

# 參賽隊伍人員及機器人簡介

## Team Member and Robot Introduction

組別：遙控組  
學校名稱：南台科技大學  
(School :)

指導老師：林開政  
隊伍名：創意羅伯特  
(Team name :)

### ※內容需中、英對照※

#### 壹、參賽隊伍人員：

一、指導老師：林開政(Lin Kaizheng)

二、組員:李修宇、闕崇安、宮大晉

(Li, Xiu-Yu、CHUEH, CHUNG-AN、Gung Da Jin)

#### 貳、機器人簡介

##### 一、構想與策略分析

主要構想是整體以最簡單不複雜的方式來呈現所想要的動作及效果，然而在動作過程上以最少動作的來完成過障礙及取娃娃。

The main idea is overall the most simple and uncomplicated way to render the desired action and effects with minimal action, however, on a course of action to complete the obstacles and take the doll.

##### 二、機構設計

腳部所採取的是四連桿機構，設定在每步可走 5.5 公分的小碎步，傳動的方式是用馬達帶動齒輪跟鍊條，最後在腳底上裝設軟墊、機身底裝設彈簧來吸收行走時與地面的撞擊跟衝擊。

手部的參考雲梯升降機構，可以藉由馬達來拉住繩線調整高度，並且將夾持機構固定於頂部，一方面可以快速夾取，可以減少其他動作的需要。

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Foot taken by the four-bar linkage, set in a small step, each step can walk 5.5 cm drive motor driven gear with the chain, and finally installed on the soles of the feet upholstered installed on the fuselage end of the spring to absorb walking impact with the impact with the ground.

Reference ladder elevating mechanism of the hand portion, by the motor to pull the rope line height adjustment, and the clamping mechanism is fixed to the top, on the one hand, can be quickly gripping, can reduce the need of other actions.



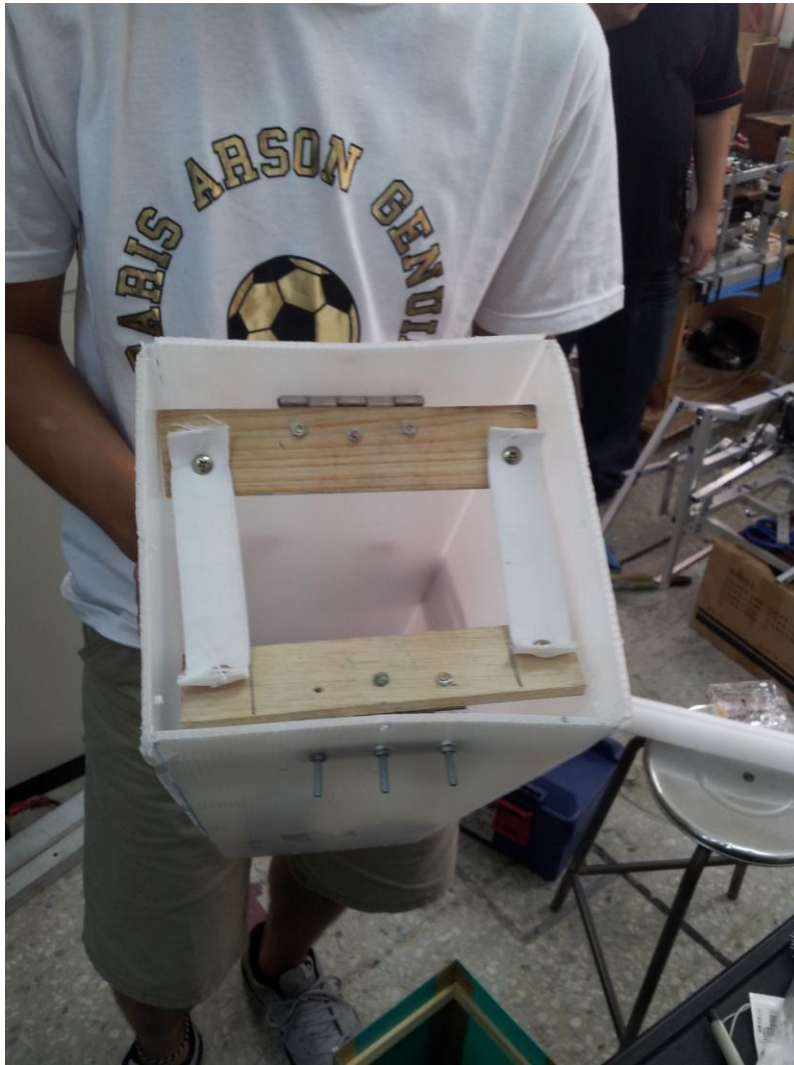
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### 三、輪子驅動設計

腳部左右兩邊各有一個馬達來做傳動，馬達配合聯軸器來帶動齒輪跟鍊條，以左右外腳前進後再帶動中間機身來前進。

Foot or so on each side to do a motor drive, motor with the coupling to the drive gear with the chain, the left and right the outer foot forward and then drive the intermediate body to move forward.

