

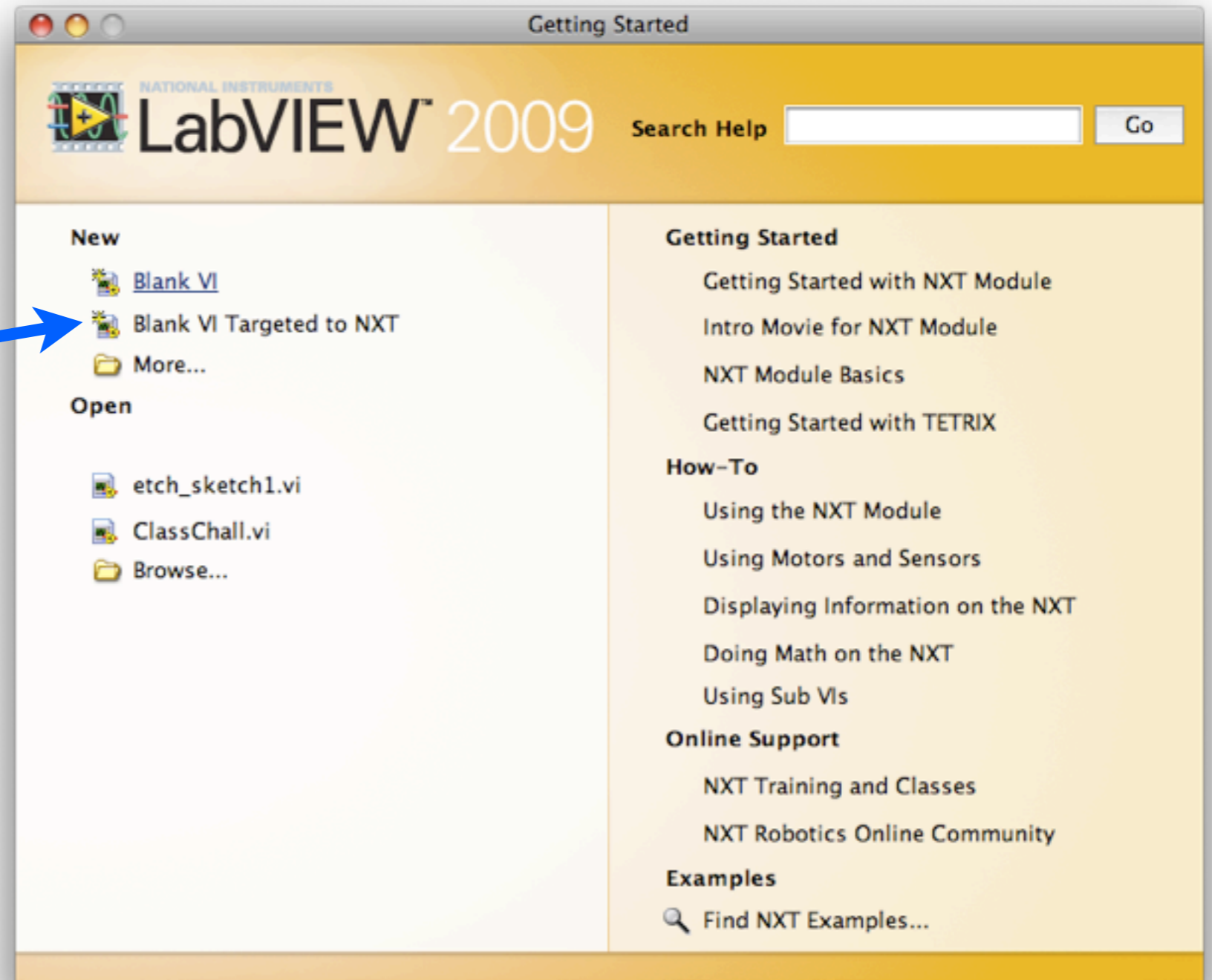


# PREVIOUS ACTIVITY



# Make a New VI

Make a new VI  
Targeted to NXT

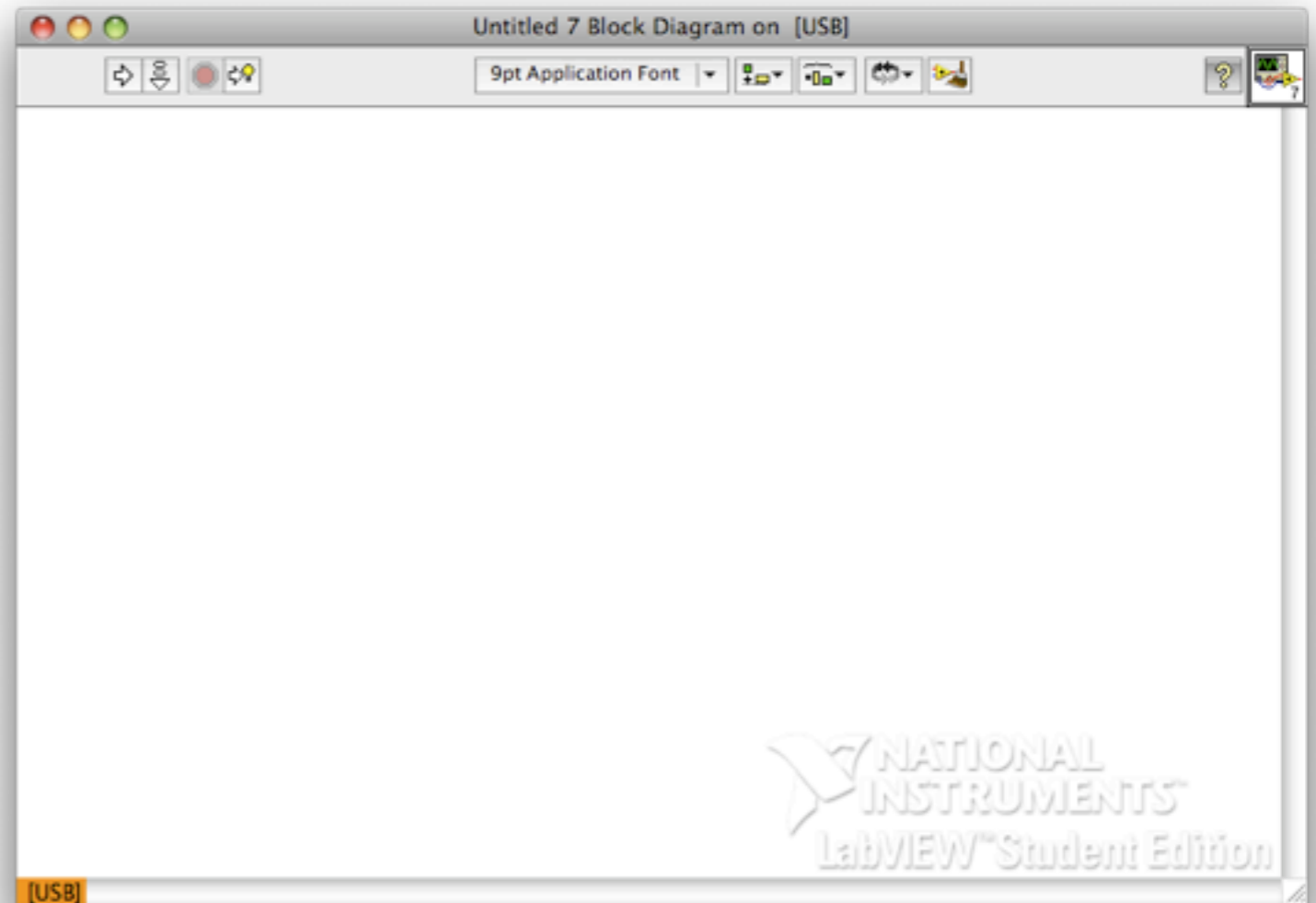




# Open the Block Diagram

## Bring up the **Block Diagram**

- Control-E
- Window >> Show Block Diagram

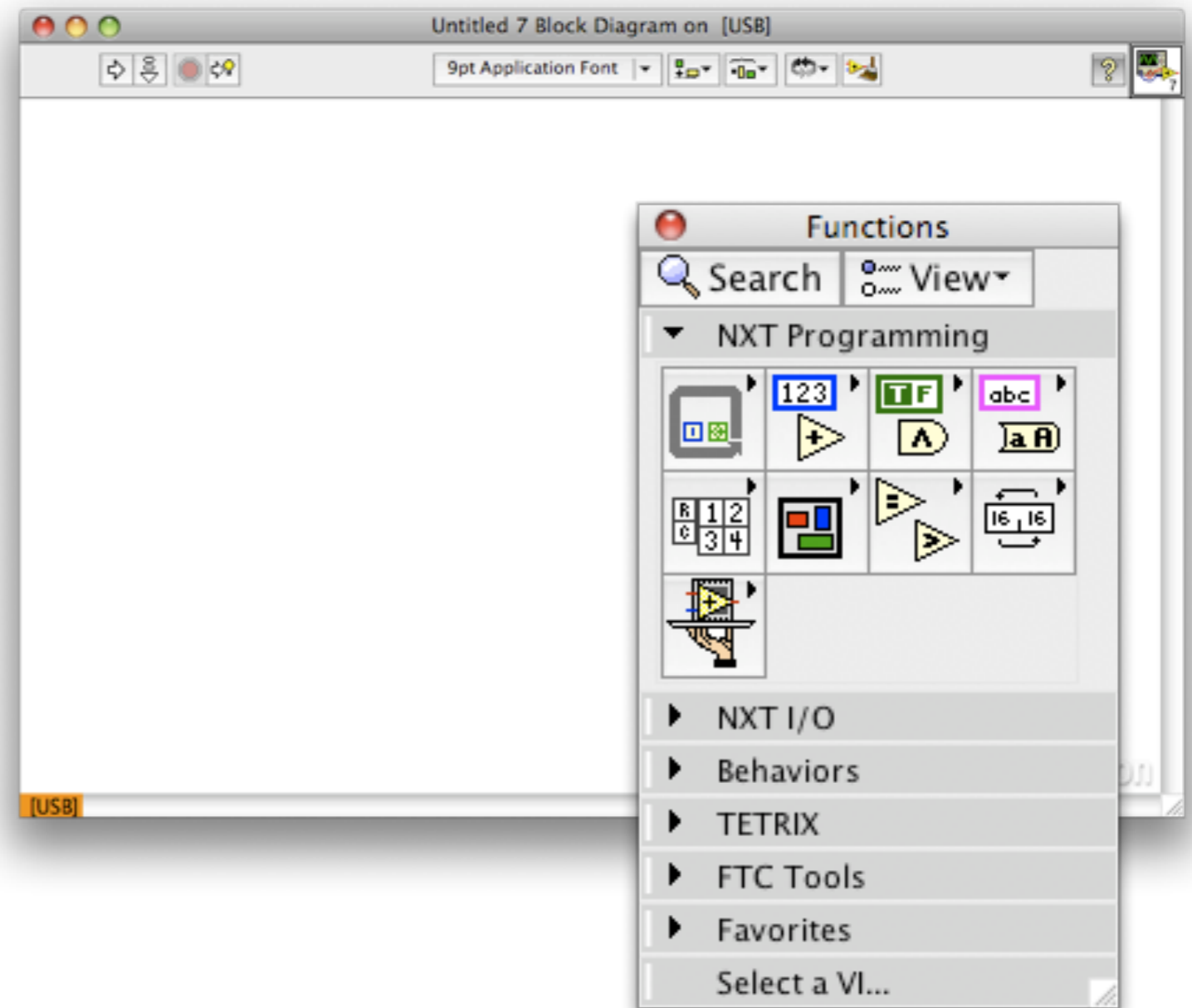


# Functions Palette



## Bring up the Functions Palette

- Left Click
- View >> Functions Palette

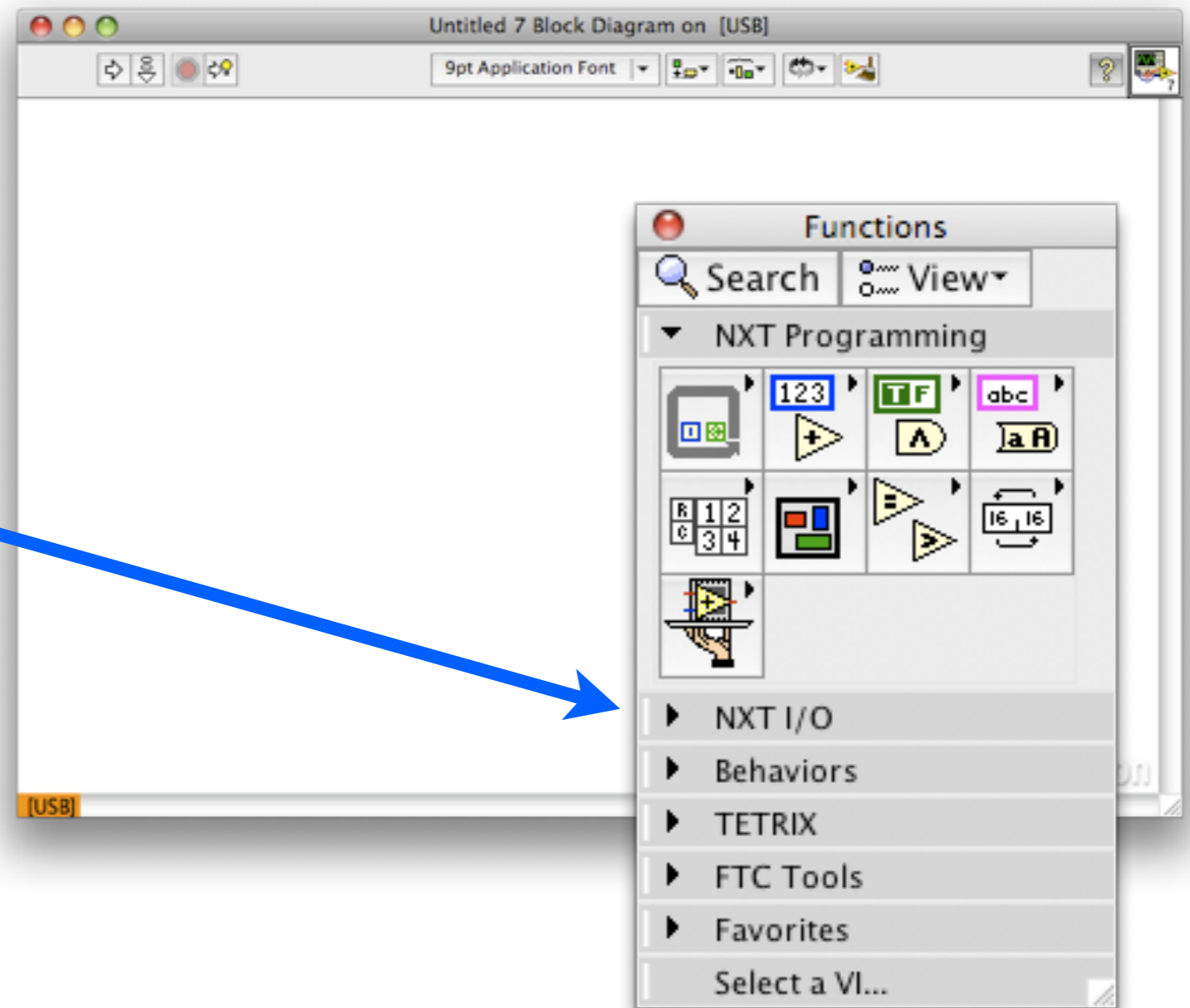
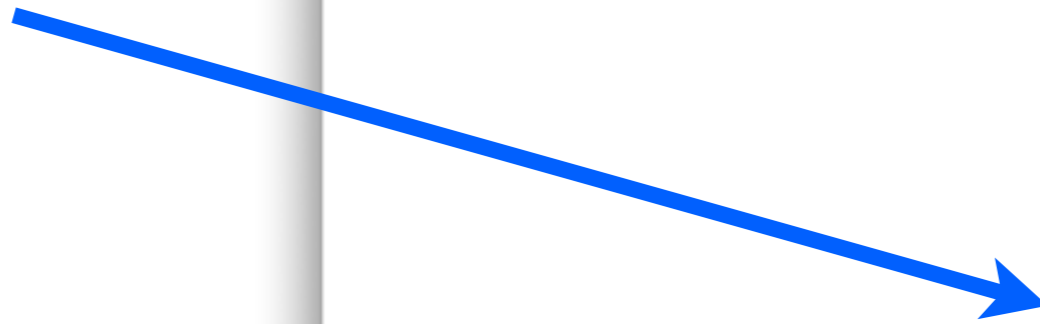




