LINEAR TRANSLATION STAGE
MSM-1001
Date Printed: 12/9/2008

MSM-1001	Rev:	Version:2	Approved:	Supercedes:11/7/2008

1 Notes

Version	Note	Resolved By	Date Resolved	Status
1	MSM-1001 LINEAR TRANSLATION STAGE - Demo was approved by Ryan O'Hagan	Ryan O'Hagan	11/7/2008	Completed

2 Bill of Materials

Part Number	Revision	Name	Qty	Unit	Reference Designator
HDW-0110	A	M5x14 Socket Head Cap Screw	4.00	None	
HDW-0130	A	M2X8 Socket Head Cap Screw	2.00	None	
HDW-0141	B	M3X8 Socket Head Cap Screw	4.00	None	
MMM-0100	A	Micro Motor	1.00	None	
MSE-0140	C	Connector Plug - 4-pin Female	1.00	None	
MSM-0100	A	8" Travel Linear Stage	1.00	None	

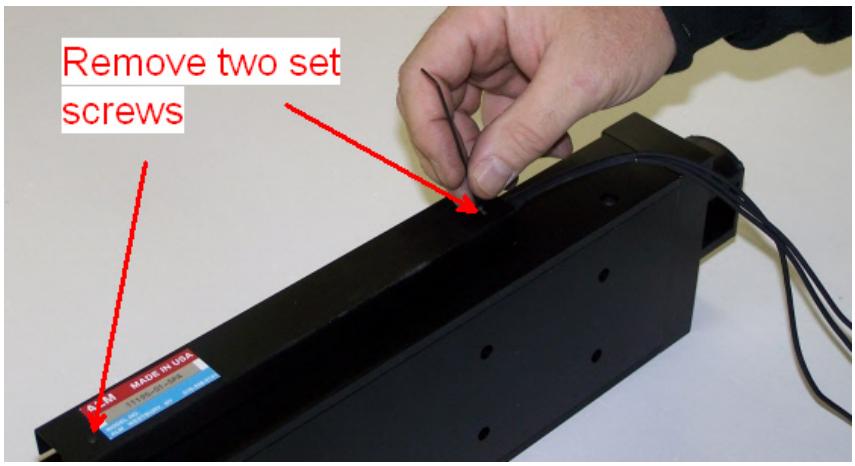
Cap Screw

Screw

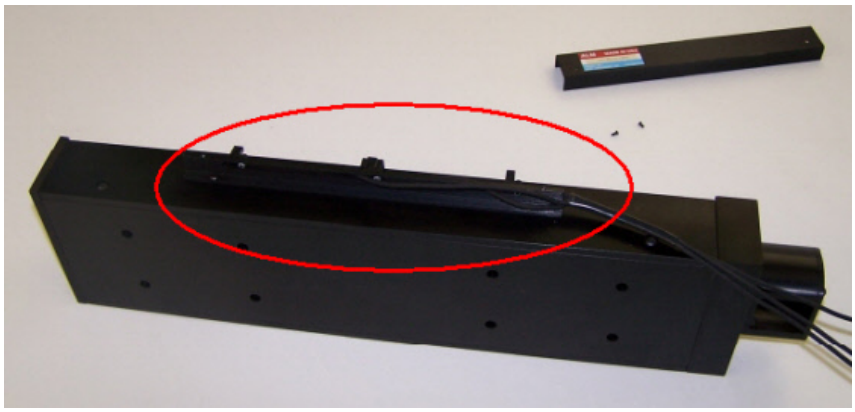
3 Station 1

3.1 Linear Stage Prep

Use a 0.05" Allen wrench to remove the two button head screws holding the cover over the limit switches of the 6" Travel Stage, as shown in the figures.



