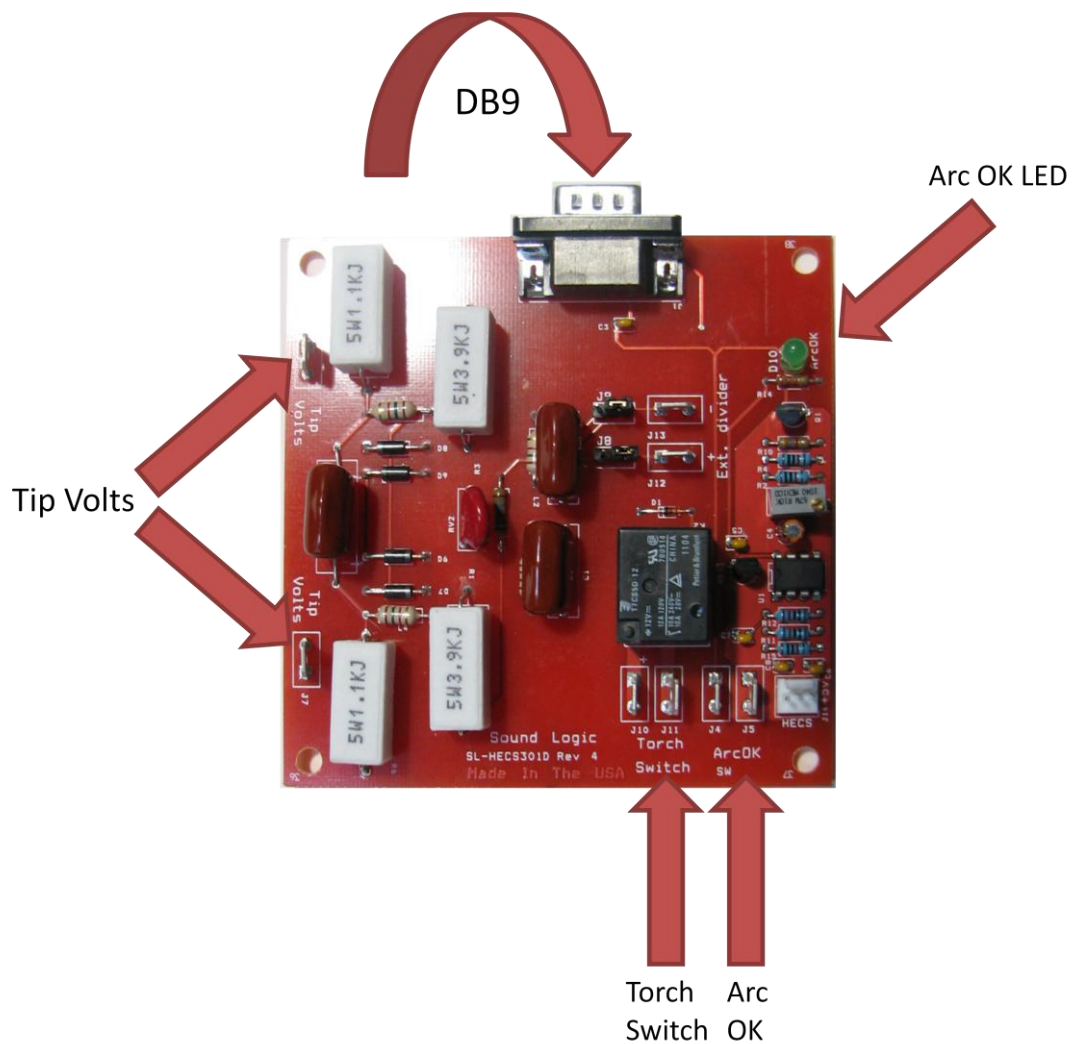


# Torch Height Control Setup Guide

Begin by mounting the Sensor Board inside your plasma unit or your drive enclosure. Make sure to connect the DB9 cable from your MachMotion control into the Sensor Board. See the diagram below.



