



Installation Instructions

PART NUMBER	158-8454	
PART DESCRIPTION	PLC DC CONVERSION KIT FROM CPM2A TO CP1L	
REV DATE	04/20/20	
MACHINE MODELS	KW - A, B / ION - A, B	

TOOLS NEEDED	PARTS
KOSI Software Wire Cutters Phillips Screwdriver Drill or Saws All 11/32 wrench Debur Tool Skill Saw or a 2 3/4" hole saw	

TECHNICAL NOTE

Please thoroughly read the instructions prior to performing the installation of this assembly. To avoid any potential problems, if at any time during the process you have a question, stop and contact our Tech Support department at the numbers listed below.

You may be required to install necessary upgrades into the lane machine prior installing this kit!

STEPS

Prior to performing this modification backup all machine settings using KOSI. If you do not have KOSI, write down all the Lane Machine settings. This includes the Oil Programs, Distance to end setting, Return travel distance, Current unwind time, End Cleaning distance and any other custom settings currently on the lane machine.



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PLC TO KEYPAD CABLE REMOVAL AND INSTALLATION

1. With the lane machine laying down in the operating position, open the oil compartment lid and then open the splash guard assembly to gain access to the bottom of the keypad assembly.
2. Disconnect the old cable from the bottom of the keypad by loosening the two screws holding on the connector to the bottom of the keypad.
3. Follow the keypad cable back to the PLC cutting wire ties along the way. In some cases, the cable was routed under the electrical panel and the electrical panel will need to be lifted to gain access to the cable.
4. Once all the wire ties have been cut, remove the cable from the lane machine.
5. Locate the new cable assembly from the kit. Route it where the old cable was and fasten into place using the supplied wire ties. Leave the cable resting on top of the electrical panel as this will be installed in the next steps.

OMRON CPM2A PLC REMOVAL & INSTALLATION

1. While the terminal strips are still attached to the PLC, remove each of the wires from both the Output side and Input side of the PLC. *Tip: even though wire schematics are supplied, it may be a good idea to take a quick pic of the PLC with your phone.*
2. On the ION, follow the Input wire down to where the clamp is holding the bundle in place on the lane machine. Remove this clamp to gain the necessary room for reinstallation.
3. On the Kustodian Walker only, remove the Expansion Module ribbon from the plug located on the right side of the PLC.
4. With all wires disconnected, take a screwdriver and insert into the orange pull tab located on the bottom front side of the PLC. This will free up the PLC from the Din Rail allowing to tilt the PLC back and away from you. Remove it from the machine.
5. Locate the new PLC from the kit. Pull the orange tabs out that are located on the bottom of the PLC.

6. Hook the back side of the PLC to the back of the Din Rail and then push into place with the orange tabs.
7. On the Kustodian Walker only, remove the small cover on the right of the PLC that is labeled EXP. Insert the ribbon cable that was removed in step 2 and replace the small cover back onto the PLC.
8. Using the appropriate table below, reattach all the wires
9. Screw the new Keypad cable into place.

KOSI SOFTWARE:

1. For KOSI to connect to your lane machine, you will need to go into KOSI settings and enter the proper machine information for it to connect!

Power up the machine and verify that all inputs/outputs work as they should.

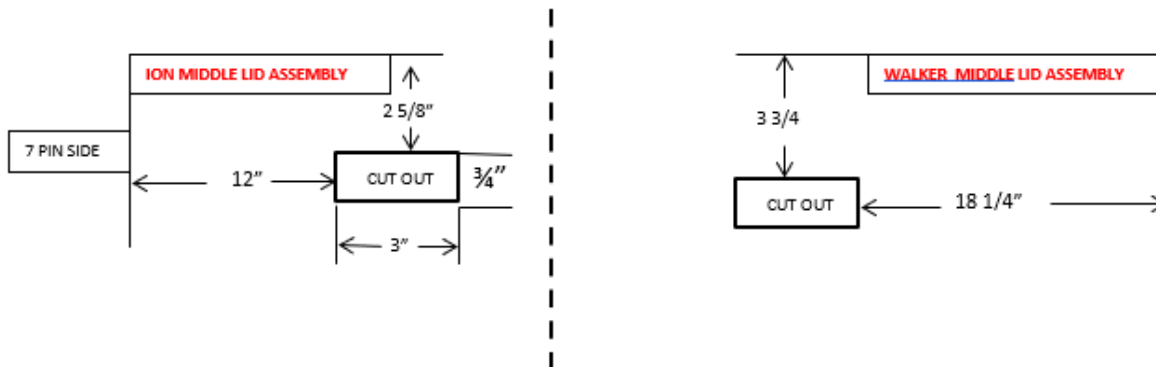
LID MODIFICATION

Because of the new PLC being taller, a necessary lid modification will require the lid to be cut allowing an opening for the Keypad cable.

You can use a couple of different methods to cut the hole

Using a Skill Saw:

1. With the machine in the operating position, remove the lid assembly.
2. Using the measurements for your lane machine type below, make an outline with a marker.
3. With your Drill, make some relief cuts around the measurement.
4. Use the Skill Saw to cut the remaining piece out to the measurements below.
5. Debur the sides of the cut out in the lid assembly.
6. Replace the lid assembly.