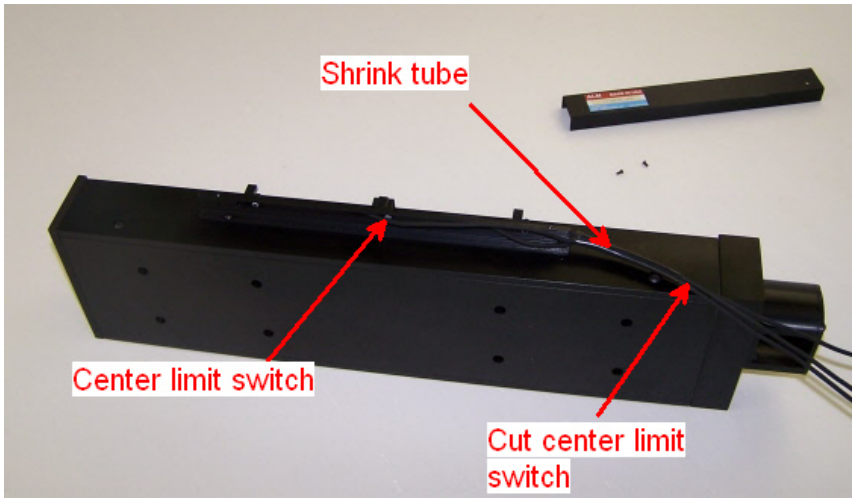
Remove Cover



Limit Switch Cover Removed

3.2 Clip Center Limit

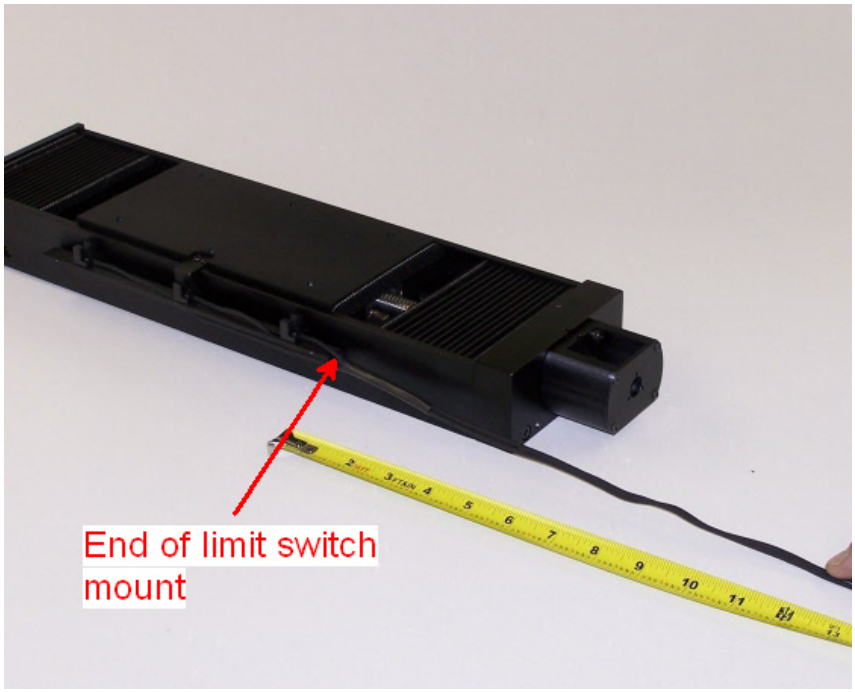
There are three cables going to the limit switches on the linear translation stage. Identify the cable going to the center limit switch (indicated in the figure). Use the wire cutters to cut the cable going to the center limit switch at the shrink tube where indicated in the figure. Pull the end of the cable under the shrink tube so it is not exposed.



Center Limit Switch Cable

3.3 Clip other two wires

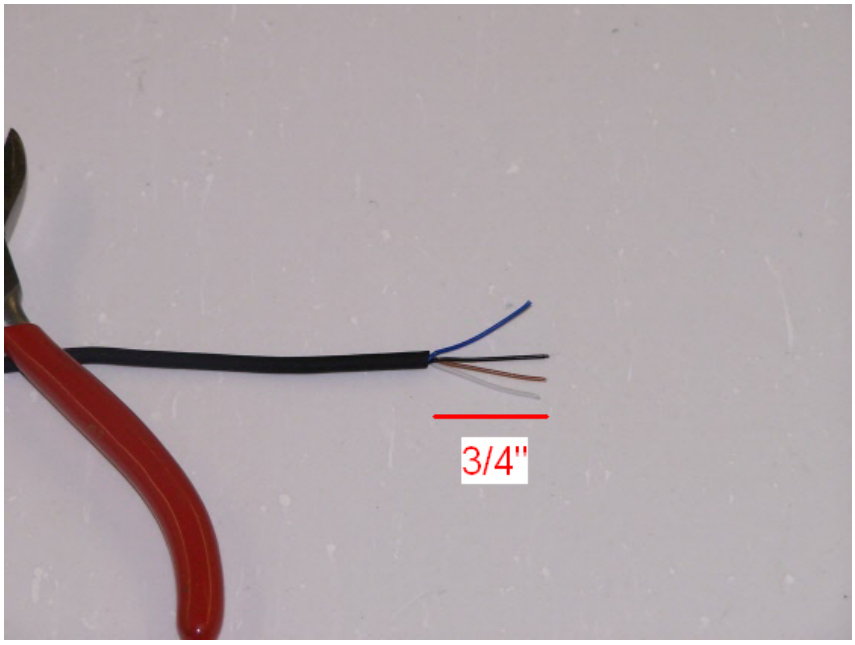
Measure 14"along the remaining two cables from the Limit Switch Mount on the linear translation stage. Cut both wires 14" from the mount.