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### 四、電路設計

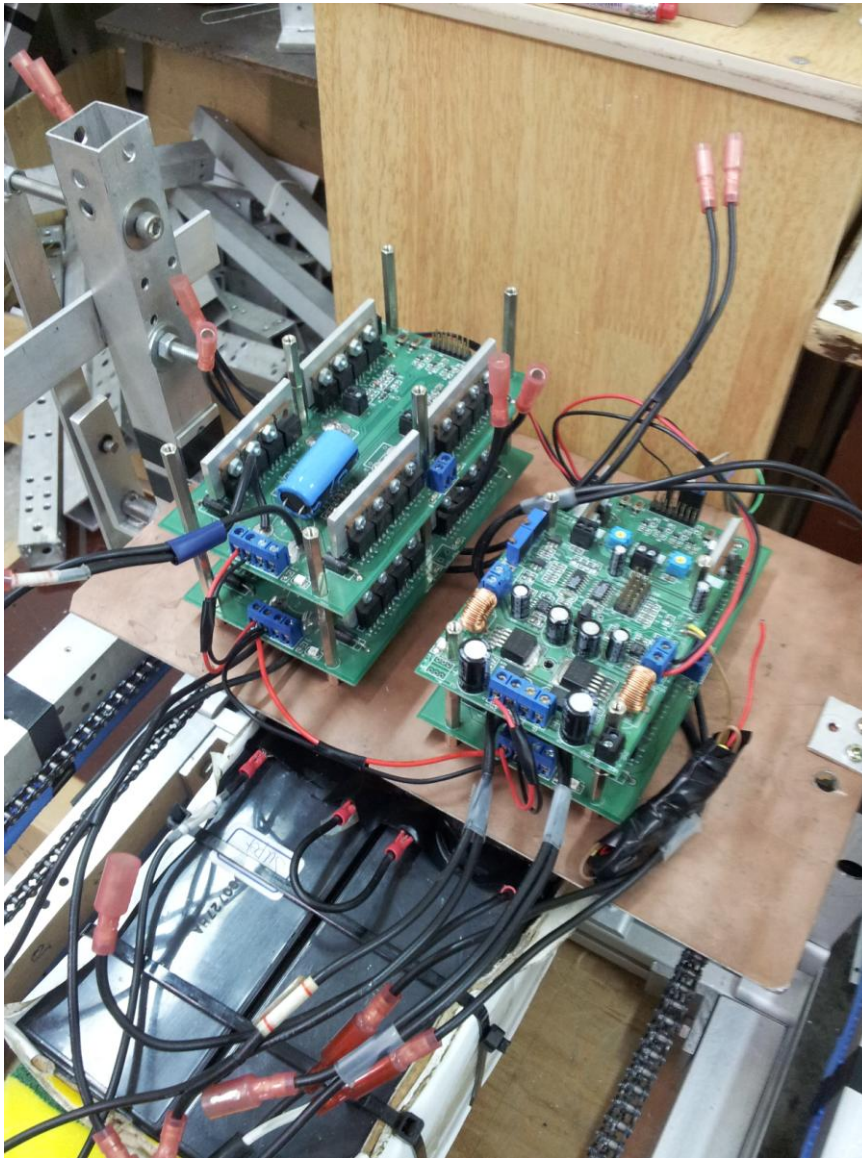
共有四塊，其中一塊是控制電池電流供應用，而另外兩塊來控制升降跟腳部馬達的正反轉，最後跟電源版同大小的事來控制夾頭馬

達正反轉及升降內部齒條齒輪的正反轉。

A total of four, which control battery current supply with a two to control the lift with foot motor reversing last things with the power version of the same size to control the chuck motor reversing and lift the internal rackreversing gear.

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五、感測器設計(遙控組無免填)

六、組裝、測試與修改

在個別完成腳部、手部與夾持部位的機構時，較為困難的是組合，不僅會讓機器人在行走時的更不穩定與重量增加隨之而來的大震動，都在測試中一一出現，並造成很大的磨耗，當然也為了震動方面做了避震以及加裝支架來固定減少晃動，才解決問題。

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More difficult for the individual to complete the foot, hand gripping part is a combination, not only to make the robot walking more unstable and increase the weight of the attendant vibration, test 11 appeared, and caused a lot of wear, of course, to vibration do to shock as well as the installation of bracket fixed to reduce shaking, before solving the problem.

