

Contactless Transistor Ignition System for the XS400

Construction Manual

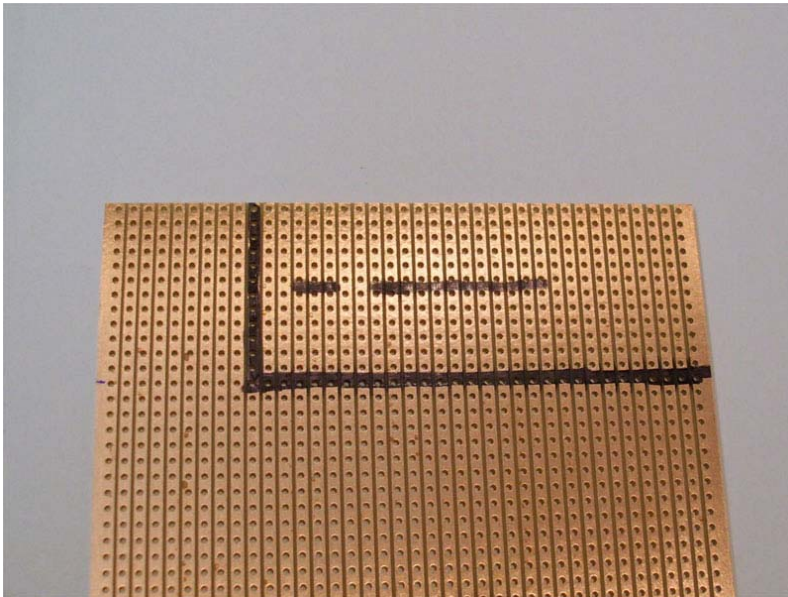
stone, v1.0

1. Instructions.

Please read through the instructions completely and only then begin to build.

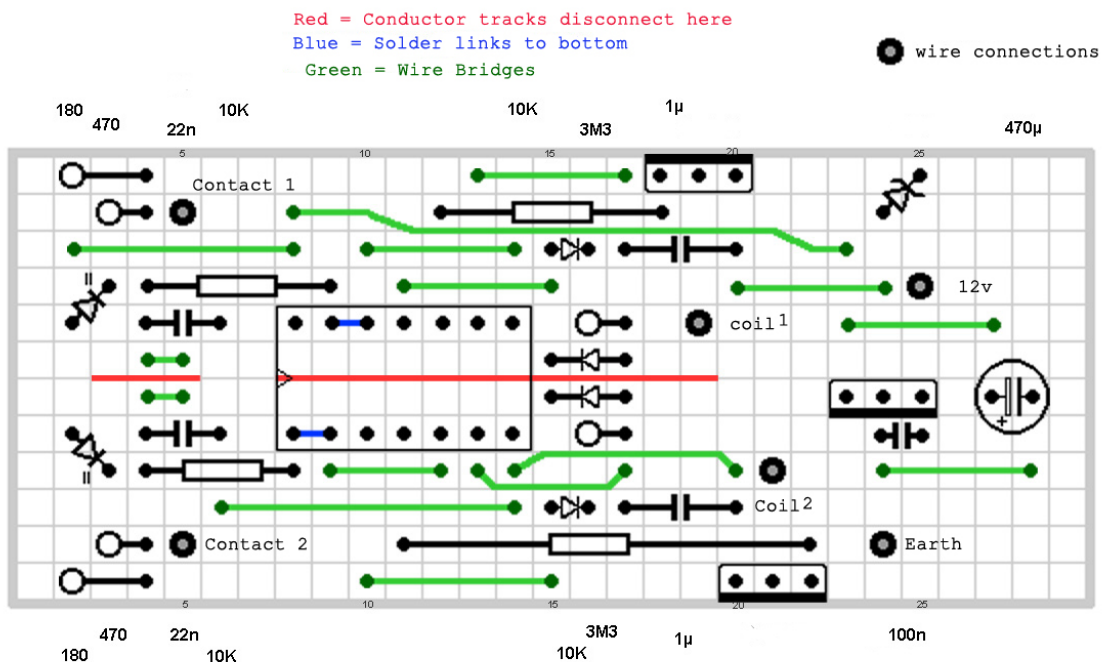
2. Preparing the board.

From the board to cut the right size for the housing and adapted to the case. There are 29 rows with 12 holes longitudinal.

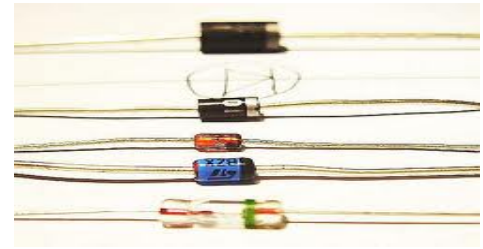


Then make the necessary separation of the tracks as shown.

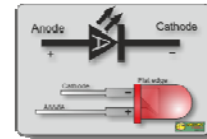
3. Soldering components



The diode polarity must be observed.
 The diodes (1N4148) have a black ring on the Side.
 The ring corresponds to the vertical line of Circuit symbol.

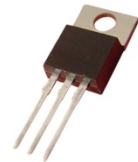


LEDs have different lengths of connecting wires.
 The short wire corresponds to the vertical line in circuit symbol.

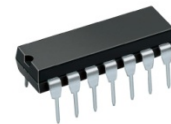


Polarity must be observed in the round capacitor.
 The negative terminal will be clearly marked.