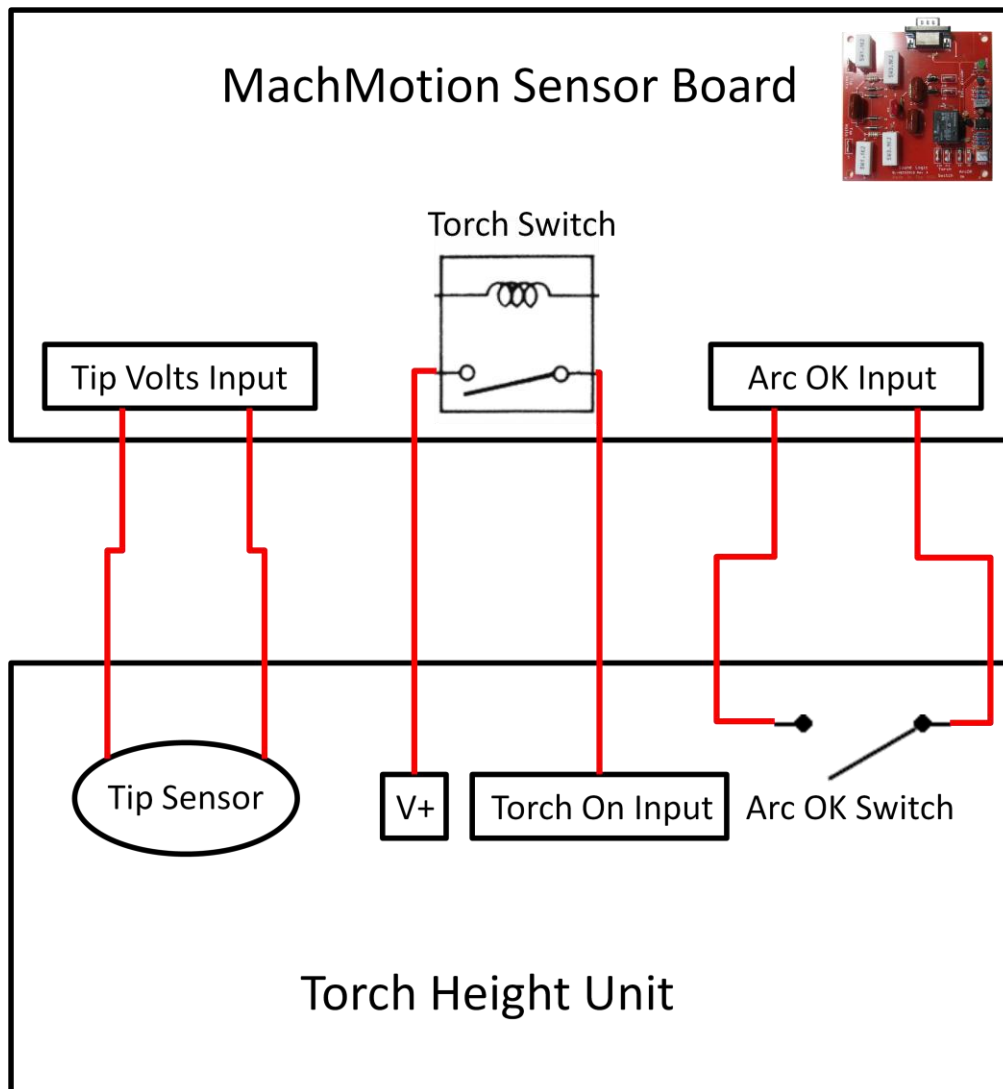
To setup your torch height control, you need 3 signals from your torch or plasma system:

THC Signals	Common Names	Specification
Arc OK	Ready to Move, Arc Transfer	Activate Input by Connecting Spades
Torch Switch	Plasma On, Torch On, Start Torch	Relay Contact Output
Tip Volts	Plasma/Torch Tip Volts	0V – 250VDC Input

To find the signals, follow the procedure below.

1. Figure out the manufacturer and model of the plasma system you are using.
2. Find information on your plasma system by calling the manufacturer or visiting their website.
3. Try to locate the 3 signals in the documentation. If you have any questions, call your plasma manufacturer.

Below is an example on how to connect the Sensor Board.




## Hypertherm Example

The page shown below is from a HD3070 Hypertherm instruction manual. After examining the manual two signals were located on the control cable (Plasma On and Transfer Out). However, the tip volts signal is scaled by 50. The real tip volts should range from 0 to 250VDC. After calling Hypertherm, another place was located on the plasma system to get the Tip Volts signal.