Cut Limit Switch Wires

3.4 Strip Insulation

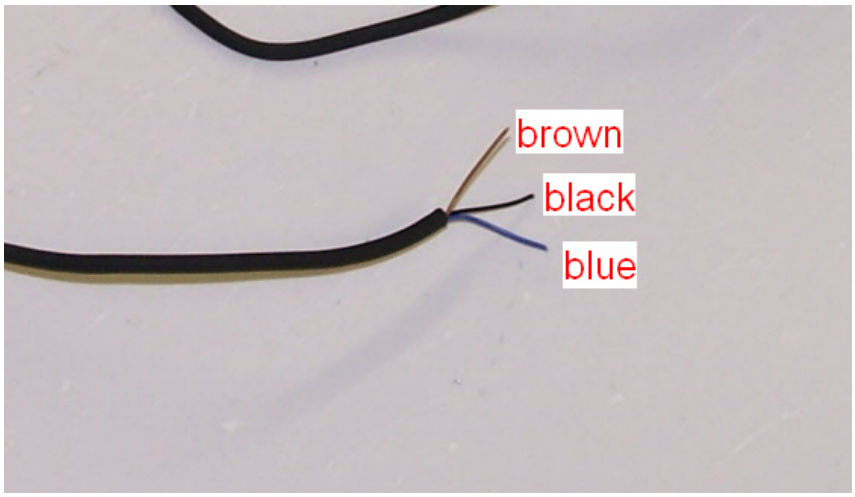
Use the wire strippers to strip the outer insulation from the two limit switch cables approximately 3/4"from the end (as shown in the figure). Be careful not to cut the four conductors inside the cable.



Strip Insulation

3.5 White Wires

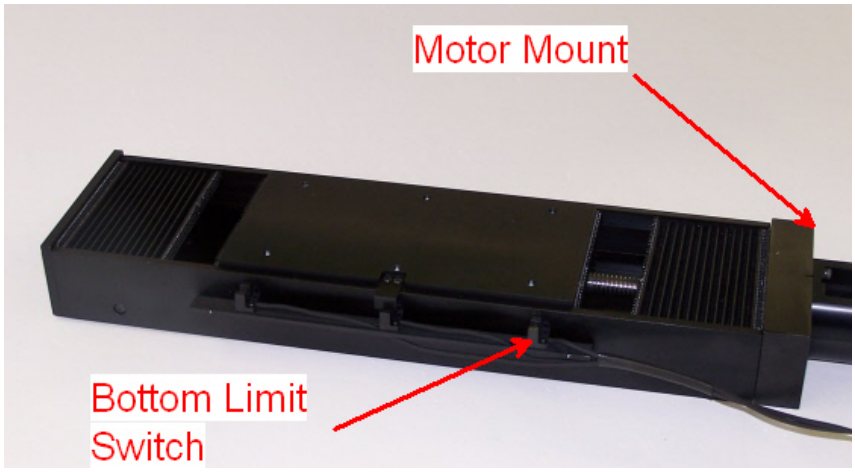
Cut the white conductors on both cables, leaving the black, brown and blue wires.