Using a 2 3/4" hole saw:

1. The hole will be started at the point of 13 1/2" from the left side panel and 3 3/8" down from the top edge of the middle lid.
Clean up all debris and debur the hole once cut.

ION					
INPUTS	ION	Function	OUTPUTS	ION	Function
L1	RD	POWER	+		
L2/N	BK	POWER	-		
GD			COM (ALL)	BN	COMMON
COM	BN	COMMON	10CH 00	OR	OIL CONTROL VALVE
0CH 00			10CH 01	WT/RD	SR1 SPEED RELAY
0CH 01	RD/WT	BOARD COUNTING PROX	10CH 02	GN/OR	FORWARD DRIVE
0CH 02	RD/OR	LEFT OIL HEAD PROX	10CH 03	YL/VI	REVERSE DRIVE
0CH 03	OR/BK	RIGHT OIL HEAD PROX	10CH 04	WT/GN	SR2 SPEED RELAY
0CH 04	GN/WT	BUFFER UP SWITCH	10CH 05	BK/PK	SR3 SPEED RELAY
0CH 05	VI/YL	BUFFER DOWN SWITCH	10CH 06	YL/OR	SR4 SPEED RELAY
0CH 06	BK/BL	TACH	10CH 07	RD/BN	OIL PUMP
0CH 07	WT/PK	LDS	11CH 00	GY	LEFT TO RIGHT HEAD DRIVE
0CH 08	VI	START BUTTON	11CH 01	YL/RD	RIGHT TO LEFT HEAD DRIVE
0CH 09	GY/GN	OIL ONLY SWITCH	11CH 02	WH/BK	BRUSH LIFT
0CH 10	GN/BK	DUSTER UP SWITCHES	11CH 03	BL/WT	SQUEEGEE
0CH 11	GY/PK	CLEAN ONLY SWITCH	11CH 04	GN/BL	DUSTER UNWIND
1CH 00	BK	SQUEEGEE DOWN SWITCH	11CH 05	GN/RD	DUSTER WINDUP
1CH 01	YL/GN	SQUEEGEE UP SWITCH	11CH 06	BL/YL	CLEANER PUMP MOTOR
1CH 02	GY/WT	OIL FLOAT SWITCH	11CH 07	BL/BK	VACUUM MOTOR
1CH 03	GY/BK	CLEANER FLOAT SWITCH			
1CH 04	WT/OR	CLEANER PRESOAK SWITCH			

Walker					
INPUTS	COLOR	Function	OUTPUTS	COLOR	Function
L1	RD	POWER	+		
L2/N	BK	POWER	-		
GD			COM (ALL)	BN	COMMON
COM	BN	COMMON	10CH 00	OR	OIL CONTROL VALVE
0CH 00	YL/OR	OLS	10CH 01	WT/RD	BUZZER
0CH 01	RD/WT	BOARD COUNTING PROX	10CH 02	GN/OR	FORWARD DRIVE
0CH 02	RD/OR	LEFT OIL HEAD PROX	10CH 03	YL/VI	REVERSE DRIVE
0CH 03	OR/BK	RIGHT OIL HEAD PROX	10CH 04	WT/GN	FORWARD APPROACH DRIVE
0CH 04	GN/WT	BUFFER UP SWITCH	10CH 05	BK/PK	REVERSE APPROACH DRIVE
0CH 05	VI/YL	BUFFER DOWN SWITCH	10CH 06	YL/BL	BUFFER MOTOR
0CH 06	BK/BL	TACH SENSOR	10CH 07	RD/BN	OIL PUMP
0CH 07	WT/PK	LDS	11CH 00	GY	LEFT TO RIGHT HEAD DRIVE
0CH 08	VI/YL	RESUME BUTTON	11CH 01	YL/RD	RIGHT TO LEFT HEAD DRIVE
0CH 09	BN/YL	RL MAUNAU START	11CH 02	WT/BK	BRUSH LIFT
0CH 10	GN/BK	DUSTER UP SWITCH	11CH 03	BL/WT	SQUEEGEE LIFT
0CH 11	BN/BL	LR MANUAL START	11CH 04	GN/BL	DUSTER UNWIND
1CH 00	BK	SQUEEGEE DOWN SWITCH	11CH 05	GN/RD	DUSTER WINDUP
1CH 01	YL/GN	SQUEEGEE UP SWITCH	11CH 06	BL/YL	CLEANER PUMP
1CH 02	GY/WT	OIL FLOAT SWITCH	11CH 07	BL/BK	VACUUM MOTOR
1CH 03	GY/BK	CLEANER FLOAT SWITCH			
1CH 04		QC FUNCTION			
1CH 05	GY/OR	10 PIN APPROACH SENSOR			
1CH 06	GY/BN	7 PIN APPROACH SENSOR			
1CH 07	WT/OR	BOTTOM DUSTER SWITCH			
1CH 08	BN/VI	CLEANING COMPARTMENT BUTTON			
1CH 09	VI/OR	7 PIN WHISKER			
1CH 10	RD/VI	10PIN WHISKER			
1CH 11	GN	BUMPER SWITCH			