### INSTALLATION

⑩

Part Number	Length
023707	25 ft (7.6 m)
023829	28.2 ft (8.6 m)
023933	50 ft (15.2 m)
023934	75 ft (23 m)
023935	100 ft (30.5 m)
023936	125 ft (38 m)
023937	150 ft (45.6 m)



**RUN LIST**

SIGNAL	PLUG 1X1	COLOR	MACHINE INTERFACE
Hold (Dry)	1	Black	1
Hold (Dry)	5	Red	5
-	10	Drain	10
Pierce Comp (Dry)	2	Black	2
Pierce Comp (Dry)	6	White	6
-	11	Drain	11
Torch Ignition Out (Dry)	3	Black	3
Torch Ignition Out (Dry)	7	Green	7
-	12	Drain	12
Power Off -	4	Black	4
Power Off +	8	Blue	8
-	13	Drain	13
Plasma On (Dry)	9	Black	9
Plasma On (Dry)	15	Yellow	15
-	14	Drain	14
Ext Inter CC (Dry)	16	Red	16
Ext Inter CC (Dry)	17	Blue	17
-	18	Drain	18
Power On Input +	29	Black	29
Power On Input -	34	Brown	34
-	23	Drain	23
1/50 Arc Voltage -	33	Drain	27
1/50 Arc Voltage +	28	Drain	27
-	27	Drain	27
Power Interlocks (Dry)	35	Red	35
Power Interlocks (Dry)	30	White	30
-	24	Drain	24
Transfer Out (Dry)	37	Black	37
Transfer Out (Dry)	32	Orange	32
-	26	Drain	26

**Torch Switch** → Plasma On (Dry)  
 Plasma On (Dry)  
 → **Scaled Tip Volts**

**Arc OK** → Transfer Out (Dry)  
 Transfer Out (Dry)

*Note: You need the real tip volts (0-250VDC), not the scaled tip volts. Call your manufacturer!*

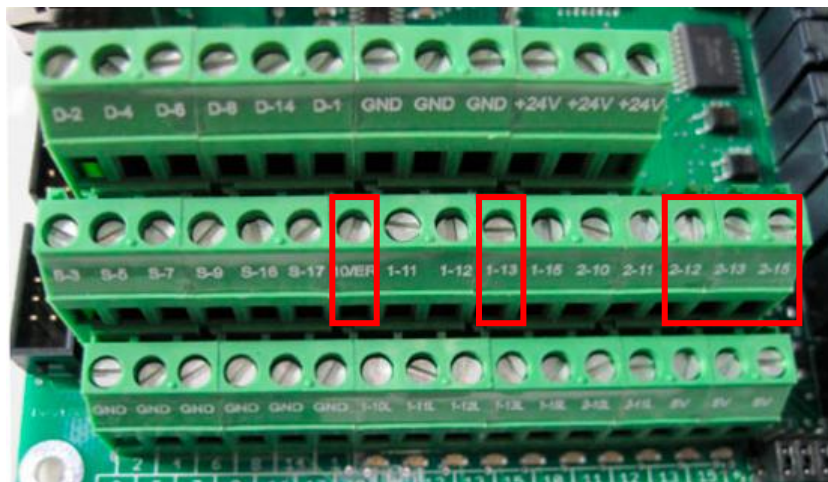
Figure 3-21 PS/Machine Interface Control Cable

# Breakout Board Inputs

**Warning: Do not connect anything to the breakout board inputs listed in the table below.**

Used Inputs	Function
10/ER	Drive Error
1-13	Torque Input
2-12	THC Down
2-13	THC Up
2-15	Arc OK

These are used for the torch height control. They are highlighted in the picture below.



You can use the rest of the inputs for your limit switches, home switches, or other standard inputs.

Available Inputs
1-11
1-12
1-15
2-10
2-11

*Note: Consult the Quick Start Guide for your control (E.G. X15-250 Quick Start Guide) or the IO6 Breakout Board Manual for more information on connecting your inputs. You can download the PDFs from <http://www.machmotion.com/support-overview/documentation.html> .*