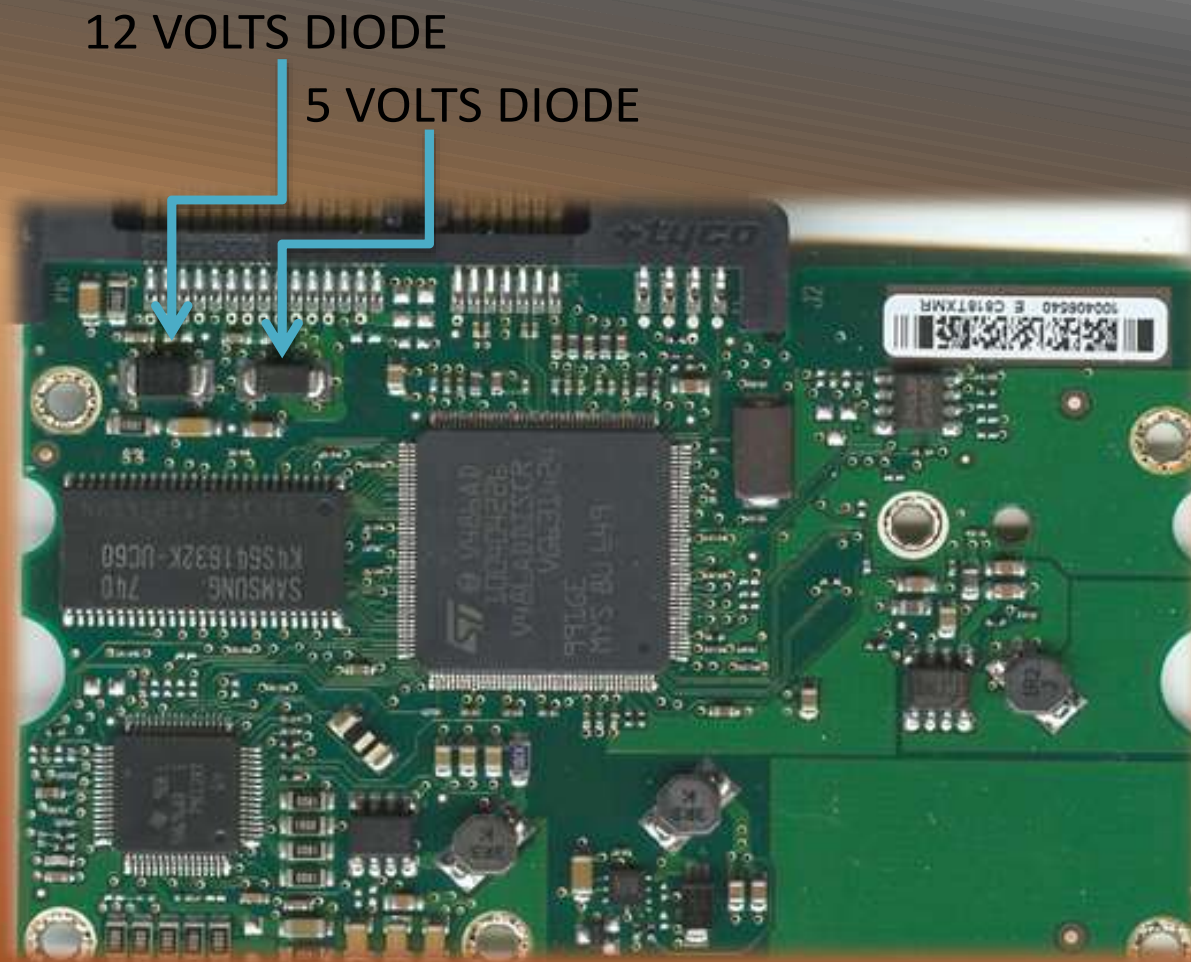
CIRCUIT BURN CAUSES

IF DIODES ARE OK.

Here you see two diodes one is 5 volts second is 12 volts . In SATA power connector 2 kinds of voltage is available one is 5 volts and second is 12 volts. If we plug connector in right direction the current flows in right direction and diode allows the current to go into the circuit . You also say it p-n junction . One is p region and second is n region . The 5 volts diode allows the current under 5 volts . If the volts exceeds to 5 then it burned and switch off the power supply if you are using switching power supply .

Why diodes are burnt??

When we plug the connector in wrong direction a 12 volts passes to the 5 volts diode and it burnt. And power supply is switch off due to short circuit.

