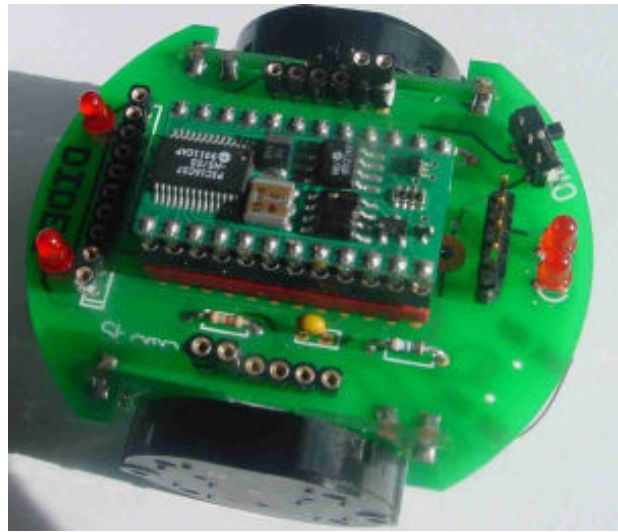


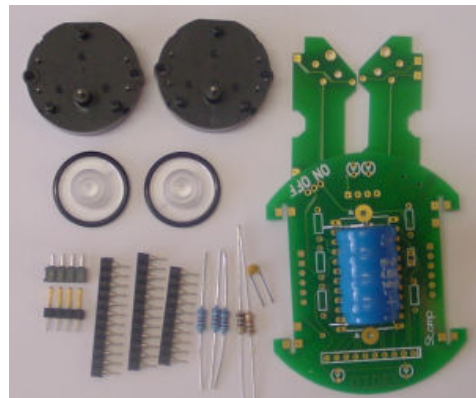
WellbotStamp – Robot kit with Basic Stamp BS2

The **WellbotStamp** is compatible with the Swibot-Stamp of 2002.
 A 6V supply is required now for recharging the small 80 mAh 4.8V NiCd accu.



The kit

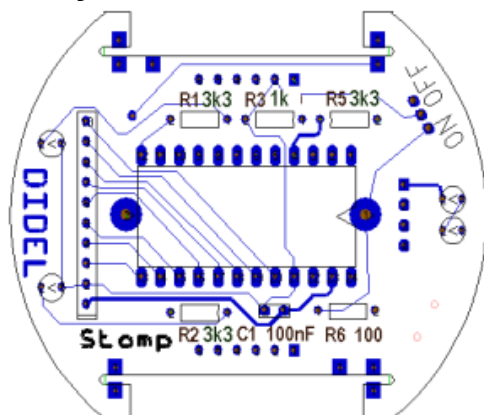
The kit consist of 3 PCB, 2 motors with wheels, 1 NiCd battery 4.8V 100 mAh, socket for processor with pin-out compatible with BS2, serial plug and extension connector.



List of components

3x PCB 4x Leds 1 x F05-40 strips for Stamp connector and extension 1 x 3-pin connector for 6V charger	1x F07-4 1x M07-4 1 x 100 Ohm 1 x 1k Ohm 3x 3,3 kOhm 1 x 100 nF	2x VID29 2x Wheels 1 x NiCd 100 mAh MS 12D16 switch 2x springs	Basic-Stamp BS-2 not supplied
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Assembly



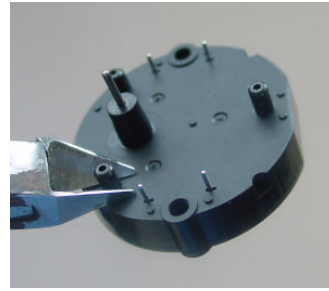
Solder components on PCB.
 Take care of the LED orientation.

Solder the on/off switch.
 Solder the battery on the bottom side, the + is on the side of the charging connector.

Be careful from now on not doing short circuits on power lines.

Prepare the motors

Remove the posts of the motors. If the wire cutter is not very sharp, clean with a knife.



Solder the motors.

