

Symptom	Probable Cause	Action
PDC hand does not move on startup - Display Reads "PDC Not available , Please Check Cables" The status lights on the PDC controller does not turn on  The status light is flashing Amber only or Flashing Green Only	1. Monetary Device is defective 2. MDB Cable not connected 3. Incompatible VMC / PDC software 4. Incompatible PDC Hardware / Software 5. Blown fuse. 6. Defective Ribbon Cable 7. Defective Igus 8. Hardware does not function	Disconnect coin mechanism , Bill Validator or Card reader from the VMC and check to Connect the MDB Cable. <a href="#">Check Compatibility chart</a> <a href="#">New boards / New firmware (2.XX) is not compatible with older boards / older firmware (1.XX)</a> <a href="#">Check the fuse - System Diagram ( SXY / Vue )</a> <a href="#">Check the light status on the PDC - replace Ribbon Cable if there are no lights on the PDC Board</a> <a href="#">Check the continuity on the IGUS cable wires - Click for wiring diagram</a> Replace PDC controller
Hand Collides with hinge Side of the door	X-Home switch malfunction The X home reed switch typically fails to open intermittently.	<b>Do not change PDC hand</b> Upgrade PDC and VMC software ( PDC 1149143-21 or PDC 1179936-2.02 and VMC 1149131-61 ) - The software upgrade detects this abnormality and takes action to correct it, whereas the older software would lose position and crash into the its hinge side of the door. If the reed switch is permanently bad - software upgrade will not resolve this issue
Hand freezes above vend delivery flap ( fingers are in semi-open state)	Dirty hand - High friction during hand movement	<a href="#">Clean and lubricate z-tracks</a> <a href="#">Clean and lubricate clamp springs and z-track</a> Upgrade PDC and VMC software ( PDC 1149143-21 or PDC 1179936-2.02 and VMC 1149131-61 )
Hand fails to retract fully after grabbing product	High Friction on Z-axis due to syrup residue Weak / Faulty Z-motor Encoder magnet disc rubbing on large diode Broken Z-wheel drive	<a href="#">Clean and lubricate z-tracks</a> Replace Z-motor Move / bend diode to have clearance between the diode and the encoder disc Replace Z-wheel
Finger collides with right / left side of the tray	Mis-aligned X - axis	<b>Do not change PDC hand -</b> Add spacer if the PDC is not reaching the allocated shelf or Remove spacer if the PDC is over travelling the target
PDC Fingers bent	The flap does not fully open during delivery	<b>Do not change PDC hand -</b> Check the flap retainer bracket for bent retainer hooks. Replace / repair as required Clean any debris trapped in flap pivot that can be preventing the flap from opening fully
Flap opens and closes repeatedly - on Flap test or during vend routine	1.Defective Flap/Bucket motor or bottle detect sensor	<b>Do not change PDC hand -</b> Flap , Bucket and vend detect circuit follow a common return wire to the controller - Any break in this common path can prevent a closed circuit loop in the switch circuit and cause a malfunction. Follow the procedure to test : <b>Switch Circuit Connect procedure</b> 1.Unplug the bucket and vend detect circuit and test the flap motor only 2.If the problem persists, then replace the flap motor otherwise connect the bucket motor and test the flap motor 3.If the problem persists, then replace the bucket motor otherwise connect the vend detection and test the flap motor 4.If the problem persists, then replace the vend detection otherwise replace the door harness and test 5.If the problem persists, replace the VMC board