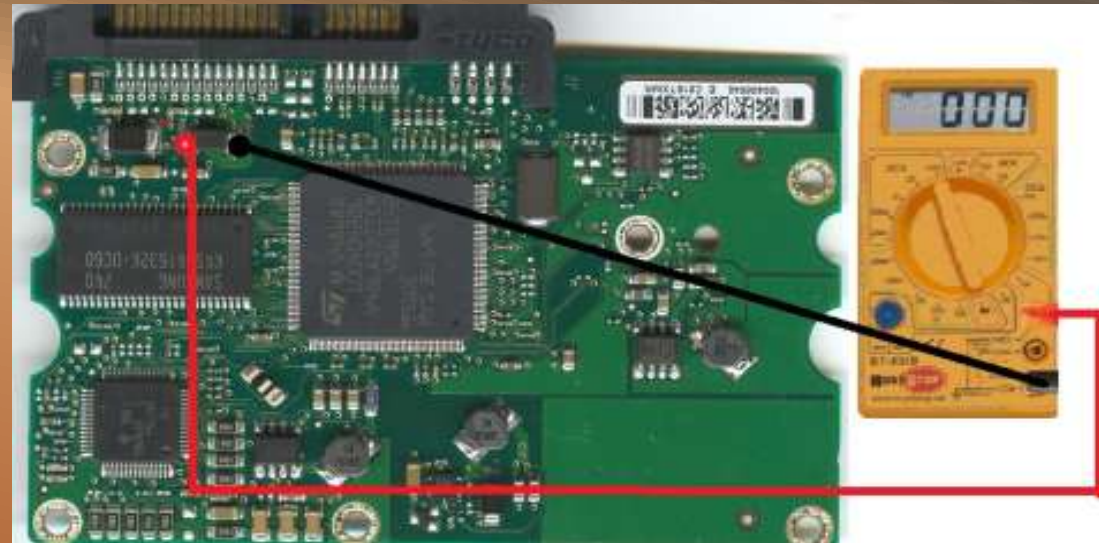


The circuit is burn when we connect wrong power into the connector of the HDD.

How can we check TVs diode either it is ok or not.

Turn on your Multimeter and select diode port in the meter. Now connect red wire to the positive point of diode and black wire to the negative point of diode. And check the value if the meter shows 000 as shown in picture then the diode is damaged . Or if it shows some value like 678,774 or others it means the diode is ok .

How to identify the positive point of diode? In the upper side of diode u will see a dark line which shows this point is positive and other is negative.



Some common faults and there solution .

HITACHI LAPTOP HARDDISK CIRCUIT

PROBLEM.

When you connect the HDD it cannot spin up, and cannot give any sound of stuck head. Then check the fuse by meter either it passes the current or not, if yes then it is ok. If not then connect these two pints with a small wire, and do the same thing with 0 value resistor.

5 volts current is passes through fuse (F1) and 0 value resistor.



Some common faults and there solution .

Maxtor SATA hard disk

PROBLEM: FET IS BURN DUE TO WRONG POWER CONNECTION.

Physically it shows damaged FET. But in real when FET burn then spindle motor IC is also burn .

SOLUTION:

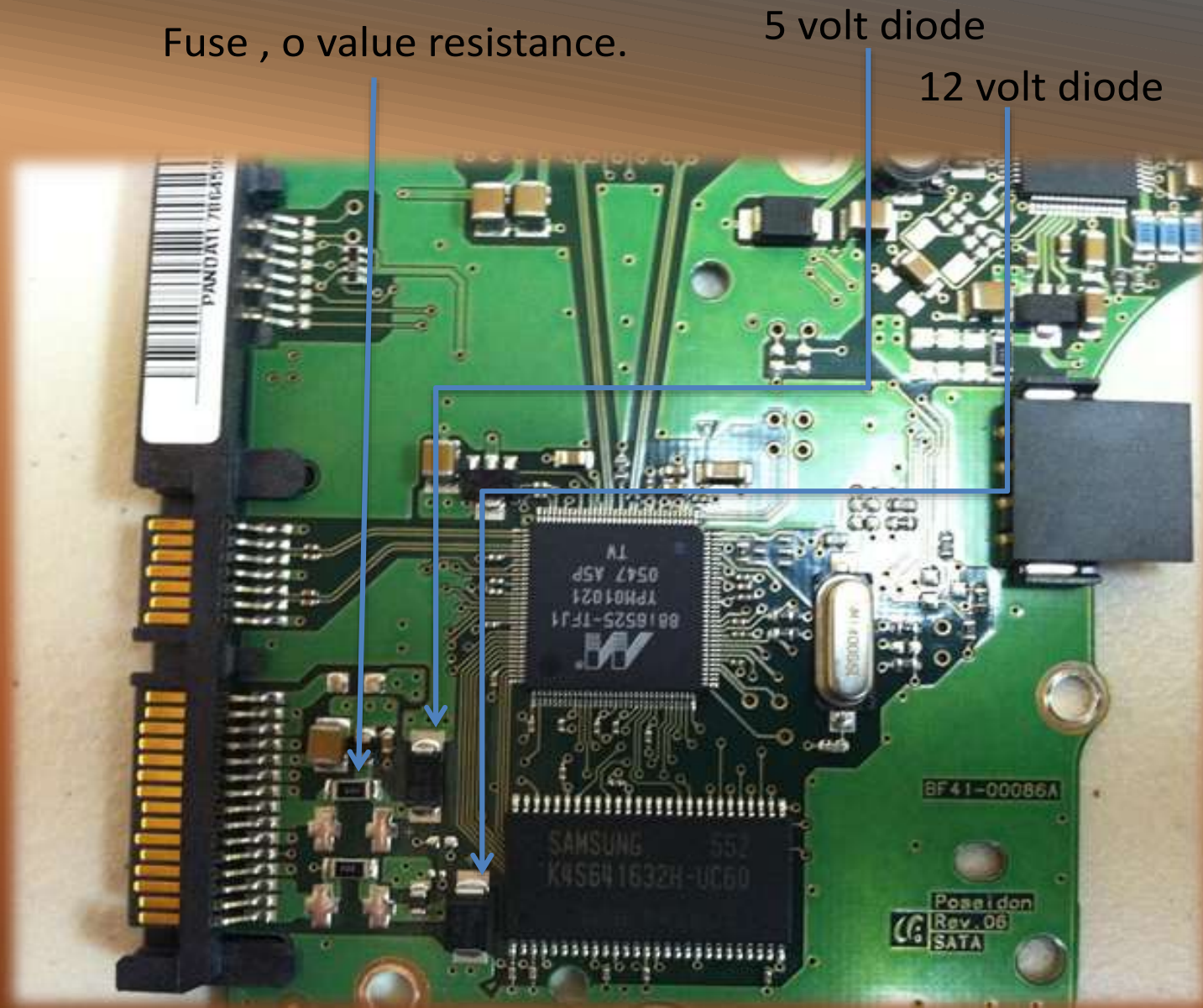
Change both of these FET and motor IC. You see in next topic how to change IC.



