

# Injection Molding Machine and Robot Interface Interlocking.

without SPI Plug

**Read carefully and make sure all the voltage and wiring with actual IMM operation. ( Not following all the step might cause damage on IMM and Robot. )**

Products : HYRobotics TOPIV Sprue Picking Robot

**FOR HY TOPIV ROBOT ONLY**

## FROM IMM TO ROBOT ( IMM TEST )

After finishing Robot body set up. Must test all the IMM voltage ( DC 24, AC 110 or Contact ) with actual operation.

### Emergency Stop

1. Locate Emergency Stop Wiring No. ( Two Point Required )
2. For Example ES1(Emergency Stop1) and ES2 ( Emergency Stop 2 ).
3. PRESS Emergency Stop Button
4. Measure Voltage ES1 and ES2 ( DC 0 Volts, AC 0 Volts or No Continuity )
5. Release Emergency Stop Button
6. Measure Voltage ES1 and ES2 ( DC 24 Volts, AC 110 Volts or Continuity )

### Mold Open Limit

1. Locate Mold Open Complete ( Limit ) Wiring No. ( Two Point Required )
2. For Example MOC1(MoldOpenComplete1) and MOC2 ( MoldOpenComplete 2 ).
3. Mold Close
4. Measure Voltage MOC1 and MOC2 ( DC 0 Volts, AC 0 Volts or No Continuity )
5. Mold Open
6. Measure Voltage MOC1 and MOC2 ( DC 24 Volts, AC 110 Volts or Continuity )

### Safety Door Closed

1. Locate Safety Door Closed Wiring No. ( Two Point Required ) \_\_\_\_\_
2. For Example SDC1 ( Safety Door Closed1 ) , and SDC2 ( Safety Door Closed 2 ).
3. Close Safety Door
4. Measure Voltage SDC1 and SDC2 ( DC 0 Volts, AC 0 Volts or No Continuity )
5. Open Safety Door
6. Measure Voltage SDC1 and SDC2 ( DC 24 Volts, AC 110 Volts or Continuity )

### Injection Signal

1. Locate Injection Signal Wiring No. ( Two Point Required ) \_\_\_\_\_
2. For Example IS1 ( Injection Signal 1 ) , and IS2 ( Injection Signal 2 ).
3. Measure Voltage IS1 and IS2 with No Injection
4. ( DC 0 Volts, AC 0 Volts or No Continuity )
5. Measure Voltage IS1 and IS2 with Injection
6. ( DC 24 Volts, AC 110 Volts or Continuity )

### Full Auto

1. Locate Full Auto Wiring No. ( Two Point Required ) \_\_\_\_\_
2. For Example FA1 ( Full Auto 1 ) , and FS2 ( Full Auto 2 ).
3. Measure Voltage FA1 and FA2 without Full Auto
4. ( DC 0 Volts, AC 0 Volts or No Continuity )
5. Measure Voltage FA1 and FA2 with Full Auto
6. ( DC 24 Volts, AC 110 Volts or Continuity )

### Mold Close Limit ( Might Not Required )

1. Locate Mold Close Complete ( Limit ) Wiring No. ( Two Point Required )
2. For Example MCC1(MoldCloseComplete1) and MCC2 ( MoldCloseComplete 2 ).
3. Mold Close
4. Measure Voltage MCC1 and MCC2 ( DC 0 Volts, AC 0 Volts or No Continuity )
5. Mold Open
6. Measure Voltage MCC1 and MCC2 ( DC 24 Volts, AC 110 Volts or Continuity )

There might be same common and write down the each number that actually reading from Voltmeter.

## FROM ROBOT TO IMM ( ROBOT TEST )

After Mounting the robot on IMM, even though Robot fully tested before shipping, we recommend actual voltage or contact reading from Robot before wiring IMM. After finishing IMM Electric Test recommended test all the ROBOT wire and Make sure all the relay and cable is working properly with ( Contact On and Off ) with actual robot operation.

To turn on the Robot, Connect the Power and Make Jumper on EC, ED ( IMM E-Stop )

### Cable Test

1. Test Continuity between C, C1, C2 ( Each of two wire ) : No Continuity
2. Test Continuity between D, E, F ( Each of two wire ) : No Continuity  
( There should no continuity on each of two wire )

### Robot E-Stop Test

1. Test Continuity EA and EB with No Robot E-Stop ( Continuity )
2. Press Robot E-Stop
3. Test Continuity EA and EB ( No Continuity )

### Mold Close Interlock

1. Adjust Robot arm stroke to prevent damaging Robot arm or mold
2. Test Continuity Between K and L ( Continuity )
3. Press Descent Button
4. Test Continuity Between K and L ( No Continuity )

Ejector Interlock need to run with Molding Machine ( In Auto Mode ) N, M ( Continuity in Manual )  
Auto Cycle Start need to run with Molding Machine ( In Auto Mode ) G, H ( No Continuity in Manual )

Follow instruction Manual to test Ejector Interlock and Auto Cycle Start

Also it's possible to test robot relay without IMM operation.

Mold Open Complete ( C, F ), Safety Door Closed, ( C2, E ), Auto Injection ( C1, D ).

From Robot wire

Test : Mold Open Complete ( C, F )

Supply 0 Volt to F and 24 Volt to C, It will activate Mold Open Complete relay ( RED Bright LED )  
Supply 0 Volt to C and 24 Volt to F, It will activate Mold Open Complete relay ( But No LED )

Test : Auto Injection ( C1, D )

Supply 0 Volt to D and 24 Volt to C1, It will activate Auto Injection relay ( RED Bright LED )  
Supply 0 Volt to C1 and 24 Volt to D, It will activate Auto Injection relay ( But No LED )

Test : Safety Door Closed, ( C2, E )

Supply 0 Volt to E and 24 Volt to C2, It will activate Safety Door Closed relay ( RED Bright LED )  
Supply 0 Volt to C2 and 24 Volt to E, It will activate Safety Door Closed relay( But No LED )

Test : IMM Full Auto Signal ( R ( Red + Black ) )

Also Supply 0 Volt to R, Will see Full Auto Icon in Handy Controller Screen.

Make sure all the test is working properly and Follow interface interlock

If you have any question, Please contact

Sam Lee ( Tel : 1-636-578-6059 )

If anyone in you or your maintenance people understand or perform above information, it's possible to install robot without paying expensive cost. Also Telephoen assitant and training is free of charge.



HYROBOTICS CORP.  
5988 MID RIVER MALL DR.  
ST. LOUIS MO 63304  
Www.hyrobot.com