Bucket opens and stays open	1.Debris inside the bucket 2.Defective vend detect circuit	Clean the bucket and wipe off the sensor Test flap motors in test mode and if it is working, check connectors for the vend detection for any loose connection Replace the vend detection circuit Test flap motos in test mode - if it is not working - the common return path for the switch circuit might be open / disconnected Follow the <b>Switch Circuit Connect procedure</b> described in previous section
Hand Fails to grab from selection 50, 40 , 30	1.IGUS chain is out of the guide bracket.	<b>Do not change the PDC hand</b> Make sure the igus is placed correctly in the IGUS metal bracket
Hand Fails to grab from Selection 30 and 40 only	The PDC hand is moving too far to the hinge side  Check X - Position	<b>Do not change the PDC hand</b> Remove the X-Spacer beneath the X-home magnet To check X home I first go from home to selection 17. The hand will never moves in X. If it off then remove a spacer. Be careful that the fingers are not bent on the hand and making it look like it is not lining up.
Hand Fails to move to the allocated Selection Machine "Out Of Service" The Flap motor and Bucket are off by 180 degrees Machine vends intermittently and sets it to "out of service" on failure	X-Track on the rail might have a physical obstruction The bucket hook is interfering with Flap and flap cannot open. This triggers the bucket to open and close and the flap will retry. This retry will continue for 3 times before the machine is set to Out of Service mode	Remove the PDC hand from the Rail, unlock the X-motor housing and check to see if there is any obstruction in the track. <b>Do not change the PDC hand</b> Check the bucket hook and make sure it is out of the way when it closes.
X-Rail jumps up about an inch and stop during power on	Faulty Y-Motor	<b>Do not change the PDC hand</b> Encoder circuit board in the Y-motor is bad - Change Y-motor Y-Motor gears are bad - Change Y-Motor
VMC Display reads "Please Wait ... " after calibration	Defective Eprom - PDC cannot store data into its flash memory -	<b>Do not change the PDC hand</b> Change eprom ( Macronix / SST are not compatible )
PDC Robotic Hand crashes into the Flap.	Failure to brake / stop the Y-Motor Movement. Defective flap assembly - Flap cannot open all the way Defective Igus Connector - loosely connected wires in the Igus	<b>Do not change the PDC hand</b> <a href="#">Check the inner flap hook is assembled correctly - spring is connected properly. Check the flap pivot - Click for diagram</a> <a href="#">Check the igus connector and make sure the wires are not loose. Ref: Diagram</a>
PDC hand lifts the tray above	1.Defective Z-Sensor	If the Z-sensor fails when in extended position , the PDC controller thinks that it is at home. This leads to mechanical jam when the PDC tries to drop the product from the tray position The jam leads to a recovery routine where the first movement is to retract the hand. However since the Z-sensor is bad and the hand is extended , the wrong signal from the sensor leads the PDC hand to raise in Y-direction for 4 inches. Eventual ries ( 5 at the most ) will lead to the tray above the hand to lift up. Restart with the door open and make sure the Z-retracts , if not replace the PDC board. If it does, go into the Test motor to check if any damage is evident on the Z-sensor.