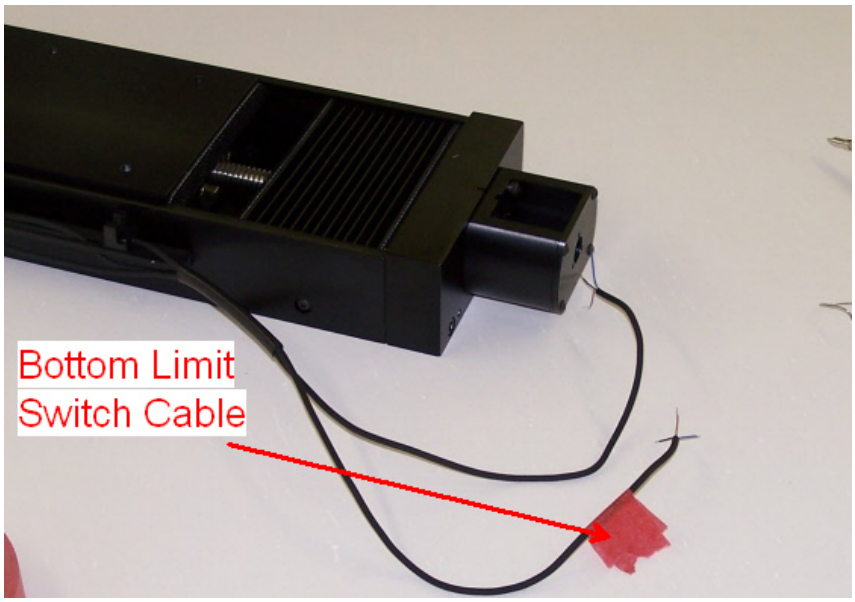
Cut off White Wire

3.6 Mark Bottom Cable

- Identify the "Bottom" limit switch using the first figure as a reference.
- Place a piece of red tape on the "bottom" limit switch cable as shown in the second picture.



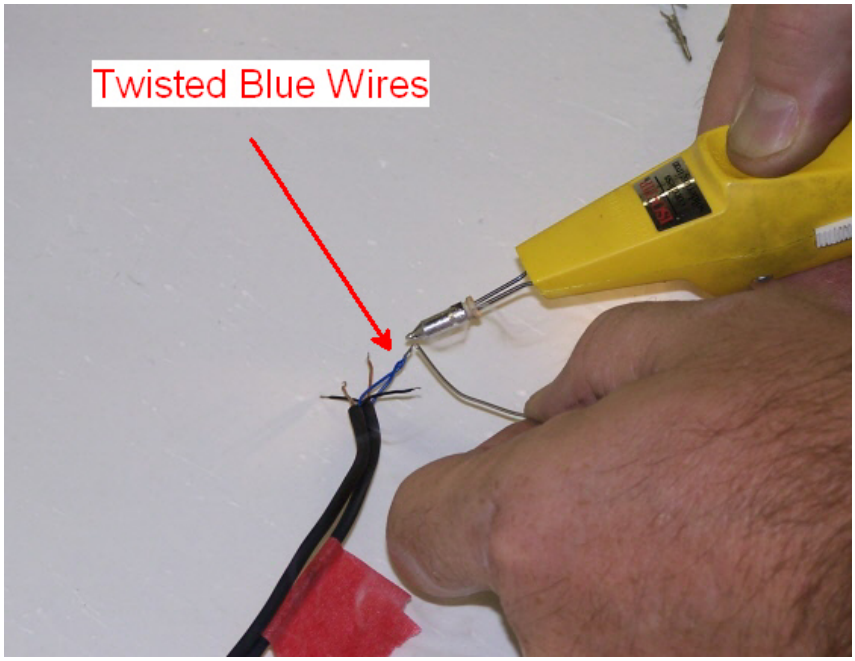
Identify Bottom Limit Switch



Mark Cable

3.7 Solder Wire Pairs

- Strip the 6 conductors (three in each cable) 1/8".
- Twist the two blue wires together and solder the pair as shown in the first figure.
- Twist the two brown wires together and solder in a similar fashion.