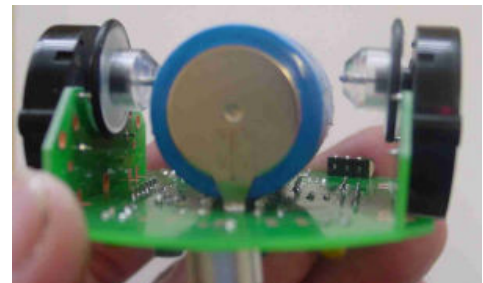
Insert the wheels. Put a 0.2 to 0.4mm thick piece (thick paper, two razor blade) as a spacer between the PCB and the wheel when you press the wheel in place. You may add a small drop of glue at the tip of the motor shaft to better hold the wheel.

Position the motor PCBs. Solder at one point, check for perpendicularity. When perfectly aligned, solder all points both sides.

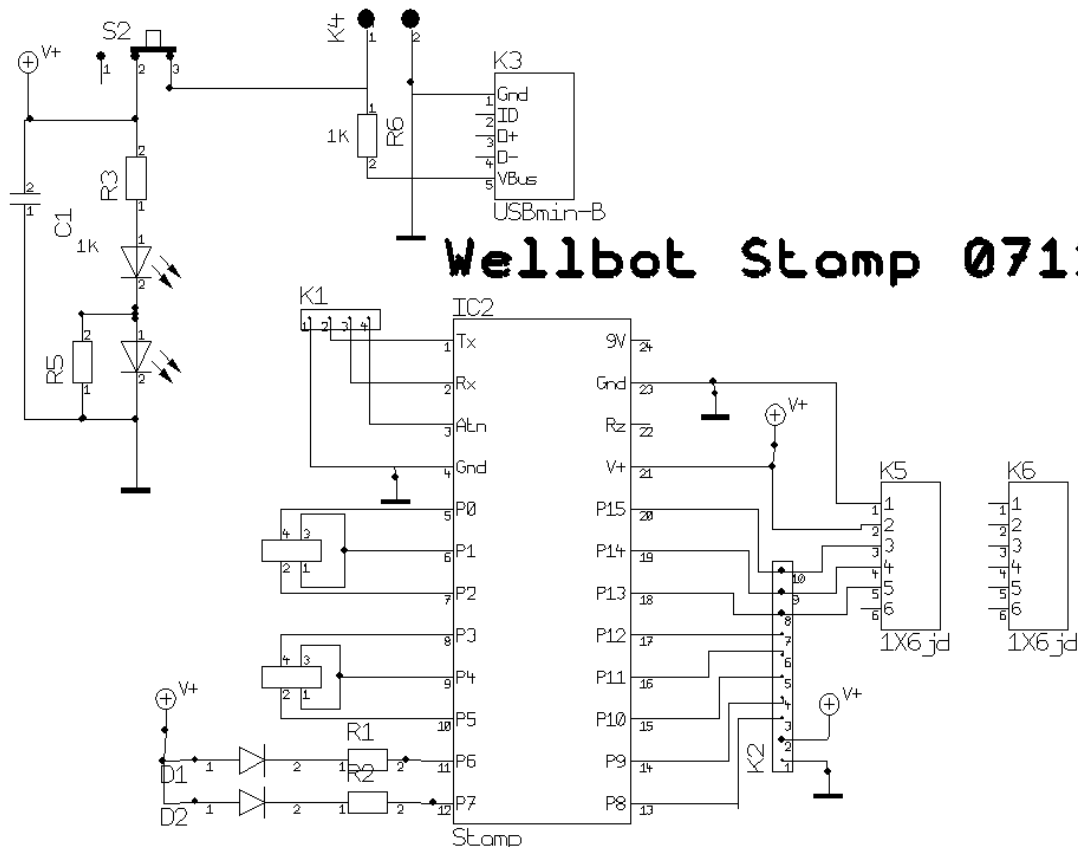
(picture of a Wb168, the accu is smaller for your proto version).