<b>Compatibility Chart</b>
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**Model: Vue 30 / 40**

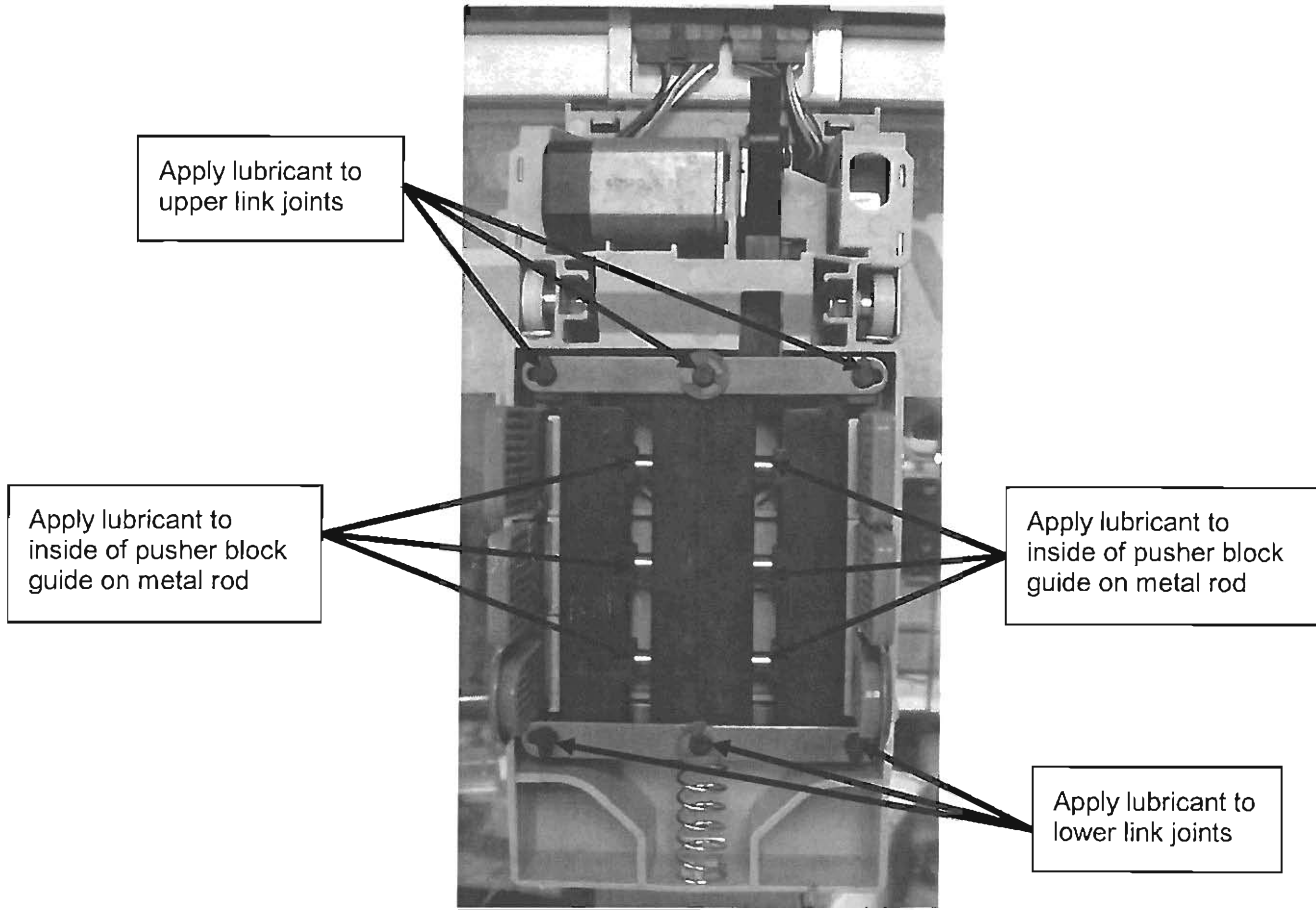
PDC Hardware	PDC Software Revision	VMC Software Revision			
		1.15	1.20 or Higher	1.45 or Higher	1.61 or Higher
	1.15	Yes	No	No	No
	1.16	No	Yes	Yes	Yes
	1.18	No	Yes	Yes	Yes
	1.21	No	Yes	Yes	Yes
1171185-Rev A	2.00	No	Yes	Yes	Yes
	2.02	No	Yes	Yes	Yes

Please Note: PDC Hardware 1133158 must have PDC Software 1.XX
PDC Hardware 1171185 must have PDC Software 2.XX

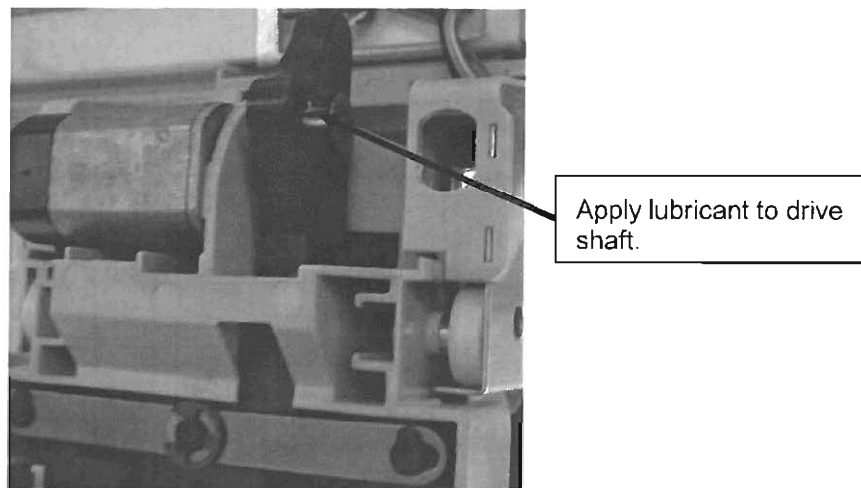
## Finger and Hand Lubrication

**Step #1** You will need either a silicone spray with “smart straw” red extender or white lithium grease with an applicator such as a small paint brush. When applying lubricant be careful not to get any on the finger pads.

