Syntron ® LD-1 Linear Feeder

■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ INSTALLATION ■ OPERATION■ MAINTENANCE

Thank you for buying your equipment from Homer City Automation. This manual will help you to understand how your equipment operates and what is required to maintain peak performance. Please read it thoroughly and keep it on file for reference. Your satisfaction is important to us, so please direct any comments to our Marketing Communications department.
Date Purchased_____ Serial No._____ Factory Order No._____

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■ SAFETY INSTRUCTIONS

WARNING: Failure to follow these instructions and safety precautions could result in personal injury, damage, shortened service life, or unsatisfactory feeder performance. There is hazard of electrical shock to the operator.

WARNING: The unit must be properly grounded and verified at installation.

WARNING: The electrical power supply connection to the unit must be made through a customer-supplied safety disconnect switch mounted next to the control. Incorporation of an emergency stop may also be required, per local codes.

NOTE: Local safety codes and regulations must be considered when installing and/or operating this equipment.

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■ INTRODUCTION

The Syntron LD-1 Linear Feeder complements Syntron Parts Feeders by providing a feeding device to transport the oriented parts from the parts feeder to the next operation. The LD-1 Linear Feeder operates at 7200 vpm.

■ INSTALLATION

Place the LD-1 Linear Feeder on a rigid support that will not deflect the weight of the unit during operation. [Drive weight is 2.5 lbs (1.134 kg) plus track weight. Maximum recommended track length and weight is 12 inches (304.8 mm) and 1.1 lb (.5 kg), respectively.]

Bolt the linear drive in its operating position. Secure the track assembly to the drive unit. Refer to Figure 1 (Page 3) for dimensions.

■ MOUNTING THE LD-1

Consider the following points when determining the mounting location of the LD-1 Linear Feeder:

1. The end of the linear feeder with the cable exit is the rear of the feeder.

2. The long axis of the linear feeder must be parallel to the direction of feed in the chute.

3. The linear feeder top mounting plate must be positioned in the center (lengthwise) of the track. If mounted too close to one end of the track, the parts will become stalled at the opposite end.

4. If the track is not rigid enough, the parts may become stalled at both ends of the track.

5. If two or more feeders are installed on a track, the height of the feeders must be the same. Shims may be placed beneath the feeder base(s).

6. The unit must not contact any objects that will hamper the vibrating action.

LD-1 DIMENSIONS

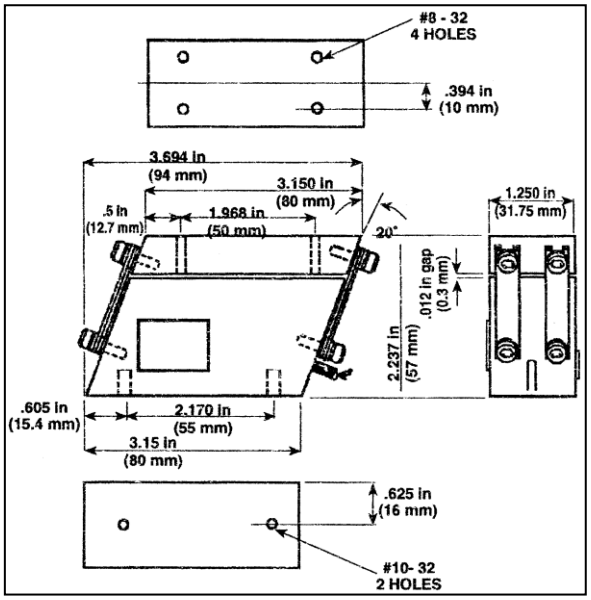


FIGURE 1

■ MOUNTING THE CONTROL

If a separate control is used, it must be mounted close to the equipment where it is easily accessible and within sight of the operator. Installation on a wall in a clean, dry, vibration-free location is recommended. Power supply voltage and frequency requirements are designated on the control nameplate.

WARNING: Power supply voltage and frequency must be that which is stamped on the equipment nameplate.

WARNING: The control must be properly grounded and verified at installation.

WARNING: The electrical power supply connection to the unit must be made through a customer-supplied safety disconnect switch mounted next to the control.

The LD-1 may be wired to a master control when used with a parts handling system. In this case, refer to the wiring diagram supplied with the equipment for installation instructions.

■ OPERATION

If the LD-1 has its own control, the unit is started by turning the rheostat knob to a low setting and switching on the control switch. To increase the feed rate, turn the rheostat knob clockwise until the required feed rate is obtained. The decrease the feed rate, turn the rheostat knob counterclockwise until the required feed rate is obtained.

If the unit is wired to a parts feeder control, operation of the LD-1 will be the same as the parts feeder.

■ MAINTENANCE

WARNING: Disconnect the power supply at the safety disconnect switch before performing any maintenance.

The LD-1 requires little maintenance. The unit must be kept clean, especially in the areas of the spring assemblies and the air gap (the space between the base and the top mounting plate). If the unit is painted, do not paint the spring assemblies or the air gap area. This would restrict the vibratory action of the LD-1.

Establish a regular maintenance schedule for checking all hardware to be sure that it is tight. Check the springs for signs of fatigue or defects. If it is necessary to replace springs, refer to the Spring Replacement instructions below.

■ SPRING REPLACEMENT

WARNING: Disconnect the power supply at the safety disconnect switch before performing any maintenance.

When replacing defective springs, Homer City Automation recommends examining all the springs. Work on one spring assembly at a time, allowing the remaining springs to support the top mounting place.

To replace the springs, perform the following steps:

1. Make a note of the location and arrangement of each spring, washer and cap screw.

2. Remove the socket head cap screws that hold the spring assembly to the unit.

3. Replace the spring assembly with new parts. When properly assembled, there should be no distortion or tension placed on the springs.