Put the springs and solder

Insert the processor and the DS275



Schematic



Port definitions and extension connectors

<p>P0 motor1 out P1 motor1 out P2 motor1 out P3 motor2 out P4 motor2 out P5 motor2 out P6 led P7 led</p>	<p>P8 ext Tx ? P9 ext Rx ? P10 ext P11 ext P12 ext P13 ext bico P14 ext bico P15 ext bico</p>	
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Charging

The 4.8V NicD is charged by a 6V DC source. A limiting resistor of 100 Ohm limit the charging current to a safe value with 6V, full charge in 10 hours. A higher voltage will accelerate the charge, but if the current is maintained after charge, there is a risk that the accu will over-heat.

Motor control

This is a sample program written by Maurice Wulliens

<pre>' {\$STAMP BS2} ' NOM DU PROGRAMME: "WellBot_1 bs2" ' BUT: 'actionner le robot en marche avant, pivoter à droite 'pivoter à gauche,puis marche arrière 'REMARQUES: 'tous les commentaires sont en minuscules ' CARATERES SPECIAUX: 'programme édité le: 03/01/2008 'programme testé le. 03/01/2008 'dernière modif. le: 03/01/2008 ajustage longueur marche avant, arrière ' ' valeur demi-tour ' MATERIEL UTILISE DIRL = %11111111 'tout en sortie DIRH = %00000000 'tout en entrées p CON 1 'réglage vitesse moteurs en mS, la durée du pas >1mS D VAR Word 'réglage longueur marche avant, arrière 'constante pour phase initiale,diodes éteintes init CON %11101101 'moteurs en phase initiale,diodes éteintes D = 2500 'constantes pour la marche avant avpas1 CON %11001001 avpas2 CON %11011011 avpas3 CON %11010010 avpas4 CON %11110110 avpas5 CON %11100100 avpas6 CON %11101101 'constantes pour pivotement droite pdpas1 CON %11001100 pdpas2 CON %11011110 pdpas3 CON %11010010 pdpas4 CON %11110011 pdpas5 CON %11100001 pdpas6 CON %11101101</pre>	<pre>debut: GOSUB leeds GOSUB marche_av GOSUB pivot_droite GOSUB pivot_gauche GOSUB marche_ar GOTO debut leeds: FOR B4 = 1 TO 240 OUTL = %00000000 'on pourrait clignoter pour mieux montrer que 'cela est bien parti. 'les lampes sont allumées mais on pourrait les 'activer ou desactiver dans chaque boucle "for" NEXT RETURN marche_av: FOR W0 = 1 TO D 'avant côté long OUTL=avpas1 PAUSE p OUTL=avpas2 PAUSE p OUTL=avpas3 PAUSE p OUTL=avpas4 PAUSE p OUTL=avpas5 PAUSE p OUTL=avpas6 PAUSE p NEXT RETURN pivot_droite: FOR B3 =0 TO 175 'pivote d'un quart de tour à droite OUTL=pdpas1 PAUSE p OUTL=pdpas2 PAUSE p OUTL=pdpas3 PAUSE p OUTL=pdpas4 PAUSE p OUTL=pdpas5 PAUSE p OUTL=pdpas6 PAUSE p NEXT RETURN</pre>
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<p>(page 3)</p> <pre> pivot_gauche: FOR B5 =0 TO 175 'pivote d'un quart de tour à gauche OUTL=tgpas1 PAUSE p OUTL=tgpas2 PAUSE p OUTL=tgpas3 PAUSE p OUTL=tgpas4 PAUSE p OUTL=tgpas5 PAUSE p OUTL=tgpas6 PAUSE p NEXT RETURN </pre>	<p>(page 4)</p> <pre> marche_ar: FOR W1 = 1 TO D 'marche arrière OUTL=arpas1 PAUSE p OUTL=arpas2 PAUSE p OUTL=arpas3 PAUSE p OUTL=arpas4 PAUSE p OUTL=arpas5 PAUSE p OUTL=arpas6 PAUSE p NEXT RETURN </pre>
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Display option

<p>Serial transfer load a 16-word bitmap that correspond to the alternating red and green lines. In the first transferred byte, a 1 activates the red, in the second transferred byte, a 1 active a green. Both active gives yellow. Transfer is done MSB first.</p>	<p>See www.didel.com/WeBico.pdf</p>
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RS232 communication
See BS2 documentation