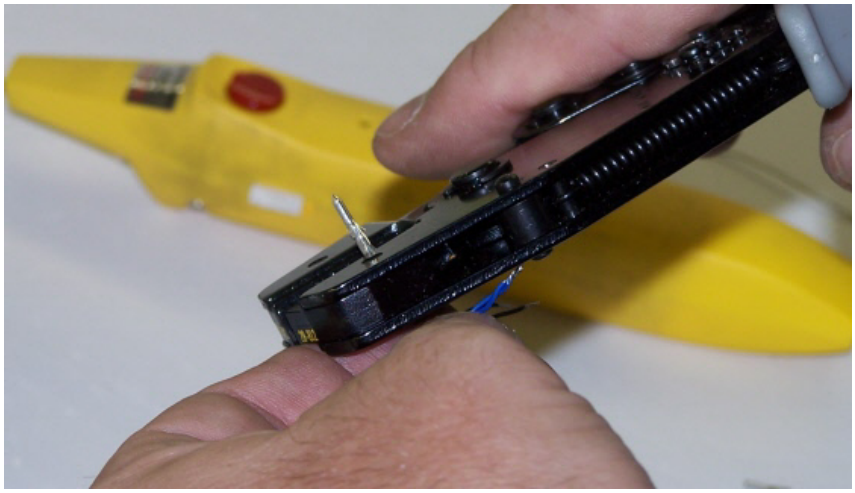


Solder Twisted Blue Wires

3.8 Crimp Pins

Identify the crimp tool used for this step. Using the tool, install a crimp pin on the soldered brown wires. Install a crimp pin on the blue wire pair. Install a crimp pin on each of the black wires. The four crimp pins should look similar to those in the second figure.