# NXT I/O

Select the  
**NXT I/O Menu**

– Click NXT I/O

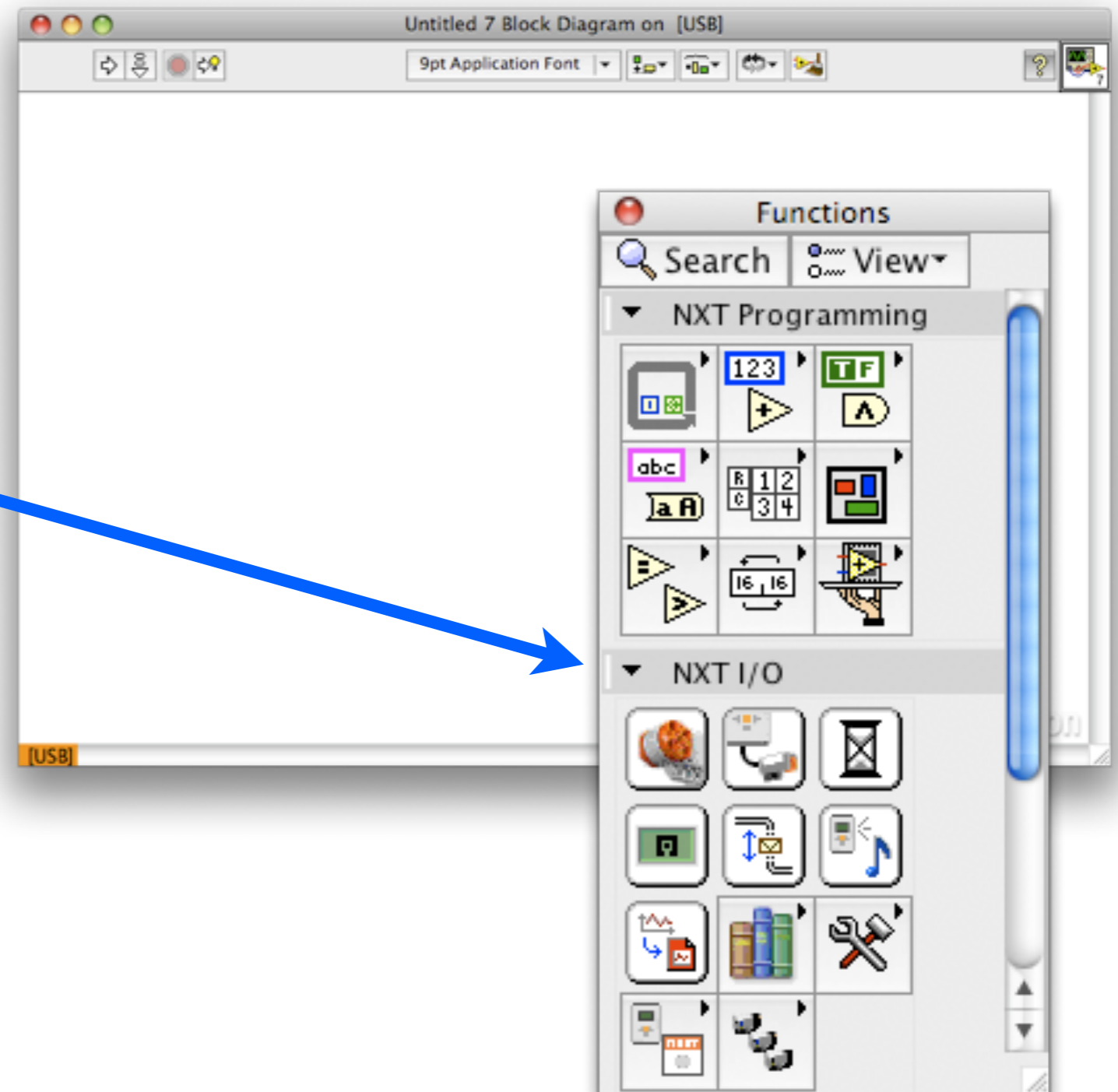




# NXT I/O

Select the  
**NXT I/O Menu**

– Click NXT I/O

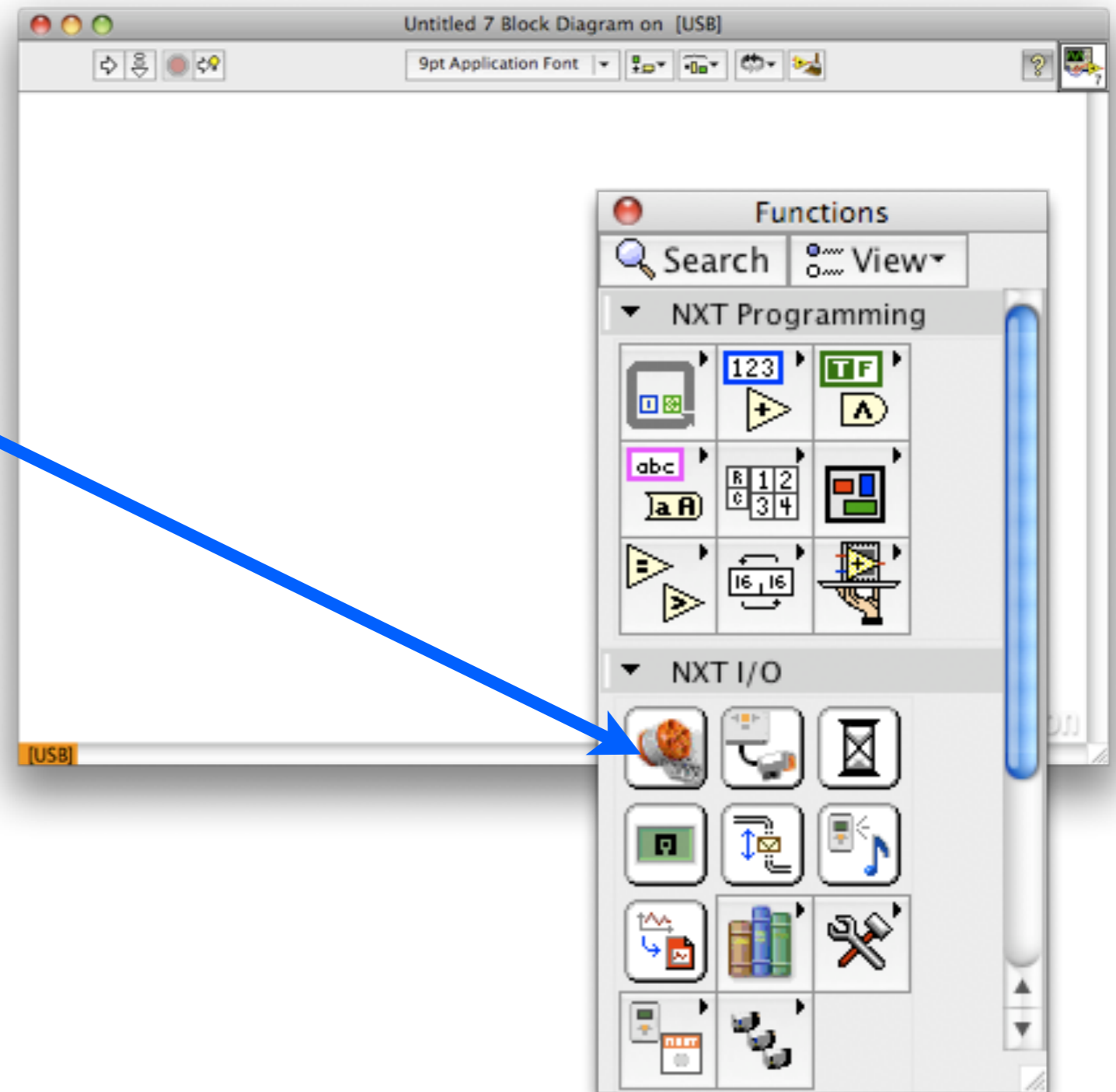






# NXT Motors

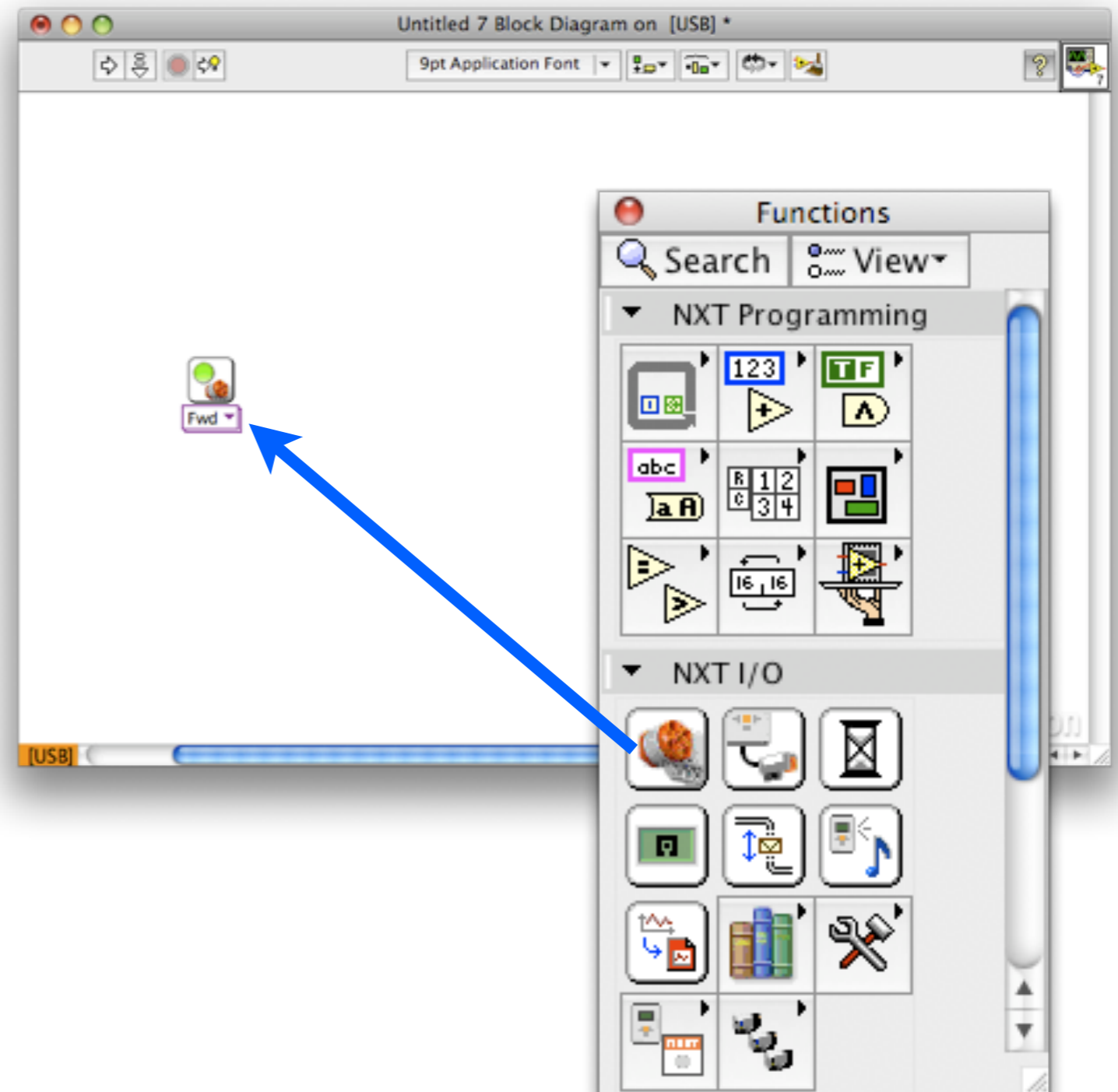
Drag a **Motor**  
into the VI





# NXT Motors

Drag a **Motor**  
into the VI








# NXT Context Help

Context Help

**Motor On**  
[MotorOn.vi]



Output Port (All Ports) —

NXT —

Power (75) —

NXT —

Turns on the motor(s) connected to the specified port(s) at the input power level.

**Inputs**

**NXT** connects to NXT terminal of previous VI to establish the flow of the program.

**Output Port (All Ports)** is the port connected to the motor. All Ports is the default, but Port A, Port B or Port C can also be selected.

**Power (75)** is a power level from -100 to 100; default power is 75.

**Outputs**

**NXT** wires to NXT terminal of next VI to establish the flow of the program.

**Context Help**  
shows us how  
to connect to  
the motor VI

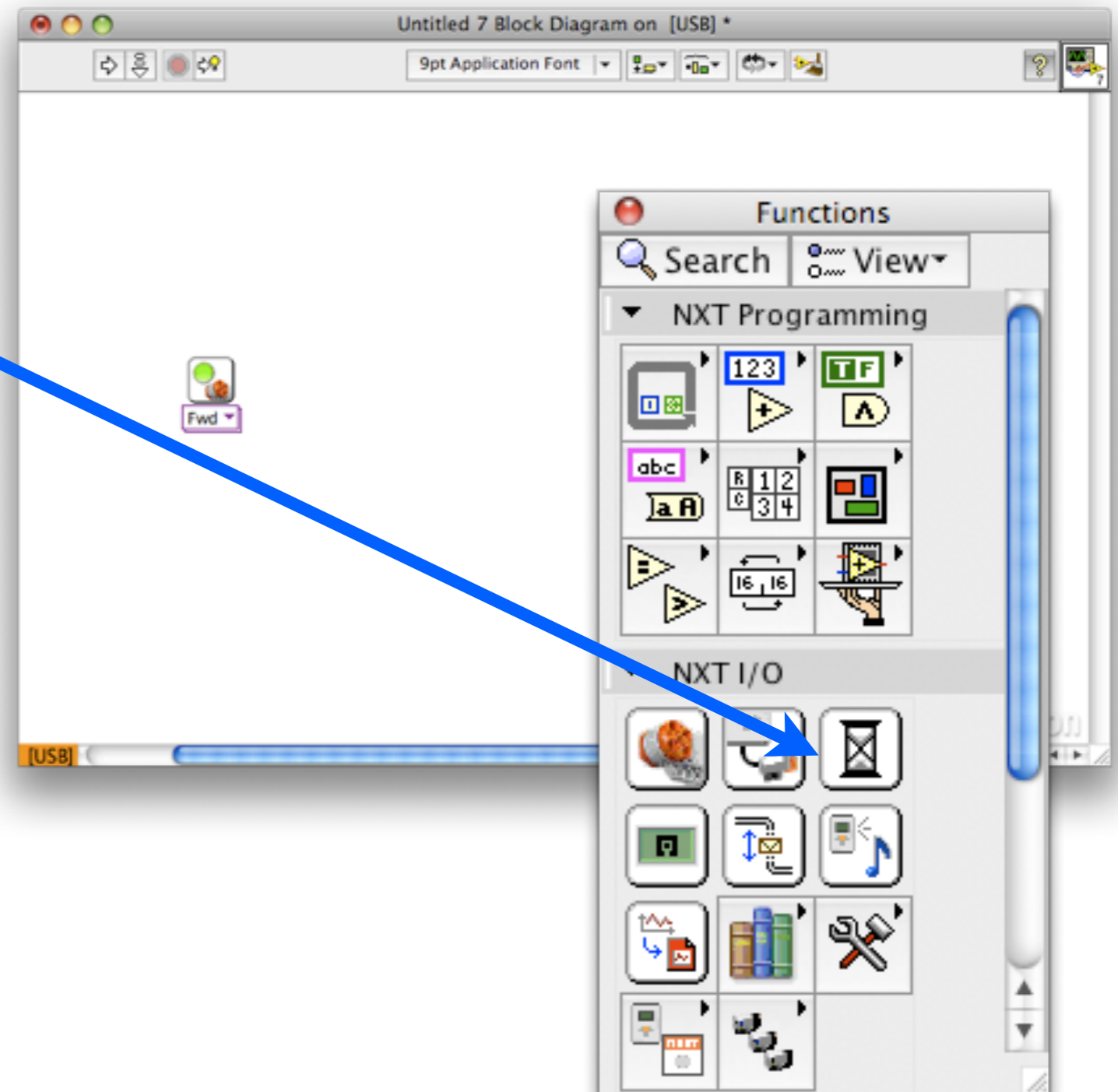
- CTRL-H
- Help >>

**Context Help**



# NXT Timers

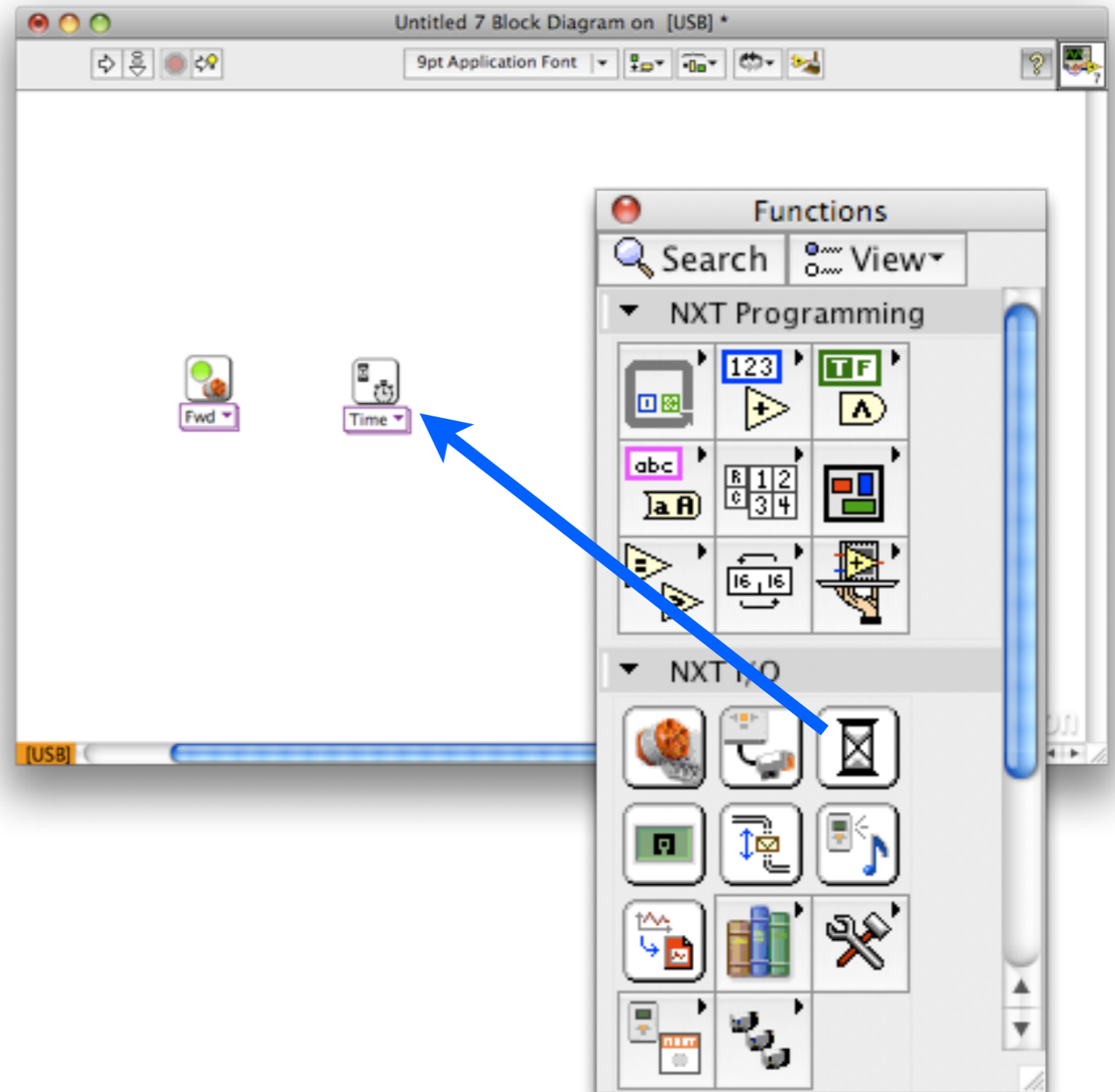
Drag a **Timer**  
into the VI





# NXT Timers

Drag a **Timer**  
into the VI






# NXT Context Help

Context Help

Wait (time)  
[Wait\_Num.vi]



Time (sec) —

Waits the specified number of seconds.

**Inputs**  
Time (sec) is the time to wait in seconds.  
NXT connects to NXT terminal of previous VI to establish the flow of the program.

**Outputs**  
NXT wires to NXT terminal of next VI to establish the flow of the program.

[Detailed help](#)

Examine the  
**Context Help** to  
**Specify the time**

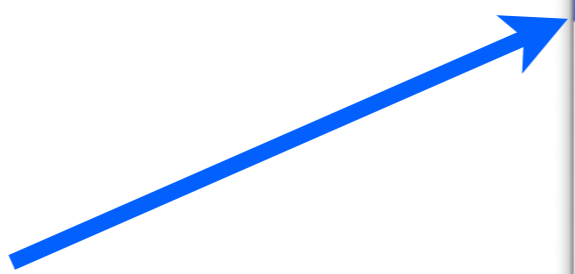


# NXT Timers

Right Click on  
the **Time** input



Select  
**Create >> Constant**



- Visible Items ▶
- Help
- Examples
- Description and Tip...
- Breakpoint ▶
- NXT I/O Palette ▶
- Numeric Palette ▶
- Create ▶**
  - Constant**
  - Control Indicator
- Replace ▶
- Select Type ▶
- Relink To SubVI
- SubVI Node Setup...
- Call Setup...
- Find All Instances
- Open Front Panel
- Open Polymorphic VI
- Show VI Hierarchy
- ✓ View As Icon
- Properties



# NXT Timers

Change **value** to 2

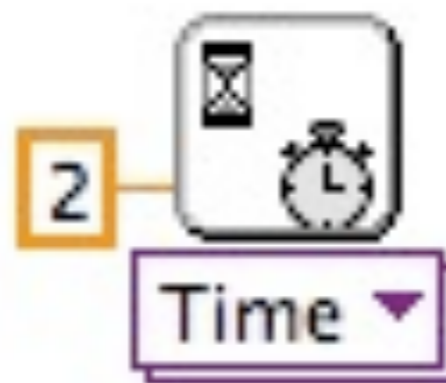






# NXT Timers

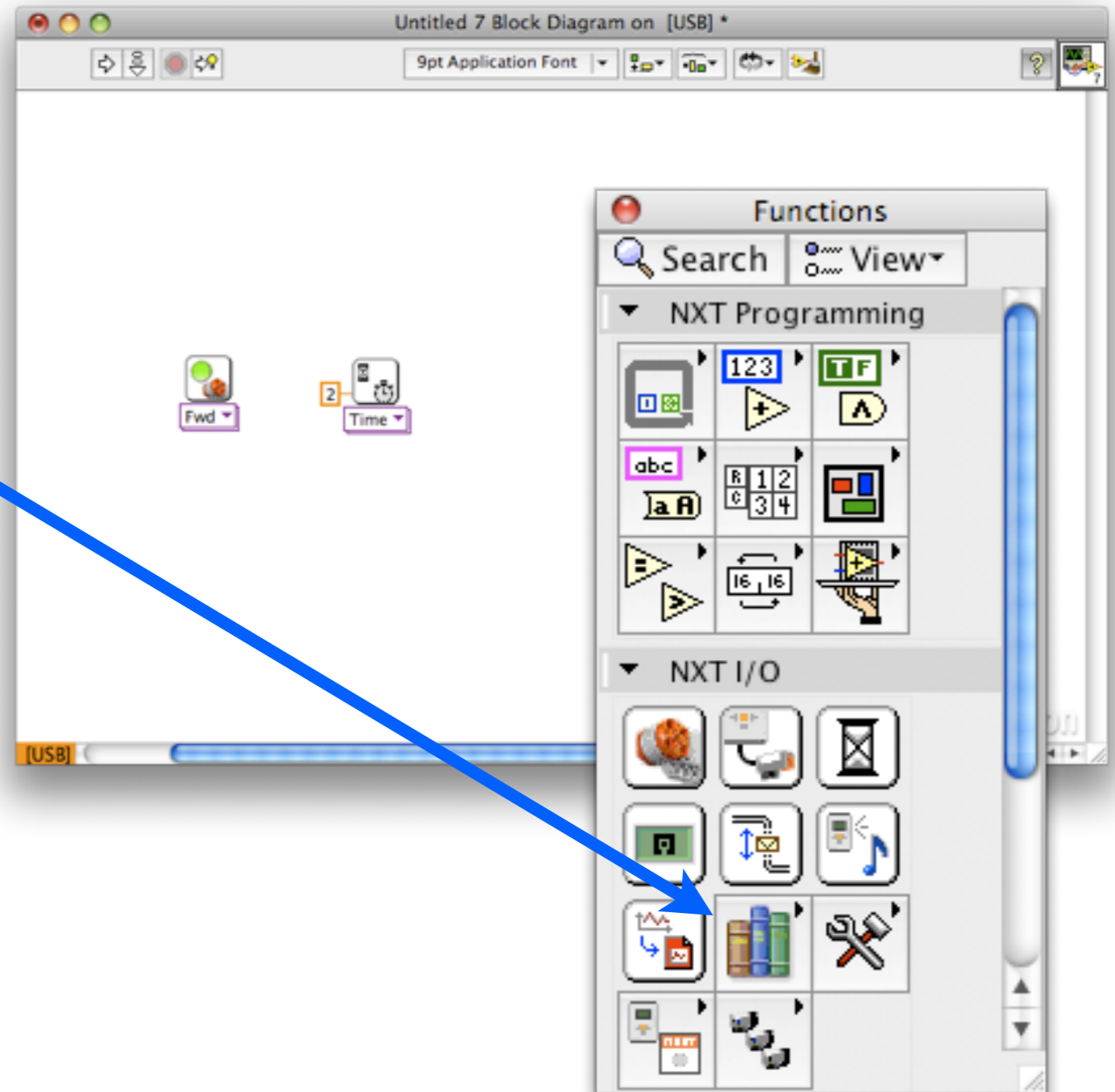
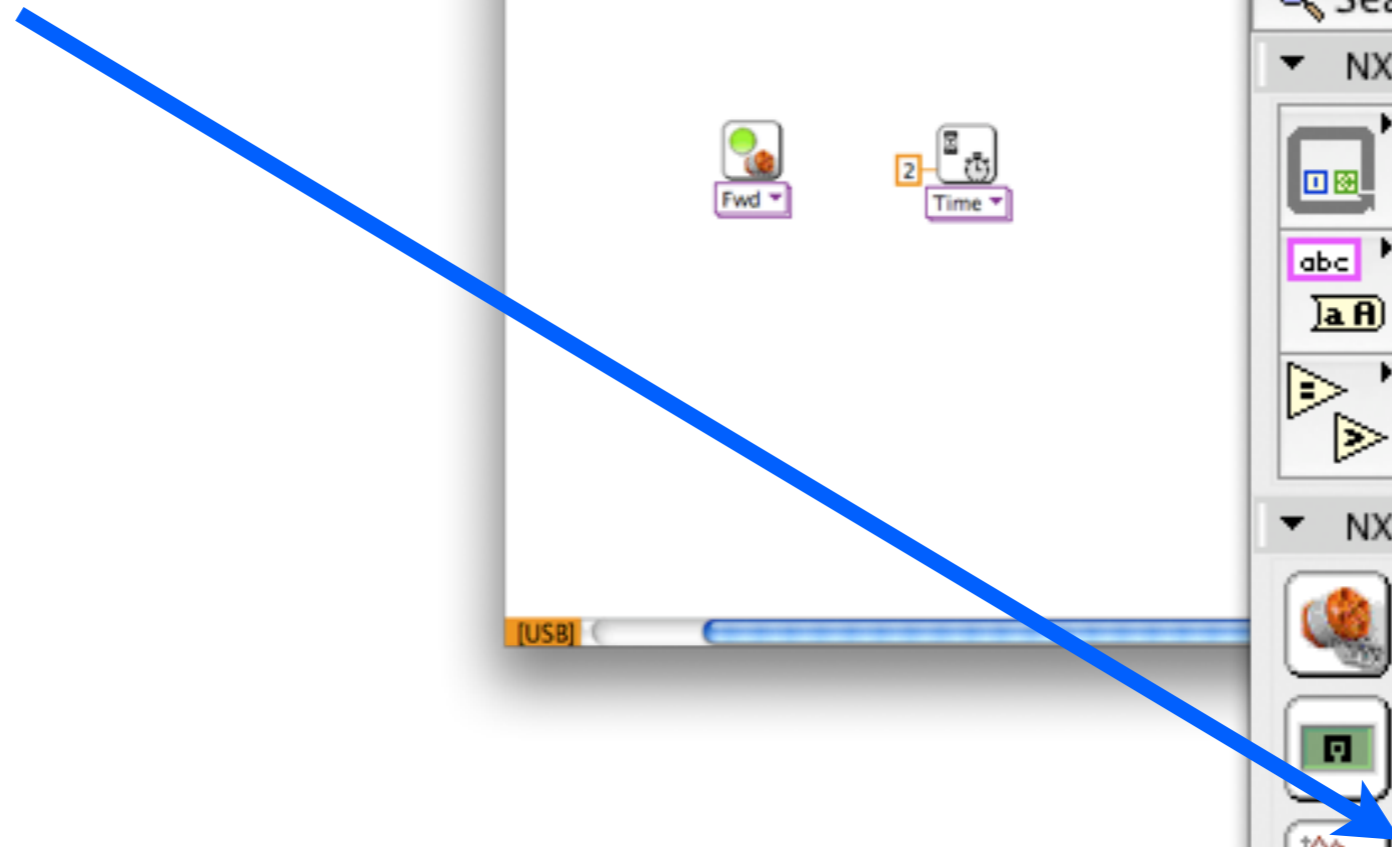
Change **value** to 2





