

**MODEL GWT-202P
OPERATIONS MANUAL
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INTRODUCTION

This manual provides the information required for operation and maintenance of GAARD Wire Terminator GWT-201P. 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.

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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.

2.0 SYSTEM DESCRIPTION

Dual Contact Feeder Crimper:

Part #

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 input connection (can be used for foot pedal, Komax signal, etc.).

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 DEUTSCH 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.
- 3.1.5 Place crimp head into press. The ram is slid into place as the base is set into the three holding fingers. Connect feed tube line into positioner on the back of the crimp head.

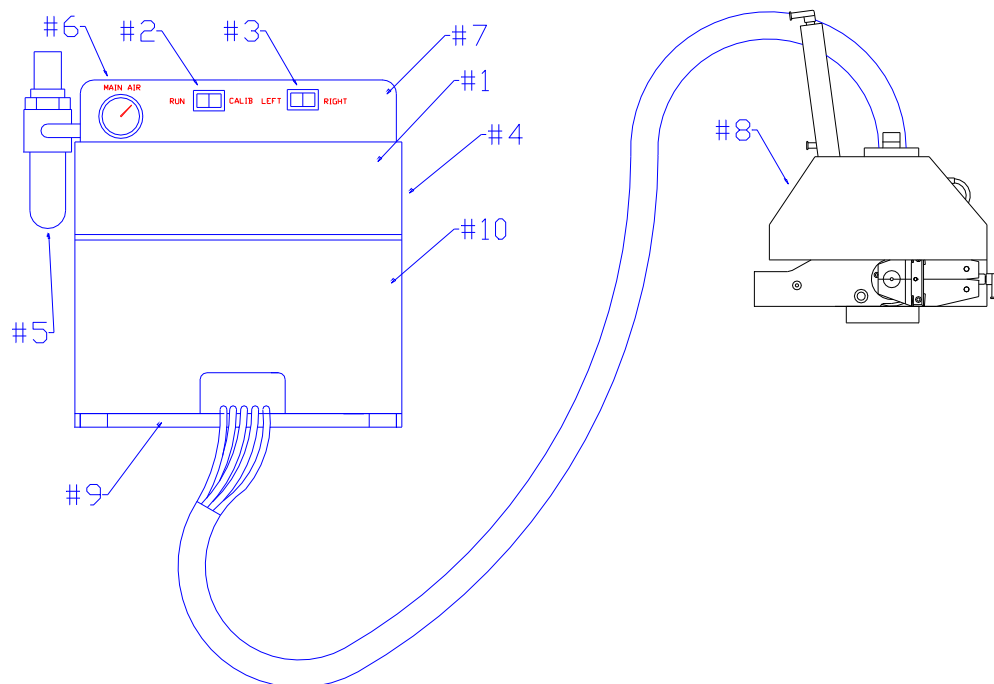
4.0 SYSTEM OPERATION

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.

4.4 Operation

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

4.4.2 To ensure insulation is butted up against the contact, the wire should be inserted approximately 1/8" beyond the bottom of the funnels. Activating the Press opens the funnels to allow the wire to insert into the contact fully.

4.4.3 The assembly can now be removed from the crimper.

4.4.4 In a manual operation, insert wire into funnel. While holding a slight down pressure, activate press. After cycle is complete, remove wire and contact from machine. The machine will reload automatically.

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.

NOTE: The last contact must be removed before shut down. If this gets forgotten or power is shut off prior to this, a manual cycle must be done and then followed with flipping switch to "CALIB" for 5 sec. This will clear crimp head.

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 or arm is not at top (up to top sensor) | Flip the "RUN-OFF-CAL" switch to cal and back to on. |
| | A Contact in Crimp head | Remove contact by cycling press & CALB. |
| | Dirty Crimper Sensor or Sensor out of Adjustment | Clean sensor by opening funnels and inserting a pipe cleaner. Or refer to Section 6.3 for sensor adjustment. |
| | Crimp head Sensor Damaged | Replace Fiber Optic Sensor. |
| Contact feeds but doesn't get to Crimp head. | 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 Contacts are not sliding Down escapement | Refer to Maintenance Section 6.2. clean track with dry rag or Q-tip. |
| | Bowl is overfilled | Turn OFF machine, remove excess contacts and clear exit for proper shuttling. |
| | Feed tube came off | Reconnect feed tube. |

