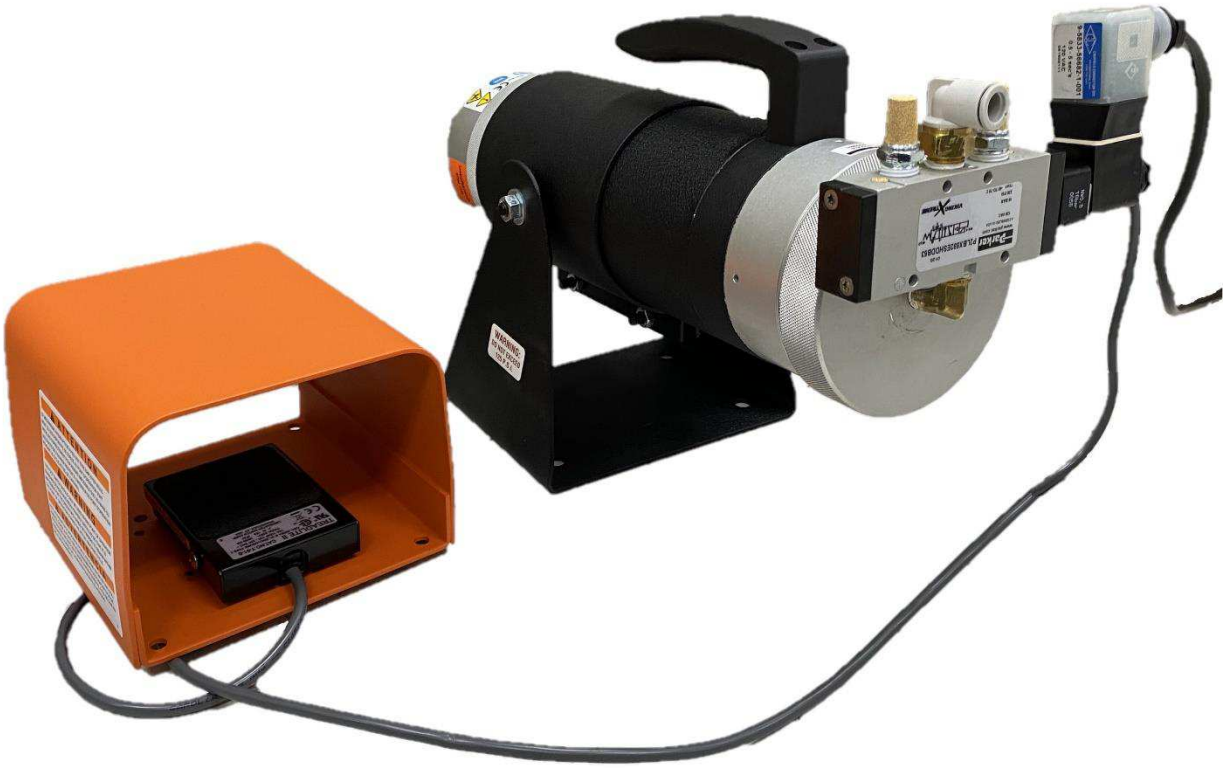


HDP-400 Power Crimper

DEUTSCH customer manual
Part number HDP-400,1606312-1

Customer Manual
409-35018
29 MAR 2023 Rev D

Original instructions

SUPPORT CENTER

CALL TOLL FREE 1-800-522-6752 (CONTINENTAL UNITED STATES AND PUERTO RICO ONLY)

The **Support Center** offers a means of providing technical assistance when required. In addition, Field Service Specialists are available to provide assistance in the adjustment or repair of the application equipment when problems arise that your maintenance personnel cannot correct.

INFORMATION REQUIRED WHEN CONTACTING THE SUPPORT CENTER

When calling the Support Center regarding service to equipment a person familiar with the device should be present with a copy of the manual (and drawings) to receive instructions. Many difficulties can be avoided in this manner.

When calling the Support Center, be ready with the following information:

- Customer name
- Customer address
- Person to contact (name, title, telephone number, and extension)
- Person calling
- Equipment number (and serial number, if applicable)
- Product part number (and serial number, if applicable)
- Urgency of request
- Nature of problem
- Description of inoperative components
- Additional information that may be helpful

© Copyright 2023 TE Connectivity Ltd. family of companies. All rights reserved.

TE Connectivity, TE Connectivity (logo), and TE (logo) are trademarks. Other logos and product or company names may be trademarks of their respective owners.

PRODUCT INFORMATION +1 800-522-6752

This controlled document is subject to change.

For the latest revision and Regional Customer Service, visit our website at www.te.com.

Contents

SAFETY PRECAUTIONS — AVOID INJURY — READ THIS FIRST!

NOTE
Keep all decals clean and legible. Replace them when necessary.

DANGER
ELECTRIC SHOCK HAZARD
This tool is not insulated. When using this unit near energized electrical lines, use proper personal protective equipment.

Failure to observe this warning could result in severe injury or death.

DANGER
Denotes an imminent hazard that can result in moderate or severe injury.

