

**MODEL GWT-202SC
OPERATIONS MANUAL
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INTRODUCTION

This manual provides the information required for operation and maintenance of GAARD Wire Terminator GWT-202SC. 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 60 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 14 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 LLC, Inc.
4620 NE Cully BLVD
Portland, OR 97218
(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 Dual Contact Feeder Crimper.

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.

1.13 Metal Objects should not be used in stripper as they can damage the stripper blades.

2.0 SYSTEM DESCRIPTION

Dual Contact Feeder Crimper:

Part #	GWT-202SC
Serial #	?????
Contact #	!!!!!!!

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

- A. The Upper Feed Bowl.
- B. The Lower Feed Bowl.
- C. The Crimper Assembly, in the center.
- D. The "RUN/OFF/CAL" switch in the top far left.
- E. The Main Air and Crimp Air gauges in the top left.
- F. The Ready Light above the Crimper.
- G. The Bowl Selector Switches in the top right.
- H. The Power Switch on the Right Side.

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

2.1 Feeder

Vibratory feeder bowls (configured to feed contacts listed in the system description) are 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 hand tool Crimper that is fitted with a funnel assembly to stop, position the contact, and guide the stripped wire into the contact prior to crimping. A fiber optic sensor is positioned below the indentures to sense the presence of a contact.

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 indenture housing of the crimper. The positioner insures that the contact will be centered in the indentures prior to gripping. At the point that the positioner enters the indenture holder a .062 diameter cross-hole is drilled in the positioner to allow the sensor light beam to reflect off the contact.

EXTREME CAUTION

Be sure the fiber optic sensor is removed before attempting to remove the contact positioner. Also on some models the indentures may be protruding into the positioner. Be sure the crimper is fully cycled.

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 Dual 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.