| <u>SYMPTOM</u> | <u>PROBABLE CAUSE</u> | <u>SOLUTION</u> |
|---|--|--|
| Loss of air | Low air pressure or air air switch is off | 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 | (1) Toggle the "RUN-OFF-CAL" switch a few times between OFF and CAL pausing 1-2 |
| | Loss of air pressure | Cycle Press Machine Toggle CALB Switch. |
| | Arm didn't get to bottom complete cycle | Check Press travel or shunt height. |
| | Sert-a-crimp (Crimper Ratchet) didn't complete cycle | Check to see if all indenters are back. |
| | Indenter Spring Broke | 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. |
| | Dirty Crimper Sensor or Sensor out of Adjustment | Clean sensor by opening funnels and inserting a pipe cleaner. Or refer to Section 6.3 for sensor adjustment. |
| Machine will calibrate but will not fire contact when switched to run | Dirty Crimp head Sensor or Sensor out of adjustment | Clean sensor by opening funnels and inserting a pipe cleaner. Or refer to Section 6.3 for sensor adjustment. |
| | A Contact in Crimp head | Remove contact by cycling press & CALB. |
| | Crimper in grip position or arm is not at top (up to top sensor) | Flip the "RUN-OFF-CAL" switch to cal and back to on. |

| <u>SYMPTOM</u> | <u>PROBABLE CAUSE</u> | <u>SOLUTION</u> |
|---|---|---|
| After crimping contact, Funnels stay open and machine will not run. | Dirty Crimp head Sensor or Sensor out of adjustment | Clean sensor by opening funnels and inserting a pipe cleaner. Or refer to Section 6.3 for sensor adjustment. |
| 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 sensor to bowl controller, supply, switches, and Bowl driver fuse. Fuse is located in electrical box on the bowl controller, #6005.1. |
| | Check Sensor | |

6.0 MAINTENANCE

6.1 Maintenance Procedures

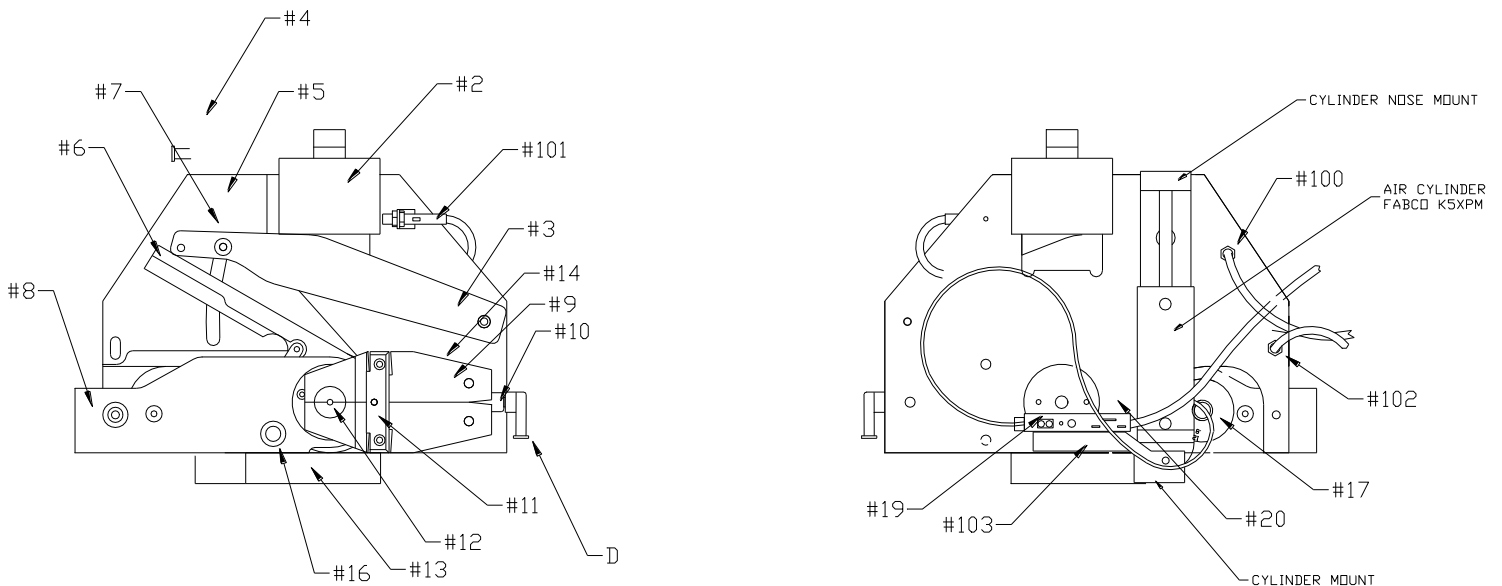
USE EXTREME CAUTION WHEN TESTING AND CALIBRATING ELECTRICAL AND PNEUMATIC DEVICES WHILE POWER IS ON. HIGH VOLTAGE IS PRESENT WHEN COVER IS REMOVED.