# NXT Motor Coast

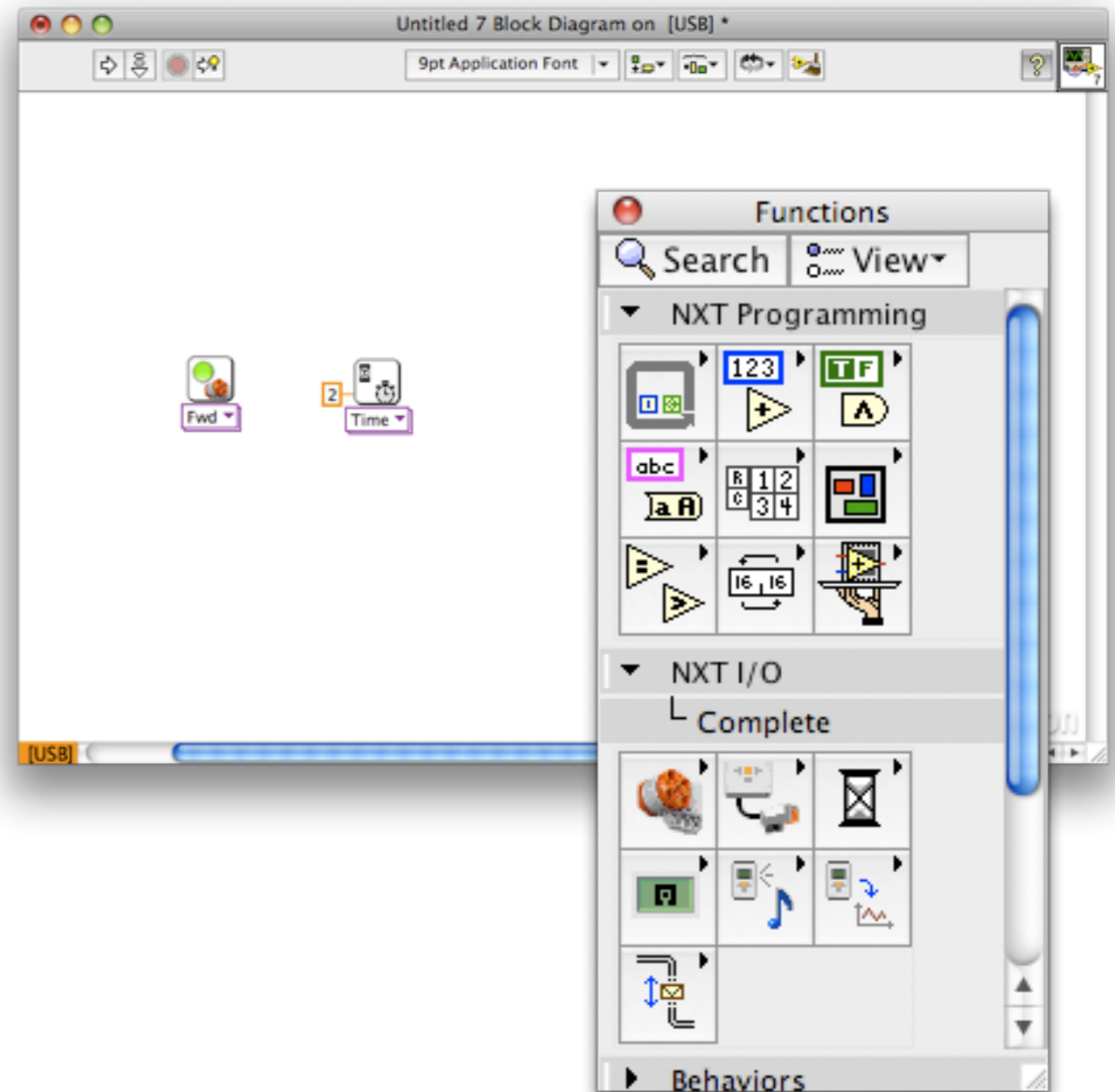
Click **Complete**





# NXT Motor Coast

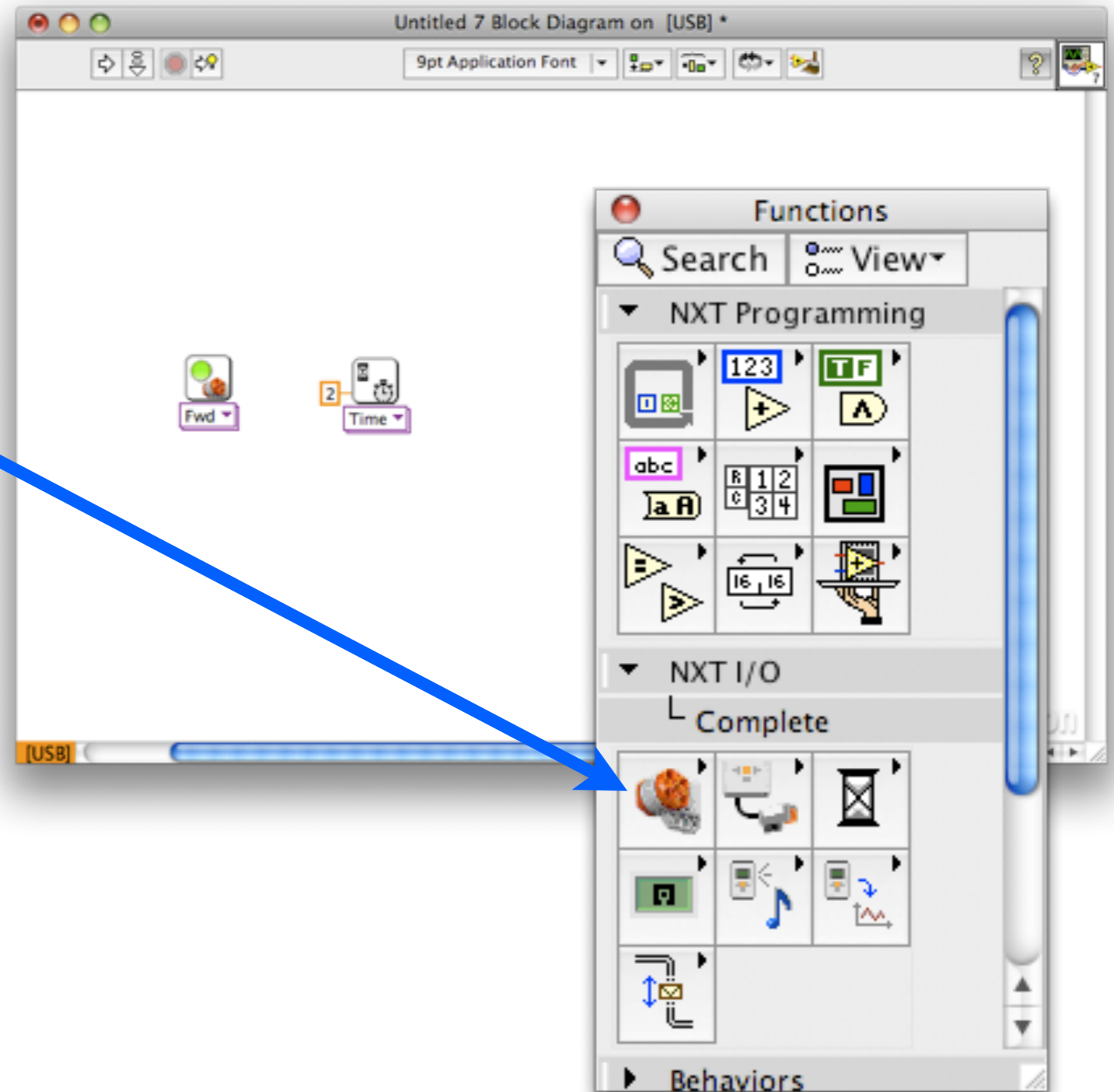
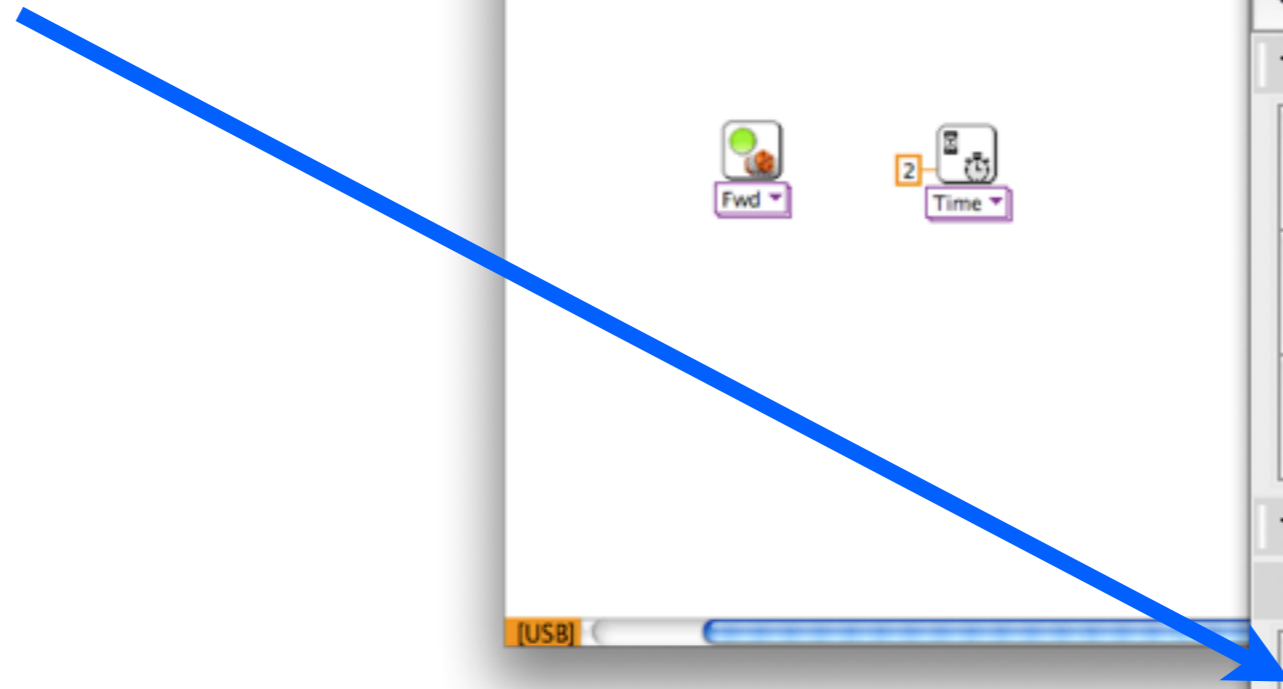
Click Complete