**Step #2** Repeat Step #2 through Step #10 from the **PDC Software Update** section. With the hand in the extended position, use one of the lubricants above to lubricate the rods inside of both pusher block guides and the upper and lower link joints.



**Step #3** While the hand is still extended, lubricate the drive shaft at the top of the driver.



**Step #4** Power off the machine by removing the power source to exit PDC maintenance mode. Next, go to test mode and select test motors. Lubricate the metal rod outside of the pushers/fingers and the upper plastic edge of the z-direction track.

**Step #1** Press "Mode Button" on the VMC Board.

**Step #2** The Display should read "Diagnostics".

**Step #3** Press '2' to scroll to "Test Mode". (Press Button '2', three times)

**Step #4** Press '4' to enter "Test Mode".

**Step #5** Press '2' to scroll to "Test Motors".

**Step #6** Press '4' to enter. The display will read, "Pls Wait...Entering Test Motors Mode".

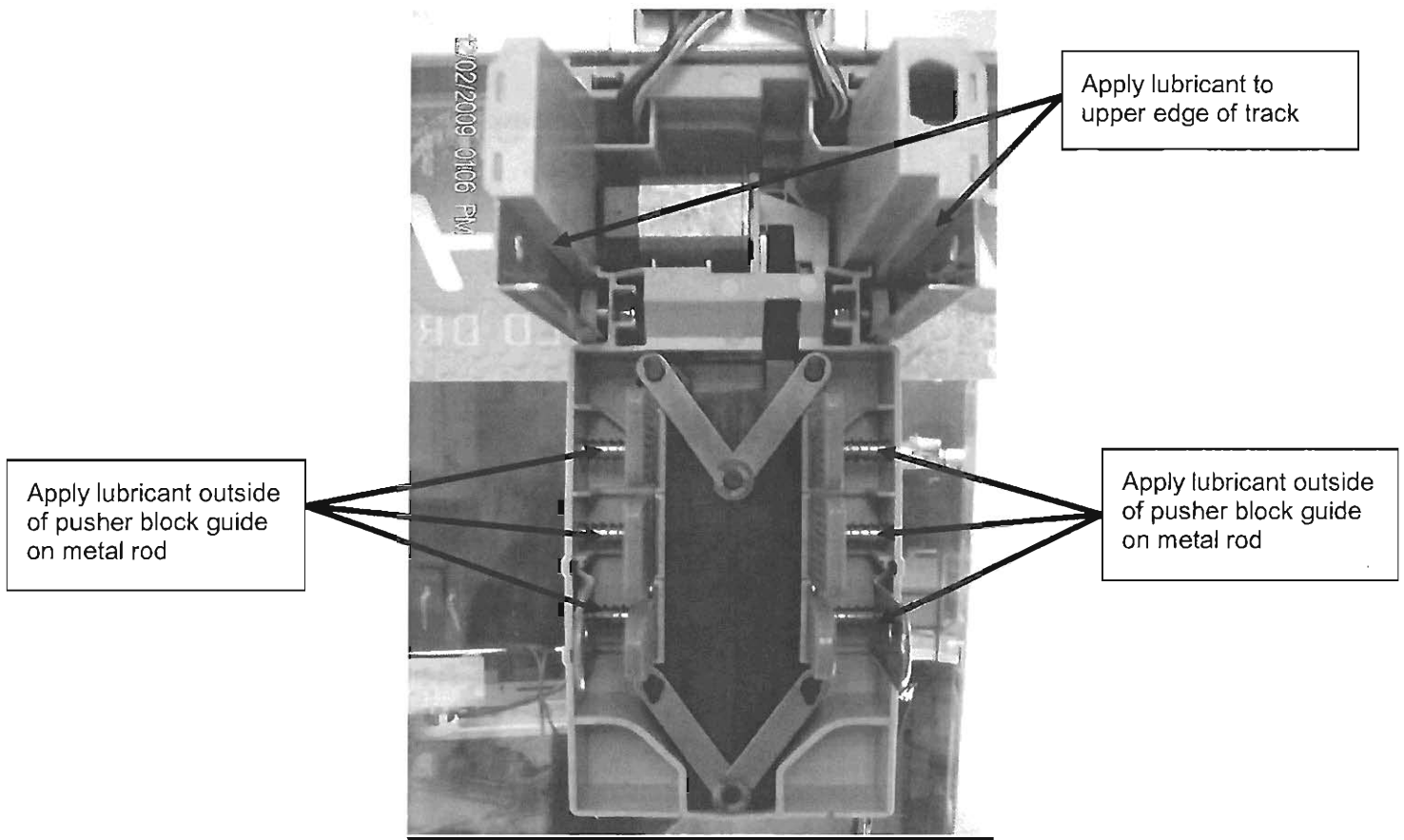
**Step #7** Press '2' to scroll to "Clamp Motor".