Some common faults and there solution .

PROBLEM.

When you connect the HDD it cannot spin up, and cannot give any sound of stuck head. Then check the fuse by meter either it passes the current or not , there are 2 fuse (5 or 12 volts) if yes then it is ok. If not then connect these two pints with a small wire. After connecting points connect the power and it switch off the power supply.. Now check the diode which is damaged and remove it. Then check the fuse again either it is ok or not. Fuse checking is same like diode .but if meter shows 00 then fuse is ok . If another value means damaged.

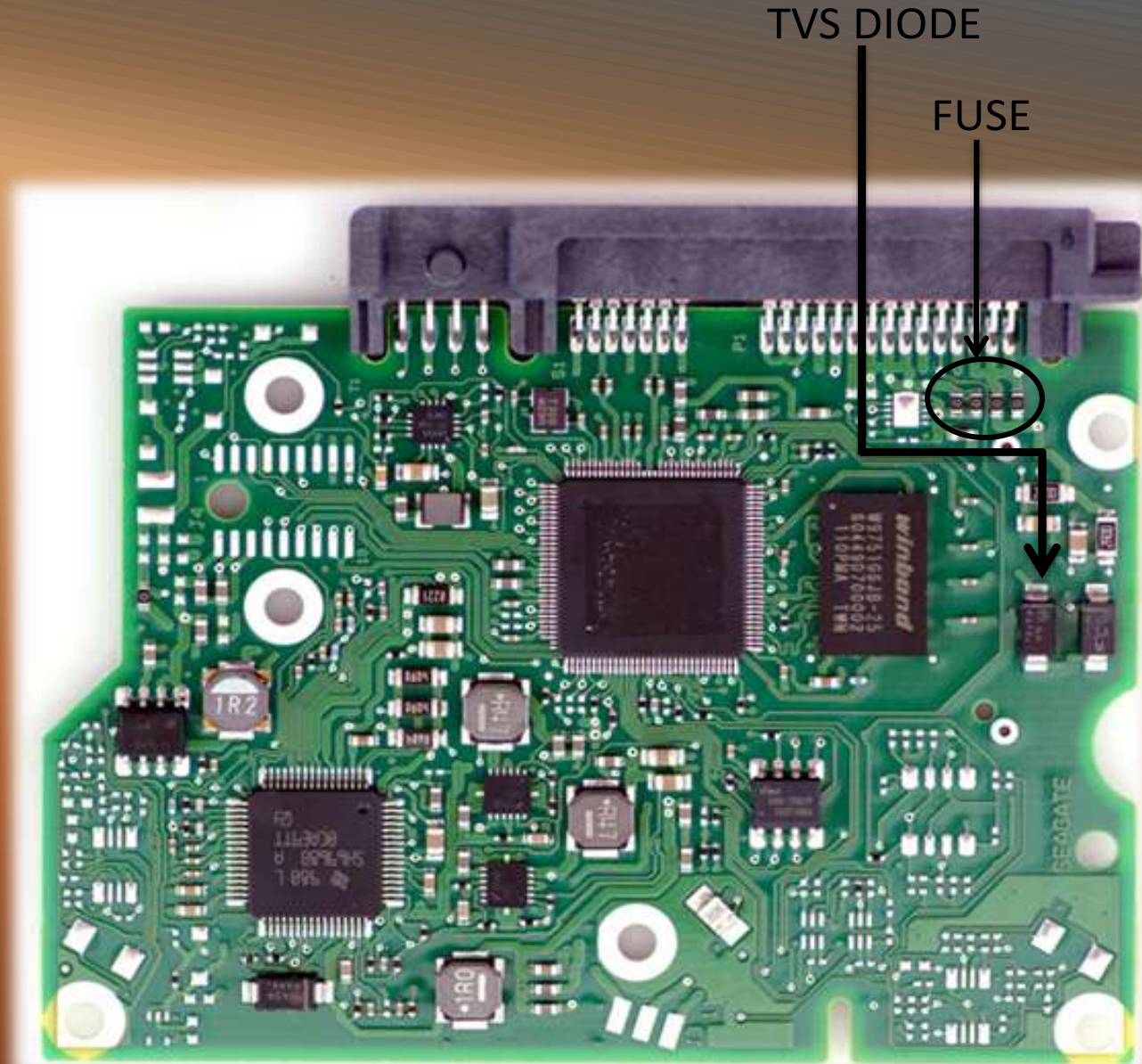


Some common faults and there solution .

SEAGATE HARD DISK CIRCUIT

PROBLEM:

In this kind of circuit only fuse and diode is burn. Remove diode and direct all the fuse points with a wire.

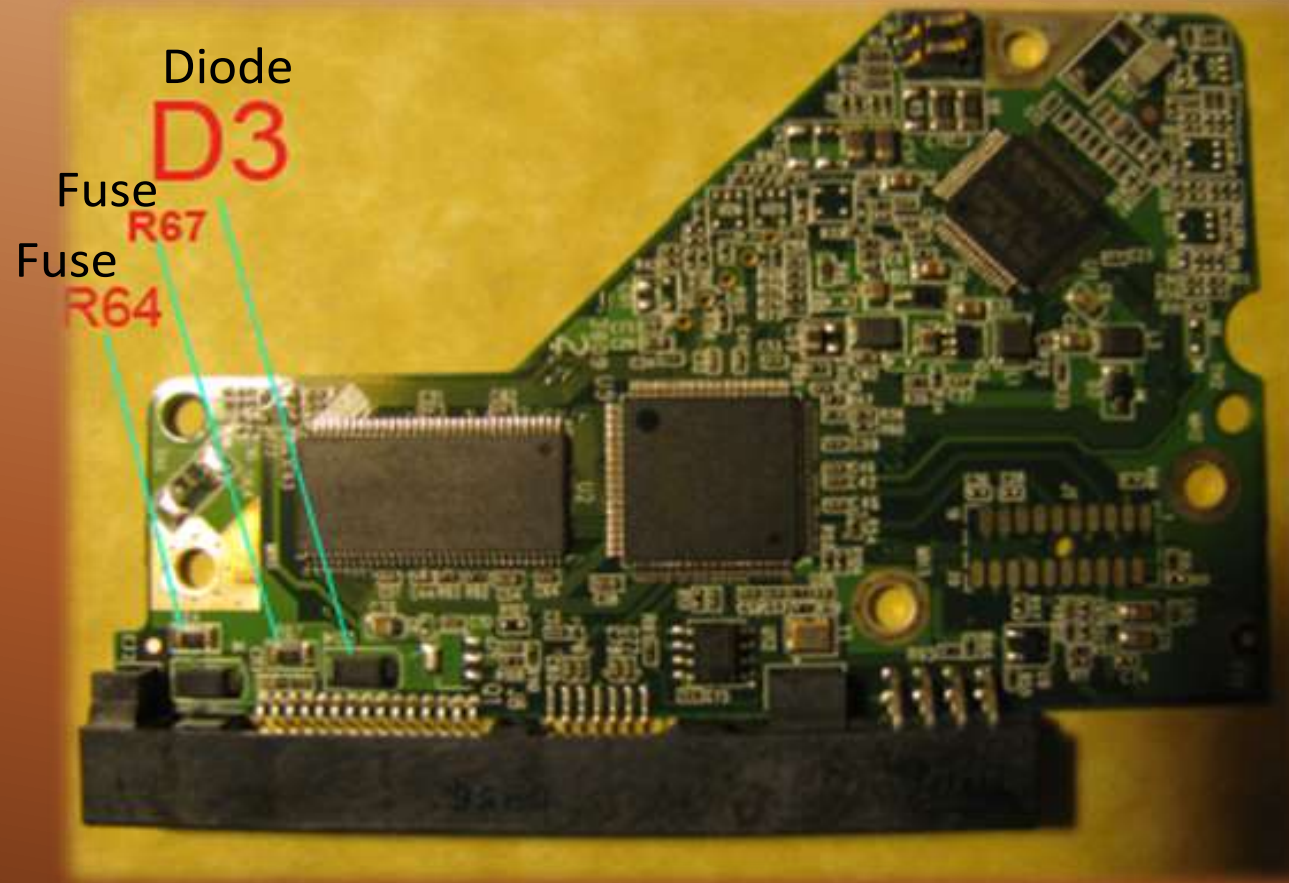


Some common faults and there solution .