# NXT Motor Coast

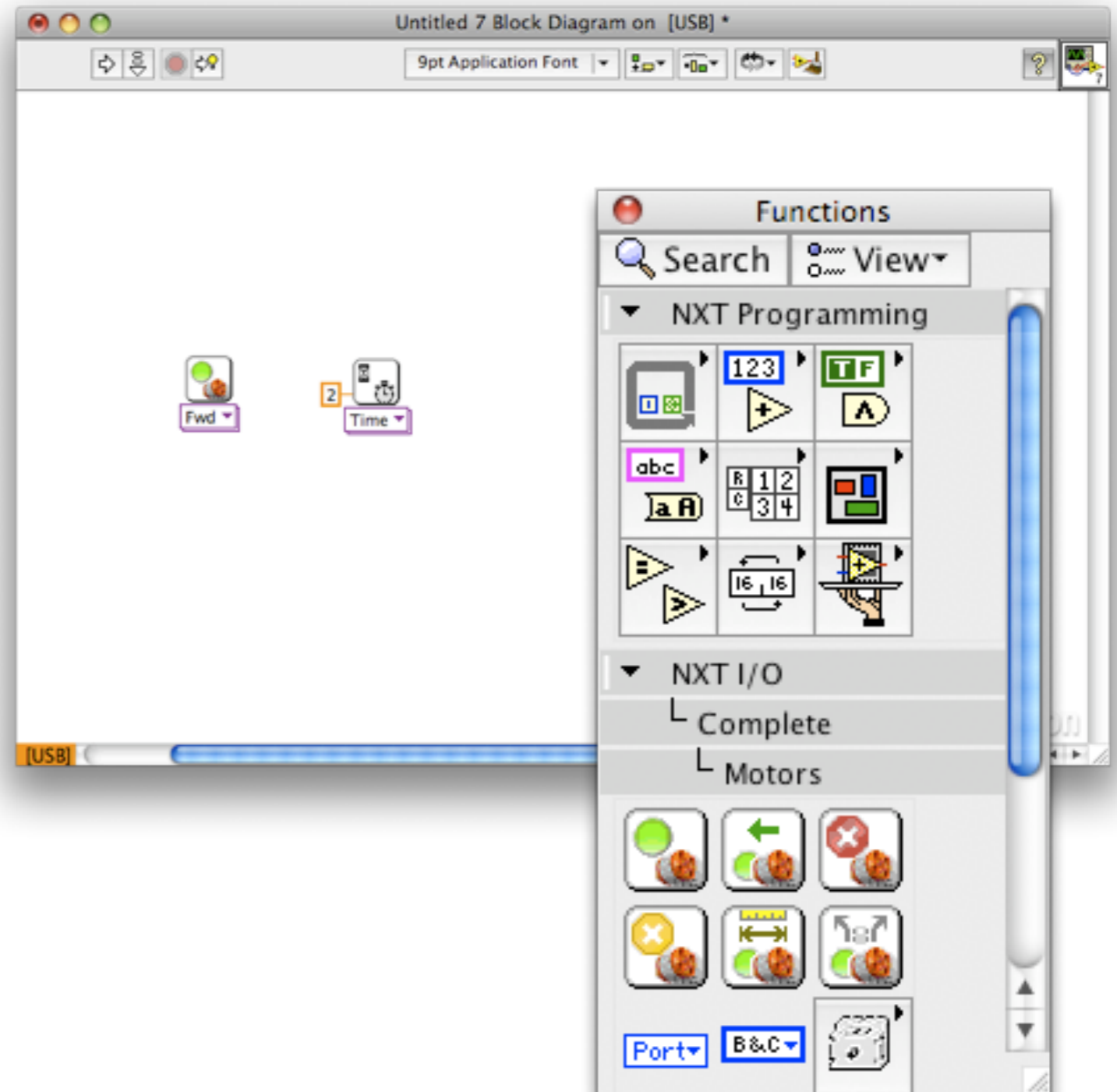
Click Motors





# NXT Motor Coast

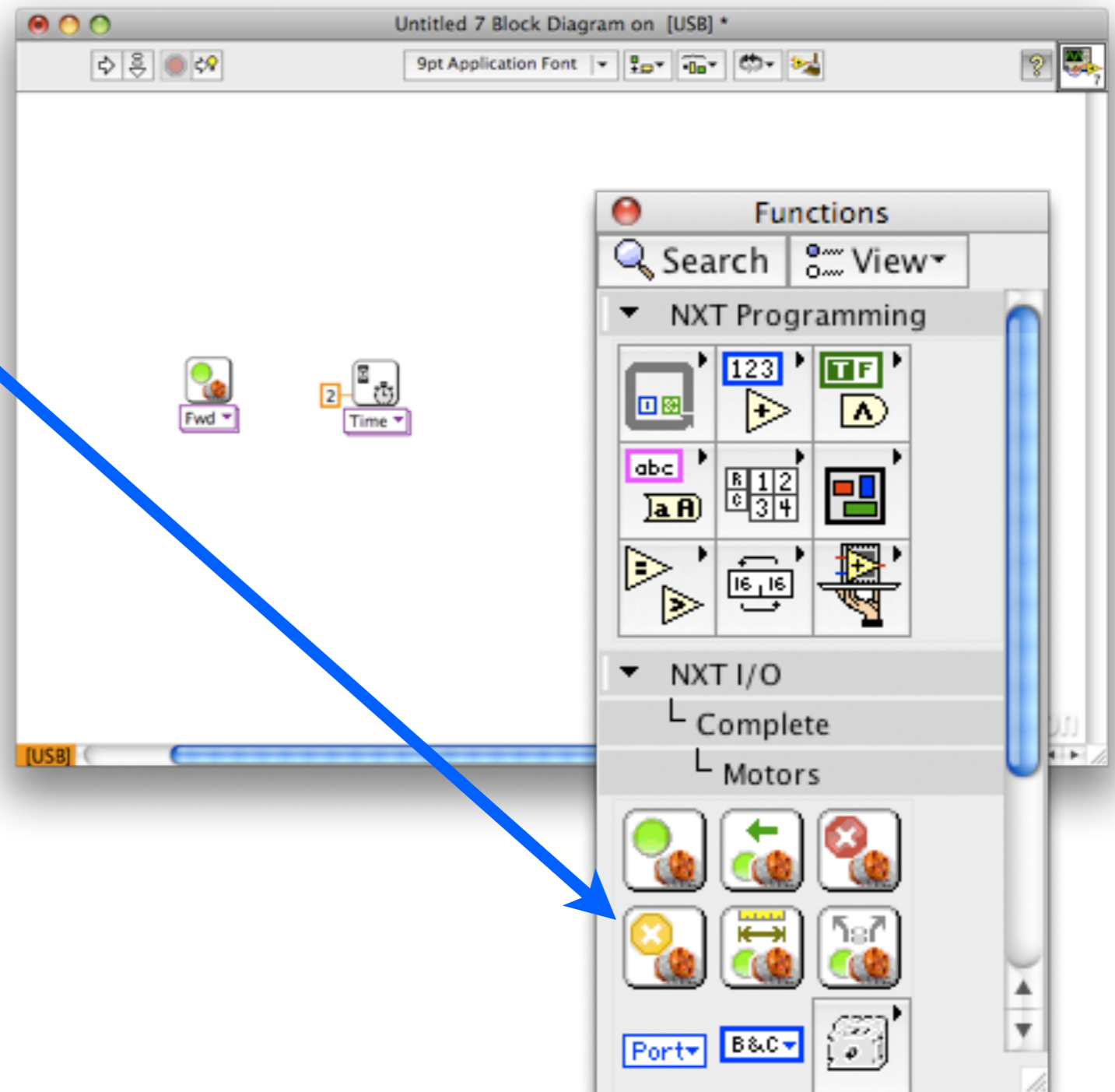
## Click Motors



# NXT Motor Coast



Drag **Motor Coast**  
onto the block diagram

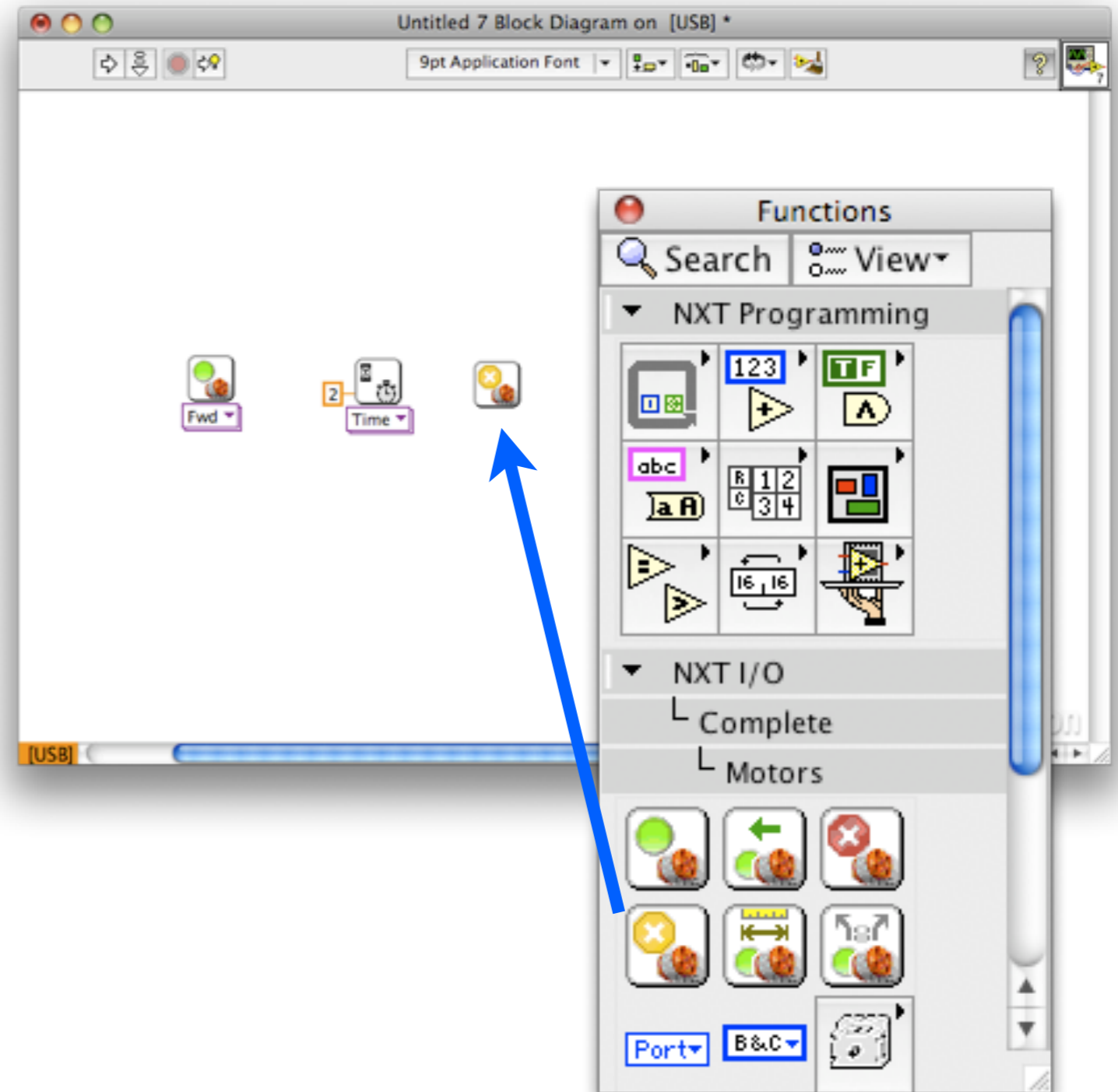






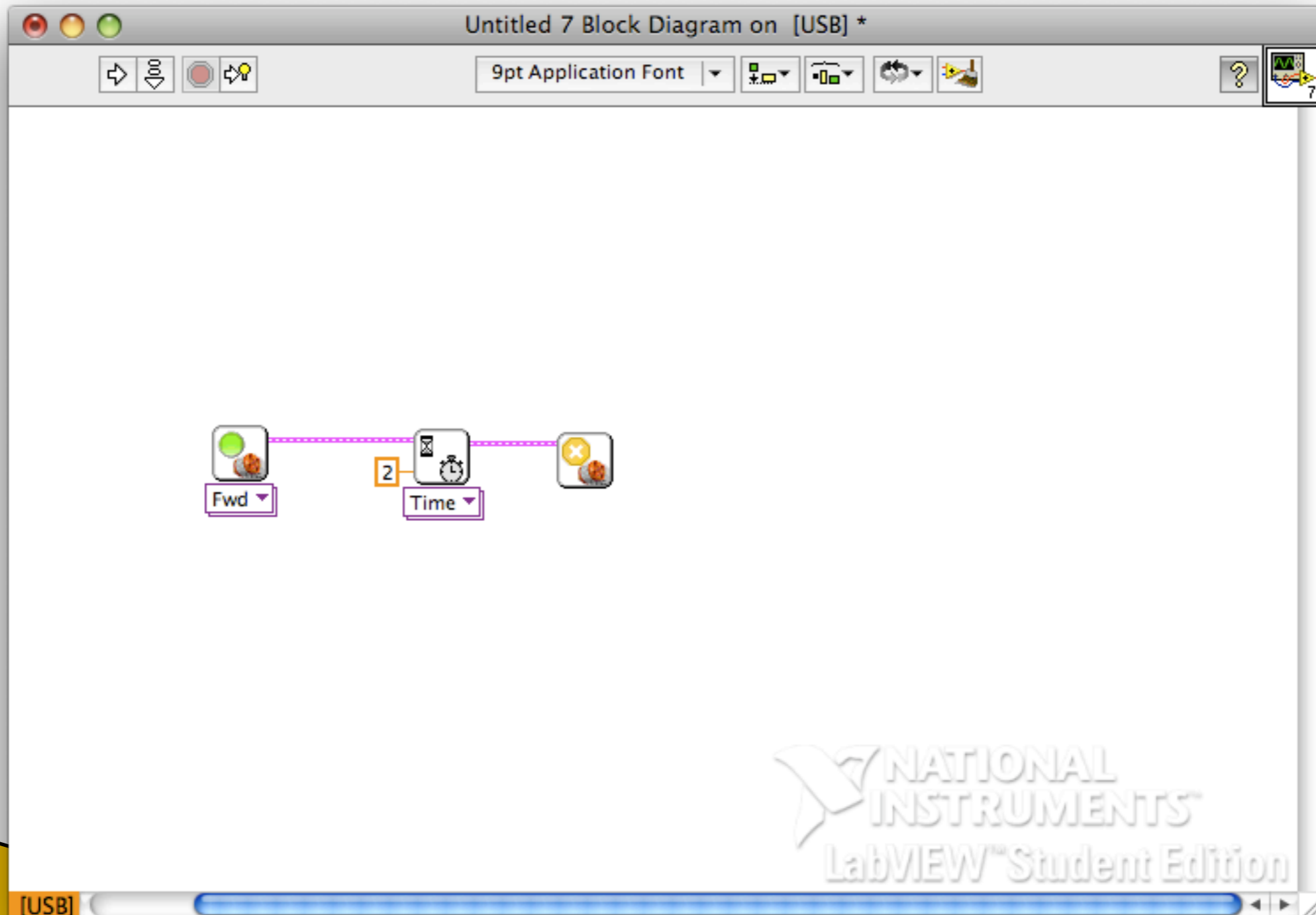
# NXT Motor Coast

Drag **Motor Coast**  
onto the block diagram





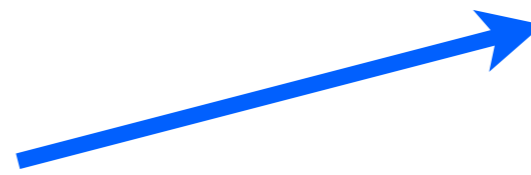
# Wire the Blocks Together





# Running and Deploying the VI

- Connect the **NXT**
- Run the VI by pressing the **Run** button
- Load the VI onto the NXT with the **Deploy** button



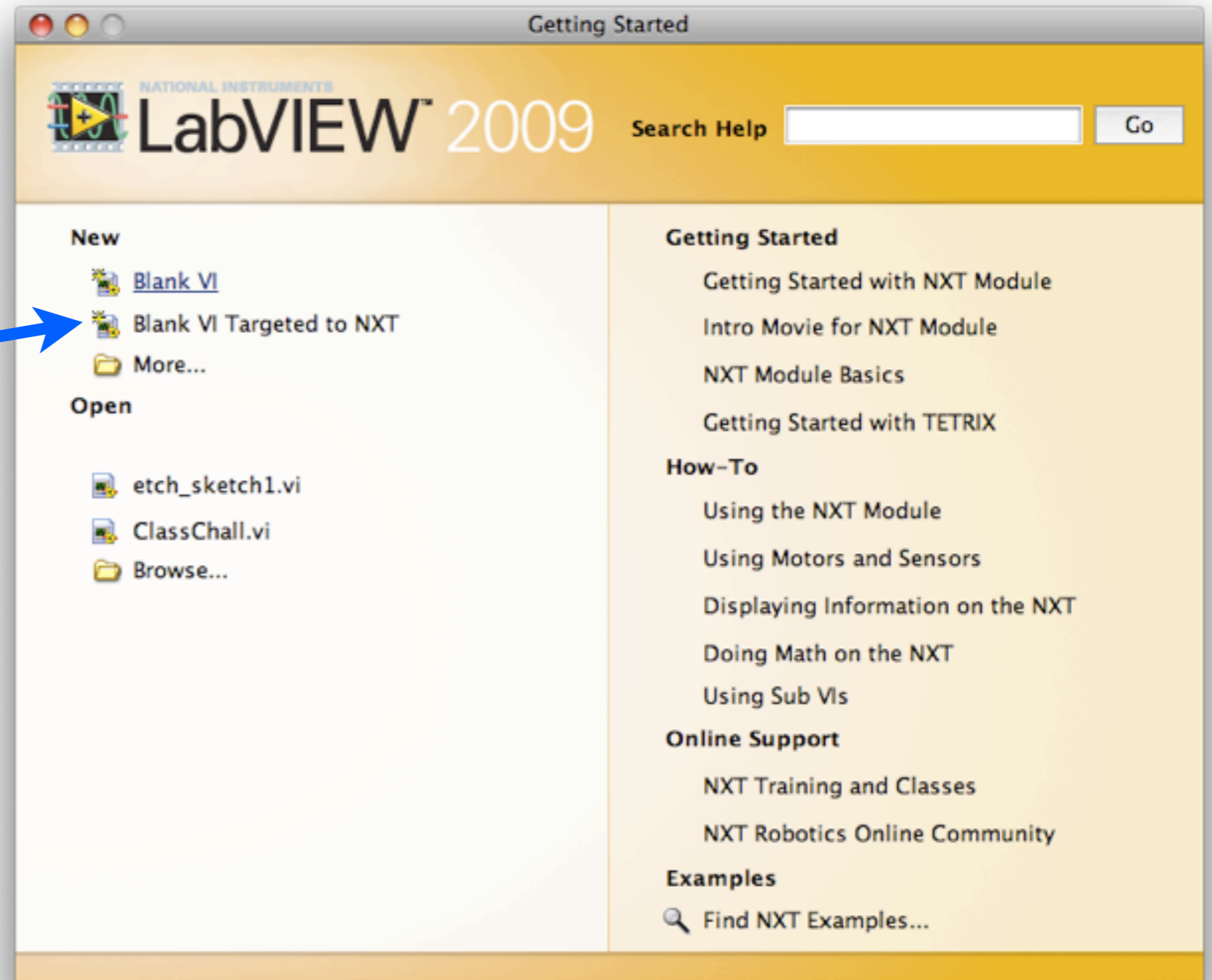


# USING TETRIX MOTORS



# Make a New VI

Make a new VI Targeted to NXT

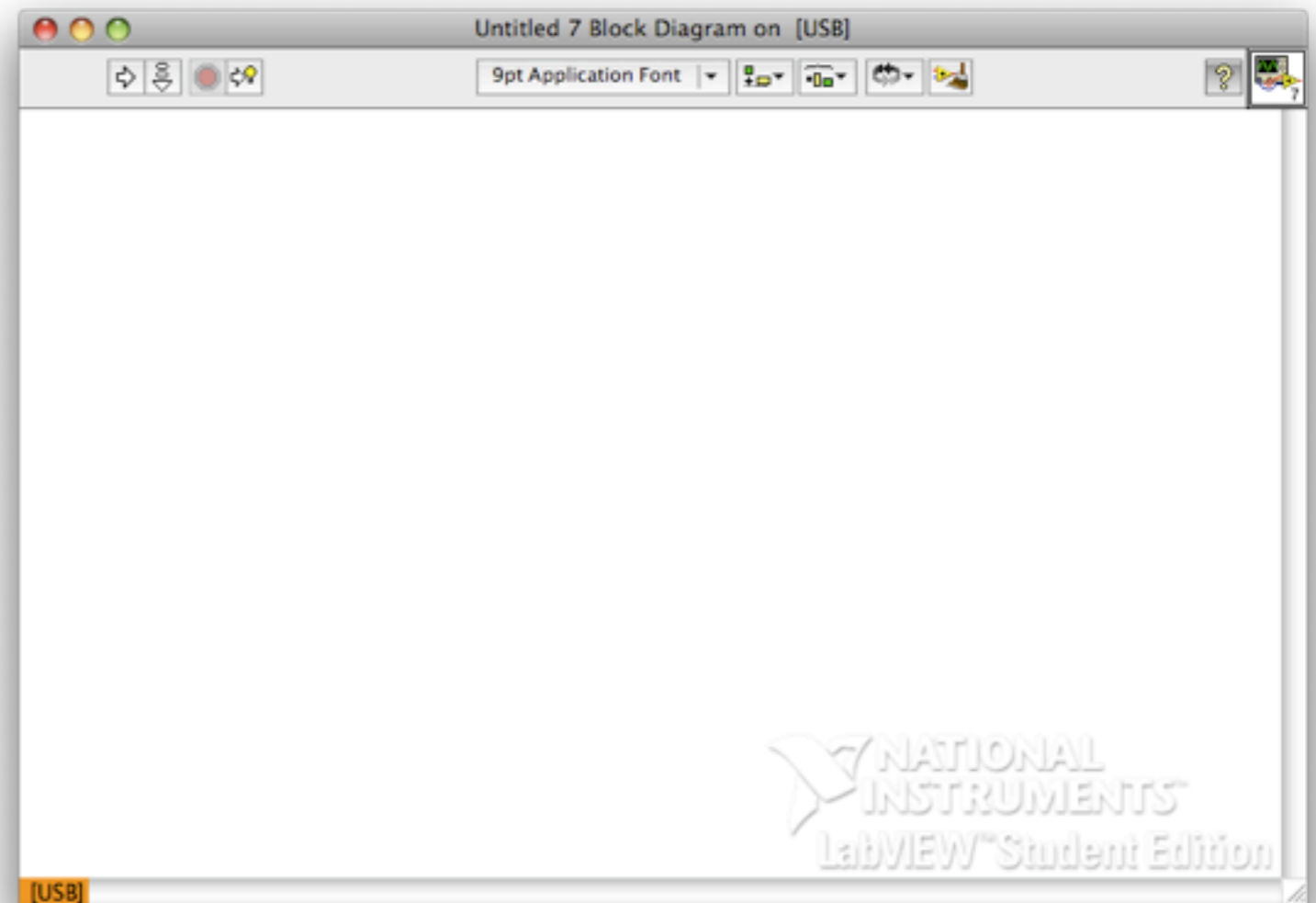




# Open the Block Diagram

## Bring up the **Block Diagram**

- Control-E
- Window >> Show Block Diagram



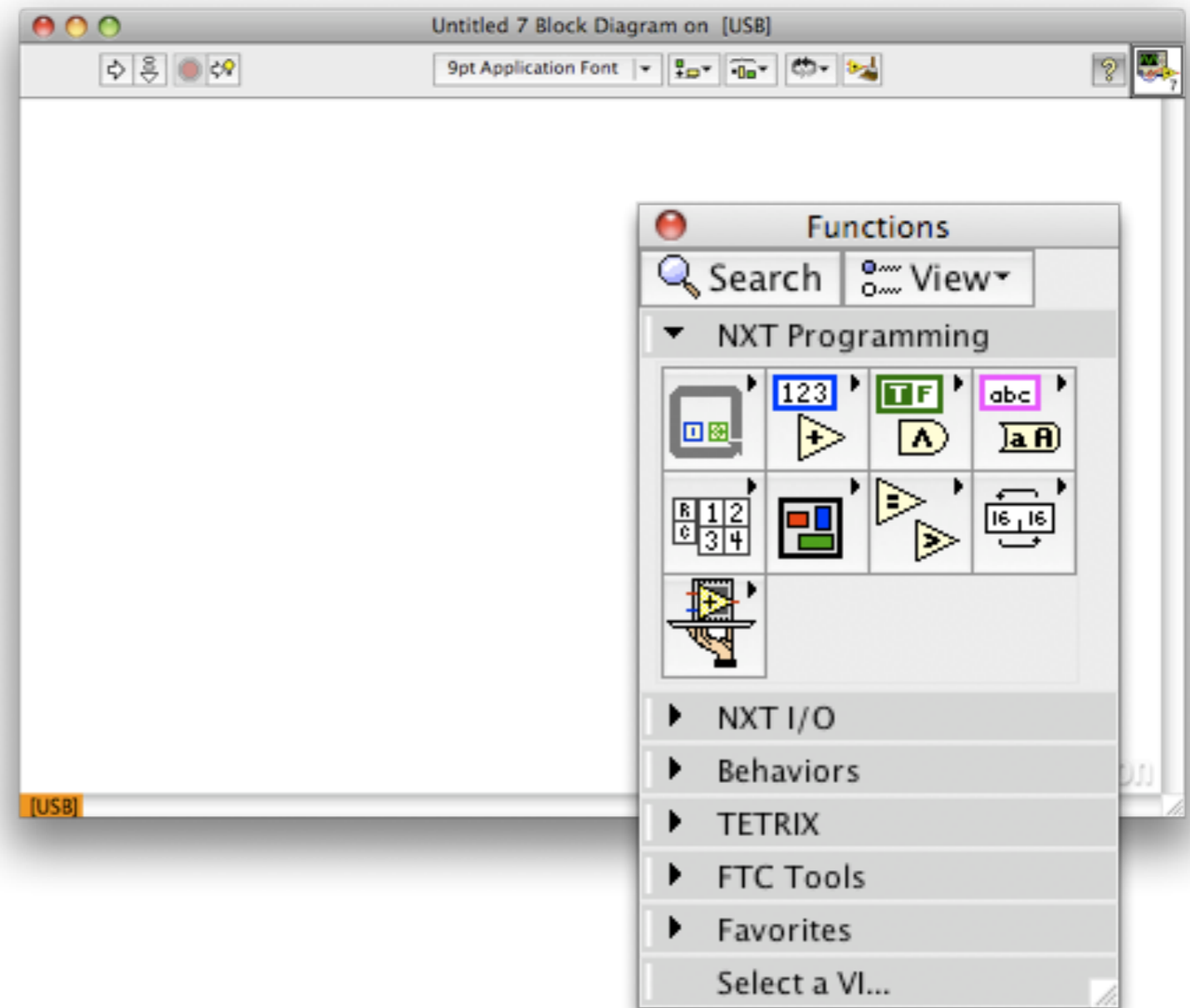


# Functions Palette



## Bring up the Functions Palette

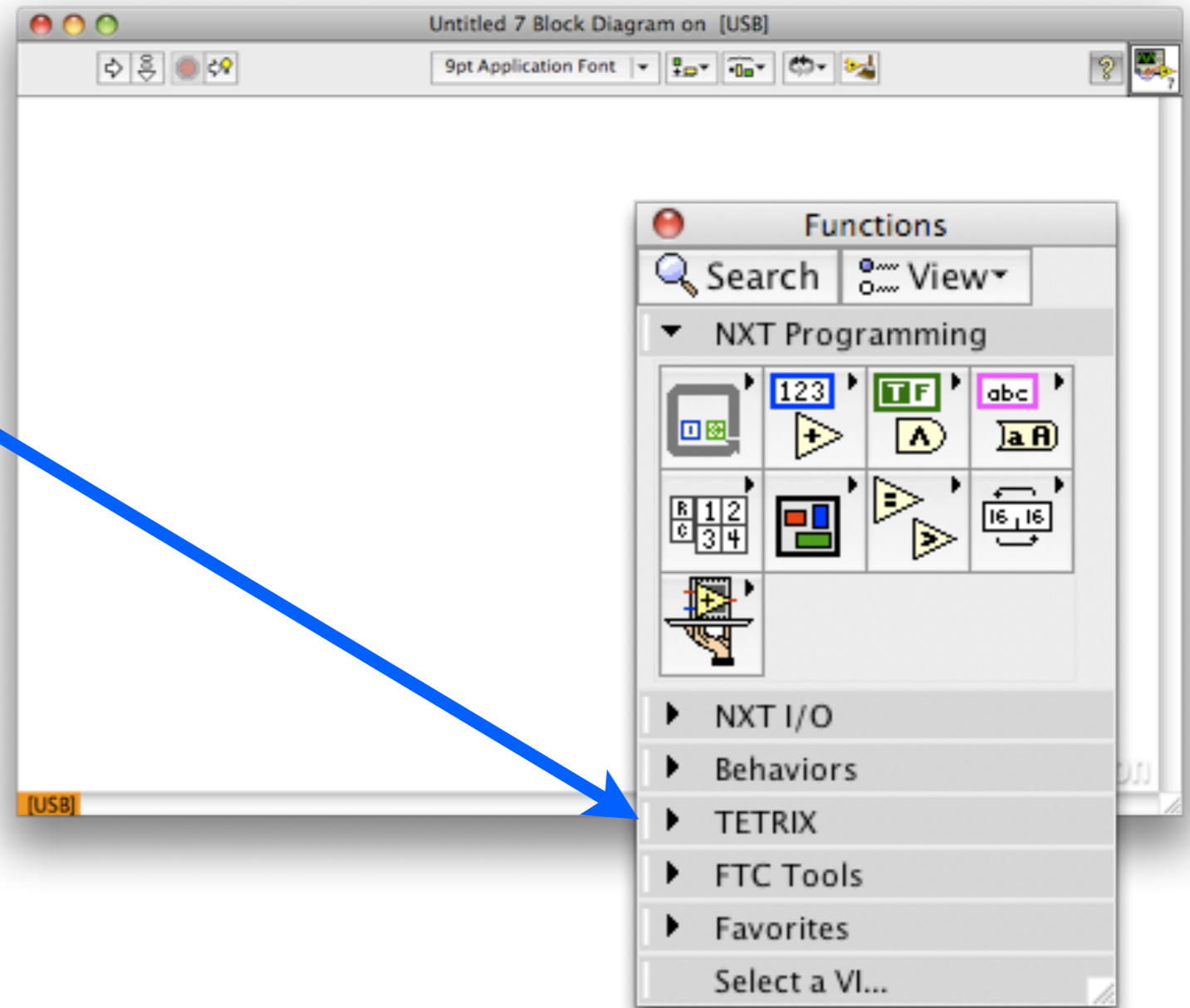
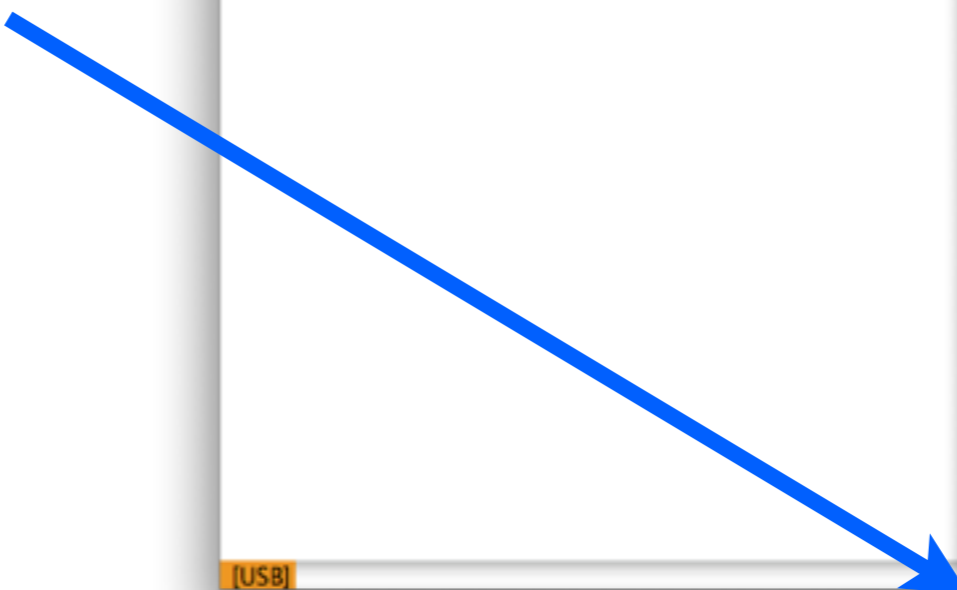
- Left Click
- View >> Functions Palette





