



INSTALLATION INSTRUCTIONS

PART NUMBER	158-8254
PART DESCRIPTION	PLC AC CONVERSION KIT FROM CPM2A TO CP1L
REV DATE	4/21/2020
MACHINE MODELS	KUSTODIAN, KUSTODIAN PLUS, PX-C, FIREBIRD, CROSSFIRE W/ CPM2A PLC



Basic knowledge of the operation of the lane machine including mechanical and electrical

TOOLS NEEDED:

Wire Cutters

Flat Screwdriver

Phillips screwdriver

*****ALL available upgrades to your model must be performed for this kit to work***
CONTACT KEGEL FOR MORE INFORMATION**



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.

Please visit our growing library of videos to see if these instructions are available!

 www.youtube.com/user/KegelBowling81

KEGEL TECH SUPPORT:
Within USA - 1-800-280-2695
Outside USA - +1 863-734-0200
via e-mail at LMC@Kegel.net
website www.kegel.net



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.

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. 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.
3. Locate the new PLC from the kit. Pull the orange tabs out that are located on the bottom of the PLC.
4. Hook the back side of the PLC to the back of the Din Rail and then push into place with the Orange tabs.
5. Reattach all the wires using the appropriate table provided.
6. On Firebird & PXC, remove the cover on the right of the PLC labeled EXP. Insert the ribbon cable that was removed in step 2 and replace the cover.
7. Screw the new Keypad cable into place.
8. Power up the machine and verify that all inputs/outputs work as they should.

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.

KUSTODIAN

INPUTS	COLOR	FUNCTION	OUTPUTS	COLOR	FUNCTION
L1	RD	POWER	+	BN	POWER
L2/N	WT	POWER	-	YL	POWER
GD	GN/YL	GROUND	COM (ALL)	YL	COMMON
COM	BN	COMMON	10CH 00	OR	OIL CONTROL VALVE
0CH 00			10CH 01	GN/OR	FORWARD DRIVE
0CH 01	RD/WT	BOARD COUNTING PROX	10CH 02	YL/VI	REVERSE DRIVE AND CLEANER PUMP
0CH 02	RD/OR	LEFT OIL HEAD	10CH 03	WT/RD	SR1 SPEED RELAY
0CH 03	OR/BK	RIGHT OIL HEAD	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	DRIVE SHAFT TACH	10CH 07	YL/BK	BUFFER CONTACTOR
0CH 07	WT/PK	LDS	11CH 00	GY	LEFT TO RIGHT OIL HEAD DRIVE
0CH 08	VI	START BUTTON	11CH 01	YL/RD	RIGHT TO LEFT OIL HEAD DRIVE
0CH 09	GY/GN	OIL ONLY SWITCH	11CH 02	WT/BK	BRUSH LIFT MOTOR
0CH 10	GN/BK	DUSTER UP SWITCH	11CH 03	BL/WT	SQUEEGEE MOTOR
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	RD/BN	CONDITIONER PUMP MOTOR
1CH 02	GY/WT	OIL FLOAT (ONLY CERTAIN MODELS	11CH 07	BL/BK	VACUUM MOTOR
1CH 03	GY/BK	CLEANER FLOAT (ONLY CERTAIN MODELS)			
1CH 04					

KUSTODIAN PLUS

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

CROSSFIRE

INPUTS	COLOR	FUNCTION	OUTPUTS	COLOR	FUNCTION
L1	RD	POWER	+	BN	POWER
L2/N	WT	POWER	-	YL	POWER
GD	GN/YL	GROUND	COM (ALL)	RD	COMMON
COM	BN	COMMON	10CH 00	RD/BL	OIL SUPPLY VALVE
0CH 00			10CH 01		
0CH 01	GY/WT	OIL FLOAT SWITCH	10CH 02	BL/YL	CLEANER PUMP
0CH 02			10CH 03	GY/RD	VACUUM MOTOR
0CH 03			10CH 04	YL/RD	CAM MOTOR
0CH 04	GN/WT	BUFFER UP SWITCH	10CH 05	WT/BK	BRUSH LIFT MOTOR
0CH 05	VI/YL	BUFFER DOWN SWITCH	10CH 06	YL/BL	BUFFER MOTOR
0CH 06			10CH 07	BL/WT	
0CH 07	WT/PK	LDS	11CH 00	YL/OR	SPEED CONTROL 1
0CH 08	VI	START BUTTON	11CH 01	BK/PK	SPEED CONTROL 2
0CH 09	GY/GN	OIL ONLY SWITCH	11CH 02	BL/GN	SPEED CONTROL 3
0CH 10	GR/BK	DUSTER UP SWITCH	11CH 03		
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	GN/OR	FORWARD DRIVE
1CH 02	RD/OR	INDEXING CAM SWITCH	11CH 07	YL/VI	REVERSE DRIVE
1CH 03	OR/BK	INDEXING CAM HOME SWITCH			
1CH 04					

PX-C/FIREBIRD

INPUTS	COLOR	FUNCTION	OUTPUTS	COLOR	FUNCTION
L1	RD	POWER	+	BN	POWER
L2/N	WT	POWER	-	YL	POWER
GD	GN/YL	GROUND	COM (ALL)	RD	COMMON
COM	BN	COMMON	10CH 00	RD/VI	RESERVOIR VALVE
0CH 00	RD/BR	CLEAN PRIME PUMP	10CH 01	GN/OR	FORWARD DRIVE
0CH 01	GY/WT	CONDITIONER FLOAT	10CH 02	YL/VI	REVERSE DRIVE
0CH 02			10CH 03		
0CH 03			10CH 04		
0CH 04	GN/WT	BRUSH UP SWITCH	10CH 05	WT/BK	BRUSH LIFT MOTOR
0CH 05	VI/YL	BRUSH DOWN SWITCH	10CH 06	YL/BL	BUFFER MOTOR
0CH 06	BK/BL	TACH SENSOR	10CH 07	BL/WT	SQUEEGEE MOTOR
0CH 07	WT/PK	LDS	11CH 00	WT/RD	DRIVE SPEED 2
0CH 08	VI	START BUTTON	11CH 01	WT/GN	DRIVE SPEED 3
0CH 09	GY/GN	OIL ONLY SWITCH	11CH 02	BK/PK	DRIVE SPEED 4
0CH 10	GN/BK	DUSTER UP SWITCH	11CH 03		
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	GY/BL	CLEANER PUMP
1CH 02			11CH 07	BL/BK	VACUUM MOTOR
1CH 03					
1CH 04					