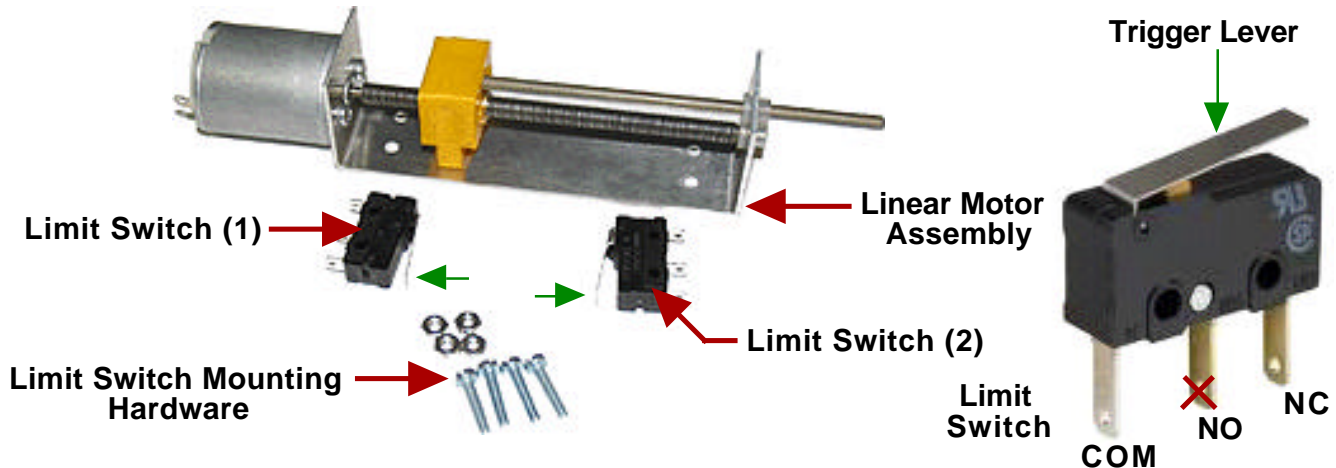


## Linear Actuator Setup

### Linear Actuator Mechanical Assembly

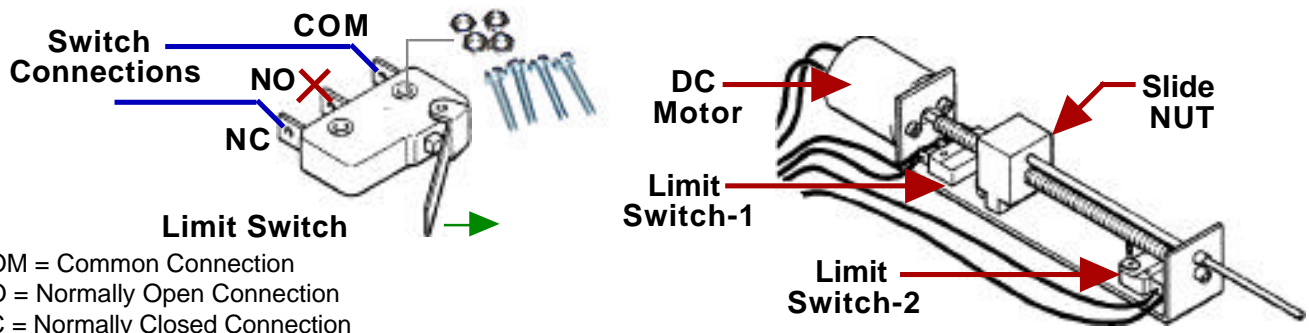
The linear actuator is an open-frame type mechanical assembly, that comes almost completely assembled. It uses a 5mm diameter screw driven directly by a miniature DC motor. The screw engages a brass nut set into a plastic block which also accommodates a push rod. The end of the screw is supported in a nylon bearing at one end of the frame and above this an identical bearing providing support for the push rod.

When the motor is connected to a 3v - 6v battery supply, the nut will run rapidly to one end of the frame. Reversing the motor supply will cause it to run in the opposite direction, however, you will find that at the end of its travel, the nut will lock onto the screw and simply reversing the motor will not be enough to free it. To prevent the nut reaching the extremity) of the thread and to provide proper control, it is necessary to add two limit switches to the frame.' These switch off the motor when the nut is almost at the end of its travel. They also enable manual or automatic reversing of the linear actuator screw / nut.