**Step #8** Press '4' to enter. The display will read, "Clamp open".

**Step #9** Press '2' to scroll to "Clamp Close".

**Step #10** Press '4' to enter. The display will read, "Testing in Progress".

**Step #11** Apply lubricant.

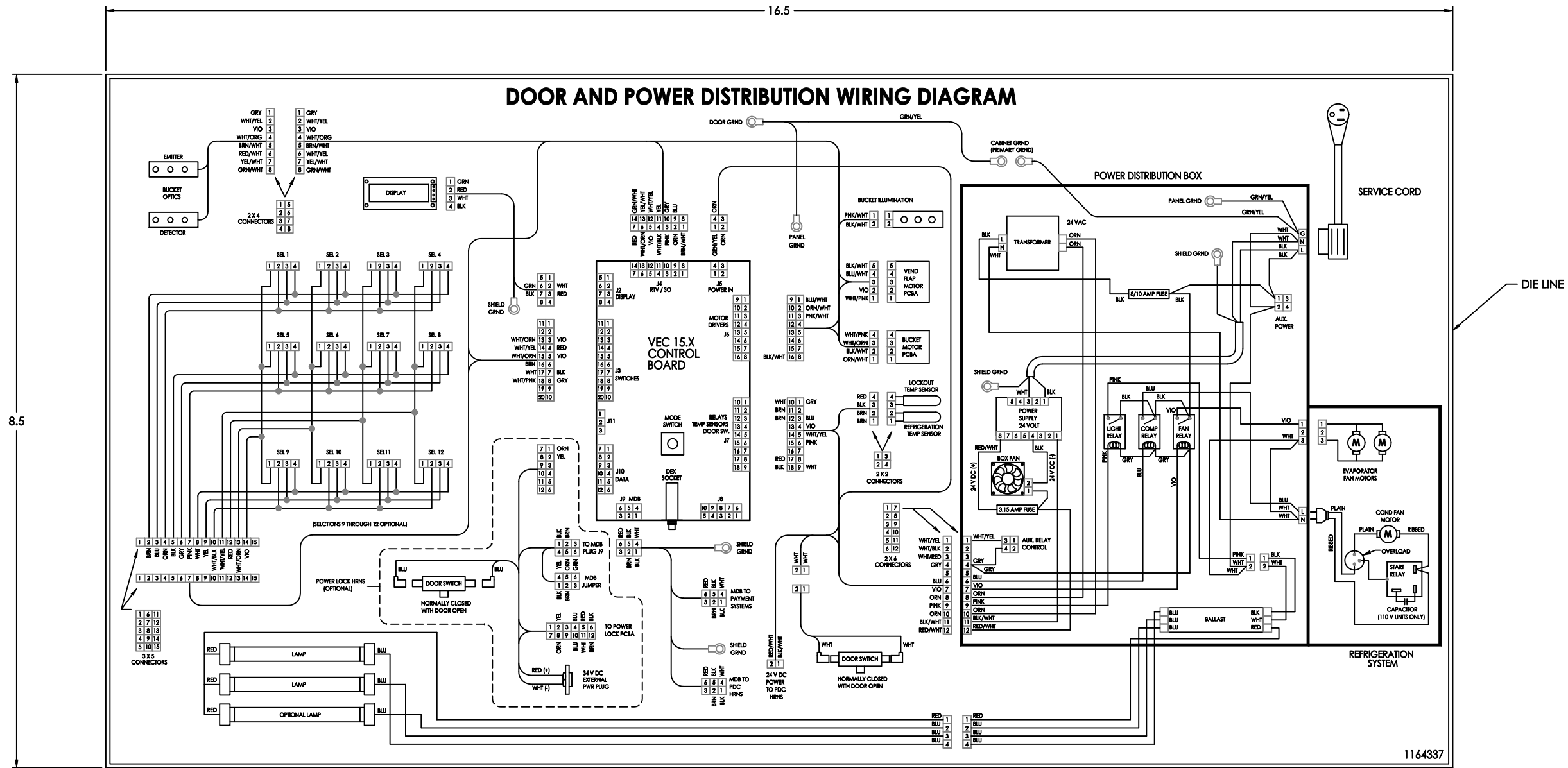


**Step #12** Press '1' five times to exit out of "Test Mode".

**NOTES:**

1. TEXT AND CHARACTERS TO BE BLACK ON WHITE BACKGROUND.
2. FOR DETAILS OF TEXT AND CHARACTERS, OBTAIN ARTWORK FILE FROM SANDENVENDO ENG. DEPT
3. PART MUST COMPLY WITH EU RoHS DIRECTIVE 2002/95/EC AND ALL AMENDMENTS.

REVISIONS					