# TETRIX Palette

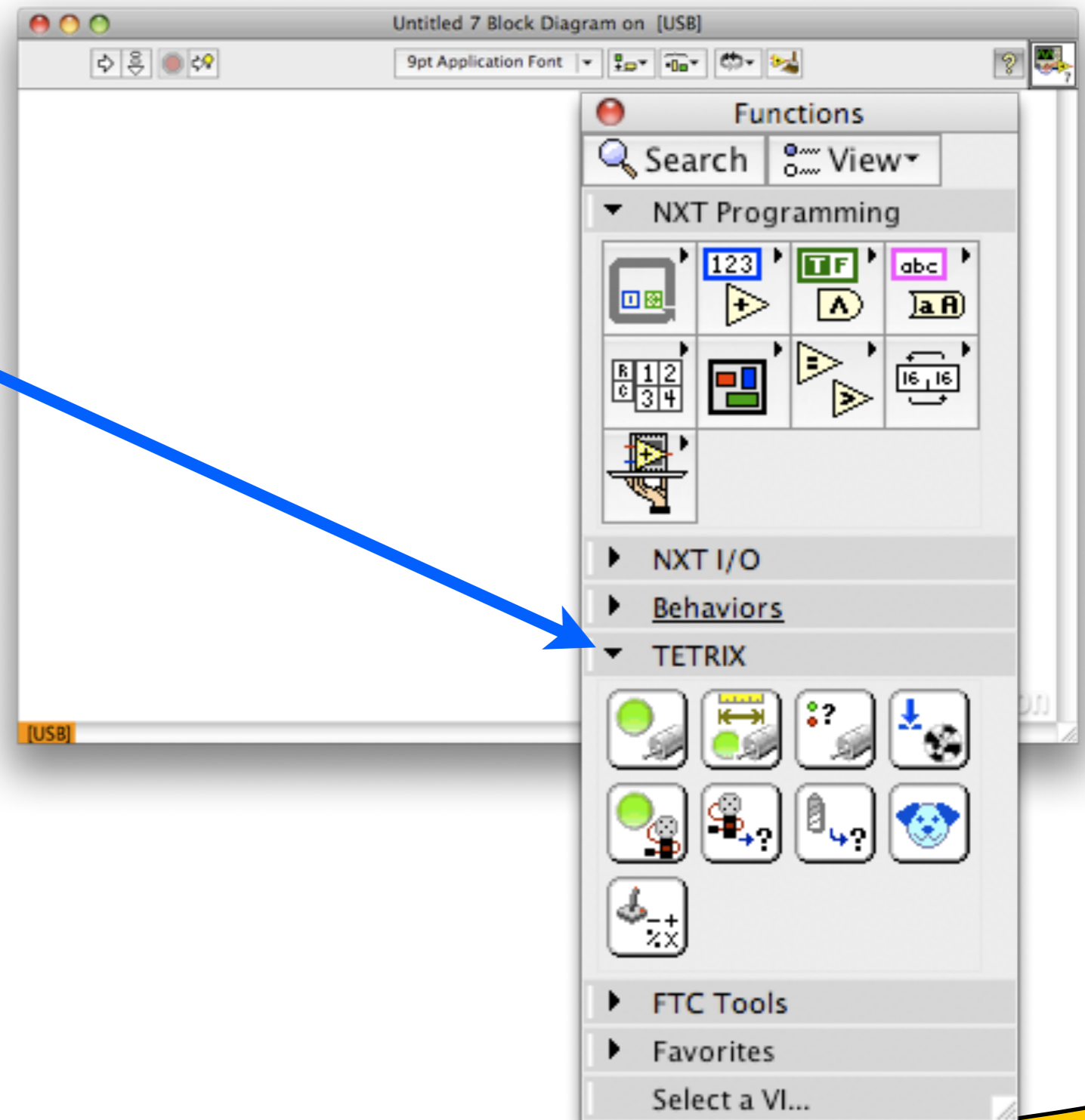
Select the  
**TETRIX Palette**





# TETRIX Palette

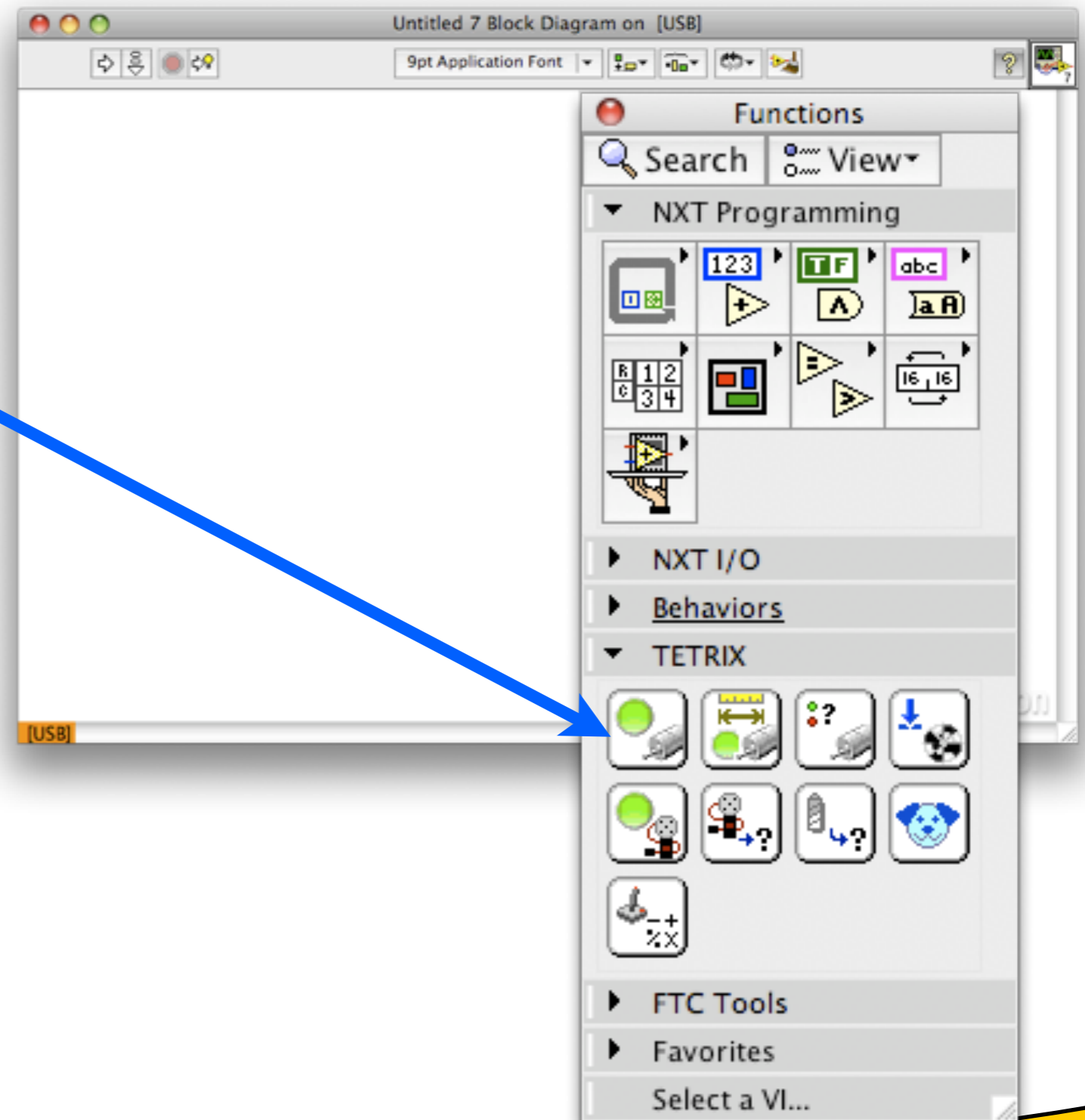
Select the  
**TETRIX Palette**





# TETRIX Motor

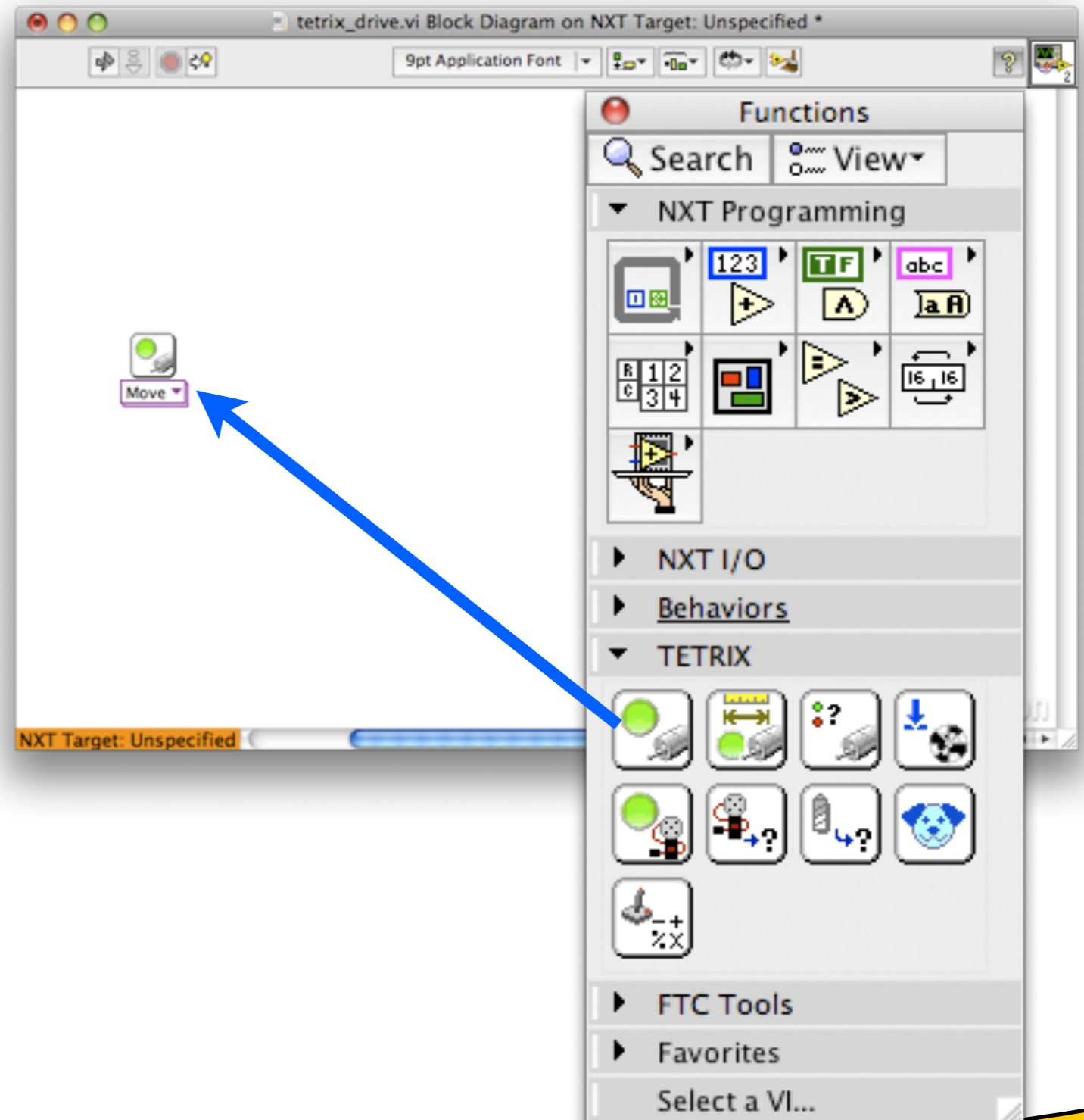
Drag on a  
**TETRIX Motor**





# TETRIX Motor

Drag on a  
**TETRIX Motor**





# Context Help

Open  
**Context Help**  
and check out  
**TETRIX Motor**

Context Help

**TETRIX Move DC Motors**  
[TETRIX Move DC Motors.vi]

NXT DC Motor Control Mode (Constant Power) Power/Speed NXT

Moves the DC motors with either constant speed or constant power. You must connect the encoders to move the DC motors with constant speed. You must manually select the polymorphic instance to use.

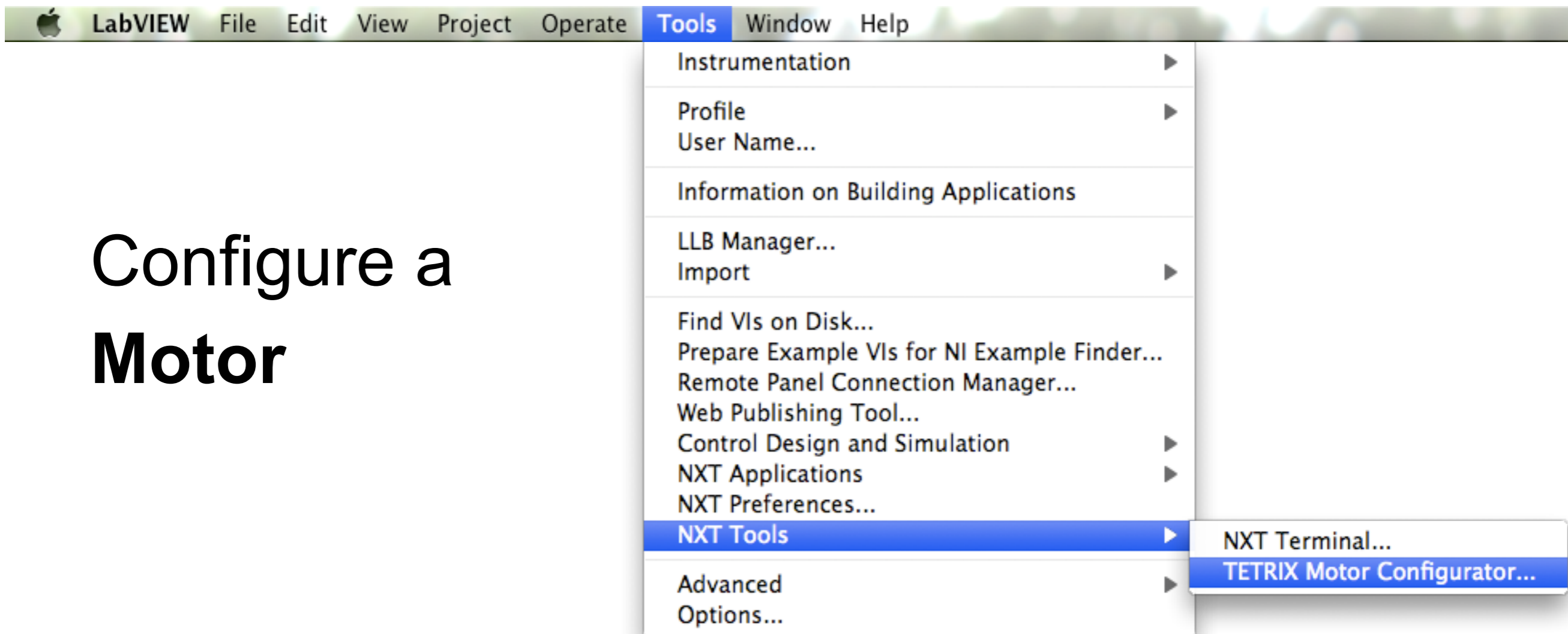
[Detailed help](#)