WD HARD DISK CIRCUIT

PROBLEM:

In this kind of circuit only fuse and diode is burn. Remove diode and direct all the fuse points with a wire.



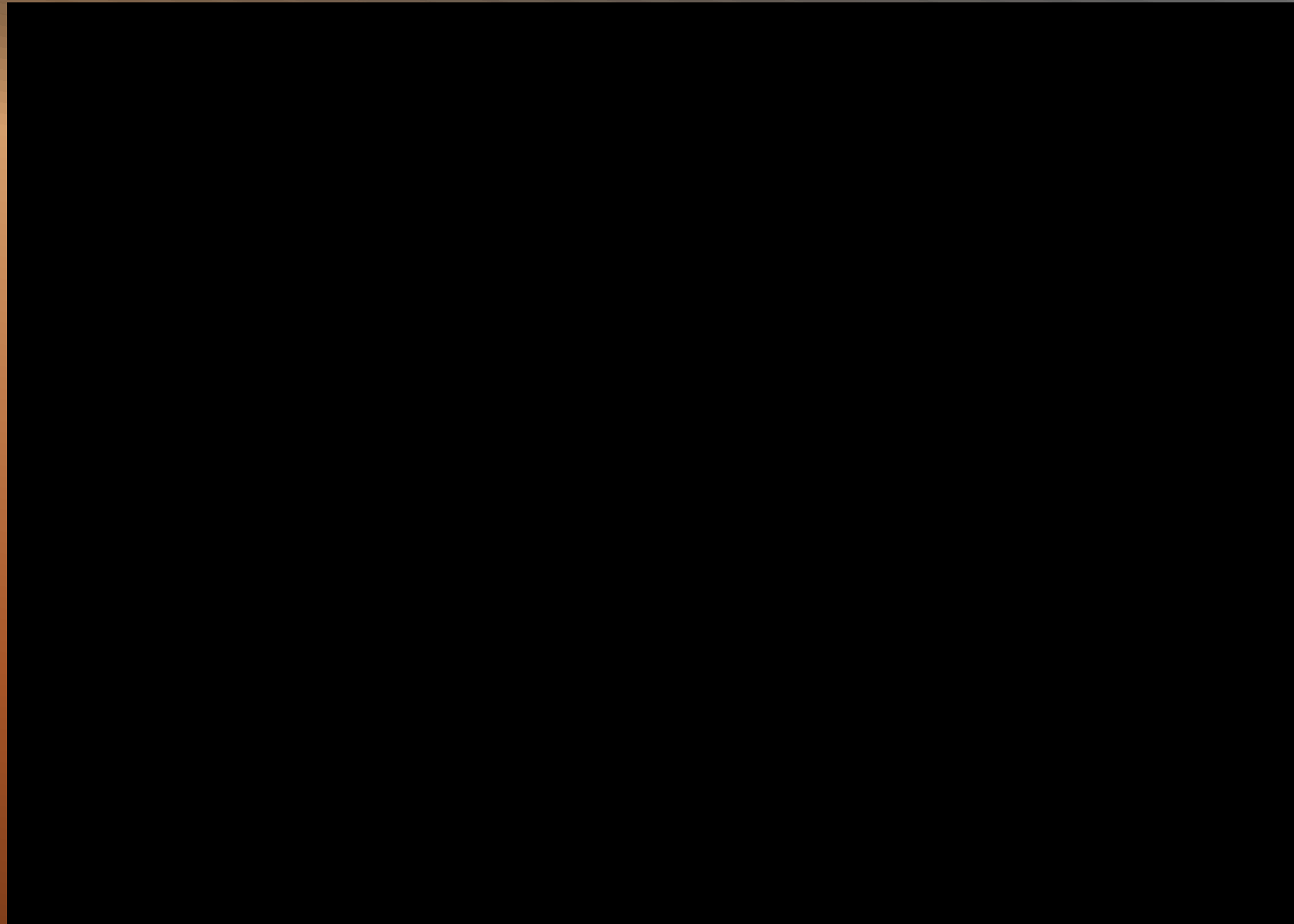
What kinds of instrument do you need for this purpose.

- A hot air gun. Or soldering station.
- A multimeter
- A soldering wire
- Soldering paste (ADVANCED QUALITY ZJ-18)
- Soldering iron
- A lamp



How to change spindle motor IC with hot air gun .

1. Heat the IC for 3 second then put soldering paste on it a small quantity of paste
2. Then heat it again for about 30 second then pick up the IC with tweezer .
3. Then place new IC and adjust the points then heat it for 10 second.
4. Then put soldering flux and heat IC for 30 second .then light press the IC with teweezer .