ECN. NO.	ZONE	DWG REV	DESCRIPTION	DATE	APPROVED
50177	~	B	INITIAL RELEASE	04-30-08	DSC
~	~	~	~	~	~
~	~	~	~	~	~
~	~	~	~	~	~



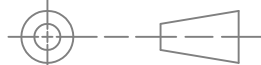
C

B

A

THIRD ANGLE PROJECTION

CRITICAL CHARACTERISTIC SYMBOLS



- <A> APPEARANCE
- <C> CRITICAL DIMENSION
- <F> FIT / FUNCTION
- <S> SAFETY

3

2

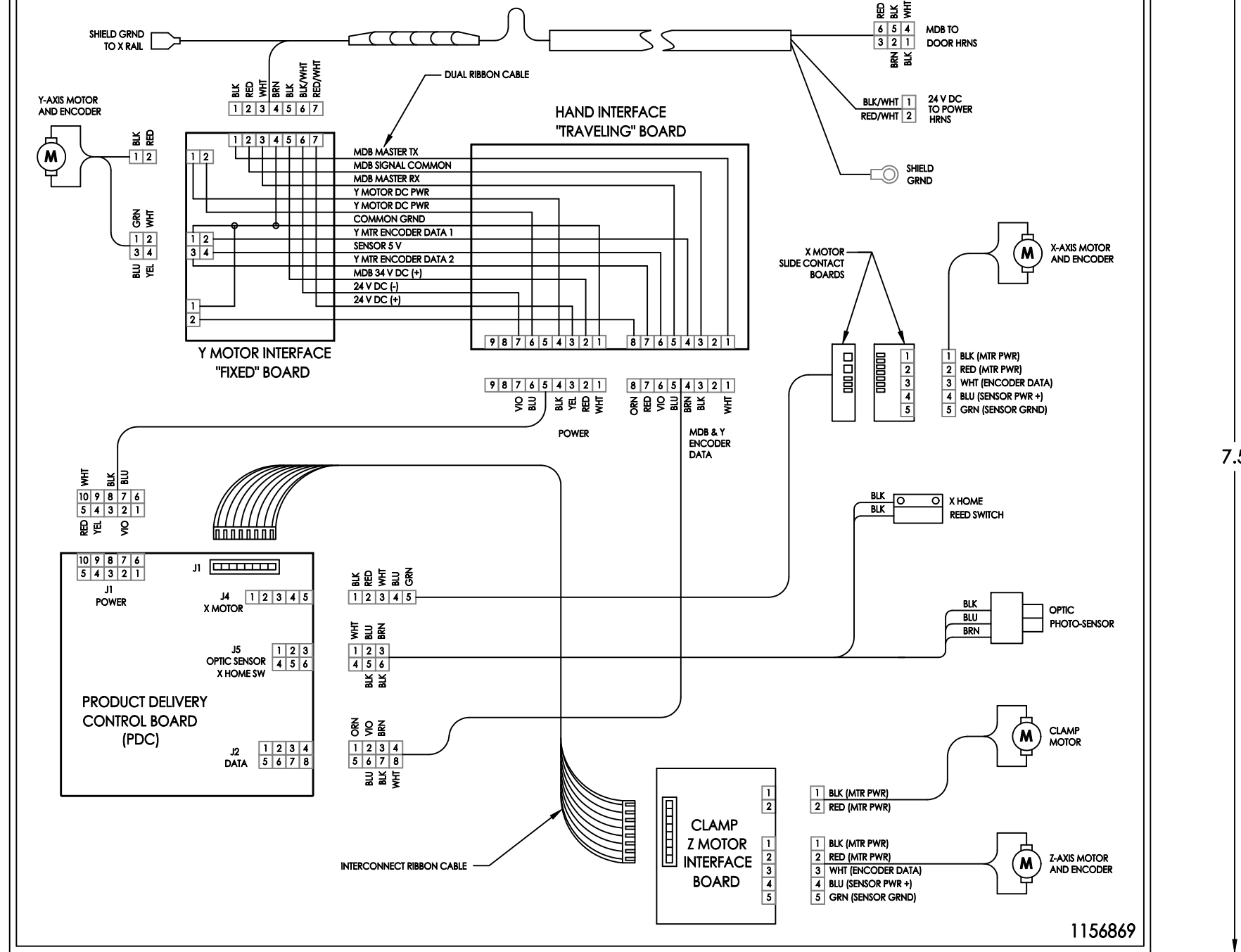
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: 1 PLACE DECIMALS ± .1 2 PLACE DECIMALS ± .030 3 PLACE DECIMALS ± .010 ANGULAR ±1°	APPROVALS		DATE
	DRAWN	DSC	04-30-08
	ENGR'	DSC	04-30-08
MATERIAL PRESSURE SENSITIVE LABEL	SPC.	VM 5200	
FINISH	SPC.	~	