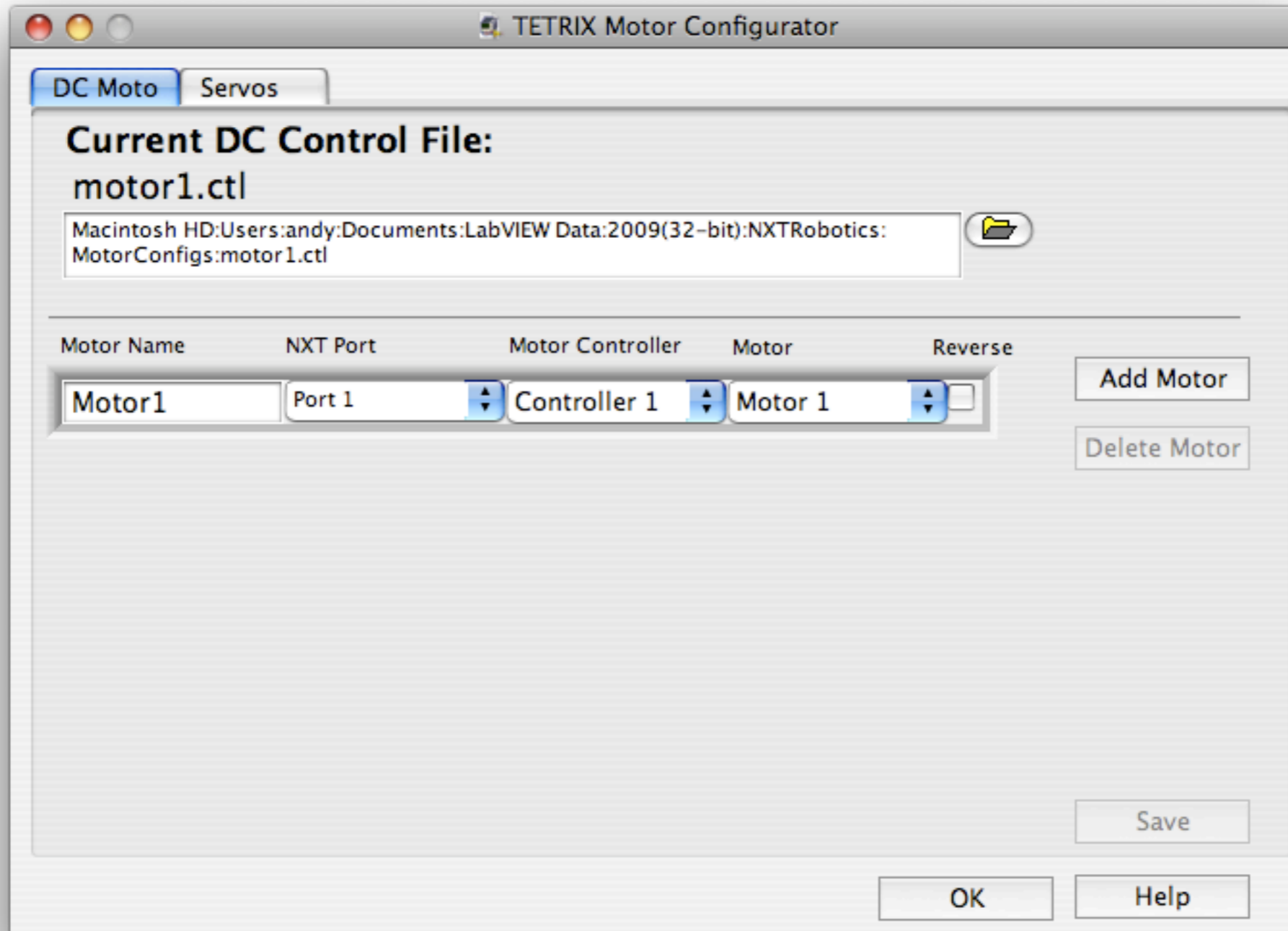
# TETRIX Motor

Configure a  
**Motor**





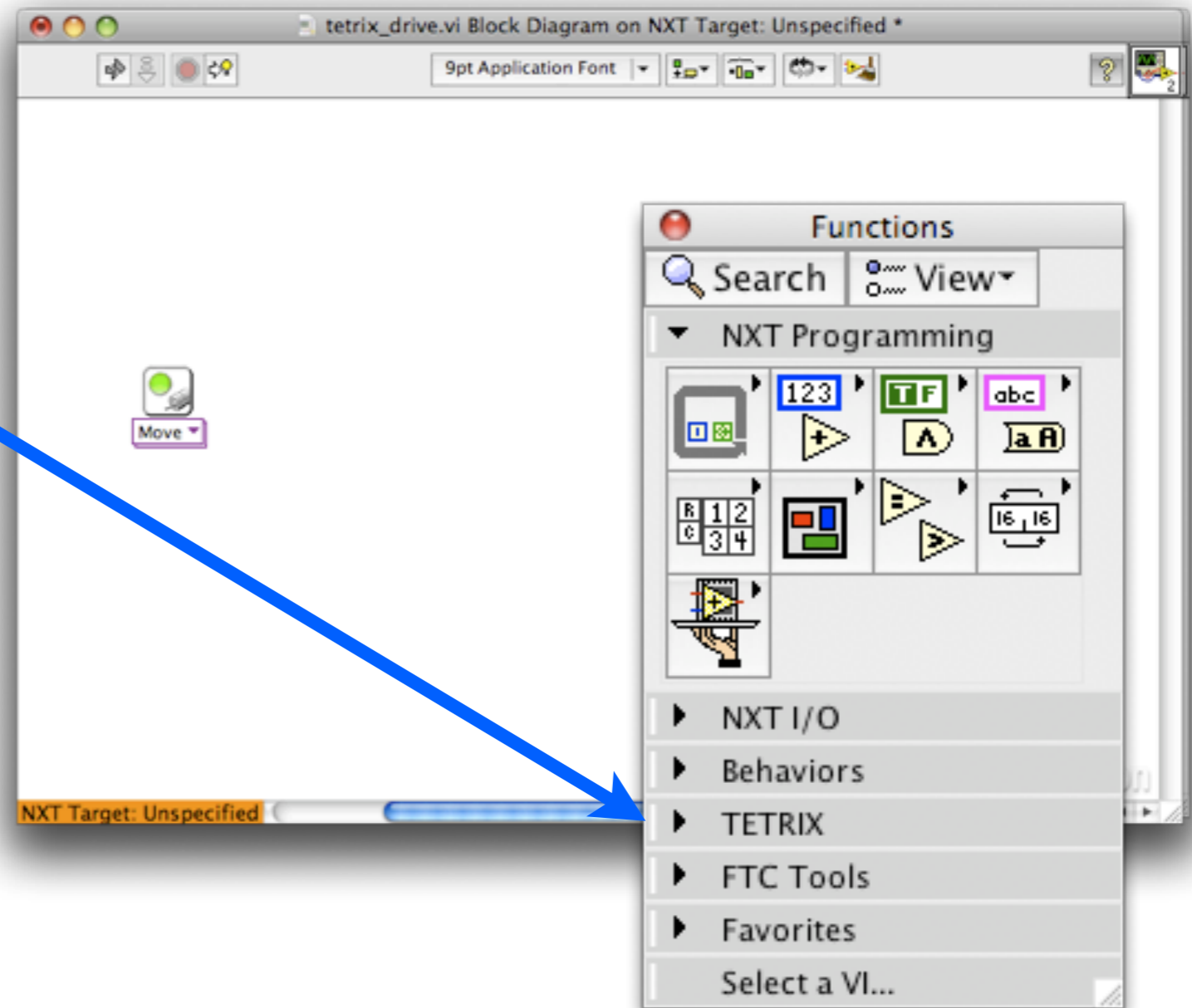
# TETRIX Motor





# TETRIX Palette

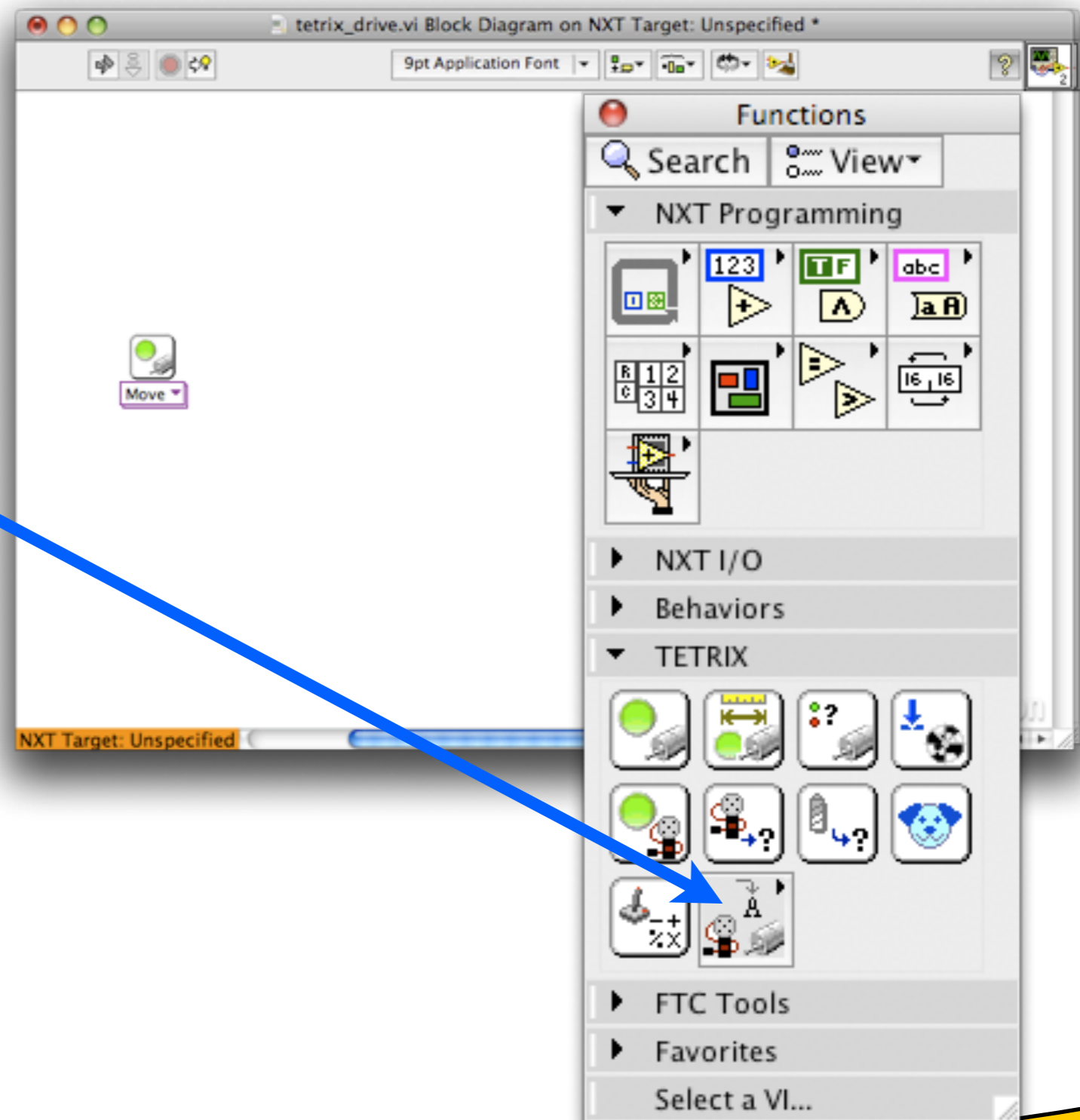
Select the  
**TETRIX Palette**





# TETRIX Motor

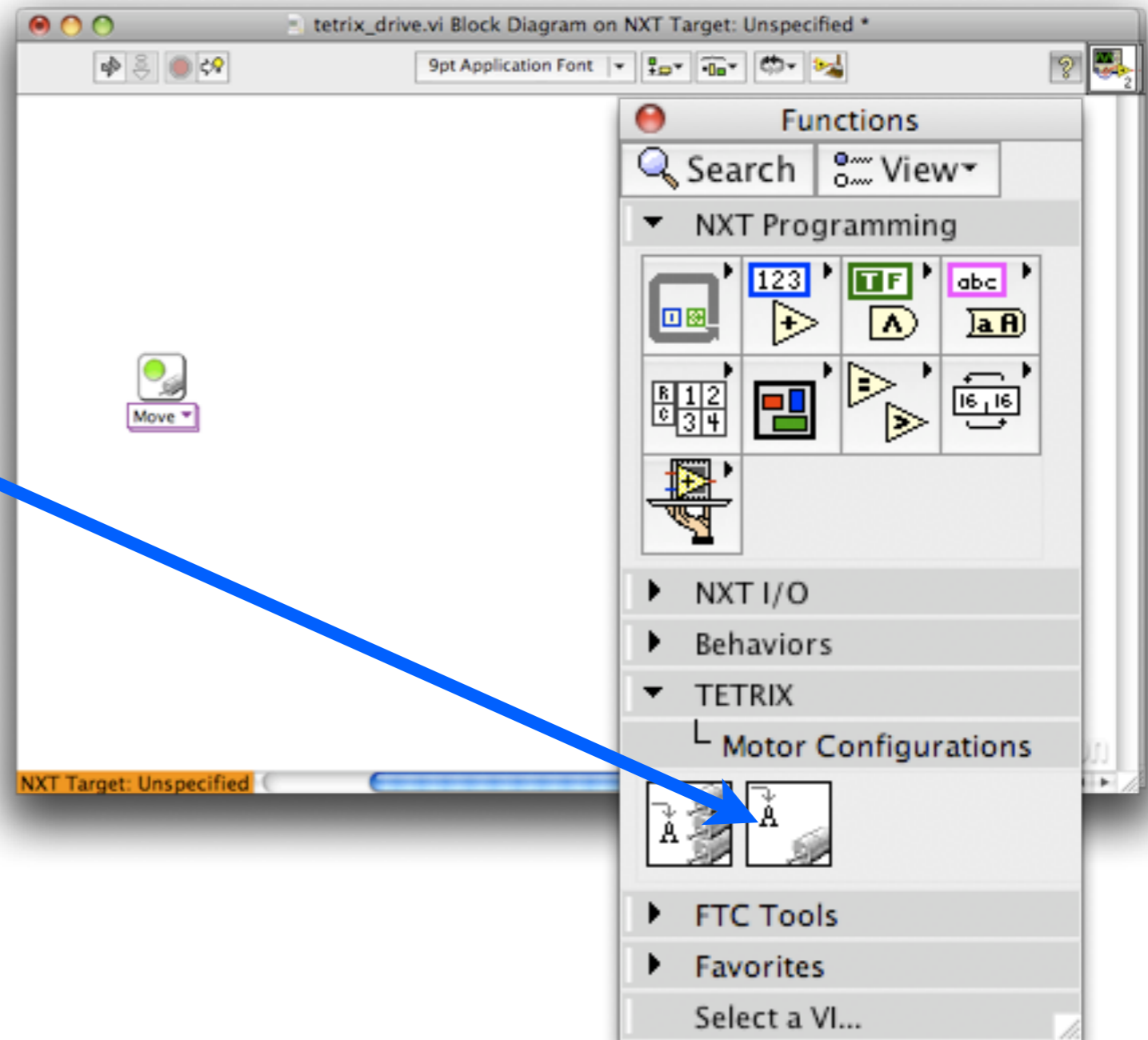
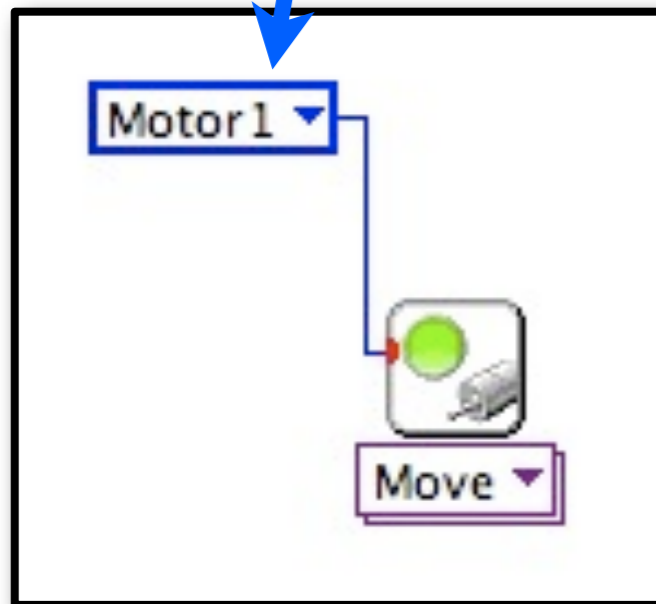
Click  
Motor  
Configuration





# TETRIX Motor

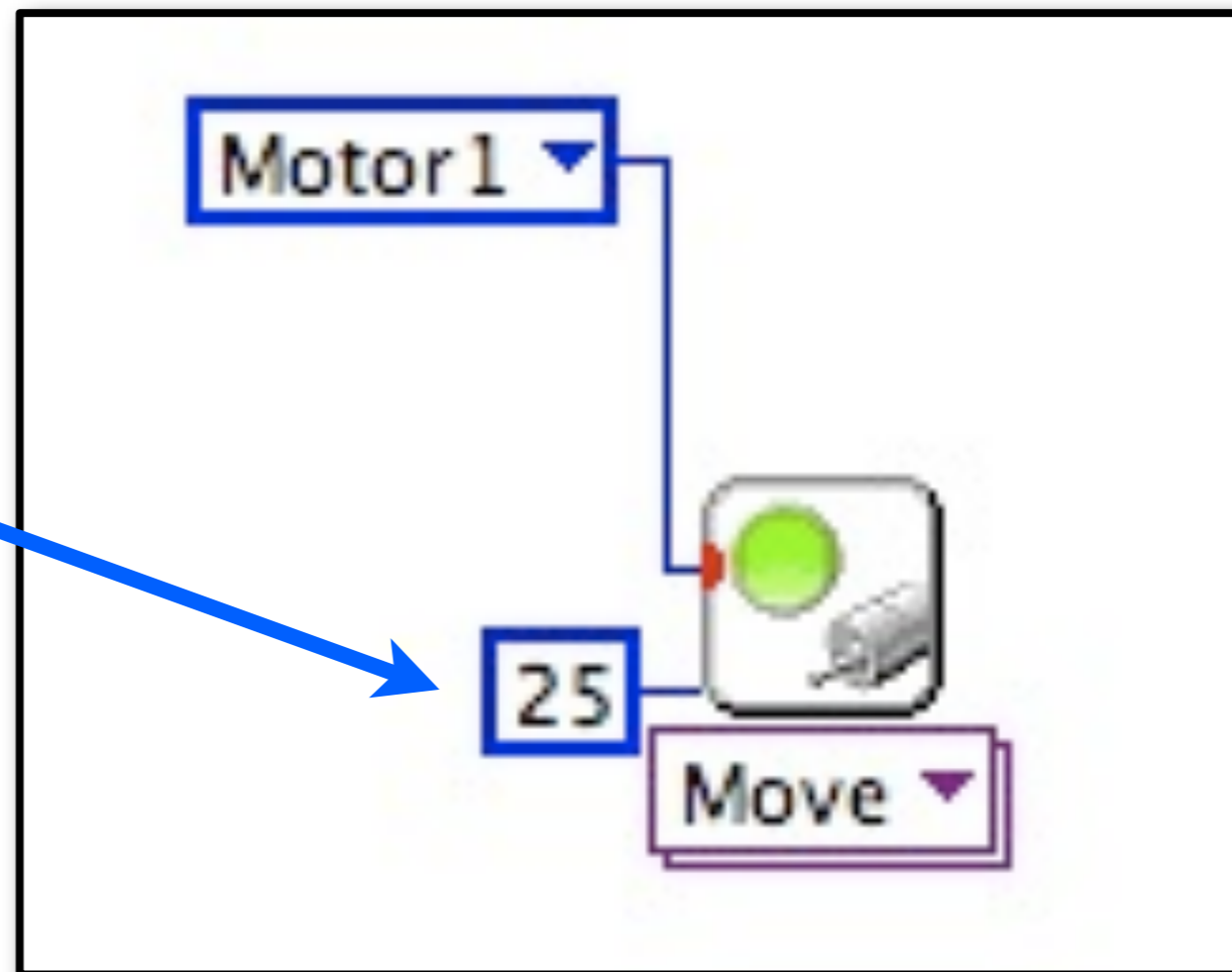
Drag on a  
**motor1.ctl**





# Set Motor Speed

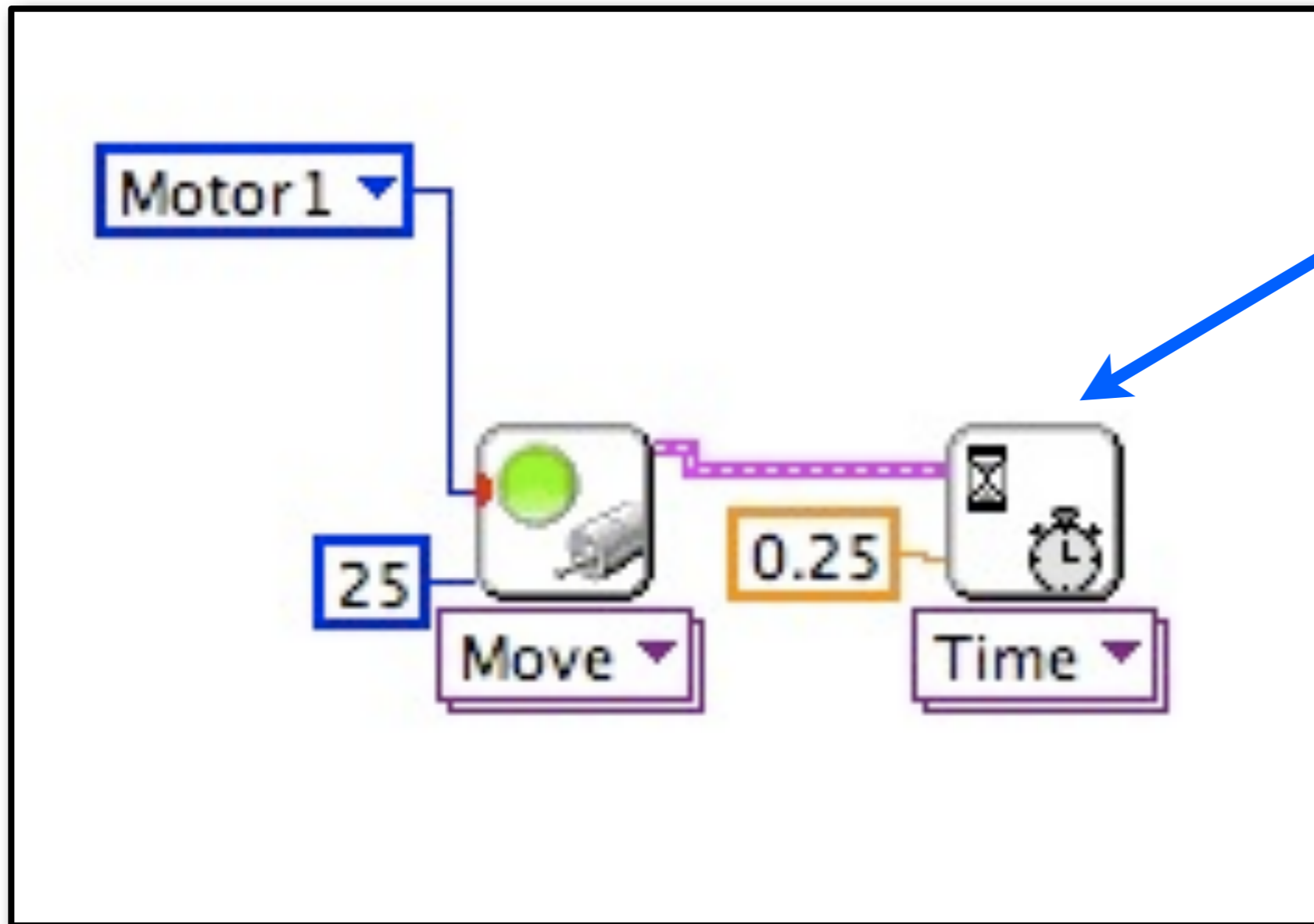
**Right Click ->  
Create Constant  
Highlight  
Type "25"**