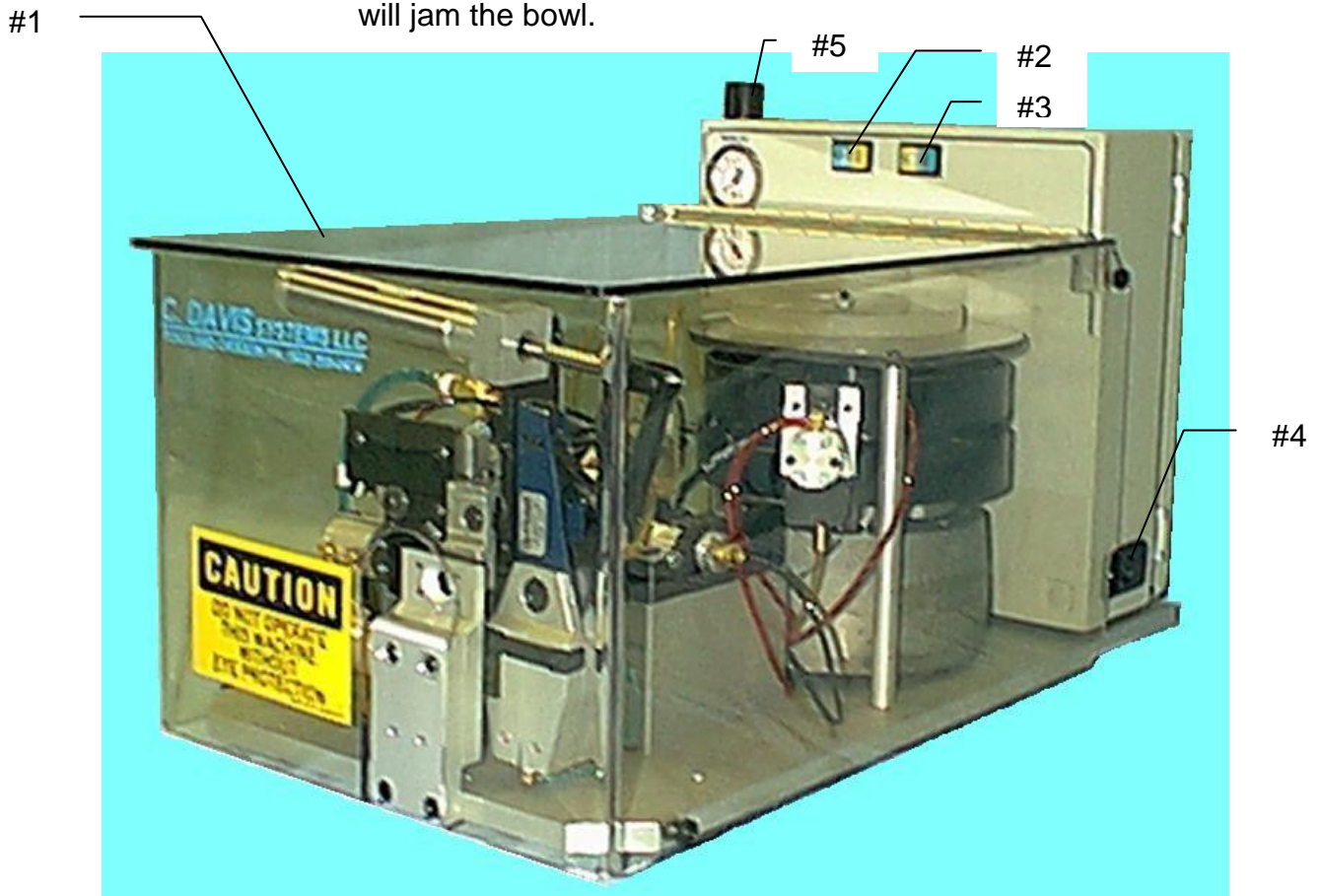
4.0 SYSTEM OPERATION

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 Upper and Lower bowls (factory determined), by opening the hinged access covers (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 The "RUN-OFF-CAL" toggle switch (item #2) should be in the "OFF" position. The toggle switches are located at the top left of the cabinet.
- 4.2.3 The Feeder Bowl Switches (item #3)
The toggle switch located at the top right of the cabinet is the "Upper - Off - Lower" switch. This should be in the "OFF" position.
- 4.2.4 The Power Switch on the Right Side (item #4) should be in the "OFF" position.
- 4.2.5 Connect the Air Supply (100 - 120 PSI) at the back of the machine (item #5).
 - 4.2.6 Check air pressure gauge to make sure the setting is correct.

4.3 Operation Description

- 4.3.1 Make sure all safety guards are in place during operation.
- 4.3.2 During operation DO NOT insert anything other than wire into the crimper.
- 4.3.3 Switch on the "Power" switch. Flip the "RUN-OFF-CAL" (#2) switch to Calibrate for 5 sec. then off again to be certain that the Crimper is not ratcheted. Select contact (#3). Flip the "RUN-OFF-CAL" switch to the "RUN" position. The Feeder Bowl will turn on and contacts will feed to the Crimper. The Crimper will grip the part and turn on the Ready Light. Grip Pressure should be 20-25 PSI (just light enough not to crimp contact).

4.4 Manual Operation

- 4.4.1 The operator now inserts a wire into the machine until it stops.
- 4.4.2 The stripper will strip and the crimper then crimps the contact onto the wire.
- 4.4.3 The operator now removes the wire/contact assembly from the funnel.

4.5 Shut-Down Procedure

Turn off the machine by selecting the off position of the feeder bowl switches (#3) before the last contact is crimped. Crimp the last contact then switch the "RUN-OFF-CAL" (#2) switch to the off position, then switch the Power button to off. 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.

<u>SYMPTOM</u>	<u>PROBABLE CAUSE</u>	<u>SOLUTION</u>
Contacts not feeding	Crimper in grip position	Flip the "RUN-OFF-CAL" switch to cal and back to on.
	Bowl is overfilled	Turn OFF machine, remove excess contacts and clear exit for proper shuttling.
	Dirty Sensor or Sensor out of Adjustment	Clean sensor by opening funnels and inserting a pipe cleaner. Or refer to Section 6.2 for sensor adjustment.
	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 6.2.

<u>SYMPTOM</u>	<u>PROBABLE CAUSE</u>	<u>SOLUTION</u>
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 ready light on Loss of air pressure Sert-a-crimp didn't complete cycle	(1) Toggle the "RUN-OFF-CAL" switch a few times between OFF and CAL pausing 1-2 seconds between each time.
	Loss of air pressure	Check Air pressure and lines
Funnel does not open	Loss of air	Check air supply hoses, air filter element and air valve. Replace, if needed.
Machine will calibrate but will not fire contact when switched to run	Dirty Sensor or Sensor out of adjustment	Clean sensor by opening funnels and inserting a pipe cleaner. Or refer to Section 6.2 for sensor adjustment.
After crimping contact, Funnels stay open and machine will not run.	Dirty Sensor or Sensor out of adjustment	Clean sensor by opening funnels and inserting a pipe cleaner. Or refer to Section 6.2 for sensor adjustment.
Machine rattles real loud when contact is selected	Feeder bowl is set to close to Escapement Contact stuck between bowl and Escapement	Reset bowl gap according to section 3.1 Remove contact from between bowl and Escapement. Check Setting according to section 3.1

<u>SYMPTOM</u>	<u>PROBABLE CAUSE</u>	<u>SOLUTION</u>
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 sensor to bowl controller, supply, switches.
	Check Sensor	
	Air pressure too low	Check air pressure and catch air pressure.
Stripper doesn't strip completely	Air pressure to low	Check air pressure
	Strip slug stuck in Stripper blades	Toggle the "RUN -OFF-CAL" switch A few times between OFF and CALIB.
	Stripper blades are dull	Replace stripper blades
Stripper pulls wire through	Stripper blades are dull	Replace stripper blades
	Stripper blade alignment Is off	check blade alignment