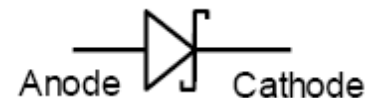
The transistor mounting position of the rear wall of metal is a thick black line in the schematic diagram



Installation position of the CMOS ICs.
 Depending on the manufacturer, the label may look different in the photo.
 The IC socket and the IC are located on one side by a notch, recess or an arrow.
 the location of pin 1 is marked always this way
 The marking pin 1 is the first pin at the bottom left.



This symbol represents the layout represents the over-voltage protection diode. However, this diode is bipolar, it is **not** considered polarity sensitive so it's no matter which way around the part is installed.



The interconnects are relatively close to each other, so do not accidentally solder a bridge across and short out the board.

4. Mounting in the housing

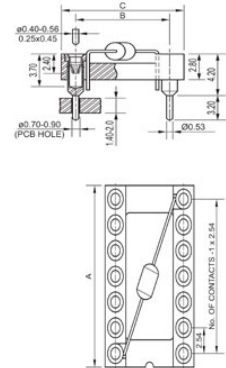
Before the board is installed, the housing must be made so that it is isolated at the bottom.
 Insulation was cut from the lid of an Ice cream container.
 Then place the board and drill holes and adjust to the housing.
 When the case is completed, the cables are soldered to the soldering lugs and the circuit board in the Housing is screwed. On no account forget the grommets.

The housing of the ICs must have no contact with the electrically conductive housing!

When the circuit board is mounted and tested the components should be fixed with some hot glue to prevent fractures through vibrations.

5. Miscellaneous

The switch-off of the ignition coils is highly dependent on the capacitors used. If there are issues when checking that the switch-off is less than 0.5 sec should 3M3, 4M7, or 5M6 resistors increase or other capacitor (type or capacity) be used. The ideal disconnection time is 1 to 2 seconds. The 100nF capacitors should be physically as close as possible to the IC (where voltage regulator and 4001CMOS) are located. For this reason, and because it is practical, use an IC socket with integrated capacitor.



If normal socket or SMD components are used, this capacitor must be ordered separately.

Version 1.0

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stone

Material list from Conrad:

www.conrad.de

Semiconductor:

1x 7808 Order No.: 179221-62 [Part #: 7808]
1x 4001 Order No.: 172529-62 [Part #: 4001]
1x P6KE24CA No.: 168025-62 [Part Number: P6KE24CA]
2x IRGB14C40LPBF No.: 163039-62 [Part Number: IRGB14C40LPBF]
4x 1N4148 Order No.: 162280-62 [Part Number: 1N4148]
2x LED 3mm Item No.: 184713-62 [Part number: L 934 DG]

Capacitors

2x 22 nF Order: 531808-62 [Part Number: RDCX223K050DKA]
2x 1.0 uF No.: 453382-62 [multilayer ceramic capacitor 1uF 50V / DC ± 20%]
1x 100 nF Order: 531855-62 [Part Number: RDCX104K050DKA]
1x 470 uF No.: 445373-62 [Part Number: SE016M0470B3F-0811]

Resistors

2x 180 (0.6 W) Item No.: 418161-62
4x 10K Order No.: 418374-62
2x 470 Order No.: 418218-62
2x 3M3 Order No.: 420336-62

Mechanics

1x IC socket with 100nF No.: 189413-62 [Part Number: STG MPQ 14.3 B 100 NFU]
2x Mounting for TO 220 Item No.: 155140-62 [Part Number: A18-9B]
2x LED version polyamide Item No.: 184802-62
1x Case No.: 522369-62 [Part Number: 27969PSLA]
1x Thermal Model No.: 145068-62 [Part number: P 12]
1x Soldering strip board No.: 529519-62 [Part Number: 710-5 EP]
1x soldering Pin (pack of 100) Item No.: 527866-62 [Part number: 1018.68]

+ Cable spiral hose per 1 or 2 meters (depending on location)

1mm ² Red Model No.: 601955-62 [Part Number: 76783051K333]
1mm ² Black Item No.: 601842-62 [Part Number: 76783051K000]
1mm ² orange / black Item No.: 604535-62 [Part Number: 76783051K220]
1mm ² white / black Item No.: 604336-62 [Part Number: 76783051K990]
0.75 mm ² orange Order number: 608361-62 [Part #: 1121002]
0.75 mm ² white No.: 608626-62 [Part #: 1121009]
Spiral hose No.: 540863-62 [Part Number: SB 12 E SW]

Material List Louis:
www.louis.de

Connector (round plug Japan) Model No.: 10,032,033

Connections to coils and Contacts

- 1 The wires come from the contacts connect directly to the ignition box.
- 2 The connector (orange cable) connects to the ignition coils directly from the ignition box.
- 3 Ground wire (Black) connects the box directly to the negative terminal of the battery.

Clean the connector from the ignition coil and the contacts prior to assembly, especially to ensure a tight fit. If necessary, you can **gently** squeeze the bushings.

After installation of the ignition box lid must be checked and adjusted if necessary.

The contact set must be in new condition.

The capacitor should be left installed because after installation of the ignition box, it will be disconnected. The harness can be disconnected as is and left connected to the capacitor and as it carries no current. If the electronics break, you can easily go back to normal contact ignition and ride on.

You only need to connect the contacts back directly into the harness on the bike. The coils are then inserted back directly to the wiring harness. Thus, the capacitor is reconnected and the (defective) ignition disconnected.

Best have a practice after installation of ignition box; you'll see how easy it is!

