M O D E L C D S - L C
OPERATIONS MANUAL
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INTRODUCTION

This manual provides the information required for operation and maintenance of C. DAVIS SYSTEMS wire terminator station CDS-LC. Information includes: description, receiving inspection and installation, machine operation, preventive maintenance, adjustments, and repair and replacement parts lists. When it is necessary to replace parts within the Crimper, always refer to the parts list supplied with the Crimper being used.

The 35 LB (approx.) machine is compact in design and is intended for bench-top operation. The size is approximately 12 in. wide x 18 in. deep x 12 in. high. For operation, the machine requires a constant air supply of 100 to 120 psi with adequate volume (3.5 cfm).

When reading this manual pay particular attention to DANGER, CAUTION, and NOTE statements. A DANGER is to inform you of possible hazards that could cause bodily injury, a CAUTION is to advise you of precautions to take to avoid damage to the machine, and a NOTE highlights special or important information.

NOTE: Each machine is shipped with a documentation package that should be retained for customer reference. The package includes drawings of the machine along with this manual. For information beyond the scope of the documentation package, contact:

C. Davis Systems
725 SE LINCOLN ST.
Portland, OR 97214
(503) 280-0434

1.0 SAFETY

1.1 EMERGENCY

Unplug Machine at Source and Disconnect Air.

1.2 Know your machine

Read the manual carefully and learn the applications, limitations and hazards.

1.3 Power Supply

ONLY plug the Crimper Station power cord into a 110-120 VAC power source and an air supply with a range of 100-120 PSI.

1.4 Keep guards in place.

1.5 **Wear safety goggles** during the operation of the machine.

1.6 Keep Work Area clean.

1.7 Avoid Dangerous Environment

Do not operate machine in damp or wet locations and keep work area well lit.

1.8 Keep Visitors away from work area.

1.9 Do Not Abuse Cords

Never pull machine by power cord and air lines. Keep them away from heat, oil and sharp edges.

1.10 **Disconnect Machine** when not in use, before servicing and before troubleshooting.

1.11 Remove Tools

After maintenance or servicing, check the area for tools left in or on the machine.

1.12 **Sharp Objects** should not be used in the bowls as they can scratch the bowls' surface and restrict proper contact movement.

2.0 SYSTEM DESCRIPTION

Dual Contact Feeder Crimper:

Model # LC-2208-12GA

Serial #

Contact #

From the front and top of the machine you can reach:

A. The Feeder Bowl.

B. The Crimper Assembly, in the center.

C. The ON button on the top far right

D. The POWER ON Light on the upper left corner of the electrical box.

The rear side of the machine houses the male air supply quick disconnect ,the electrical power cord, and the foot switch.

2.1 Feeder

Vibratory feeder bowl (configured to feed contact listed in the system description) is mounted to an aluminum base plate with rubber isolation feet. The contacts are oriented and fed onto an Escapement mechanism that singulates them and blows them to the Crimp Head. The Escapement mechanisms have sensors mounted in them to keep a steady supply of contacts in Que. When the sensor detects the Escapement is full the feeder bowl will shut off.

2.2 Crimper

The Crimper is a modified DEUTSCH, DANIELS, or ASTRO Crimper that is fitted with a funnel assembly to stop, position the contact, and guide the stripped wire into the contact prior to crimping.

2.3 Funnel

The FUNNEL assembly consists of 2 pivoting split jaws mounted on a base with removable hyperbolic steel funnels that guide the wire into the contact. After the wire is crimped the jaws are opened with a small air cylinder. The jaw guide retains the jaws to the base.

2.4 Contact Positioner

A contact positioner extends through the funnel base and into the indenter housing of the crimper. The positioner ensures that the contact will be centered in the indenters prior to gripping.

3.0 INSTALLATION

3.1 Set-Up

3.1.1 Place the machine on a solid table or work bench. Soft tables' can dampen the vibratory feeders.

3.1.2 The Contact Feeder Crimper requires one 110-120 VAC power source and an air supply with a range of 100-120 PSI. Hoses should be a minimum of 1/4" ID with 1/4" fittings.

