# Mini Hexapodinno 18-DOF Robot

# **Instruction Manual**

Version 1.12



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#### Errata

We hope the users may regard this document as a lively and practical instruction manual. We have put tremendous efforts in making this instruction manual complete and correct; however, there may be unavoidable missing parts or errors. With a view to providing the user updated and complete information in the instruction manual, we keep improving and supplement the contents of this instruction manual. If you find any error in this manual, please contact us via the e-mail service@innovati.com.tw. Any related update information will be disclosed on our website. Please visit our website http://www.innovati.com.tw for more updated information.

## Precautions

- This kit comprises Servo Commander 32 and the attached CD-ROM contains instructions for use and functions. Please refer to these for optimal effects.
- The input voltage to the Servo Commander 32 must correspond to the voltage rating of the servo.
   Servos provided in this kit are rated 4.8-6V; over or under voltage may cause unpredictable results, even burnout of the motor. Make absolutely sure of the correct voltage before connecting the power supply.
- The kit provides a total of 19 servos. When operated simultaneously, they consume a large current; make sure the power supply or battery connecting to Servo Commander 32 is capable of providing 10A of current, so as to properly operate the kit. Insufficient current may cause unexpected results and damage of the kit.
- When using a battery power supply to the module, the voltage may lower after some while of operation and cause abnormal actions of the kit. In such case, remove and fully charge the battery before using again. If prolonged testing and operation is required, we suggest you use a power supply unit to ensure uniform performance.

Prior to assembling the kit, install InnoBASIC Workshop as per the content of the CD; also make sure that the PC communicates with Servo Commander 32 via a USB Line connection, so that the entire assembly can be accomplished.

# Part List

Item	Illustration	Qty.	Specifications and instructions
	Assembly Kit Pa	urts	
Main Board for module installation		1	PC body Main Board for accommodating parts of the mini hexapod robot. Six protrusions are designed for connecting six leg kits. The center part is for placing different modules or power supply according to different needs.
Leg Joint Plate	aga aga	6	PC plate for connecting module installation board and supporting leg plate. Fix the servos at two ends by fastening screws.
Supporting Leg Plate		6	The supporting leg is made of PC material and connects servo terminal with screws.
Sonar Support (small)		1	PC plate for module installation and connecting the sonar module.
Sonar Back Plate	0	1	PC plate for connecting the sonar module and the servo.
Servo		18	Servo provides for 180° rotation movements capable of simulating articulation behaviors; connections with signal, power and ground are required for the operation. Pay attention to wire polarity. Avoid having the servo sustained to a same movement for a long period of time, to prevent wearing the motor. Dimensions (LxWxH): 22.8x12.0x25.4 (mm) Weight: 13.6g Speed: 0.09 (sec/60°) Torque: 1.6 (kg/mm)
Screw A		12	ISOT 3 x 8 mm
Screw B	Same Sa	72	1.7 x 5 mm

Screw C	<b>S</b>	4	ISOP 3 x 10 mm
Screw D		2	ISOP 3 × 6 mm
Plastic Post A		2	18mm
Plastic Post B		2	6mm
Nut	•	22	3 x5 mm
	Module Kits		•
Servo Commander	32	1	Servo Commander 32 combines the features and functions of both BC1 and Servo Runner A. It can store programs and control the movements of servos. I/O Ports and cmdBUS are also provided.
SonarA	With Anomalisan by Son ar a Son a	1	SonarA module can measure the distance of 2cm-5m by emitting and receiving the sound waves. It can communicate with Servo Commander32 through cmdBUS.
Power Line with Switch	AND NOT	1	Used for connecting the battery and the module boards for switching the power on/off.
Velcro Cable Straj		1	It is attached on the module installation board for fixing the power supply (battery).
Double-sided Tap	C SW VHB" SW SW VHB" SW SW VHB" SW	1	Used for attaching and fixing servos.
USB Line		1	Links Servo Commander 32 with PC, allowing downloading of PC program to Servo Commander 32 or performing communication in Debug Mode.