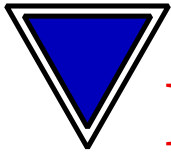


### Setting up the limit switches

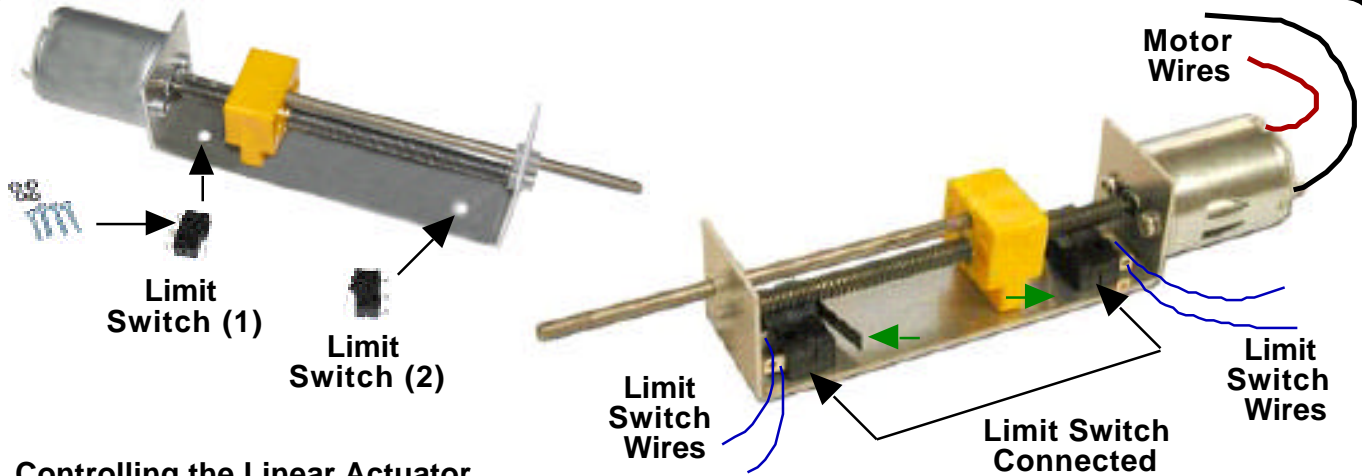
The actuator is supplied with two limit switches and small screws for fixing. Two wire leads should be soldered to each switch as shown, and the switches fastened to the frame. The lever of each switch should be bent outwards so that the supply is switched off well before the end of the nut's travel. This needs to be done because the motor continues to spin after the supply is switched off, and the nut traveling beyond its limit will jam.



COM = Common Connection  
NO = Normally Open Connection  
NC = Normally Closed Connection