3.1.3 Set all sensors according to the sensor adjustments in section 6.3.

3.1.4 Set the gap between the Slide Escapements and the feeder bowls. The gap should not be big enough for the contact to fall into.

On Vertical Escapements, the Orienter unit should be lined up with the Escapement below.

3.1.5 Connect feed tube line into upper hole of reject "y" on the back of the crimp head. Connect tank and tube to lower hole reject "y". Note: Reject tank will need to be emptied periodically as jamming will result.

4.0 SYSTEM OPERATION

4.1 Pre-Start Check List

4.1.1 Verify there is a 110-120 VAC power source and an air supply with a range of 100-120 PSI

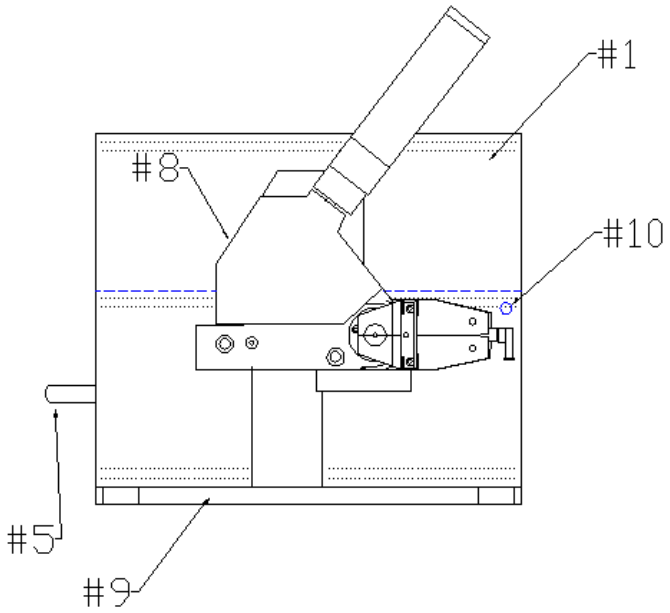
4.1.2 The Contact Feeder Crimper is designed to accommodate only the contacts, as noted in section 2.0. Any attempt to use another type of contact will jam the Feeder mechanism.

4.2 Start-Up Procedures Refer to drawing Below

4.2.1 Load specified contacts in the bowl (factory determined), by opening the hinged access cover (item #1). Feed in the contacts no higher than the lower lip near the bowl exit (approximately 3/4" from top). Overfilling will jam the bowl.

4.2.2 Connect the Air Supply (100 - 120 PSI) at the back of the machine (item #5).

4.2.6 Check air pressure to the machine to make sure it is correct.



4.3 Operation Description

4.3.1 Make sure all safety guards are in place during operation. (main cover #1 above)

4.3.2 During operation DO NOT insert anything other than wire into the crimper.

4.3.3 Switch on the "Power" switch (#10 above) located on top of the electrical box by pressing once (once more to turn off). The Feeder Bowl will turn on and contacts will feed to the Crimper. The Crimper will grip the part.

4.4 Manual Operation

4.4.1 The operator now inserts a wire into the Split Funnel until it stops.

4.4.2 The operator must keep a slight down pressure on the crimper while activating the pedal to ensure insulation is butted up against the contact. Depressing the pedal causes the Funnel to open allowing for full insertion. The crimper then crimps the contact onto the wire.

4.4.3 The operator now releases the pedal and removes the wire/contact assembly from the funnel. The machine will reload automatically.

4.4.4 Note: Optimum performance is achieved by depressing and releasing the pedal in one quick motion and removing the wire immediately after being crimped.

4.5 Shut-Down Procedure

Turn off the machine by pressing the start / stop button located on top of the electrical box. If the machine is to be dormant for an extended period of time, unplug the power cord and remove the air supply to prevent condensation in air lines.

