

 Factory Setup (Proprietary)	LCI LA-306 & LA-309P MOTOR SPEED CONTROL	DOC NBR: PTEC-307
		APRVD: SLB 03/21/14
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Equipment

Motor Speed Controller Model PCM21010A

Motor Speed Control Preparation

1. Assemble and wire the equipment per document 802-101781-04, with attention to notes 7-9.
2. Confirm fuse MA is 1A for LA-306 1/20 HP motor and 3A for LA-309P 1/8 HP motor.
3. With furnace power off, turn the console speed adjust knob CCW all the way to the zero stop.
4. Turn furnace power on and press CONTROLS ON button to start furnace. Press and hold CALIBRATE button for at least 3 seconds. The CALIBRATE lamp should light remain lit. You are now in manual belt speed mode. Turn the speed adjust knob CW until the belt starts moving and confirm belt movement is in the proper direction.
5. If the belt is moving backwards (towards the entrance of the furnace), stop furnace immediately and shut off all power. Reverse +ARM and –ARM connections on the Motor Speed Controller and repeat step 4 until the belt is moving smoothly in the proper direction.
6. Check for satisfactory belt and motor operation throughout the speed range by turning the speed adjust knob CW all the way to maximum speed and then CCW all the way to zero. The belt should stop completely with 0 showing on the belt speed indicator. Remedy any belt interference problems before proceeding further.
7. If the belt motor or drive does not perform as described, shut down furnace immediately and refer to Troubleshooting section of this document.

Motor Speed Control Setup

With CONTROLS on, manual belt speed mode on (CALIBRATE lamp remains on), and the console speed adjust knob at zero, using a nonconductive adjustment tool, adjust only these pots at the top of the motor speed board in this order:

- a. **SIGNAL ADJUST (SIG ADJ)**: must be set to deliver 90 Vdc armature output with the belt running at full speed. Turn the console speed adjust knob fully CW to the stop (maximum speed). With a DC voltmeter, confirm 90 Vdc between terminals A1 and A2 on the board; if necessary, rotate SIG ADJ pot until 90 Vdc is established.
- b. **MINIMUM SPEED (MIN SPD)**: must be set so that the belt does not move when the console speed adjust knob is fully CCW to the stop. Turn the console speed adjust knob fully CCW to the stop (zero speed). Observe the belt speed display on the console:

If the display initially reads “0” or “0.0” (zero speed), carefully rotate MIN SPD trimpot CW until the display just indicates movement with a non-zero number. Then, carefully rotate the trimpot CCW until the display just indicates zero speed again.

Or, if the display initially indicates movement with a non-zero number, carefully rotate the trimpot CCW until the display just indicates “0” or “0.0” (zero speed).

- c. **MAXIMUM SPEED (MAX SPD)**: this adjustment is not functional; do not adjust.
- d. **TORQUE**: do not adjust unless operationally necessary; do not set higher than 120% of motor nameplate current rating.

- e. **REGULATION (IR COMP):** do not adjust unless operationally necessary. If the motor does not maintain set speed as the load changes, turn the console speed adjust knob about 5 turns to a midway position between zero and full speed. Gradually rotate the IR COMP trimpot CW. If the motor speed oscillates (overcompensation), the trimpot may be set too far CW; rotate the trimpot gradually CCW until the motor speed is stable again.

Troubleshooting

8. Motor does not run.
 - a. Check that the board is receiving 117 Vac power between terminals L1 and L2.
 - b. Check that DC voltage 0-10 Vdc appears between board terminals POS and NEG as the speed adjust knob is turned fully CW to the stop.
 - c. Check whether belt is mechanically jammed. If not jammed, rotate TORQUE trimpot *slightly* CW until belt moves (see 8.d. on previous page).
9. Fuse MA blows.
 - a. Confirm fuse value (see 2. on previous page).

Calibrate Belt Speed

Calibrate belt speed according to standard procedure.