SKIN INJECTION HAZARD
Do not use hands to check for oil leaks. Highly pressurized oil punctures the skin, causing serious injury, gangrene, or death. If injured, seek immediate medical help to remove the oil.

DANGER
FIRE HAZARD
Do not use solvents or flammable liquids to clean the crimping tool. Solvents or flammable liquids could ignite and cause serious injury or property damage.

Failure to heed these warnings could result in severe injury from harmful fumes or burns from flying debris.

DANGER
Inspect the tool and jaws/dies before each use. Replace any worn or damaged parts. A damaged or improperly assembled tool can break and strike nearby personnel.

Failure to observe this warning could result in severe injury or death.

CAUTION
Do not place the tool in a vise. The crimping tool is designed for hand-held operation.

Protect the crimping tool from rain and moisture. Water damages the crimping tool and battery.

Failure to observe these precautions can result in injury or property damage.

CAUTION
Do not perform any service or maintenance other than as described in this manual. Injury or damage to the tool can result.

Failure to observe these precautions can result in injury or property damage.

Safeguards are designed into this application equipment to protect operators and maintenance personnel from most hazards during equipment operation. However, certain safety precautions must be taken by the operator and repair personnel to avoid personal injury, as well as damage to the equipment. For best results, application equipment must be operated in a dry, dust-free environment. Do not operate equipment in a gaseous or hazardous environment.

Carefully observe the following safety precautions before and during operation of the equipment:

Always wear approved eye protection while operating equipment.

Always wear appropriate ear protection while using equipment.

Moving parts can crush and cut. Always keep guards in place during normal operation.

Electrical shock hazard.

Always turn off the main power switch and disconnect the electrical cord from the power source when performing repair or maintenance on the equipment.

Always turn off the main power switch and disconnect the electrical cord from the power source when performing repair or maintenance on the equipment.

Never alter, modify, or misuse the equipment.

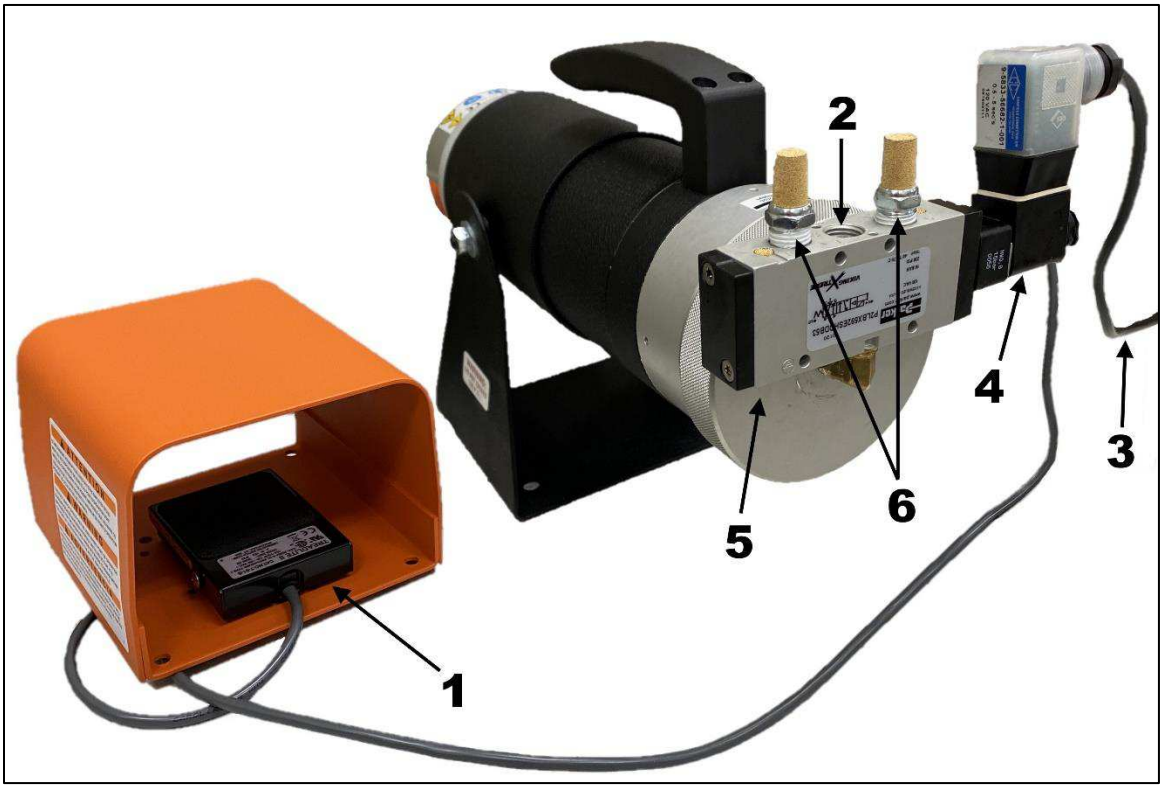
Do not operate equipment if the guards are removed.

Read and understand this entire document before using equipment.

1 Introduction

The HDP-400 Power Crimp Tool (TE PN 1606312-1) is a precision, pneumatic, full-cycling tool capable of producing four-indent crimps on pin and socket type solid contacts, both HD and CE style, size 20 thru 4. This is accomplished by changing out the die assembly and locators in accordance with factory specifications. The HDP-400 is foot-controlled.