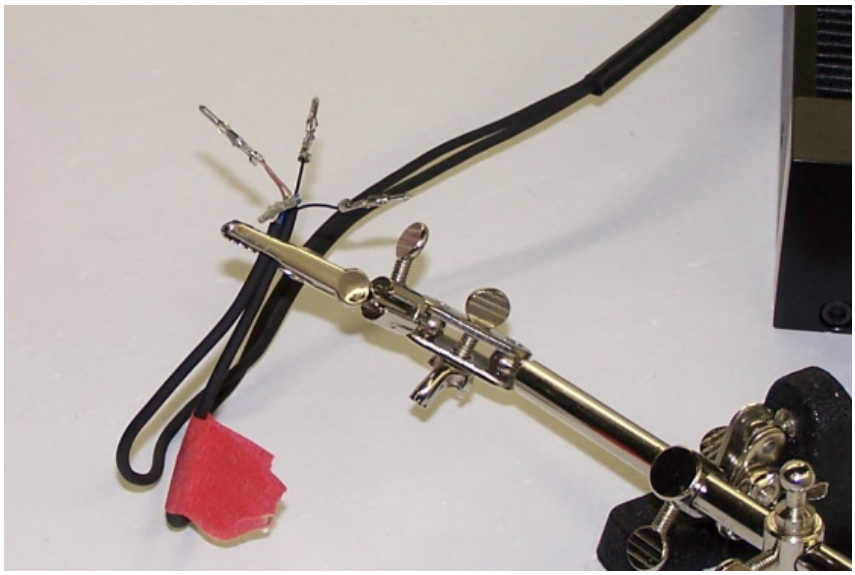
Installed Crimp Pins



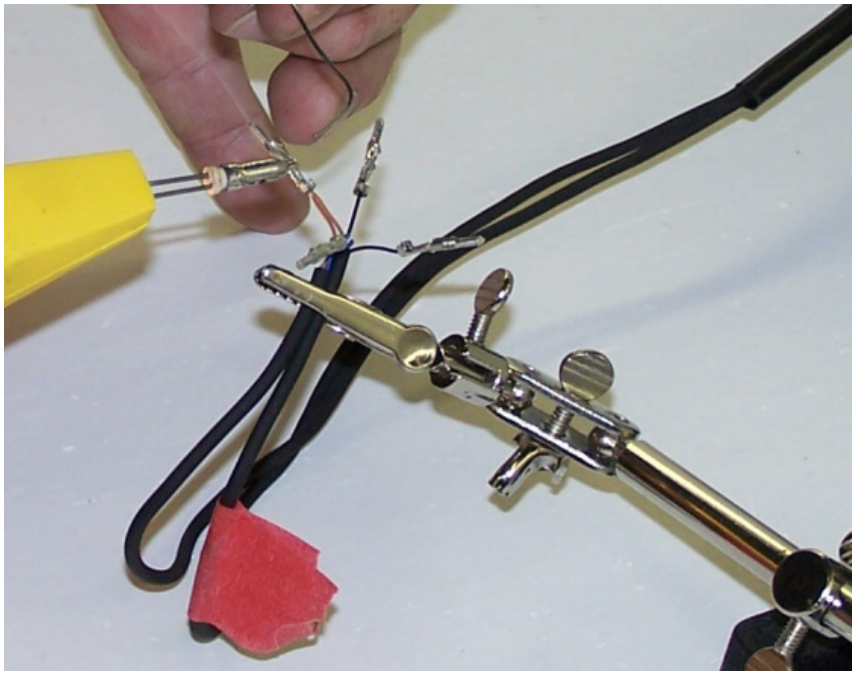
Install Male Pins

3.9 Solder pins

Obtain a jeweler's vise and hold the wires in place as shown in the first figure. Solder the pins to the conductors as demonstrated in the second figure.



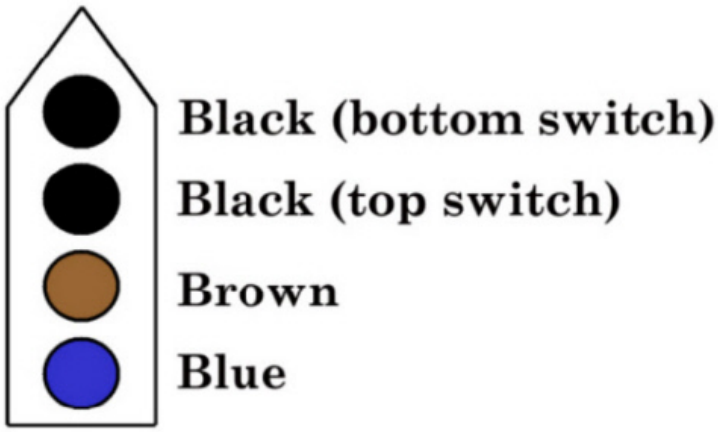
Secure the Wires



Solder Crimp Pins

3.10 Electrical Plug

Press the crimp pins into the Electrical Plug as indicated below.
Pin 1=Black wire from Bottom Limit Switch (cable with red tape)
Pin 2=Black wire from Top Limit Switch
Pin 3=Brown wires
Pin 4=Blue wires



Molex

3.11 Motor Mount Plate

Use (3) M2x6 cap screws to attach the Motor Mount Plate to the MicroMotor as shown in the picture. The three mounting holes in the center of the motor

mount plate are recessed on one side of the plate. The recessed side goes away from the motor. Note also that the motor must be rotated relative to the plate as shown in the figure.
You will use a M1.5 allen wrench for this step.

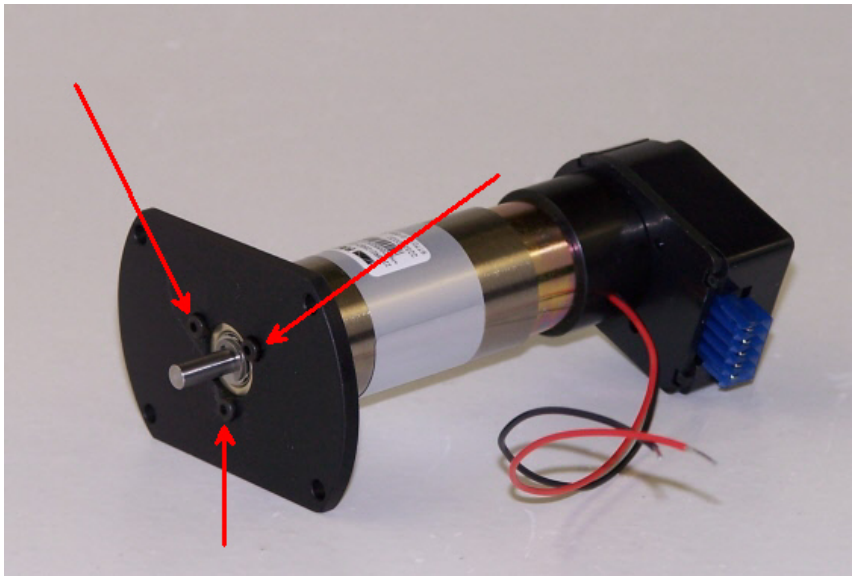


Plate Orientation