Requirements elements

GEARs controller and NXT integration requires following:

- Two GEARs controllers
- Two GEARs motors
- Mindstorms NXT brick
- Mindsensors NXTServo (supports upto 4 GEARs controllers or 8 motors)

Optionally to make a robot you will need chassis and related accessories.

Optionally for joystick control you will need:

- Any Sony Playstation 2 controller joystick (preferably wireless)
- Mindsensors PSP-Nx

### Power ON sequence for the completed robot

GEARs controller needs a neutral signal when it is first powered on. When NXT is powered on while no program is running on NXT, NXTServo will send neutral signal to attached controllers.

Use following sequence to achieve above mentioned operation:

- First power on NXT
- Power on GEARs Controller(s)
- Then start the program on NXT brick

Electrical Connections

The picture below shows overall connections diagram for NXTServo, NXT and PSP-Nx.

PSP-Nx
1 2 3 4
NXTServo
To joystick
via wireless
To Gears
controller
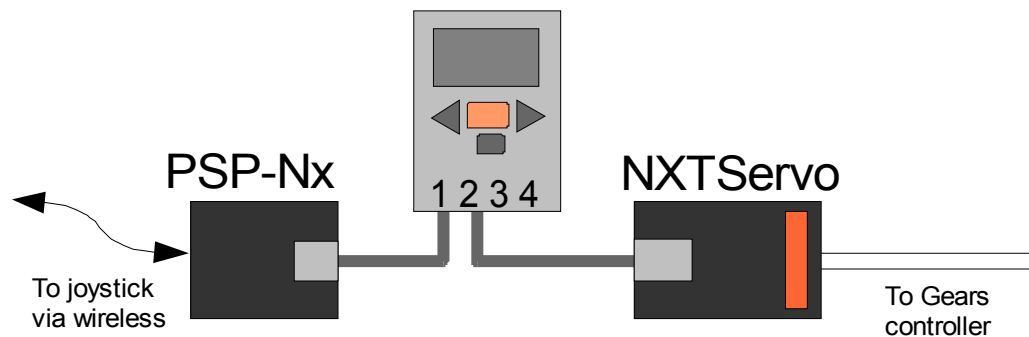
Picture below shows the electrical connections between Gears controller and NXTServo pins. Connect left Gears controller to SV1 and right controller to SV2.

NXTServo (Pins area)

Signal Pins

SV8
SV7
SV6
SV5
SV4
SV3
SV2
SV1

Gears controller

minds
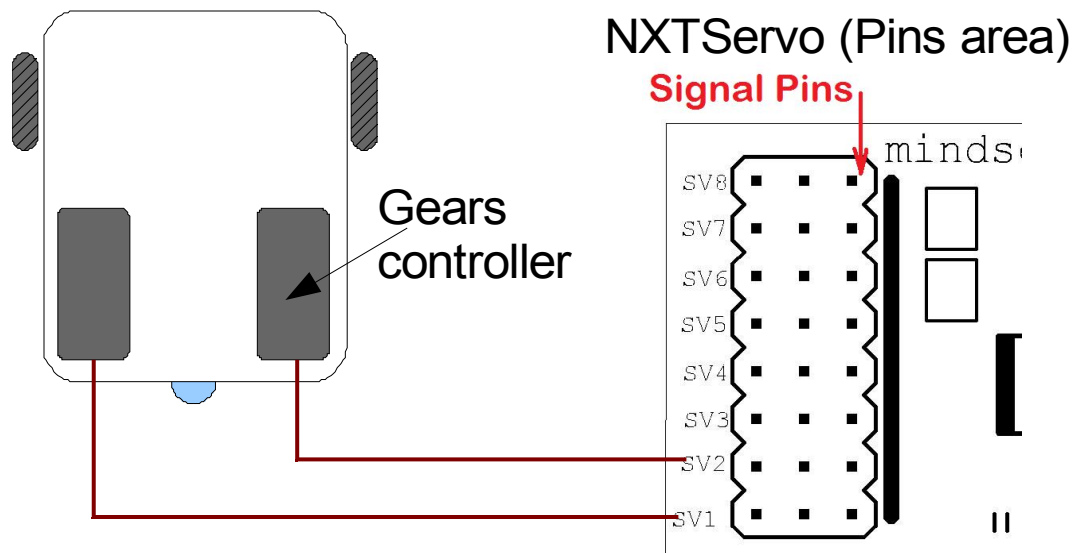
Ensure that the signal pin of Gears controller matches with the signal pin shown above.

Picture of robot created using this integration
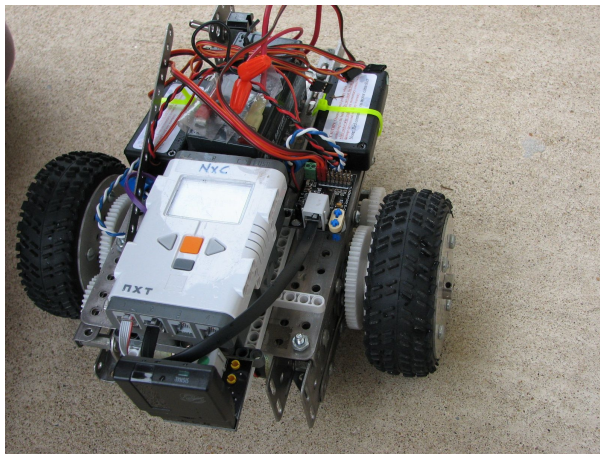
Programming for NXT

Conceptually, to program for this robot using Tank drive style Joystick control, you need to bind right joystick's vertical movement to right Gears controller, and bind left joystick's vertical movement to left controller.

To achieve this in program:

- bind the Right joystick Y values to Servo 1 and
- bind Left joystick Y values to Servo 2.

Program pictured here is available at:

http://www.mindsensors.com/index.php?
module=documents&JAS_DocumentManager_op=viewDocument&JAS_Document_id=
86

Get Joystick reading (which is between -100 to 100)
Transform it for GEARS controller (to range between 1100 to 1900)
Send right joystick value to motor 1 and send left joystick value to motor 2.