## Linear Actuator Setup

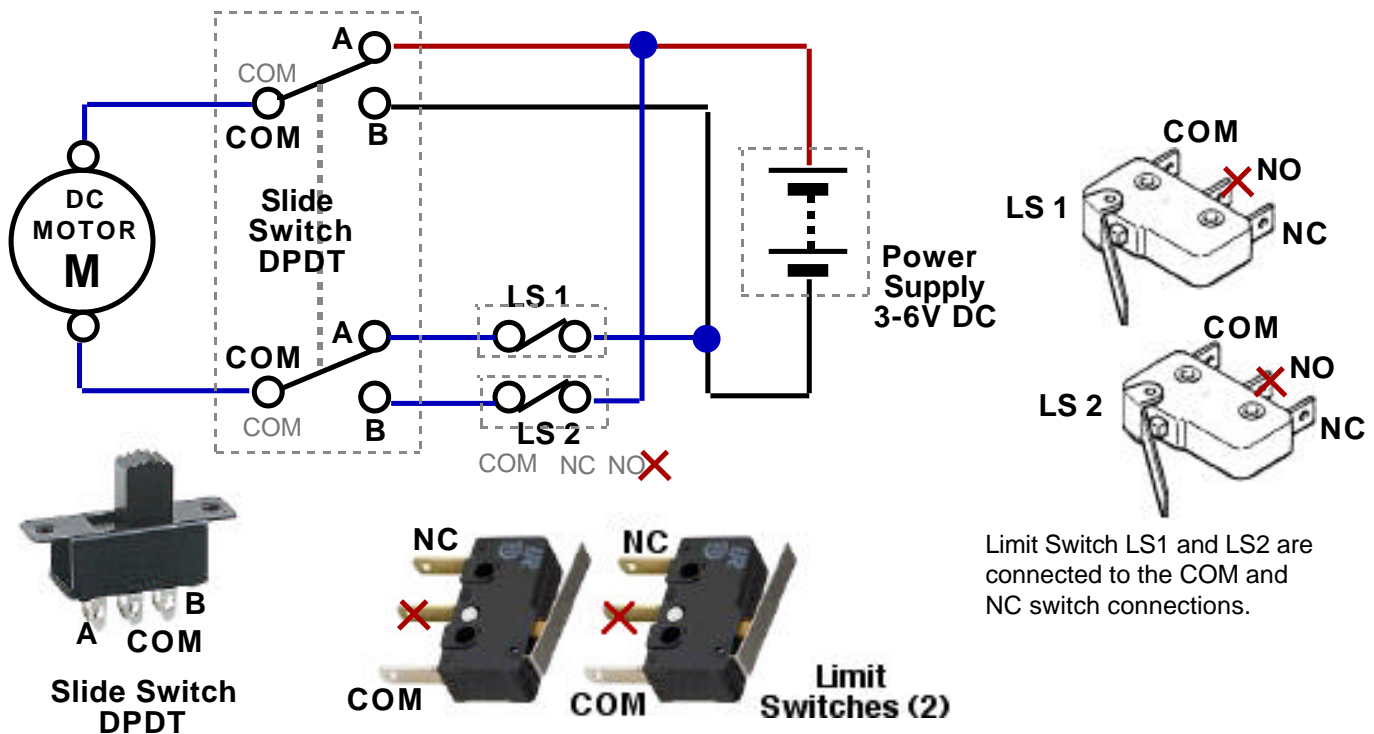


### Controlling the Linear Actuator

Use a 4.5v - 6.0v DC supply to power the motor only.

For manual operation of the actuator, the limit switches are connected to a DPDT (double pole, double throw) switch as shown. When the slide switch is in the centre position, it is 'OFF'. In either of the other two positions it supplies current to the motor until one of the limit switches breaks the circuit. The slide switch can then be thrown to the other 'ON' position to reverse the motor/ nut.

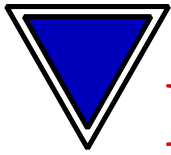
The actuator can also be controlled electronically by using an appropriate circuit and a DPDT relay (or two SPST relays). See Instruction section on setting up automated system for more details.



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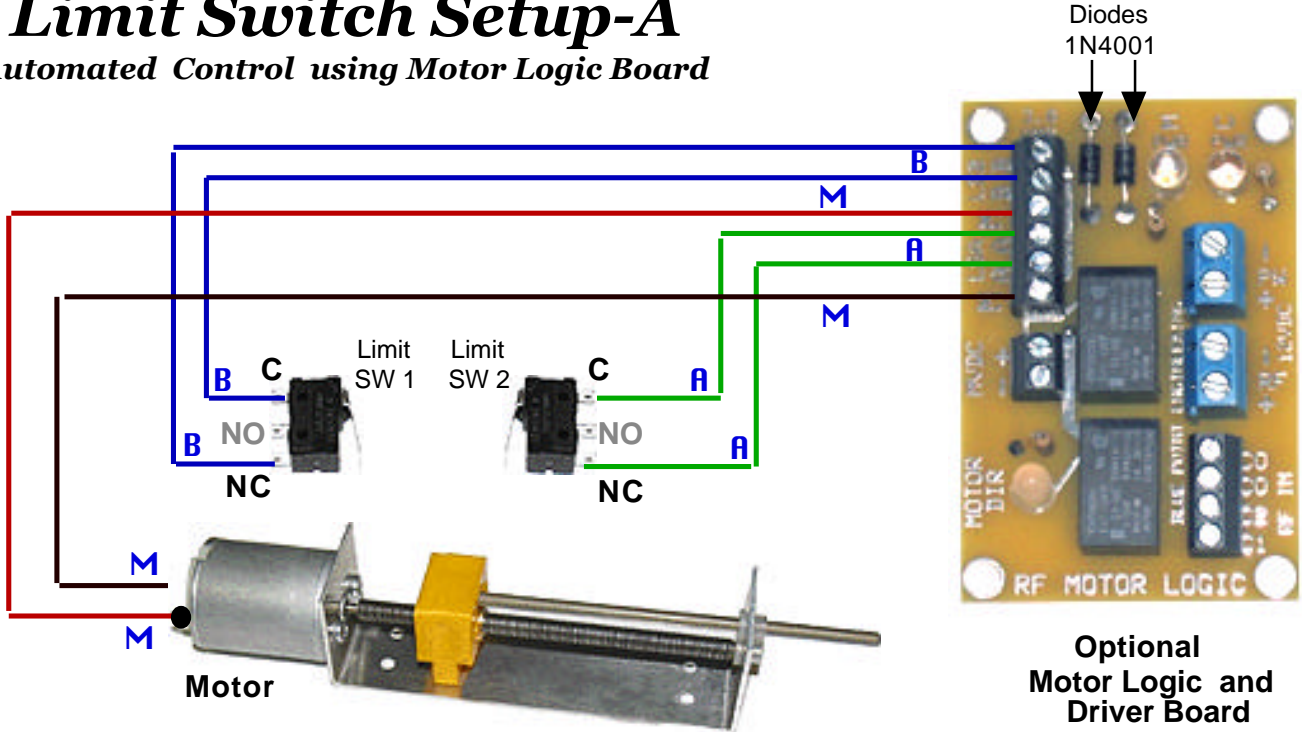
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## Linear Motor Setup

### Limit Switch Setup-A

Automated Control using Motor Logic Board



### Optional Limit Switch Setup-B

Optional Motor Logic and Driver Board