Cable Strap		30	Used for fixing wires, so that they do not tangle or affect motions unexpectedly during the operation of the servo.
Charger	紅燈:充電中 撥燈:充電完畢轉優充 此時電量約085左右 積用優充可充至9点台以上 適用ち-10額組2線電池 僅供充電 顏小心使用	1	Red : Charging Green : Slow charge after normal charge. The battery contains more than 85% of power at this time. Fit for 5-10 packaged Ni-MH battery.
Power Adapter	<complex-block></complex-block>	1	Provide power for development and test. Do not use this for charge.

# 1. Tools

- Phillips Screwdriver (2mm and 3 mm)
- Long Nose Pliers
- Screw Glue (selectively used at the joint between nut and Aluminum Plate, to prevent the nut from loosening.)

# 2. Assembly Procedures

that a jumper is

use the same

power source

externally.

labeled



## Step 2: Adjust the servo to the central point

Connect the servos, Servo Commander 32 and power lines in the sequences as illustrated below.

Power supply input terminals. Please pay attention to the polarity of the power supply. It is necessary to connect the "+" terminal to the positive electrode of the power supply and connect the "-" terminal to the GND electrode.



Х While connecting the power supply, please notice that the voltage of this kit should be 6V (please refer to Notices). It is recommended to use a voltage regulator to ensure that the voltage is within the safe range.

- i. Connect the PC and Servo Commander 32 with a USB line.
- ii. Connect the power line of the servo to the power supply. (Please make sure that the voltage and current from the power supply are within the range required by the servo. After the power cord is connected, the servo may make a transient motion due to receiving a switch surge; this is normal.)



#### iii. Start the innoBASIC Workshop

iv. Click the "Tool" item in the menu bar on the top.



v. Click the "Motion Editor" in the pull-down menu (If a warning window appears, it means that the BASIC Commander is not correctly connected. Please check if the USB line is connected or unplugged, and then plug it in again to ensure a correct connection. Exit the Motion Editor and then re-click this button.)



ServoMotionEditor	
Failed to reset servo server	If this message appears, it means
ОК	cable is not connected correctly.

vi. If the connection is correct, the message "Downloading Editor Program…" will be displayed on the PC screen meaning that the program is being downloaded. Please wait a moment.



vii. After the downloading is complete, a notification window will appear. Please make sure that each servo has been connected correctly. After confirming all the connections, please click "OK". (If "Cancel" is clicked, the Motion Editor will be closed. If there is any component that is incorrectly connected at this moment, please click "Cancel" to terminate the program.)

ServoMot	tionEditor 🔪 🔀	
?	Warning! Please make sure all servos at proper position!	The messa download that each c correctly.

The message appears for notifying the lownload is complete. Please make sure hat each component has been connected correctly.

means that the USB

viii. Please check the checkbox for activating the servos on the left side to move all the servos to their central points. Please note that the number next to it should be 1500. If it is not 1500, please click the number directly, enter the number 1500 and then click "Enter".

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Check if all servos are at the correct positions;

Please maintain the servo at the same angle before the disk is fastened during the assembly. In case the disk is moved, please follow this adjustment procedure again to prevent from any unexpected movement or damage to the parts.

## Step 3: Mount Servo Disks





**Step 5: Assemble the Module Installation Board** 



**Step 6: Assemble the Module Installation Board and Legs** 

![](_page_11_Figure_1.jpeg)

## Step 7: Install the Velcro Cable Strap

![](_page_12_Picture_1.jpeg)

Step 8: Install Servo Commander 32.

![](_page_12_Figure_3.jpeg)

![](_page_13_Figure_0.jpeg)

![](_page_13_Figure_1.jpeg)

## **Step 9: Install the Power Switches**

A. Remove the nut and washers on the switch as shown in the following figure. It is disassembled into the Power Line with Switch, Nut A, Washer B, Washer C, and Nut D.