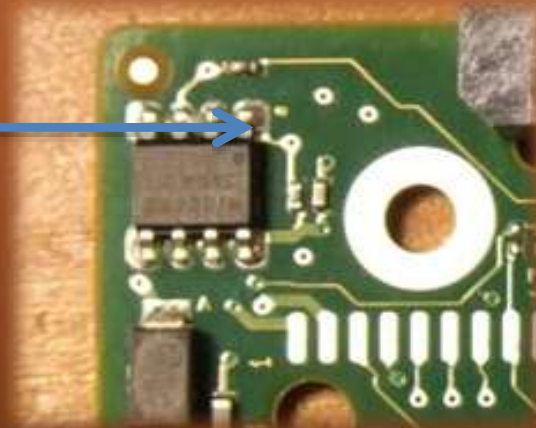


How to change circuit if u don't find the fully matched circuit.

Here are two circuit of different number but same family.

1. Remove ROM IC from good circuit .
2. Remove ROM IC from damaged circuit and place it on good circuit.
3. **Note : Be careful don't place IC on wrong side . There is a dot on the circuit near the ROM chip which tells you that place number 1 pin here. Also a dot on ROM chip.**

Pin number 1 identification

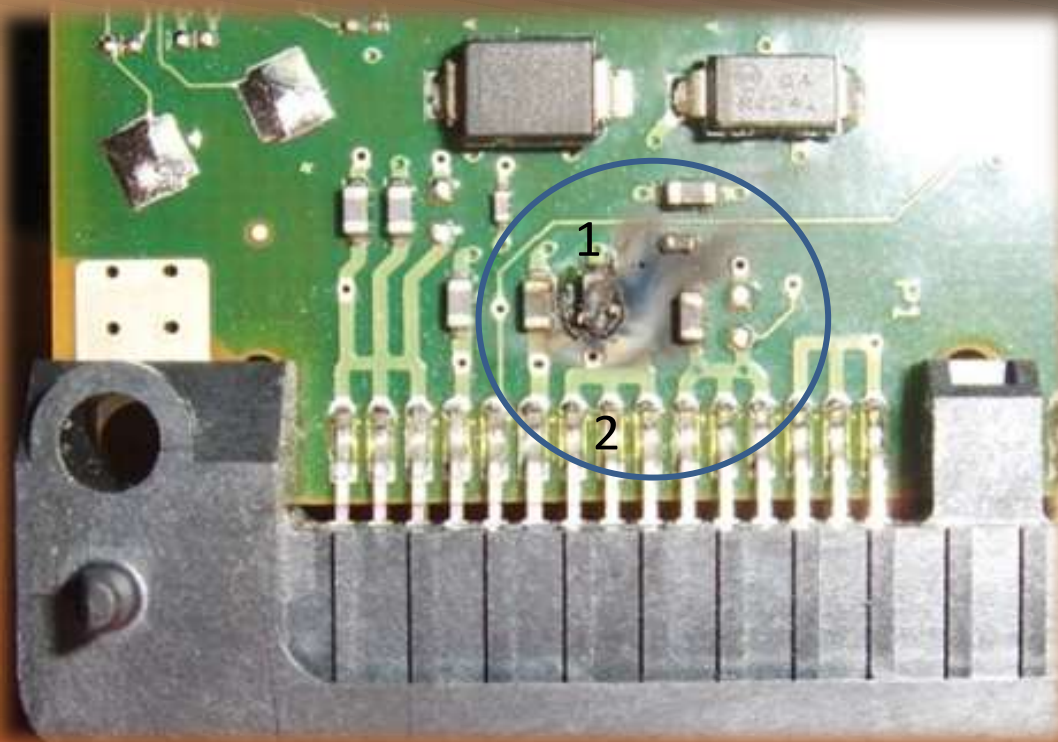


ROM , FLASH



ROM , FLASH

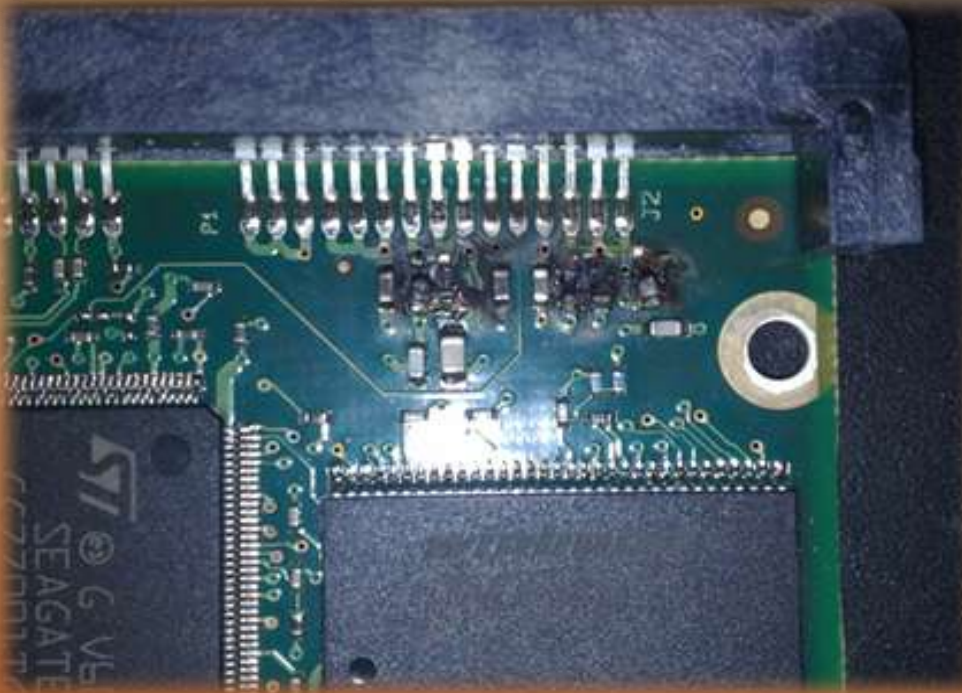
Seagate 7200.11 and 7200.12 HDD circuit repairing.



