

Motor Block

This block allows for precise control of one motor's speed. You can “ramp up” to a set speed or “ramp down” to a stop. By deselecting “Wait for Completion,” your program can move on to the next block once the Motor block has started a motor.



1. The letter at the top right corner of the block shows which NXT port is set to control a motor.
2. This icon shows which direction the motor will go.
3. This icon shows the power level.
4. This icon shows whether you have set the Duration property to unlimited, degrees, rotations, or seconds.
5. You can change values dynamically by connecting data wires to this block's data hub. (See the Data Hub section below for more information.)



1. This icon shows that the Direction property is set to “stop”. This setting will stop the indicated motor.

Configuring the Motor Block



1. Select the motor you'd like to control.
2. Choose whether the motor should go forwards, go backwards, or stop.
3. You can precisely control the acceleration of the motor by selecting “Ramp Up” or “Ramp Down.” A motor set to “Ramp Up” will slowly increase its speed until it reaches specified power. A motor set to “Ramp Down” will slowly decrease its speed until it reaches zero power. A motor set to “Constant” will reach full power immediately and will stop quickly by either coasting or braking (depending on the setting).

4. This slider and the editable input box will let you set the power level [0-100%].
5. Select this checkbox if you'd like to turn on power control. Power control will attempt to compensate for any resistance or slippage that the motor encounters. It will increase power to a maximum of 100% to maintain the same rotation amount per second.
6. Using the Duration pull-down menu, set the motor to run for an unlimited interval or for a set number of rotations, degrees, or seconds.
7. With "Wait for completion" selected, the motor will finish its action completely before allowing the program to move on. If you de-select "Wait for completion," other blocks in the program can proceed while your motor completes its action. For example, a Sound block placed after the Motor block could start playing a sound file while the motor continues its action.
8. Choose whether the motor will brake or coast after finishing its action. Set the motor to brake if you want it to stop precisely at an exact position and (attempt to) hold that position. Braking does require additional battery power because the motor does extra work to maintain the position. Coast is a good choice if this block is followed by another block controlling the same motor.
9. The feedback boxes will count how many degrees or full rotations your motor turns. Press the reset button to return the values to zero. (To receive feedback, make sure that the motor is connected to the chosen port and that communication has been established with the NXT.)



Note: The feedback value will be displayed in black-colored text if the motor is running in the forward (positive) direction and in red-colored text if it is running backwards.

Motor versus Robot Direction

When you set a Move or Motor blocks' direction, you are specifying the direction the motor will spin. This may be different than the direction your robot actually moves. Depending on how you build your robotic invention, setting the motors to go forwards may cause your creation to move backwards. The image below shows a motor spinning in the default, forwards direction.