![](_page_14_Picture_2.jpeg)

- B. Assemble them in the sequences of Nut A  $\rightarrow$  Washer B  $\rightarrow$  Module Installation Board  $\rightarrow$  Power Line with Switch as describe above.
- Note: While installing Washer B, please pay attention that the protruded part on Washer B should be hooked into the small hole on the Module Installation Board as shown in the following figure.

![](_page_14_Picture_5.jpeg)

C. Pass the red and white wires upward through the hole and then fix them into the power input terminals with the screws.While installing, please pay attention to the polarity. The red wire should be connected to the "+" terminal and the white wire should be connected to the "-" terminal.

![](_page_15_Picture_1.jpeg)

### **Step 10: Install Servo Wires to Servo Commander 32**

Connect the control lines of each servo to the corresponding pins on Servo Commander 32. Please note whether the module IDs and servo IDs defined in the program agree with the module IDs and servo IDs on the Servo Commander 32 to be connected. The pin assignments for wire connection are as follows.

![](_page_15_Figure_4.jpeg)

[Configuration of the IDs of the joints]

![](_page_16_Figure_0.jpeg)

[Configuration of the pin assignments]

Note: The corresponding servo IDs are printed on Servo Commander 32. Pay attention that the orange (white) wire is the signal line, the red wire is the power line, and the brown (black) wire is the ground wire. Please connect these wires to the corresponding positions marked on the module to avoid damage to the module and then arrange the wires orderly as shown in the following figure.

![](_page_16_Picture_3.jpeg)

## **Step 11: Install the Sonar Module**

![](_page_17_Figure_1.jpeg)

While installing, please pay attention to adjust the ID of the sonar module to 3 according to Note 1.

![](_page_17_Figure_3.jpeg)

![](_page_17_Figure_4.jpeg)

After the installation is completed, connect the wires of the head servo to Pin 3 of Module 0 on Servo Commander32 and then connect the cmdBUS. While installing, please pay attention to the polarity as shown in the right figure.

![](_page_17_Picture_6.jpeg)

# **3. Fine-tuning Initial Values of Servos**

There might be some positioning errors in each servo that are possibly caused by installation or mechanical errors. Therefore, before assembling and installing, it is necessary to perform the adjustment so as to allow the follow-up operations to be positioned correctly.

**Fine-tuning in Software:** 

- 1. Connect the PC and the Servo Commander 32 on the Mini hexapod Robot with the USB line.
- 2. Connect the power line of the servo to the power supply (Please make sure that the voltage and current from the power supply are within the range required by the servo. After connecting the power line, the servo will make a transient motion after receiving the switch surge, which is normal. While connecting the power cord, please pay attention not to place your hands within the space where the servo will move into to avoid being clamped.)

#### 3. Start innoBASIC Workshop.

![](_page_18_Picture_6.jpeg)

4. Click "Tool" in the menu bar on the top.

![](_page_18_Picture_8.jpeg)

After clicking each item, a pull-down menu with more function items will be displayed. Please click the "Tool" item. 5. Click the "Motion Editor" in the pull-down menu. (If a warning window appears, it means that the BASIC Commander is not correctly connected. Please check if the USB line is connected or unplugged, and then plug it again to ensure a correct connection. Exit the Motion Editor and then re-click this button.)

![](_page_19_Figure_1.jpeg)

6. If the connection is correct, the message "Downloading Editor Program..." will be displayed on the PC screen meaning that the program is being downloaded. Please wait a moment.

![](_page_19_Picture_3.jpeg)

7. After the downloading is completed, a notification window will appear. Please make sure that the fine-tuning of the mechanical parts has been performed successfully. After confirming all the mechanical parts are correctly assembled and tuned, please click "OK". (If "Cancel" is clicked, the Motion Editor will be terminated. If the mechanical part is not correctly assembled at this moment, please click "Cancel" to terminate the program.)