5.0 TROUBLESHOOTING

DO NOT open or clear the crimper without first shutting down electrical power and air.

SYMPTOM	PROBABLE CAUSE	SOLUTION
Contacts not feeding	Crimper in grip position	cycle power by pressing button twice
	Bowl is overfilled	Turn OFF machine, remove excess contacts and clear exit for proper shuttling.
	Contact stuck in the feed tube	Turn OFF machine, shake feed tube to loosen contact.
	Feed tube obstruction	Remove & clean tube, and inspect shuttle at tube connection.
	Escapement jam	Refer to Maintenance Section 6.5.

SYMPTOM	PROBABLE CAUSE	SOLUTION
Loss of air		Check air supply, hoses, air filter element, and air valve. Replace if needed.
Contact jammed in Crimper	Wire pushed in crimper before crimper was ready	power cycle machine, clear by hand if needed following all safety precautions pertaining to power and air.
	Loss of air pressure	Check Air pressure and lines
Funnel does not open	Loss of air	Check air supply hoses and air valve. Replace, if needed.
Machine rattles real loud when contact is selected	Feeder bowl is set to close to Escapement	Reset bowl gap according to section 3.1
	Contact stuck between bowl and Escapement	Remove contact from between bowl and Escapement. Check Setting according to section 3.1
Bowl does not move contacts up to escapement	Bowl vibration is low	Amplitude adjustment may need to be adjusted to factory setting.
		Bowl mounting bolt not tight.
Bowl vibration does not come on	Check power	check power supply and Bowl driver fuse. Fuse is located in electrical box on the bowl controller, #6005.1.

6.0 MAINTENANCE

6.1 Maintenance Procedures

USE EXTREME CAUTION WHEN TESTING AND CALIBRATING ELECTRICAL AND PNEUMATIC DEVICES WHILE POWER IS ON. HIGH VOLTAGE IS PRESENT WHEN COVER IS REMOVED.

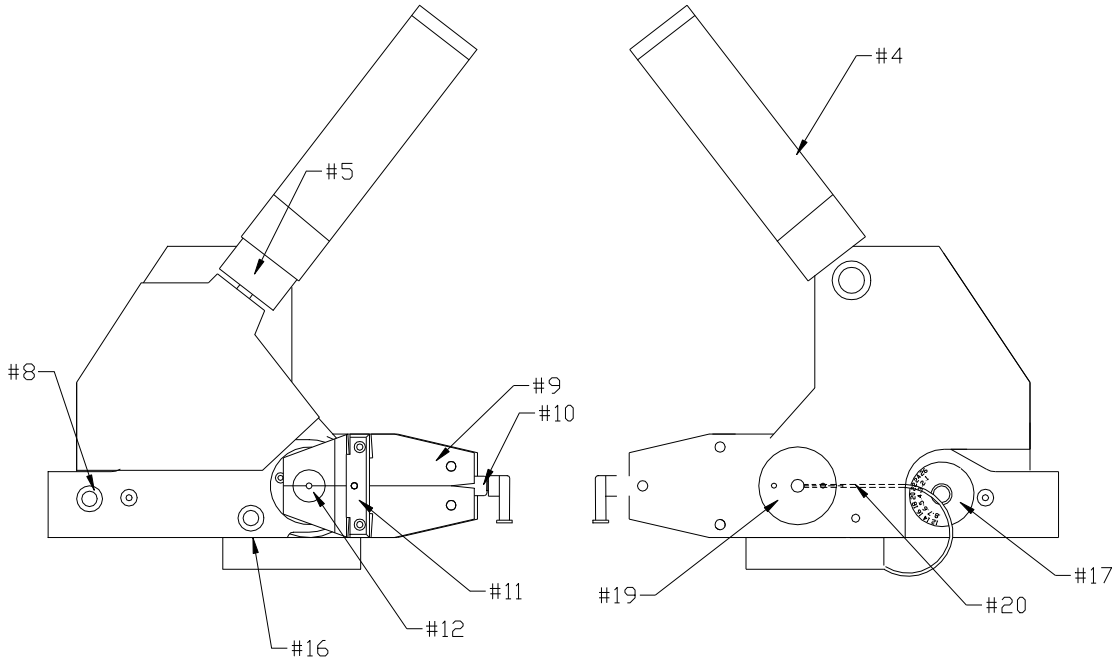
6.1.1 The air filter should be inspected regularly. The regularity of inspections is dependent upon the accumulation of water and debris in the air-lines. Replace filter, as necessary.