- 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. 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 Crimper Disassembly (see drawing below)

The funnel base (item #14) 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 screw (#?) and gently remove crimp tool. **NOTE:** A fiber optic sensor cable is attached to the crimp tool. **CAUTION** must be taken.



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 hole in the positioner (item #19). The end of the sensor should be set .030 thousandth of an inch back from the edge of the contact hole in the positioner. The sensor is retained in its hole by a setscrew from the back. To move the sensor, the setscrew must be loosened.

To install sensor 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 setscrew.

6.4 Adjusting Amplifier

Locate the contact sensor amplifiers (Item #103) behind the crimp head. 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 too 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.

There are also amplifiers located in the electrical box. They are to be set in the same manor above except for the average 200 setting.

NOTE: On some vertical escapements, the red and green LEDs alternate when part passes in front of them. 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-301P**

| ITEM NUMBER | 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 | 0250-717319 | Power Entry Module | 4 weeks | \$ 18.57 |
| 3 | CDS-P120 | Selector switch w/light | 4 weeks | \$ 48.89 |
| 4 | 0275-701303 | Omron Que & Puff Sensor | 4 weeks | \$ 28.20 |
| 5 | | | | |
| 6 | 0275-790243 | Fiber Optic Amplifier (Slave) | 2 week | \$ 168.58 |
| 7*** | 0275-790244 | Fiber Optic Sensor (FU-49X) | 1 week | \$ 102.86 |
| 8 | 3910-717391 | Air Filter Element | 2 weeks | \$ 7.96 |
| 9 | 0710-791111 | Indenter Spring | 3 weeks | \$.93 |
| 10 | 0750-700174 | Bimba Funnel Cylinder | 1 week | \$ 14.30 |
| 11 | 0750-717519 | Fabco Air Cylinder 3/8" | 2 weeks | \$ 38.51 |
| 12 | 0765-790051 | "Y" 1/4" Joining | 1 week | \$ 78.57 |
| 13 | 2200-790186 | Shuttle Valve | 1 week | \$ 8.62 |
| 14*** | CDS-P095 | Press Arm Sensors | 2 weeks | \$ 69.95 |
| 15 | CDS-P012 | 1/4" Feeder Tube (per ft.) | 1 week | \$.50 |
| 16 | CDS-P027 | Quick Exhaust Valve | 3 weeks | \$ 16.36 |
| 17 | CDS-P031 | Indenter (double) Indent | 4 weeks | \$ 27.30 |
| 18 | CDS-P037 | Feeder Controller Cube | 1 week | \$ 78.65 |
| 19 | 0275-770236 | Fiber Optic Amplifier (Master) | 2 week | \$ 168.58 |
| 20 | CDS-P108 | Single Solenoid Air Valve | 2 weeks | \$ 28.54 |
| 21 | CDS-P045 | Expansion Module | 2 weeks | \$ 128.70 |
| 22 | CDS-P048 | Crimp tool (Modified) | 2 weeks | \$ 308.71 |
| 23 | CDS-M015 | Complete Press Crimp Head | 4 weeks | \$2,995.00 |
| | (need contact type) | Funnel | 2 weeks | |
| | CDS-M065 | Positioner insert | 2 weeks | \$99.95 |