![](_page_19_Picture_5.jpeg)

Download servo manager...

The message appears to notify that the download is complete. Please make sure that the servos have been connected correctly at the specified positions. 8. Please pay attention not to place your hands within the space where the servos may move into to avoid being clamped. Please check the checkbox for activating the servos on the left side one by one to move all the servos to their central points. Please note that the number next to each checkbox should be 1500. If it is not 1500, please click the number directly, enter the number 1500 and then click "Enter".

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9. Click the "Adjust Offset" button at the upper right corner.

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10. If the fine tune values are not yet stored, the Filename will be "untitled". The user can specify a preferred name while storing the file.

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11. Observe the servo that requires the fine tune and click the corresponding arrow buttons. The servo will rotate in the selected direction. Please make sure that the rotation is in the correct direction. If the reverse rotation is required, click the opposite arrow button. Adjust each servo to its central point one by one.

![](_page_21_Figure_1.jpeg)

The left/right arrow buttons can be used to rotate the servo clockwise or counterclockwise. Please observe the rotation of the servo to the required central position. Then adjust the next servo.

![](_page_21_Figure_3.jpeg)

Note: If the fine tune is not able to make them perpendicular. The user can perform the

Note: If the fine tune is not able to make them perpendicular. The user can perform the adjustment described in Step 4 again.

12. Please write down the values after the fine tune. Click "Save", select the location for storing the file, enter a preferred filename, and then click OK to save the values in the PC.

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![](_page_22_Figure_0.jpeg)

13. Click the "Close" button at the lower right corner to close the window.

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14. After returning the "Set Servo Frame Position" window, click the "Exit" button at the lower right corner to close the fine tune operation.

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# 4. Perform Demonstrative Motions

- 1. Please copy the folder "Mini 6-Legged Robot Documents" to the PC.
- 2. In the innoBASIC Workshop, click "Tool" in the menu bar on the top.

![](_page_23_Picture_3.jpeg)

3. Click "Motion Editor" in the pull-down menu.

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CH1	1500	4	▶ Spee	0	Time	0	F	CH1	1500	4		▶ Sp	ed	0	Time	0
CH2	1500	4	▶ Spee	0	Time	0		CH2	1500	4		⊁ Sp	ed [	0	Time	0
CH3	1500	4	⊁ Spee	0	Time	0		CH3	1500	4	111111	▶ Spi	ed	0	Time	0
CH4	1500	4	▶ Spee	0	Time	0	Г	CH4	1500	4		▶ Sp	ed [	0	Time	0
□ CH5	1500	4	≯ Spee	0	Time	0		CH5	1500	4		▶ Spi	ed [	0	Time	0
CH6	1500	4	▶ Spee	0	Time	0		CH6	1500	4	ann an	▶ Sp	ed.	0	Time	0
□ CH7	1500	4	▶ Spee	0	Time	0		CH7	1500	4		¥ Sp	ed	0	Time	0
CH8	1500	•	> Spee	0	Time	0		CH8	1500	4		▶ Spi	ed	0	Time	0
CH9	1500	4	▶ Speel	0	Time	0		CH9	1500	4		▶ Sp	ed	0	Time	0
CH10	1500	4	≯ Spee	0	Time	0		CH10	1500	4		▶ Spi	ed	0	Time	0
□ CH11	1500	4	▶ Spee	0	Time	0		CH11	1500	4		▶ Sp	ed	0	Time	0
□ CH12	1500	4	▶ Spee	0	Time	0		CH12	1500	1	0000000	> Sp	ed	0	Time	0
CH13	1500	-	> Spee	0	Ime	0		CH13	1500	4		▶ Spi	red.	0	Time	0
CH14	1500	-	> Spee		ime	0		CH14	1500	4		▶ Sp	red.	0	Time	0
CH15	1500	-	▶ Spee	0	Time	U	12	CH15	1500	4		▶ Sp	ed	U	Time	U.
ALL	11500	1	▶ Spee	10	Inne	0.		ALL	11500	4		▶ Spi	bea	σ,	Time	10
DC:					Madula											