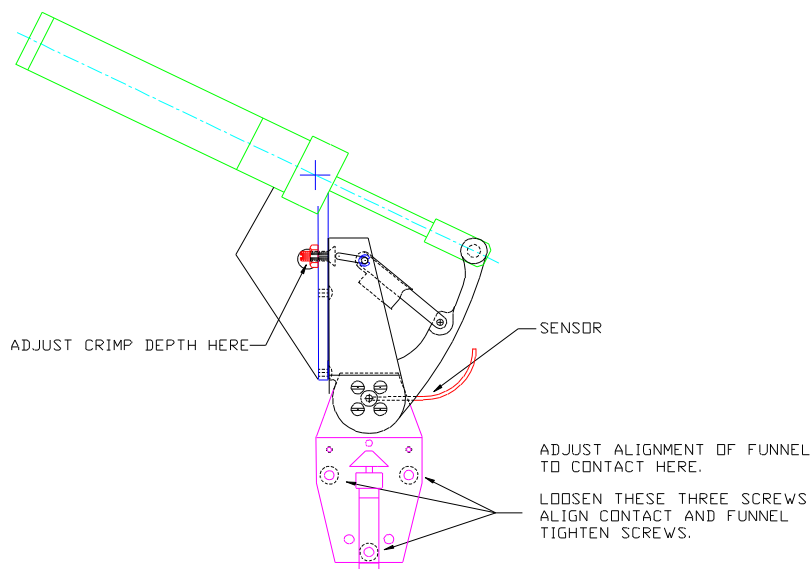
6.0 MAINTENANCE

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.

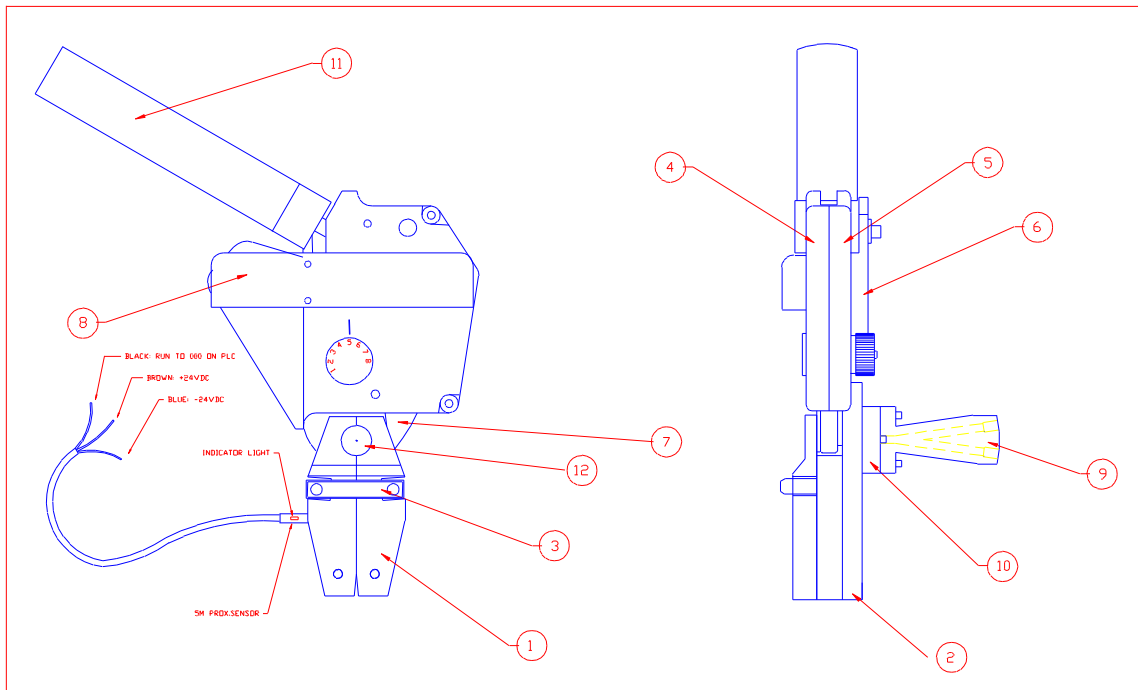
6.1.2 The Crimper should be inspected periodically to determine wear. Lubricate with a silicon spray, as required. The RUN-OFF-CAL switch is set to the CAL position to check the Crimper for Go/No-Go gauging **NOTE: DO NOT STICK GO/NO-GO GAGE INTO STRIPPER. IT WILL DESTROY THE BLADES.** Use drawing below to fine tune crimp depth and funnel alignment.