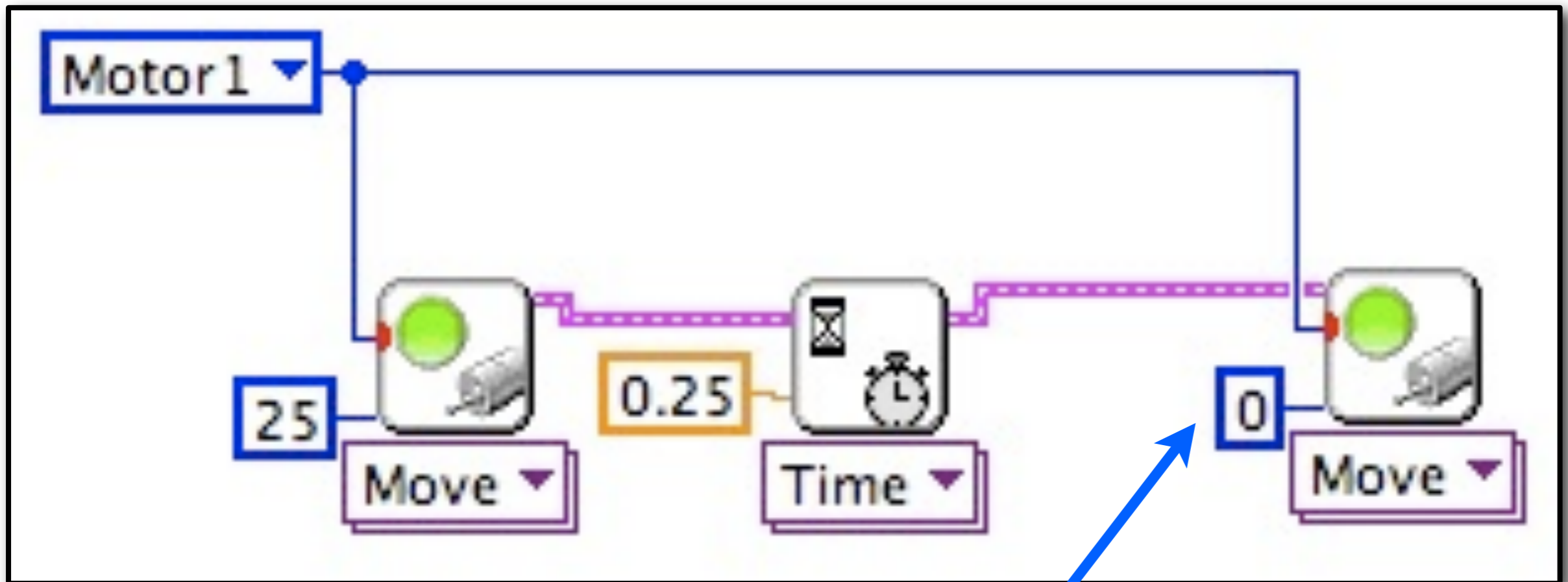
# Add Timer



**Add Timer  
Set .25 Sec**



# Add Another Motor Block



**Set Speed to 0**  
**Stopping the Motor**

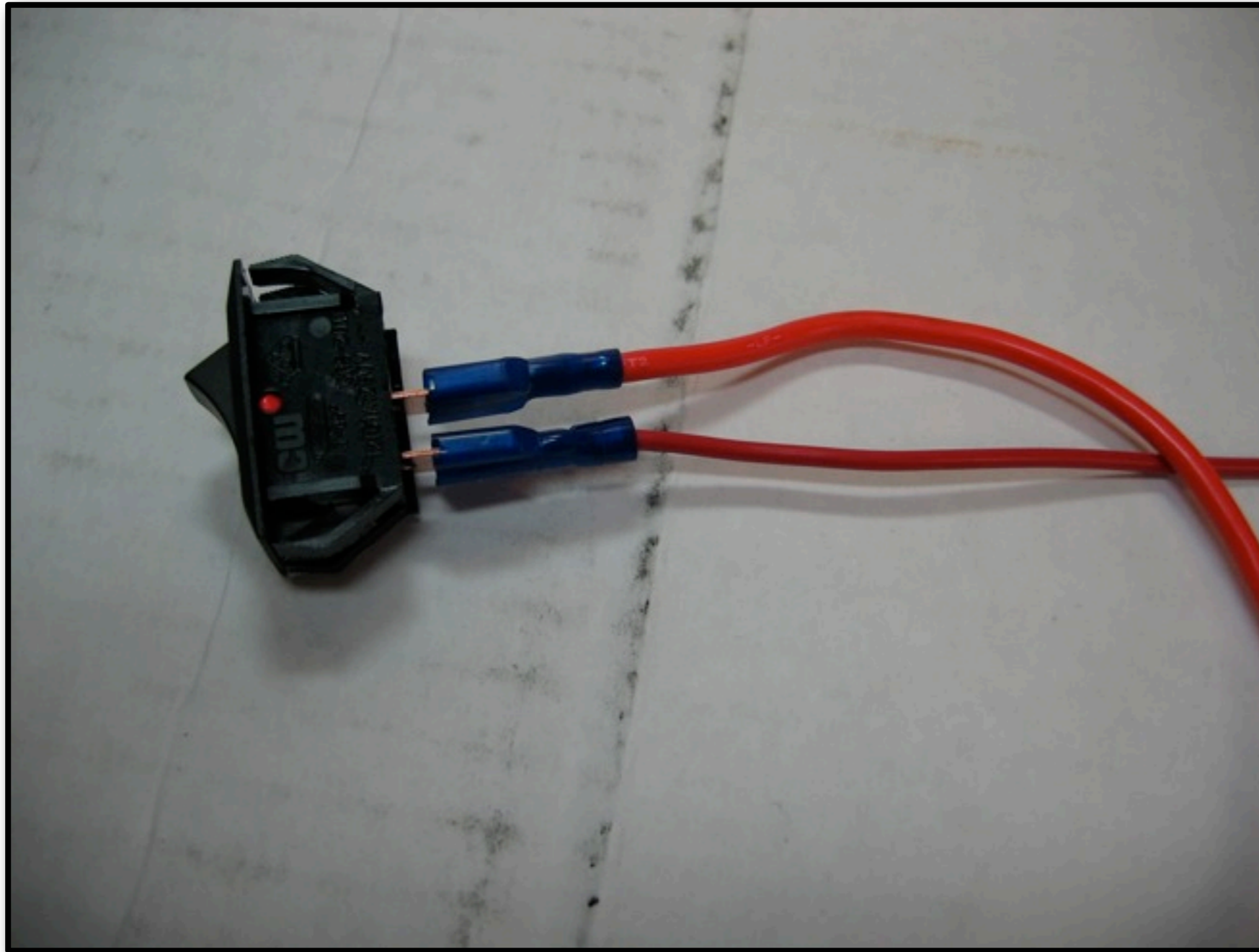


# HOOKING EVERYTHING UP

**RoboJackets**

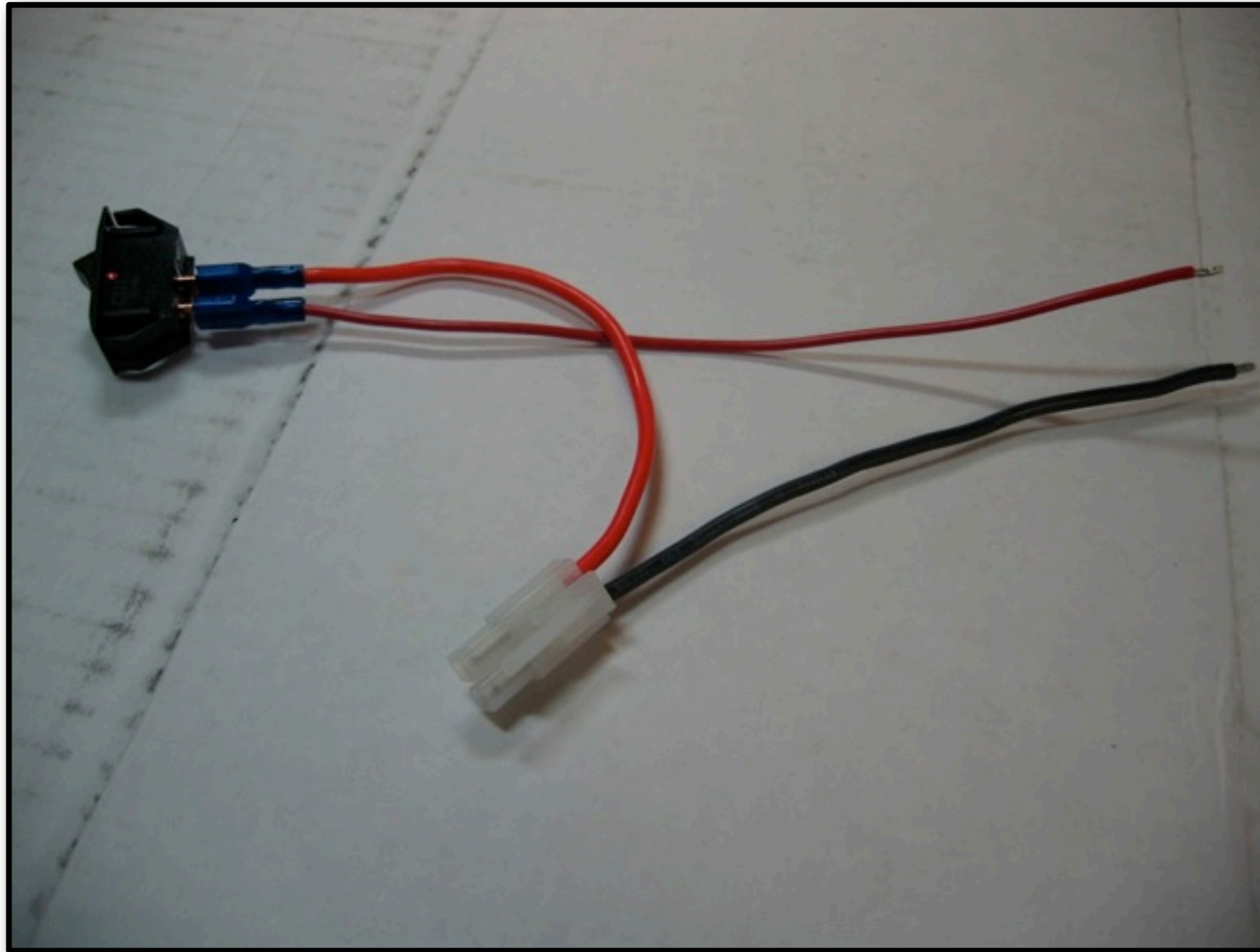


# Connect the Switch





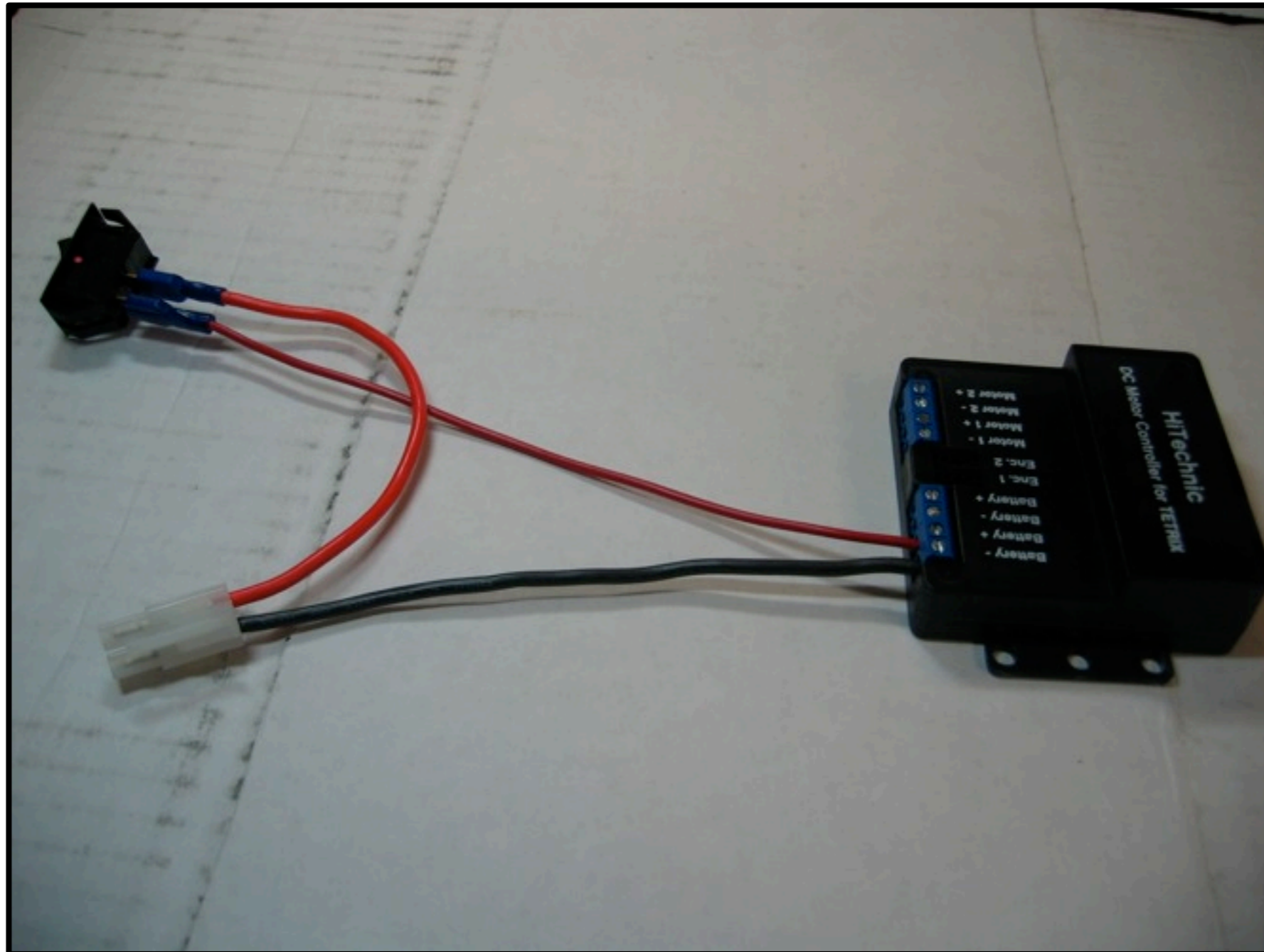
# Connect the Switch







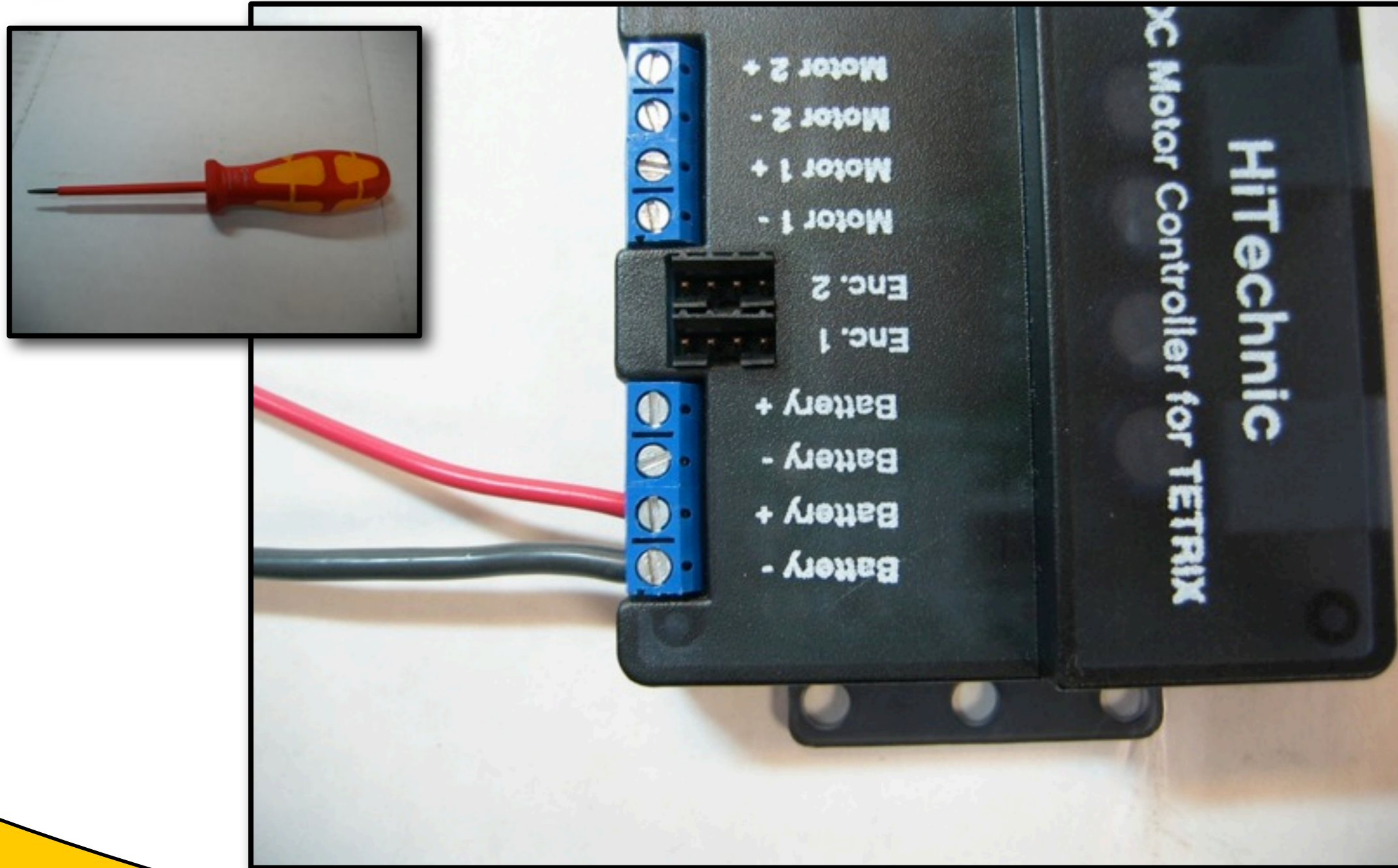
# Connect Switch to Motor Driver





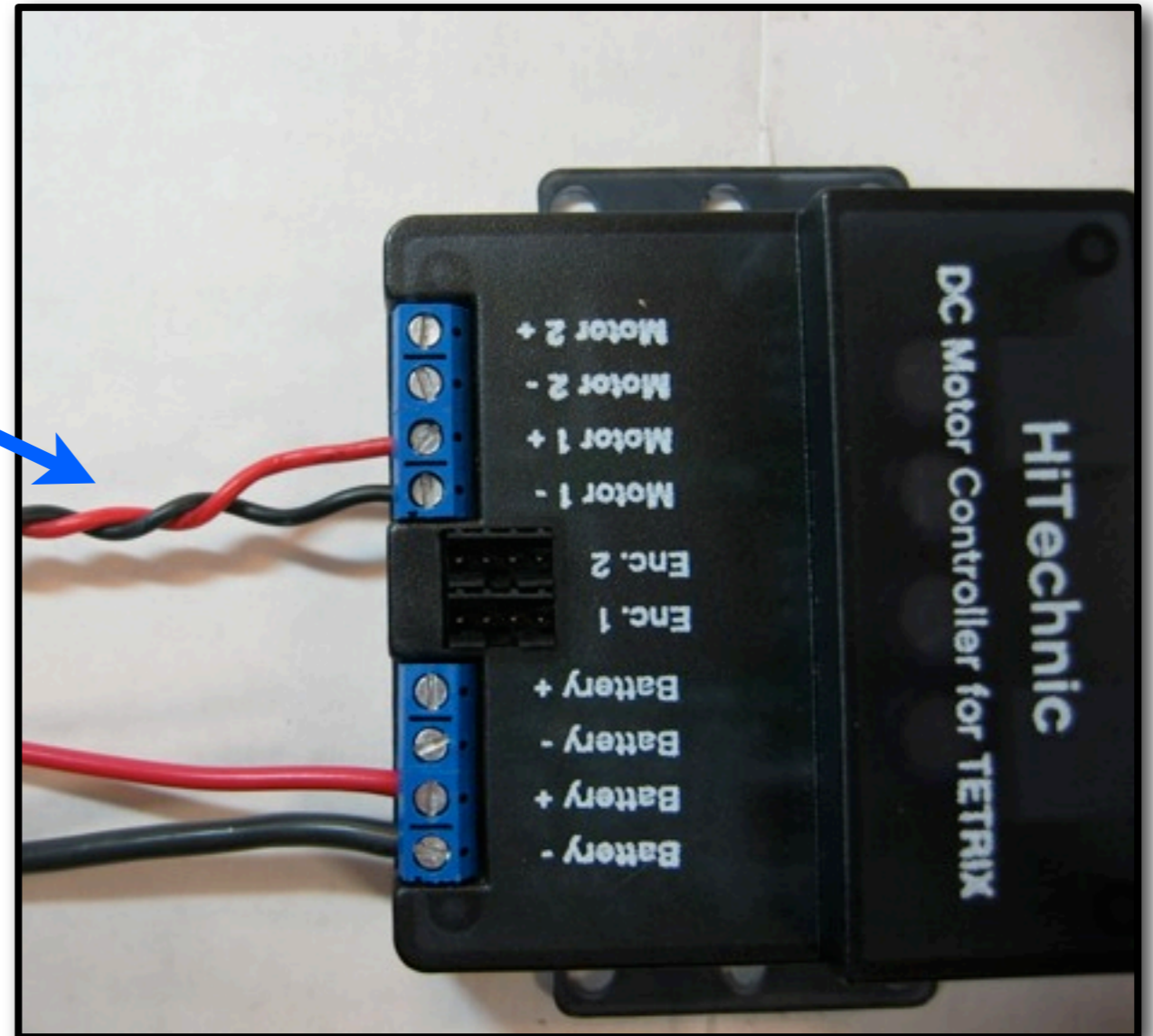
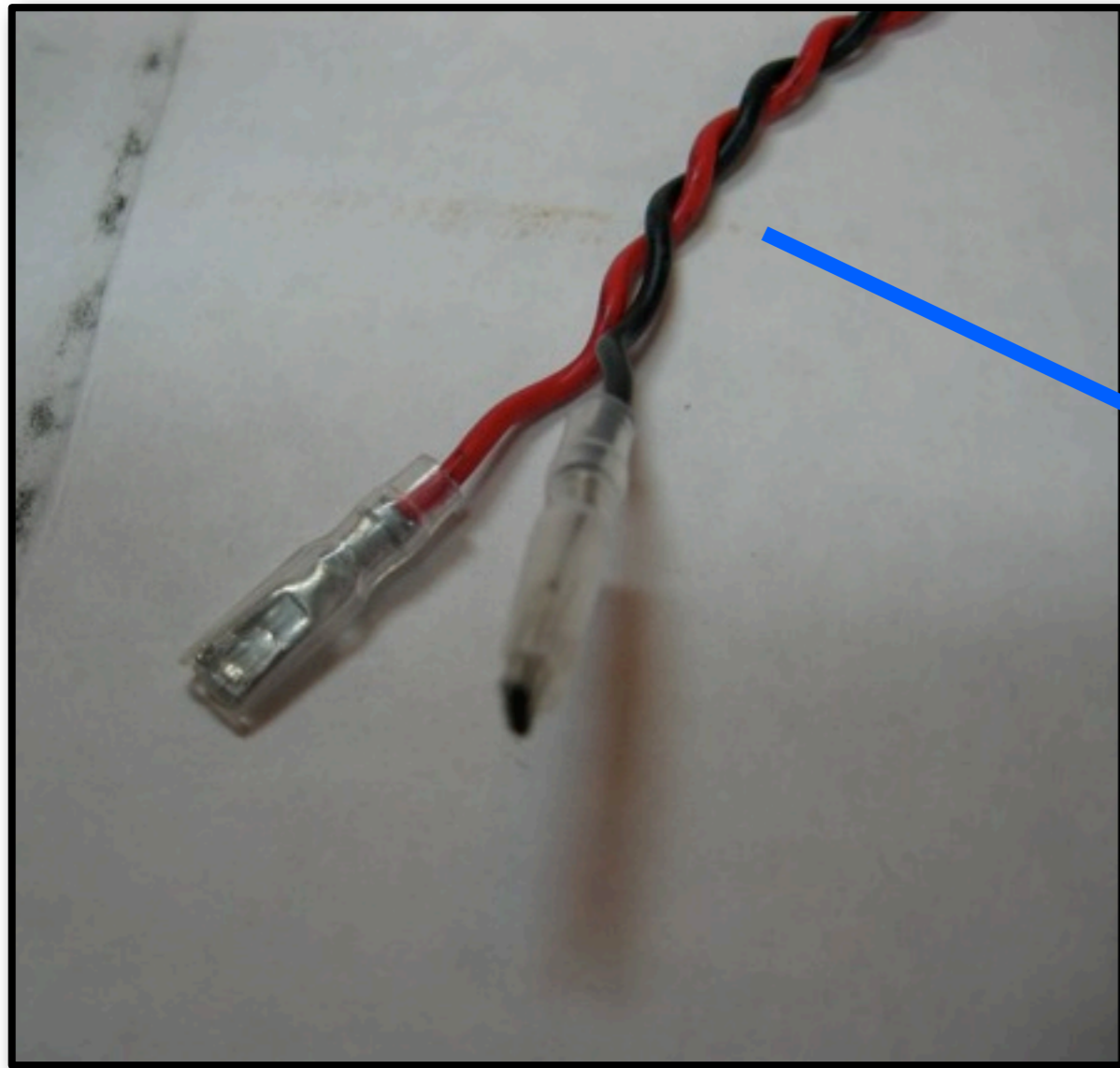