5. Click the "Browse" button at the lower left corner.

rame Files:		Module 0		Module 1	
		Frame 0		Frame 0	
		Frame 1		Frame 1	111
		Frame 2		Frame 2	
		Frame 3		Frame 3	
		Frame 4		Frame 4	
		Frame 5		Frame 5	
		Frame 6		Frame 6	
		Frame 7		Frame 7	
		Frame 8		Frame 8	
	New<<	Frame 9		Frame 9	
		Frame 10		Frame 10	
	<<	Frame 11		Frame 11	
	-	Frame 12		Frame 12	
	Aller	Frame 13		Frame 13	
		Frame 14		Frame 14	
		Frame 15		Frame 15	
	>>	Frame 16		Frame 16	
		Frame 17		Frame 17	
		Frame 18		Frame 18	
		Frame 19		Frame 19	
		Frame 20		Frame 20	
		Frame 21		Frame 21	
		Frame 22		Frame 22	
		Frame 23		Frame 23	
		Frame 24	1991	Frame 24	PRO
		Frame 25		Frame 25	
CulDocuments and Settings James Mu	Documents				1

6. Set the "Browse" folder to the "Mini Hexapodinno Frame" folder under the "Mini Hexapodinno Doc" folder and then click the "OK" button.

![](_page_24_Figure_3.jpeg)

7. Please click the "Mini Mini Hexapodinno Frame0.frm" below the motion files on the left side, click the "Frame 0" under the Module0 and Module1 and then click the ">>" button.

ranie Files;		Module 0	Module 1
		Frame 0	Frame 0
Mini Hexapodinno Frame1. frm		Franc 1	
Mini Hexapodinno Frame10.frm		Frame 2	France 2
Mini Hexapodinno Frame11.frm		Frame 3	Frame 3
Mini Hexapodinno Frame12.frm		Frame 4	Frame 4
Mini Hexapodinno Frame2.frm		Frame 5	Frame 5
Mini Hexapodinno Frame3.frm		Frame 6	Frame 6
Mini Hexapodinno Frame4.frm		Frame 7	Frame 7
Mini Hexapodinno Frame5.frm		Frame 8	Frame 8
Mini Hexapodinno Frame6.frm	New<<	Frame 9	Frame 9
Mini Hexapodinno Frame7.frm		Frame 10	Frame 10
Mini Hexapodinno Frame8.frm	<<	Frame 11	Frame 11
Mini Hexapodinno Frame9.frm	-	Frame 12	Frame 12
	Aller	Frame 13	Frame 13
	Allss	Frame 14	Frame 14
		Frame 15	Frame 15
	>>	Frame 16	Frame 16
		Frame 17	Frame 17
		Frame 18	Frame 18
		Frame 19	Frame 19
		Frame 20	Frame 20
		Frame 21	Frame 21
		Frame 22	Frame 22
		Frame 23	Frame 23
		Frame 24	Frame 24
		Even OF	Examp 2E

Before clicking the ">>" button to download the motion file into the module, please make sure that the "Frame0" under the Module0 and Module1 has been selected and highlighted. 8. Make sure that the "Frame 0" under the Module0 and Module1 has become "Mini Hexapodinno Frame0".

![](_page_25_Picture_1.jpeg)

After the download is complete, the original text "Frame 0" will turn into "Mini Hexapodinno Frame0".

