

```
'-----Title-----
' File.....hpwm2.pbp
' Started....1/17/08
' Microcontroller used:  Microchip Technology 16F88
'                          microchip.com
' PicBasic Pro Code:  micro-Engineering Labs, Inc.
'                          melabs.com

'-----Program Description-----

' Uses HPWM command to change the motor speeds
' for a Jameco #155855 gearhead motor.

'-----Related Lesson-----

' hpwm1.pbp is used in the lesson MOTOR CONTROL WITH PWM at:
' http://www.cornerstonerobotics.
org/curriculum/lessons_year2/erii21_motor_control_pwm.pdf

'-----Comments-----

' The default HPWM Channel 1 (CCP1) for the PIC16F88 is RB0.
' The CCP module's input/output pin (CCP1) can be
' configured as RB0 or RB3. To configure the CCP1 as RB3,
' compile the same program but before you physically program
' the 16F88 from meProg, click on the C (Configuration), then
' change the CCP Multiplexed With from RB0 to RB3.

'-----Variables-----

    p0  VAR BYTE          ' Byte to store Dutycycle variable

'-----Initialization-----

    TRISB = %00000000    ' Sets all pins of PORTB as outputs

    ANSEL = 0            ' Configure all pins to digital
                        ' operation since not using ADC
                        ' (Analog to Digital Converter)

    OSCCON = $60         ' Sets the internal oscillator in
                        ' the 16F88 to 4 MHz

'-----Main Code-----

start:

    p0 = 90              ' Sets Dutycycle variable to 90
    GOSUB motorhpwm     ' Jumps to subroutine motorhpwm
    p0 = 255            ' Sets Dutycycle variable to 255
    GOSUB motorhpwm     ' Jumps to subroutine motorhpwm
    p0 = 0              ' Sets Dutycycle variable to 0
    GOSUB motorhpwm     ' Jumps to subroutine motorhpwm
    GOTO start          ' Jump to loop label and start all over
```

END

```
motorhpwm:           ' Subroutine motorhpwm
                      '
                      ' Format: HPWM Channel,Dutycycle,Frequency
                      ' Motor is driver by Channel 1, (RB0 by default)
                      ' on the PIC16F88. The Dutycycle is set at
                      ' the value of p0.
                      ' The frequency is set for 245 Hz.
                      '
                      ' Pauses 2000 mS or 2 sec.
                      '
                      ' Returns to next program statement after
                      ' the GOSUB command.
                      '
HPWM 1,p0,245
PAUSE 2000
RETURN
END
```