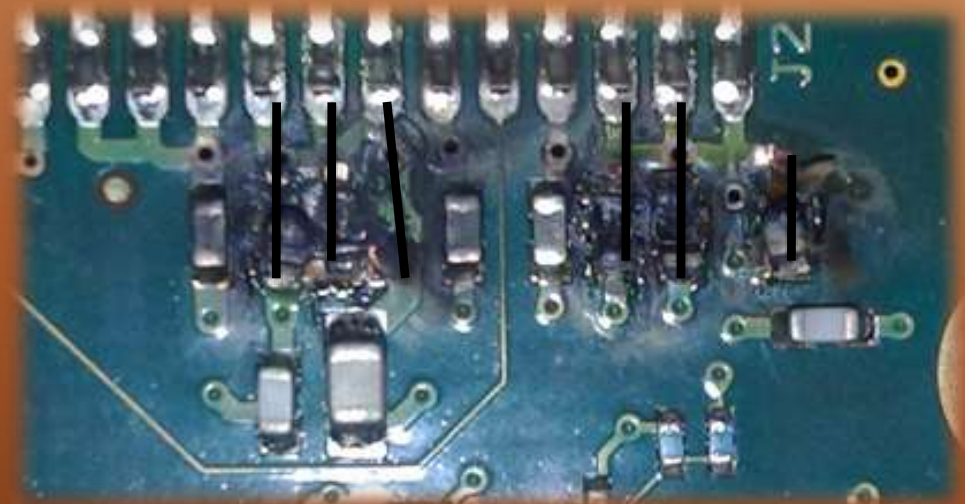
1. First remove this fuse and clean the circuit then Connect a wire to point 1 then connect it to point 2.
2. Then check diode and remove the damaged diode. if u don't understand then see the video in the last.



Seagate 7200.11 and 7200.12 HDD circuit repairing.