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

6.2 Funnel Disassembly (see drawing below)

The funnel base (item #2) is bolted to the crimper with four 5-40 thread cross head screws found directly under the funnels (item #12). To access the screws, the funnel jaws (item #1) first must be removed. To remove the jaws remove the 2 socket head cap screws that hold the funnel jaw guide in place (item #3). Gently slide the jaws as a unit off the 3 dowel pins. The jaws are held together with a tension spring. Now the screws may be accessed. Do not remove the screws from the crimper body.



6.3 Contact Sensor Adjustment (see drawings on previous pages)

"CAUTION"

The "Power" switch should be ("ON"). The "RUN-OFF CAL" switch should be in ("OFF") position and the air lockout closed to make this adjustment.

A fiber optic sensor is located in a slot in the funnel base (item #2). The end of the sensor should be set .030 thousandth of an inch back from the edge of the contact hole in the positioner (item #10). The sensor is retained in its slot by pressure from the base being held tight to the bottom of the crimper by 4 cross head screws. To move the sensor, the 4 cross head screws must loosened as described in the funnel disassembly section.

Gently slide the fiber optic cable into the hole until you see it in the positioner. Now retract the cable approximately .030 of an inch out of the positioner, now tighten the four screws.

6.4 Adjusting Amplifier

Locate the contact sensor amplifiers in the electrical box. It has small red and green numbers on it with a white set button. With no contact in the head, push and hold the white set button. Small lines should start blinking (after about 3 sec.). Then release. The red numbers will be just below the green numbers. You can use the rocker to move the green numbers up so the sensitivity is not to close. About 200 is an average setting. Move a contact on a wire in and out a few times to make sure the sensor turn on and off. With the contact removed the LED should be off.

NOTE: On some vertical escapements, the sensor may be set to light on or dark on. All sensor amplifiers should be adjusted with no part in front of them and completely assembled.

7.0 SPARE PARTS

RECOMMENDED SPARE PARTS LIST FOR THE GWT-202SC

NO.	PART NUMBER	ITEM (not all items are used on every machine. List covers all machines.	APROX. LEAD TIME	PRICE EA.
1	0125-701400	PLC Pre-Programmed	1 week	\$ 374.85
2	CDS-P045	Expansion Module	2 weeks	\$ 128.70
3	0250-717319	Power Entry Module	4 weeks	\$ 18.57
4	0250-717403	Rocker Selector Switch	4 weeks	\$ 68.57
5	0275-770236	Sensor Amplifier (T2)	1 week	\$ 168.58
6	0275-790243	Sensor Amplifier (T1)	1 week	\$ 168.58
7	0275-790244	Fiber Optic Sensor (FU-49X)	1 week	\$ 102.86
8	3910-717391	Air Filter Element	2 weeks	\$ 5.91
9	0710-791111	Indenture Spring	3 weeks	\$.93
10	0720-717396	Swivel Base Dytex	2 weeks	\$ 49.02
11	0750-700174	Bimba Funnel Cylinder	1 week	\$ 13.04
12	0750-717519	Fabco Air Cylinder 3/8"	2 weeks	\$ 35.76
13	2200-790186	Shuttle Valve	1 week	\$ 7.35
14	CDS-P001	Funnel Close Sensor	2 weeks	\$ 124.29
15	CDS-P011	Crimper Ratchet Rack	1 week	\$ 25.71
16	CDS-P027	Quick Exhaust Valve	3 weeks	\$ 16.36
17	CDS-P033	Ratchet Housing Assembly	2 weeks	\$ 40.63
18	CDS-P037	Feeder Controller Cube	1 week	\$ 68.25
19	CDS-P043	Single Solenoid Air Valve	1 week	\$ 38.90
20	(need contact type)	Cam Handle Assembly	2 weeks	
21	(need contact type)	Funnel	2 weeks	
22	(need contact type)	Positioner	2 weeks	
23	0275-701303	Omron Que & Puff Sensor	4 weeks	\$ 27.44
24	CDS-P012	1/4" Feeder Tube (per ft.)	1 week	\$.50
25	0765-790051	"Y" 1/4" Joining	1 week	\$ 78.57
26	0765-790052	"Y" 3/16" Joining	1 week	\$ 78.57
27	CDS-P046	Stripper Blades	2 weeks	\$ 193.70
28	CDS-M004	Foot Pedal W/Guard	2 weeks	\$ 98.47
29	0765-771250	Spare Crimp Head	4 weeks	\$ 936.92
30	0100-701340	Seeka Amplifier	2 weeks	\$ 100.10
31	CDS-P031	Indentor (double) Indent	4 weeks	\$ 27.30
32	CDS-P032	Indentor (triple) Indent	4 weeks	\$ 54.60