<b>Vendo</b>		SANDEN VENDO AMERICA, INC.	
TITLE: LABEL, WIRING DIAGRAM DOOR & POWER, COKE SXY			
SIZE	PART REV	DWG. NO.	1164337
SCALE	NONE	Solidworks	SHEET 1 OF 1

1

REVISIONS					
ECN. NO.	ZONE	DWG REV	DESCRIPTION	DATE	APPROVED
50177	~	B	INITIAL RELEASE	04-30-08	DSC
~	~	~	~	~	~
~	~	~	~	~	~
~	~	~	~	~	~

# DELIVERY SYSTEM WIRING DIAGRAM



## NOTES:

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2. FOR DETAILS OF TEXT AND CHARACTERS, OBTAIN ARTWORK FILE FROM SANDENVENDO ENG. DEPT
3. PART MUST COMPLY WITH EU RoHS DIRECTIVE 2002/95/EC AND ALL AMENDMENTS.

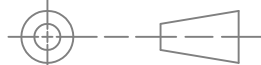
C

B

A

THIRD ANGLE PROJECTION

CRITICAL CHARACTERISTIC SYMBOLS



- <A> APPEARANCE
- <C> CRITICAL DIMENSION
- <F> FIT / FUNCTION
- <S> SAFETY

3

2

1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:  
 1 PLACE DECIMALS ± .1  
 2 PLACE DECIMALS ± .030  
 3 PLACE DECIMALS ± .010  
 ANGULAR ±1°