9. Now click the "Mini Hexapodinno Frame1" below the Motion File and "Frame 1" under the Module0 and Module1 as the two steps describe above. Repeat the operation for all the motions until Frames 0-12 have been downloaded to the corresponding frames.

rame Files:		Module 0	Module 1
Mini Hexanodinno Frame0.frm	1	Mini Hexapod	Mini Hexanod
Mini Hexapodinno Frame1.frm		Frame 1	Frame 1
Mini Hexapodinno Franeto.mi		France 2	Frame 2
Mini Hexapodinno Frame11.frm		Frame 3	Frame 3
Mini Hexapodinno Frame12.frm		Frame 4	Frame 4
Mini Hexapodinno Frame2.frm		Frame 5	Frame 5
Mini Hexapodinno Frame3.frm		Frame 6	Frame 6
Mini Hexapodinno Frame4.frm		Frame 7	Frame 7
Mini Hexapodinno Frame5.frm		Frame 8	Frame 8
Mini Hexapodinno Frame6.frm	New<<	Frame 9	Frame 9
Mini Hexapodinno Frame7.frm		Frame 10	Frame 10
Mini Hexapodinno Frame8.frm Mini Hexapodinno Frame9.frm	<<	Frame 11	Frame 11
		Frame 12	Frame 12
		Frame 13	Frame 13
	All<<	Frame 14	Frame 14
		Frame 15	Frame 15
	>>	Frame 16	Frame 16
		Frame 17	Frame 17
		Frame 18	Frame 18
		Frame 19	Frame 19
		Frame 20	Frame 20
		Frame 21	Frame 21
		Frame 22	Frame 22
		Frame 23	Frame 23
		Frame 24	Frame 24
		Frame 25	Frame 25
11 mm 1 11			

10. After all the download operations are complete, it is clear that all the motions above Frame13 under the Module0 and Module1 have been changed to the corresponding motions.

![](_page_26_Figure_1.jpeg)

Please make sure that first 13 Frames have been successfully downloaded.

11. After the verifying the operations, click the "Close" button at the lower right corner to close the window for setting the corresponding motions.

![](_page_26_Figure_4.jpeg)

12. In the Set Servo Frame Position window, click the "Exit" button at the lower right corner to close the Motion Editor.

		E. N.	17							-	
rame ID: 11		Prame Name:	Unitited							Adj	ust Offse
Module ID	); <b> </b> 0	•				Module ID	: 1	•			
Г СНО	1500 4		▶ Speed 0	Time	0	Г СНО	1500	<b> </b>	▶ Speed 0	Time	0
┌─ CH1	1500 4	(Connectioned)	▶ Speed 0	Time	0	CH1	1500	<ul> <li>••••••••••••••••••••••••••••••••••••</li></ul>	▶ Speed 0	Time	0
┌ CH2	1500 4		Speed 0	Time	0	CH2	1500	4	▶ Speed 0	Time	0
□ CH3	1500 <		▶ Speed 0	Time	0	CH3	1500	₹ 11111	▶ Speed 0	Time	0
□ CH4	1500 4	<u>Generates</u>	▶ Speed 0	Time	0	CH4	1500	•	▶ Speed 0	Time	0
□ CH5	1500 4	dennen nen	▶ Speed 0	Time	0	CH5	1500	4	▶ Speed D	Time	0
□ CH6	1500 4	Onnonnon	▶ Speed 0	Time	0	CH6	1500	4	▶ Speed 0	Time	0
□ CH7	1500 -		▶ Speed 0	Time	0	CH7	1500	4	► Speed 0	Time	0
CH8	1500 <		▶ Speed 0	Time	0	CH8	1500	<u> </u>	▶ Speed 0	Time	0
□ CH9	1500 ∢	and the second second	▶ Speed O	Time	0	CH9	1500	€	► Speed 0	Time	0
□ CH10	1500 4		▶ Speed 0	Time	0	CH10	1500	<	▶ Speed O	Time	0
CH11	1500 4		▶ Speed 0	Time	0	CH11	1500	4	▶ Speed 0	Time	0
CH12	1500 -		> Speed U	lime	0	CH12	1500	4	▶ Speed 0	Time	0
CH13	1500 4		▶ Speed 0	Ime	0	CH13	1500	<b></b>	▶ Speed 0	Time	0
CH14	1500 4		▶ Speed U	1 ime	0	CH14	1500	<u> </u>	▶ Speed []	Time	0
CH15	1500 4		▶ Speed U	1 ime	0	CH15	1500	4	> Speed 0	Tune	0
T ALL	1500 4		▶ speed 0	lume	Ju	I ALL	11500	4	▶ Speed ()	Time	0
PC				Module							
Save	Load	Mat	ch	Save	L	bad				Versio	n : 1.0.0.