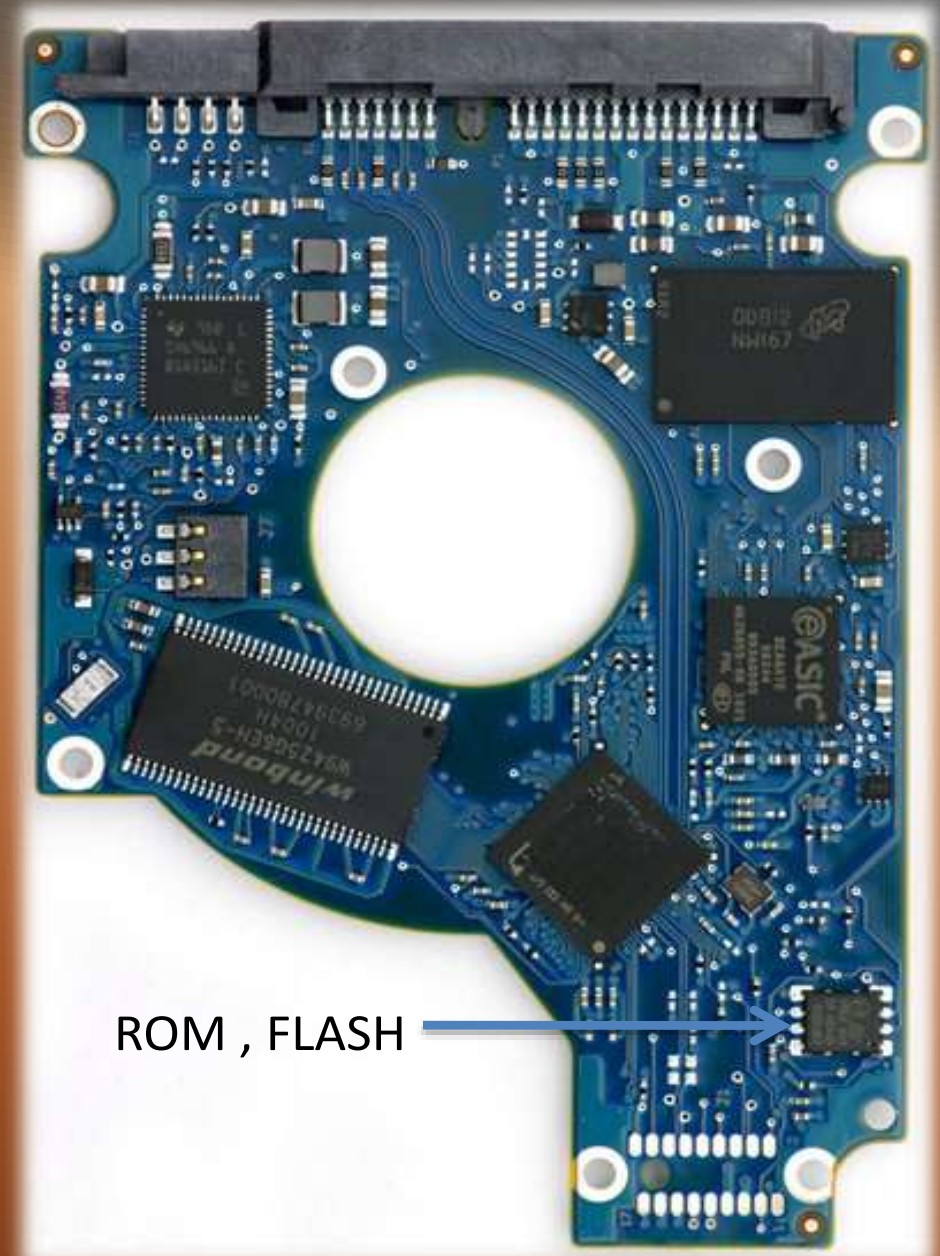
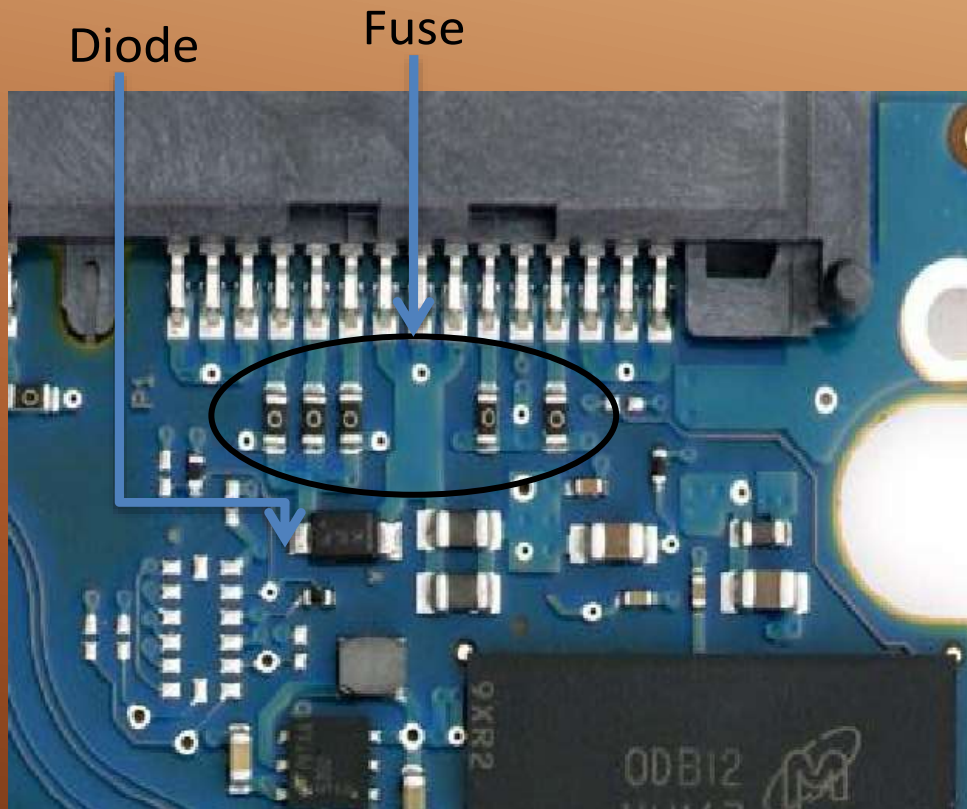


1. Check the diode if damaged then remove it.
2. Remove the burn fuse and clean the circuit with petrol. Then as shows in the picture connect the points with wire as shown in picture.
3. If u don't understand then see video in the last .



Seagate 7200.11 and 7200.12 HDD circuit repairing.

In this circuit only fuse and FET is burn just repair it with the previous method.



WD HDD circuit repairing.

It is a wd L shape circuit . Its spindle motor IC is burnt.

1. First clean the circuit points with petrol ..then use soldering iron to sold again the burn points. Then use hot air gun to remove the IC.
2. Heat the IC for 10 second the put soldering paste on it ,,then heat it for about 20 to 30 second then pick up it with teweezer.
3. Same like in the video of IC change.