APPROVALS		DATE
DRAWN	DSC	04-30-08
ENGR'	DSC	04-30-08

**Vendo** SANDEN VENDO AMERICA, INC.

TITLE: LABEL, WIRING DIAGRAM  
 DELIVERY SYS CONTROL, GFV

MATERIAL	SPIC.
PRESSURE SENSITIVE LABEL	VM 5200
FINISH	SPIC.
~	~

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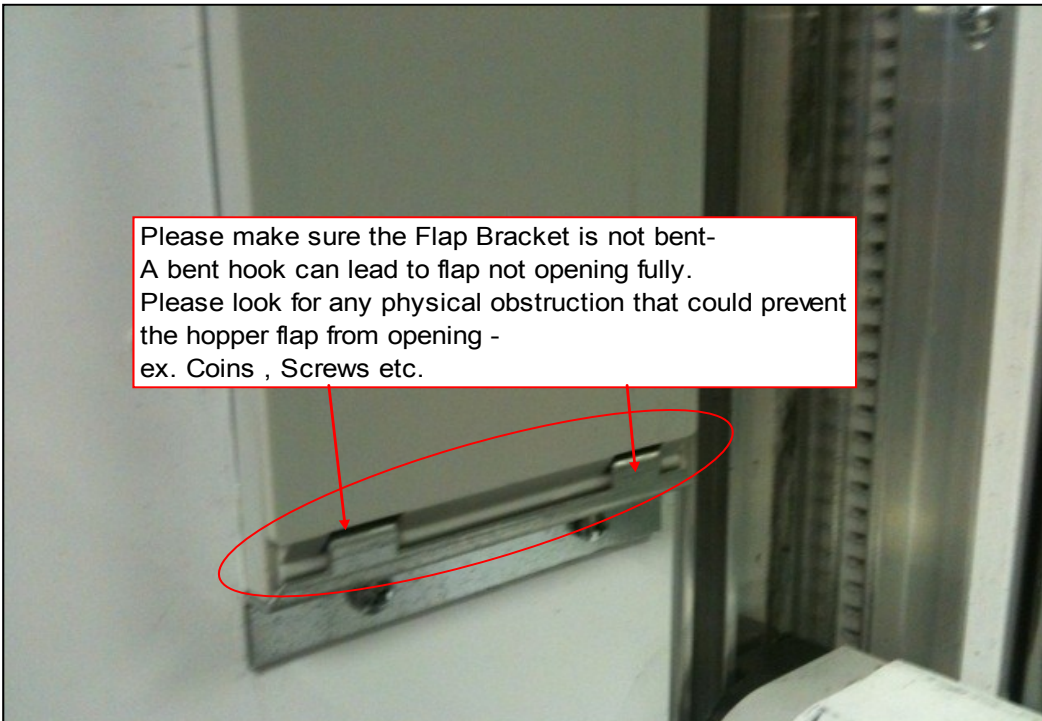
SIZE	PART REV	DWG. NO.
B	B	1156869
SCALE	Solidworks	SHEET 1 OF 1

Please make sure the Flap opens approx.  
above the Label 46 during Vend.

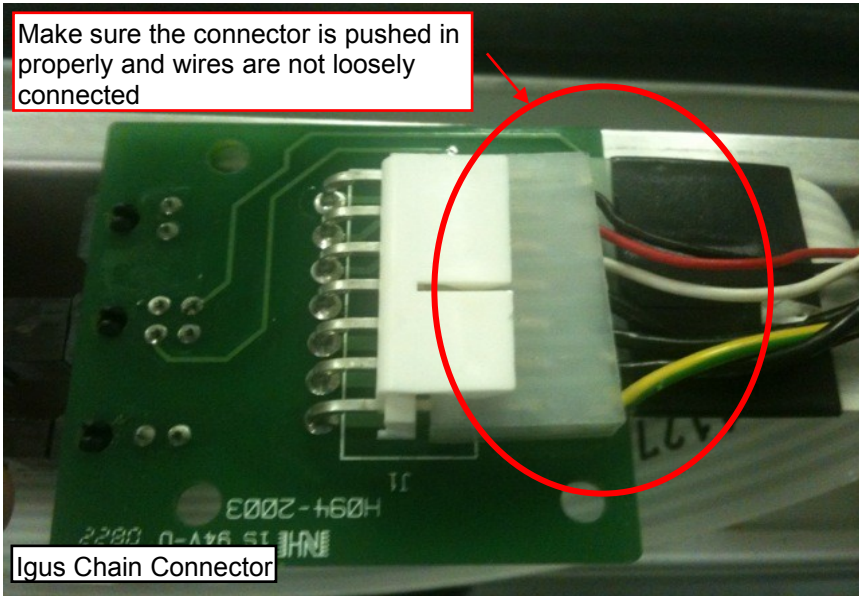
A normal flap opening should always be around the location  
shown in this picture



Please make sure the Flap Bracket is not bent-  
A bent hook can lead to flap not opening fully.  
Please look for any physical obstruction that could prevent  
the hopper flap from opening -  
ex. Coins , Screws etc.



Make sure the connector is pushed in properly and wires are not loosely connected



Igus Chain Connector