6.1.2 The Crimper should be inspected periodically to determine wear. Lubricate with KRYTOX high performance lubricant, as required.

6.1.3 Clean the bowl with a water dampened cloth, as needed.
Never use sharp objects or cleaning solution.

6.2 Crimper Disassembly (see drawing below)

The funnel base is bolted to the crimper. The funnel jaws (item #9) are mounted on top of it. To remove the jaws remove the 2 socket head cap screws that hold the funnel jaw guide in place (item #11). Gently slide the jaws as one unit off the 2 dowel pins. The jaws are held together with a tension spring. Now the crimp tool may be accessed. Do not remove the screws from the crimper body. To remove crimper, Remove main screws (#8 & 16) and gently remove crimp tool.



6.4 Adjusting Amplifier

Locate the contact sensor amplifiers inside the electrical box. It has a small red and green LED on it with a white set button. With no contact in the head, push and hold the white set button. A small white LED should start blinking (after about 3 sec.). Then release. The sensor should now be properly adjusted. With the contact removed the red LED should be off.

There may also be other amplifiers located in the electrical box. They are to be set in the same manor above. **The CDS-LC model machine may not use a fiber optic sensor at all depending on the contact.**

NOTE: On some vertical escapements, the red and green LEDs alternate when a part passes in front of them. All sensor amplifiers should be adjusted with no part in front of them and completely assembled

6.5 Escapements

The Escapement is the component of the machine that singulates and feeds the contact to the crimp head. It is mounted at or on the end of the feeder bowl. The feeder bowl will feed the parts into the escapement. There is a sensor on the Escapements to tell the machine when it is full. Which type of Escapement you have can be observed by its style.

With **Slide type Escapements** the contacts drop into it from the feeder bowl and slide down to the Shuttle. They stack up until they are in front of the sensor. At that point the bowl will shut off or that bowls Air gate will come on. The gap between the feeder bowl and the Escapement should be less then half the size of the contact to prevent the contact from dropping down into the gap. If the bowl rattles against the Escapement, it is to close. If a wrong contact gets in the bowl it will feed into the escapement and drop to the bottom and slide down into the shuttle causing it to jam. By removing all the contacts out of the Escapement you can retrieve the wrong contact without taking the Escapement apart.

With **Vertical Escapements** The contacts feed into the Orientation devise that puts the contact into position before dropping it into the Escapement. The Orientation devise is mounted directly to the feeder bowl. It must be aligned with the Escapement to feed the contact into the Escapement. Half way down the Escapement is a device we call the Pickle Fork. It is the devise that holds the stack up and lets one part at a time drop into the Shuttle at the bottom. In the event of a wrong or bent contact getting into the Escapement, the front cover can be removed by unscrewing the two thumb screws in the front to access all of the mechanism within. Just remove the contacts (including the one in the Shuttle) and reassemble. The fiber optic sensor should never stick into the vertical track. To set the fiber optic sensor, refer to section 6.4.

With **Zig-Zag Escapements** The contacts are fed right into the Escapement and are stacked in the Zig-Zag track. The contacts are oriented just before sending them to the Crimp head. A sensing device or sometimes a mechanical orientating device is used. The front cover can be removed to access bad or bent contacts. If you open the front and turn on the feeder bowl, it will feed all the contacts out of the Escapement. The fiber optic sensor should never stick into the track. To set the fiber optic sensor, refer to section 6.4.