NOTE: The springs may vary in quantity and thickness. The new springs must be the same size and quantity as those removed.

4. Repeat steps 1 through 3 on the remaining spring assemblies.

NOTE: If the number of springs has been increased, the air gap will need to be increased. If the number of springs has been decreased, the air gap will need to be decreased. Refer to the Air Gap Adjustment instructions on page 5.

After all the springs have been replaced, check the operating current of the unit. The operating current must not exceed the requirements designated on the nameplate.

■ AIR GAP ADJUSTMENT

The air gap is the space between the top mounting plate and the base assembly. The static air gap should measure approximately .012 inches (.304 mm) throughout its entire length. Increasing the air gap will increase the current draw and reduce the feed stroke, and decreasing the air gap will decrease the current draw and increase the feed stroke. The current rating of an LD-1 is 0.27 amps from a 115V power supply, and 0.135 amps from a 230V power supply. Proper current rating is important to a good feeder operation.

CAUTION: If the unit makes a loud striking noise while operating, immediately shut off power to the unit.

If the air gap is adjusted so that the mounting plates and the base assembly are too close, they will make contact during operation. This is called striking. A striking condition will cause severe mechanical damage.

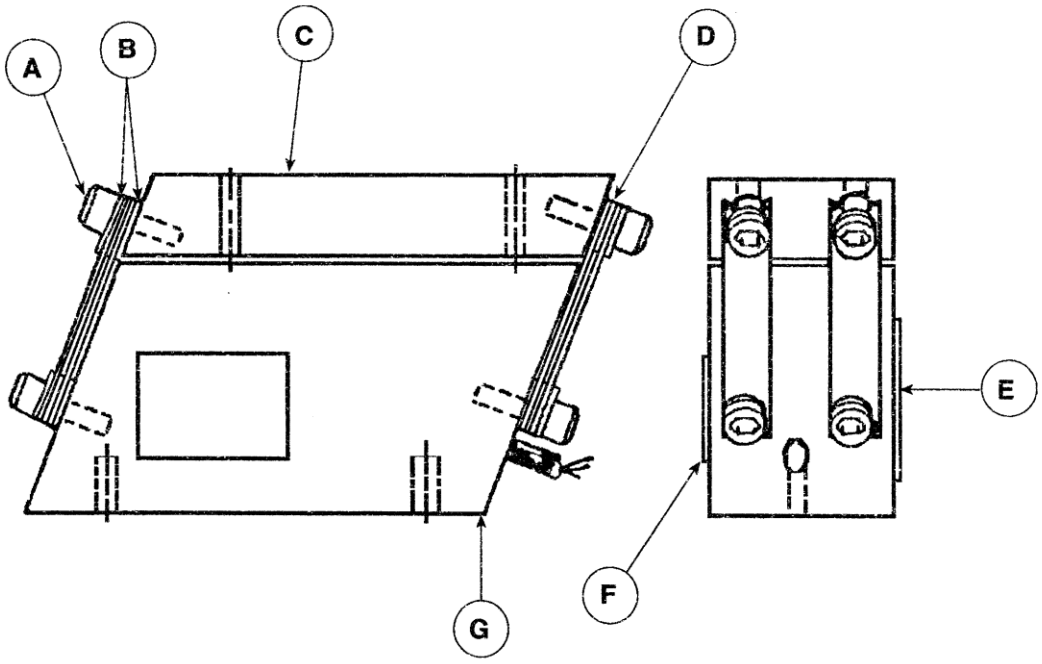
CAUTION: Never open the air gap more than necessary. An air gap that is too wide draws excessive current, resulting in poor feeder operation.

If the air gap is adjusted so that the mounting plate and the base assembly are too far apart, the current draw will be excessive. A high-current condition will result in coil burn-out and/or control failure.

To adjust the air gap, loosen (but do not remove) the cap screws that hold the springs to the top mounting plate. Adjust the air gap and tighten these screws. The faces of the base and top mounting plate must be parallel. After adjusting the air gap, check the current draw to ensure that it does not exceed the current rating.

■ TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Feeder will not operate	No power to the feeder	Repair or adjust power supply
	Burned out coil	*Replace coil and base assembly
Feeder will not operate at required capacity	Improper air gap	Adjust
	Air gap clogged	Clean
	Tuning too low	Add springs
	Tuning too high	Remove springs
	Open circuit	Repair
	Loose or broken hardware	*Tighten or replace
	Chute or feeder top contacting rigid object	Isolate so parts are free to vibrate



NOTE : Use 1/32" (.8 mm) thick washers between springs, mounting plate, and base. Use 1/16" (1.6 mm) thick washers as spring clamps and spacers.

PARTS LIST

Item	Description	Quantity	Part No.
A	Cap Screw, Soc Hd (#8 – 32 x 1/2”)	8	H0414400
	Lockwasher (#8)	8	H0112209
B	Flat Washer [1/32 in (0.8 mm) thk, SS]	8	H0109904
	Flat Washer [1/16 in (1.6 mm) thk, SS]	16	H0118786
C	Top Mounting Plate	1	B-204071-1
D	Spring [.028 in (0.7 mm) thick]	--	B-204066-1
	Spring [.035 in (0.9 mm) thick]	--	B-204066-2
	Spring [.022 in (0.6 mm) thick]	--	B-204066-3
E	■ Warning Label	1	A-202599
F	■ Nameplate	1	A-202599
G	Coil and Cable Assembly w/ Base (115V)	1	B-204079-A
	Coil and Cable Assembly w/ Base (230V)	1	B-204079-B

When ordering springs, specify the thickness and quantity.

■ Do not remove or paint over safety labels. If safety labels need replaced, contact Homer City Automation for an additional supply free of charge.

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