13. Click "File" in the menu bar and click "Open".

![](_page_27_Picture_3.jpeg)

![](_page_27_Picture_4.jpeg)

#### 14. Please select the "Hexapodinno Walk Demo" in the folder and click "Open".

![](_page_28_Picture_1.jpeg)

15. Move to the 141<sup>st</sup> line of the program to see the Initial Function. (To move within the program, the user can also click the mouse button at any position in the program and then rotate the mouse wheel to scroll to the program page.)

![](_page_28_Figure_3.jpeg)

The number on the left side represents the line number of the program. The Function starts at "Sub" and ends at "End Sub" within which the operations are defined to store the fine tune values into the module. At the beginning of each program, it is necessary to set the fine tune values.

16. Update the fine tune values, which are recorded during the software fine tune, into the Initial Function to replace the original values of "0".

![](_page_29_Figure_1.jpeg)

The SetPosOffset command has two parameters: one is the Servo ID and the other is the fine tune value. Please enter the fine tune value according to the value recorded for each servo ID. The number in the figure is arbitrarily defined, Please do not enter the same number as shown in the figure.

- 17. Turn off the power switch to prevent the Mini Hexapodinno from starting the motion directly after the program is successfully created.
- Destruction of the state of the If the user is not sure about the Terminal Window function of each button, the user Peripheral mySer1 As ServoRunnerA 8 0 Peripheral mySer2 As ServoRunnerA 8 1 can move the mouse pointer input | Dim ActionSpeed As Word Dim i As Byte Dim j As Byte over the image. After a while, Sub checkstatus() Din Tenp As Byte the English name will Tenp-Checknodule automatically appear. After IF Tenp=1 Then Debug "Timeoutt", CR Coto TEST\_FAIL Elseif Tenp=2 Then Debug "Errort", CR clicking the "Build" button, the . CR Debug "Errort" Goto TEST\_FAIL End IF program will be downloaded into the BASIC Commander Coto check TEST\_FAIL: and stored automatically. CHECK\_END: According to the layout, the Hain() ActionSpeed = 300 mySer1.SetPosAndRun(3, 1500) Initial() Pause 3000 "Build" button may appear at different position. Terminal Window 🕫 Function List Winds 🔮 🔛 = - -0.5 MiniHoxapodinno Walk Demount Peripheral ngSer1 As ServoRunnerA @ 0 Peripheral ngSer2 As ServoRunnerA @ 1 Innovati (R) innoBase Compiler Version V1.0 Copyright (C) 2008 innovati Inc. All rights reserved. Constaling Din ActionSpeed As Word Din i As Byte Din j As Byte U Error(s) error(i) ing download file After the download is complete, ub checkstatus() Din Tenp As Byte the output window will display Tenp-Checknodule If Temp=1 Then Debug "Timeout Goto TEST\_FAIL Elseif Temp=2 Then the used memory space. If there is any error, it will be displayed Debug "Errort", GR Goto TEST\_FAIL End IF in the output window. Please Goto check end make sure that no error is TEST\_FAIL: displayed in the output window. CK\_END: ActionSpeed = 300 mySer1.SetPosAndRun(3, 1500) Initial() Pauce 3000 🔊 Output Window 🖼 Find Result ielp, press F1
- 18. Press the "Build" button and wait until the download is complete.

- **19.** Remove the USB line that has been connected to the Mini 6-Legged Robot and place the Mini 6-Legged Robot at a location prepared for performing the motion operations.
- 20. Turn on the DIP switch. The Mini 6-Legged Robot will perform a forward movement according to the demonstration program.