# Connect Switch to Motor Driver





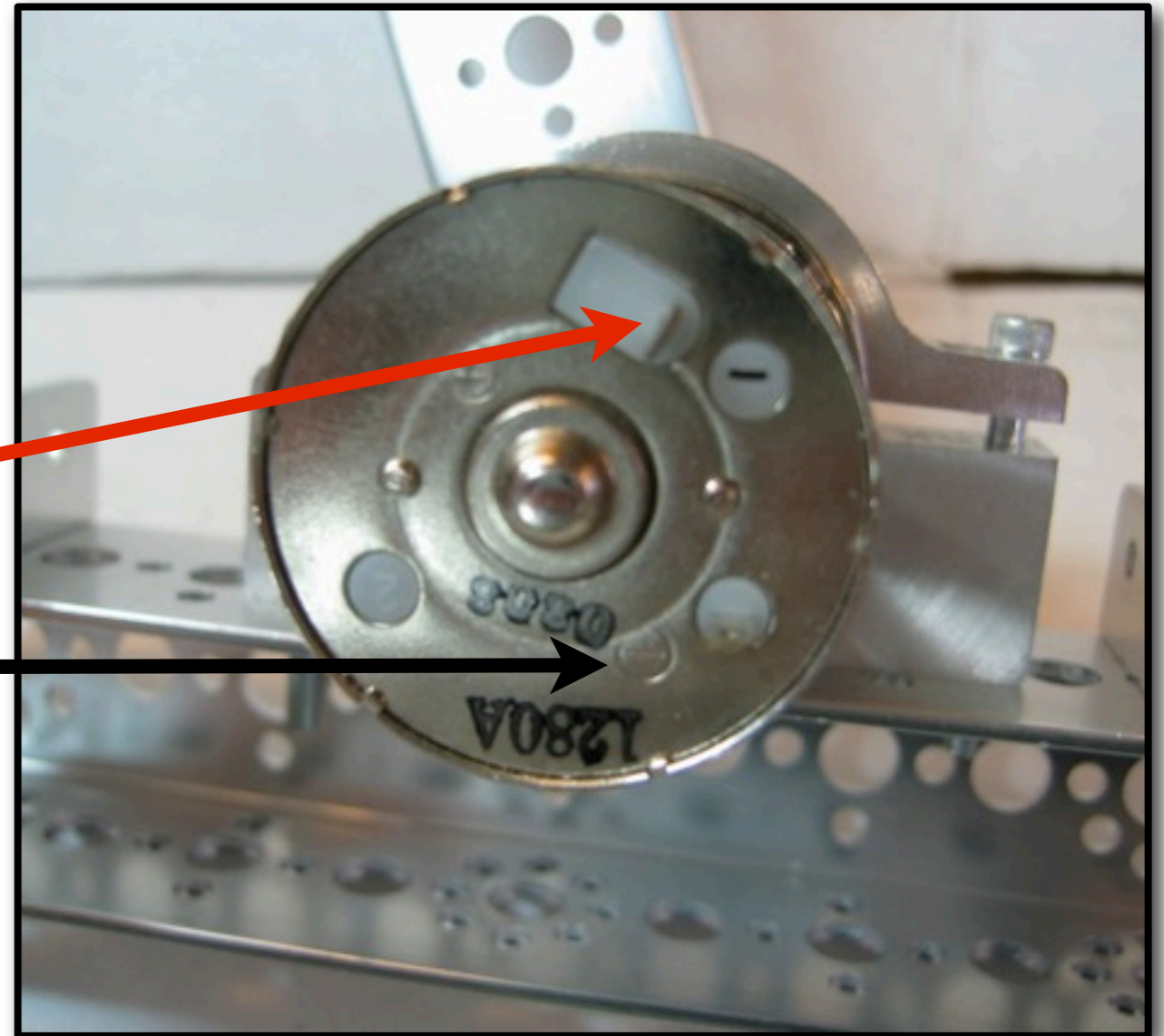
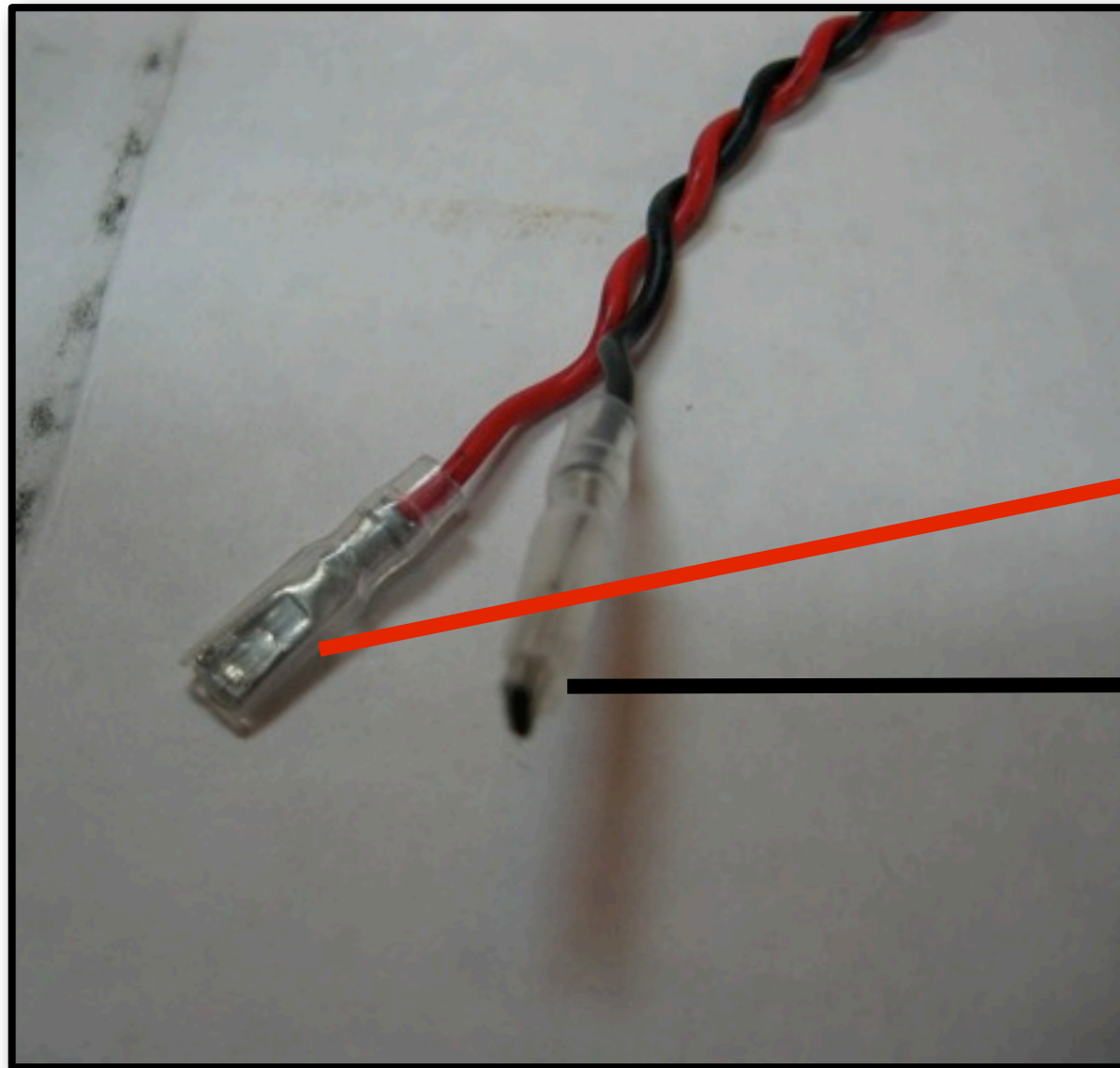
# Connect Motor Wires To Driver







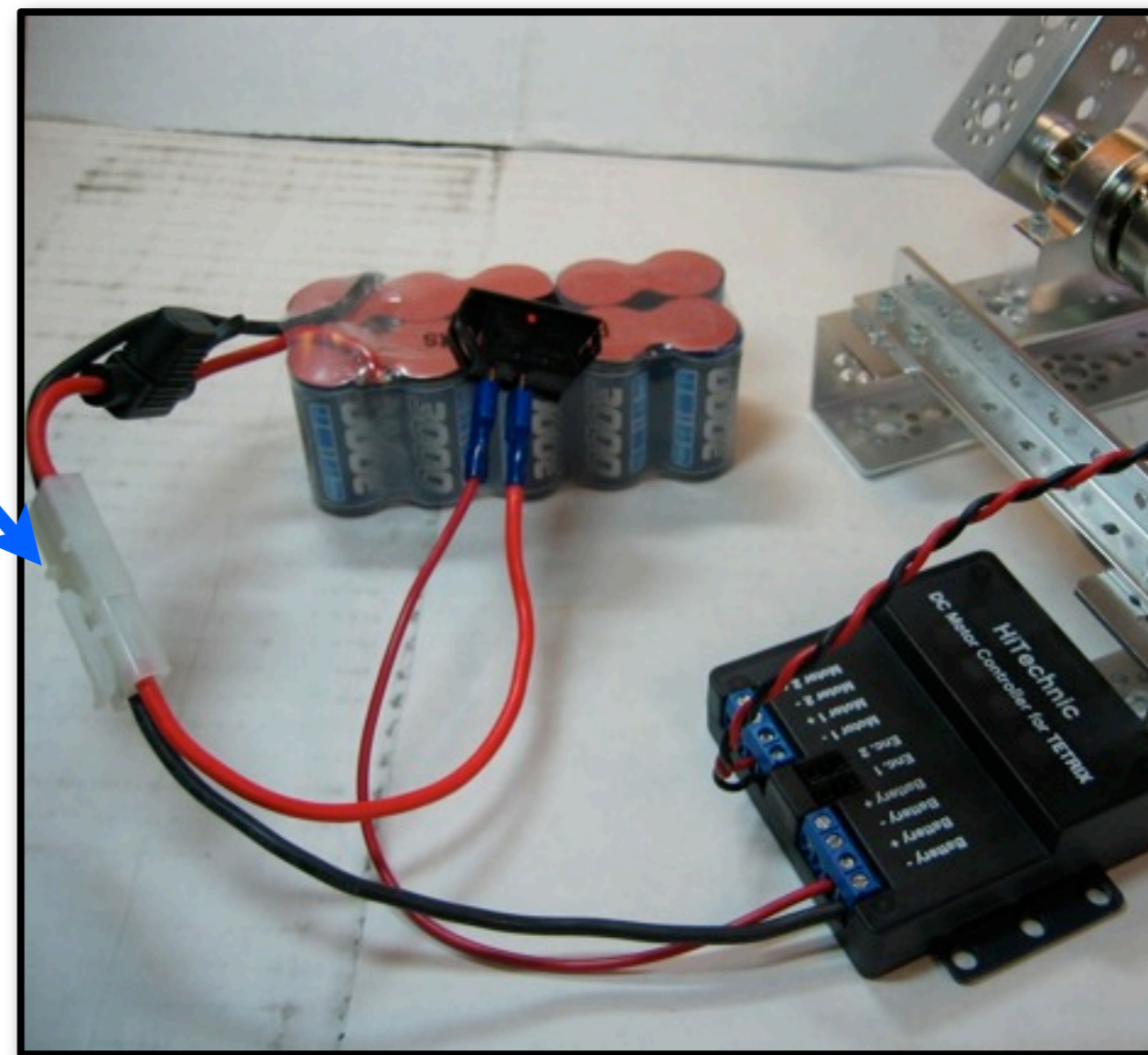
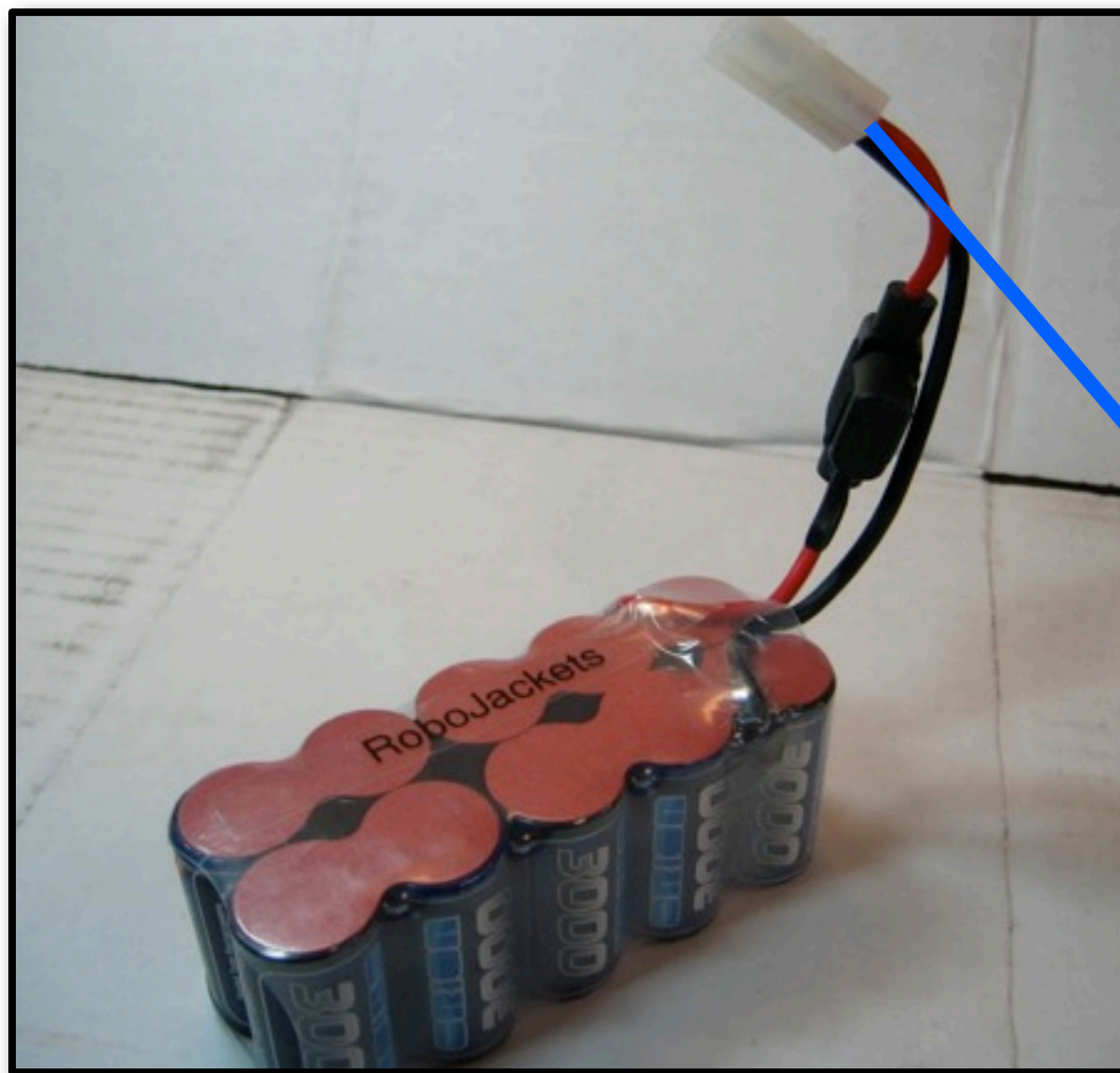
# Connect Motor Wires to Motor



**Polarity matters!**



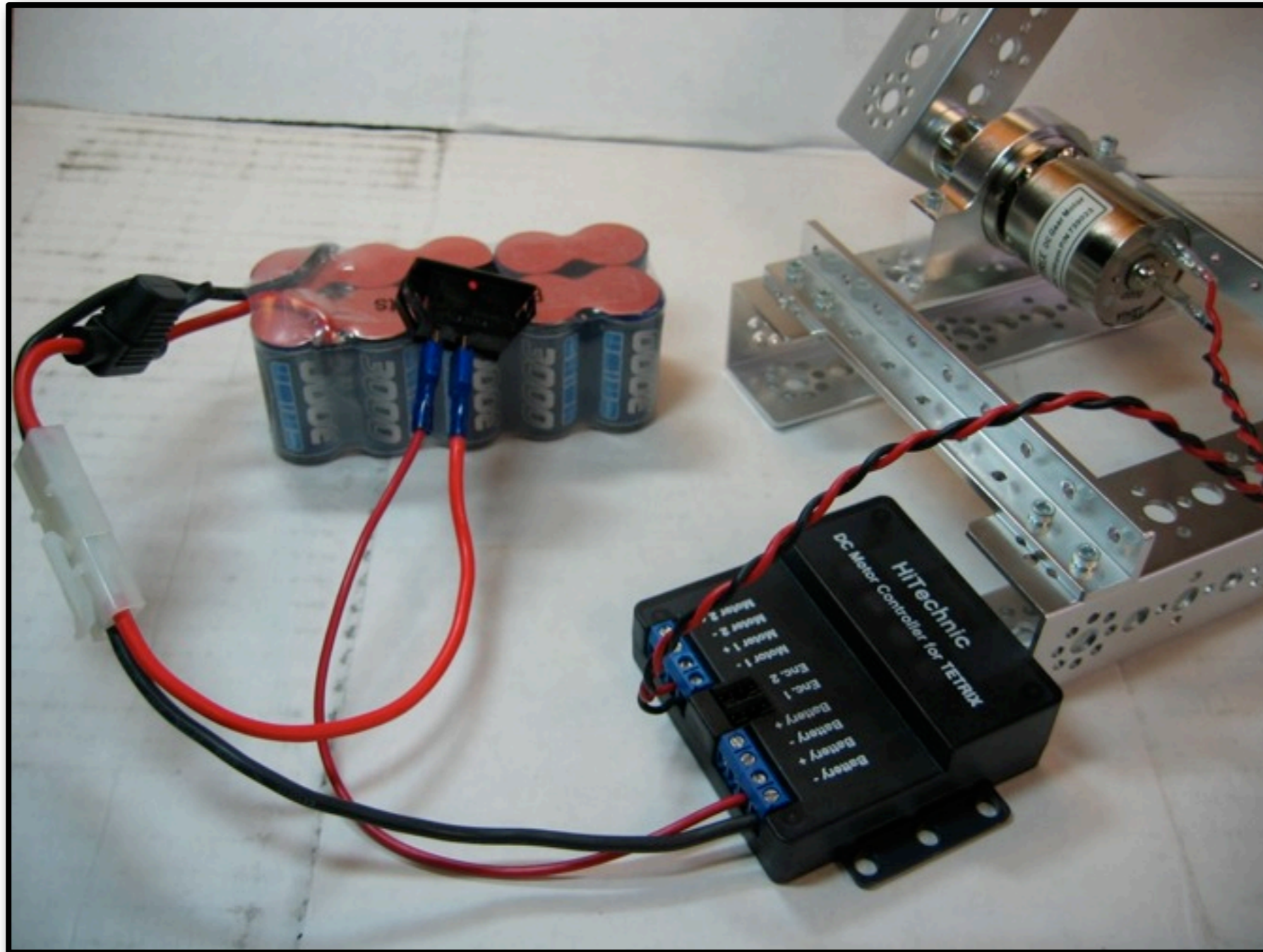
# Connect Battery







# Current Assembly







# Connect NXT

Use  
Port 1  
Any Port  
on  
Controller