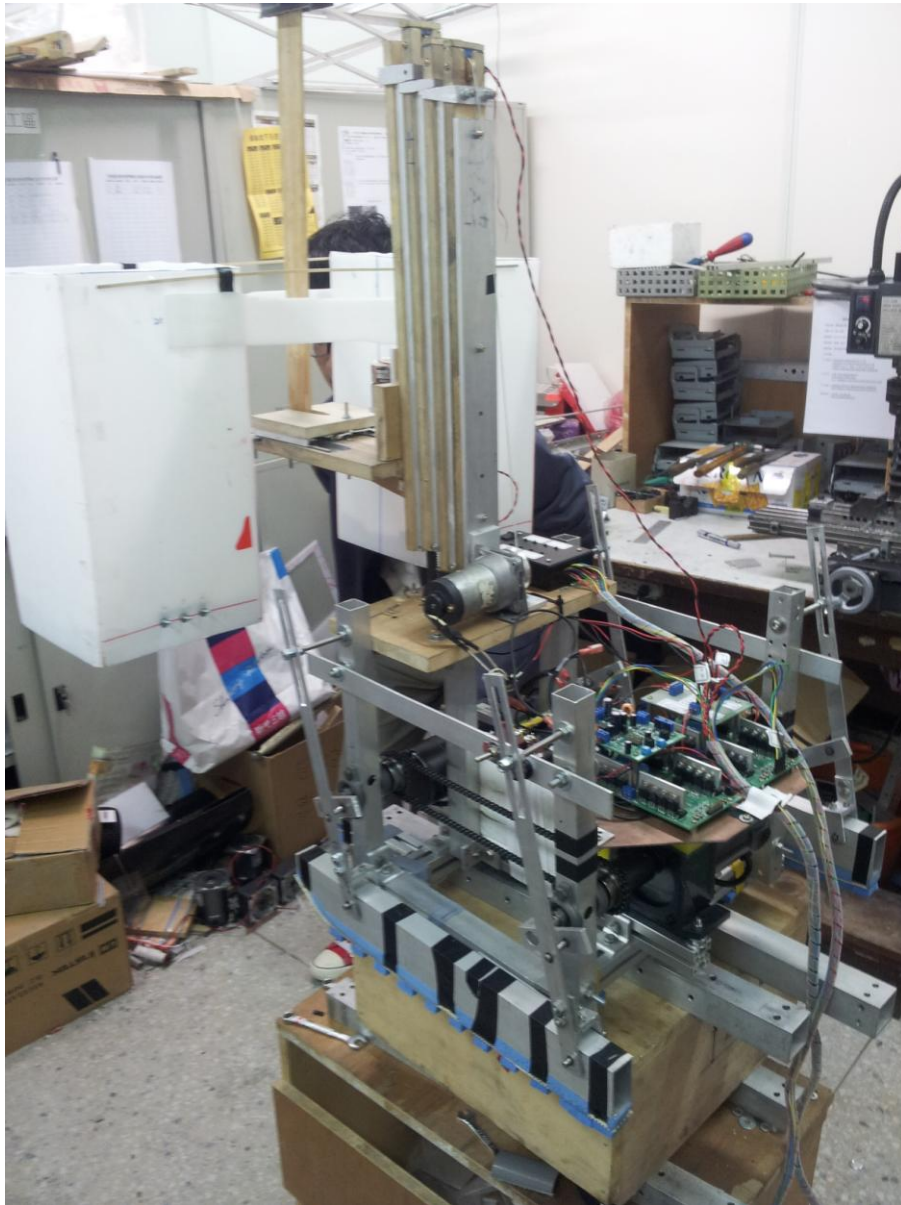
### 七、機器人創意特色說明

特色就類似像動物海獺的走路方式，此機構行走時必定在接觸地面為正方形，此方式是最穩定且容易操控。在加上昇降的動作只有兩個，可以在救援時，減少很多不必要的動作來於機器人的操控，再加上夾持機構的設計在昇降上面，更能快速的將待救援物快速送至纜車，來完成救援行動。

**Characteristics similar way to walk like animals, sea otters, the walking of this agency must be in contact with the ground for the square, this way is the most stable and easy to manipulate. Plus quickly sent to the lifting action of only two in the rescue, reduce a lot of unnecessary movement in the manipulation of the robot, plus on the design of the clamping mechanism in the lift above, the more quickly the material to be rescue The cable car to complete the rescue operations.**

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### 參、參賽心得

這次非常榮幸能參加本校所舉辦的第 16 屆 TDK 機器人高空救援競賽，再對每一項規定跟條件來製作機器人真的非常具有挑戰性，在製作過程裡也將自己在機械系所學到的加工技術用到極致，不只是自己所做的機器人；就連每間學校的機器人都非常具有特色，看到許多形形色色的機器人可真是讓人大飽眼福，再競賽過程裡與組員們一起



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同心協力的完成每項目標是件很有意義的事情，非常感謝本校舉辦這次的比賽，讓我們在大學過程中有個最無法忘懷的回憶。

**This very honored to be able to participate in school organized the 16th TDK robot high-altitude rescue contest, each provision with conditions to make the robot really challenging in the production process will also be learned in the Department of Mechanical Engineering processing technology used in the extreme, not just his own robot; even robots of each school are very distinctive, can see many kinds of robots is really a feast for the eyes, and then contest and team members who join together to complete each goal is a meaningful thing, very grateful to the school to organize this race, the most vivid memories of the college process.**