Figure 1: HDP-400 power crimper



1 Foot pedal
2 Air inlet
3 Power cord (110V)
4 Solenoid/trigger/timer
5 Valve
6 Air exhaust

When reading this manual, pay particular attention to DANGER, CAUTION, and NOTE statements.

DANGER
Denotes an imminent hazard that may result in moderate or severe injury.

CAUTION
Denotes a condition that may result in product or equipment damage.

NOTE
Highlights special or important information.

Also, pay particular attention to the following safety precautions:

Always wear approved eye protection while operating equipment.

Always wear appropriate ear protection while using equipment.

Always disconnect the air and lockout the tool when not in use or when head or tool holder is detached.

Reasons for reissue of this document are provided in section 7, **Revision summary**.

NOTE
Dimensions in this customer manual are in metric units [with U.S. customary units in brackets]. Figures are not drawn to scale.

DANGER
This power unit should only be operated by trained personnel.

DANGER
If not using quick-disconnect fittings to connect the tool to the air supply, other means must be provided to easily disconnect the tool from the air supply.

1.1 Air supply requirements

An air supply of 620-827 kPa (90-120 PSI) is required.

1.2 Electrical supply

In North America, an electrical supply of 110/120 volts AC is required.

In Europe, 220/240 volt AC operation requires a voltage converter that meets the following requirements:

- Input voltage of 220/230/240Vac
- Power capacity of 100 watts or greater
- German/French Schuko input socket
- Universal socket for the machine's power cord
- UL/CSA/VDE approved
- CE certified
- EMI standards per EMC directive 2014/30/EU

The voltage converter is plugged into the local 220/240V receptacle, with the tool 110/120V power cord plugged into the voltage converter.

DANGER
Electrical shock hazard*. Improper electrical connections can cause moderate or severe injury.*

CAUTION
Improper electrical connections can cause damage to equipment.

2 Setup

Each tool is shipped from the factory pre-assembled. The locator and die assembly are not pre-installed. These must be purchased separately and installed by the user. For help in choosing the correct die and locator solution, refer to instruction sheet 408-35142.

The tool is operated with a foot control pedal.

Setting the tool up for operation consists of the following:

1. Install the locator.
2. Install the die.
3. Install the cover nut.
4. Connect the air supply to the tool.
5. Check tool operation (without inserting a wire and contact, cycle the tool with air to check operation of the indenters).
6. Gage the tool.
7. Proceed with normal operation.

Detailed setup and operating instructions follow.

2.1 Air supply setup

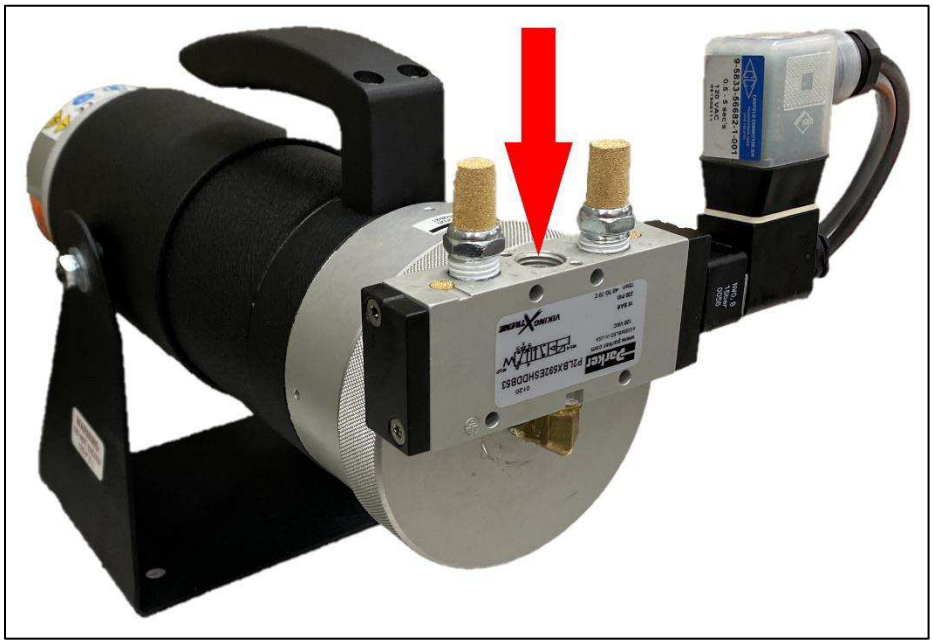
The tool is operated with a foot pedal assembly.

- Use a 1/4" ID, 3/8" OD line capable of 70 to 125 psi (1-2 CFM).
- Crimp tool operating pressure is 620 to 861 kPa [90 to 125 psi] (1-2 CFM). Nominal pressure is 80 psi.
- Use clean, dry air with a quality filter and regulator within 7.62 m [25 ft.] of the tool.

CAUTION
Do not use an oiler. Do not turn on the air pressure before calibrating the dies (see section 2.5).

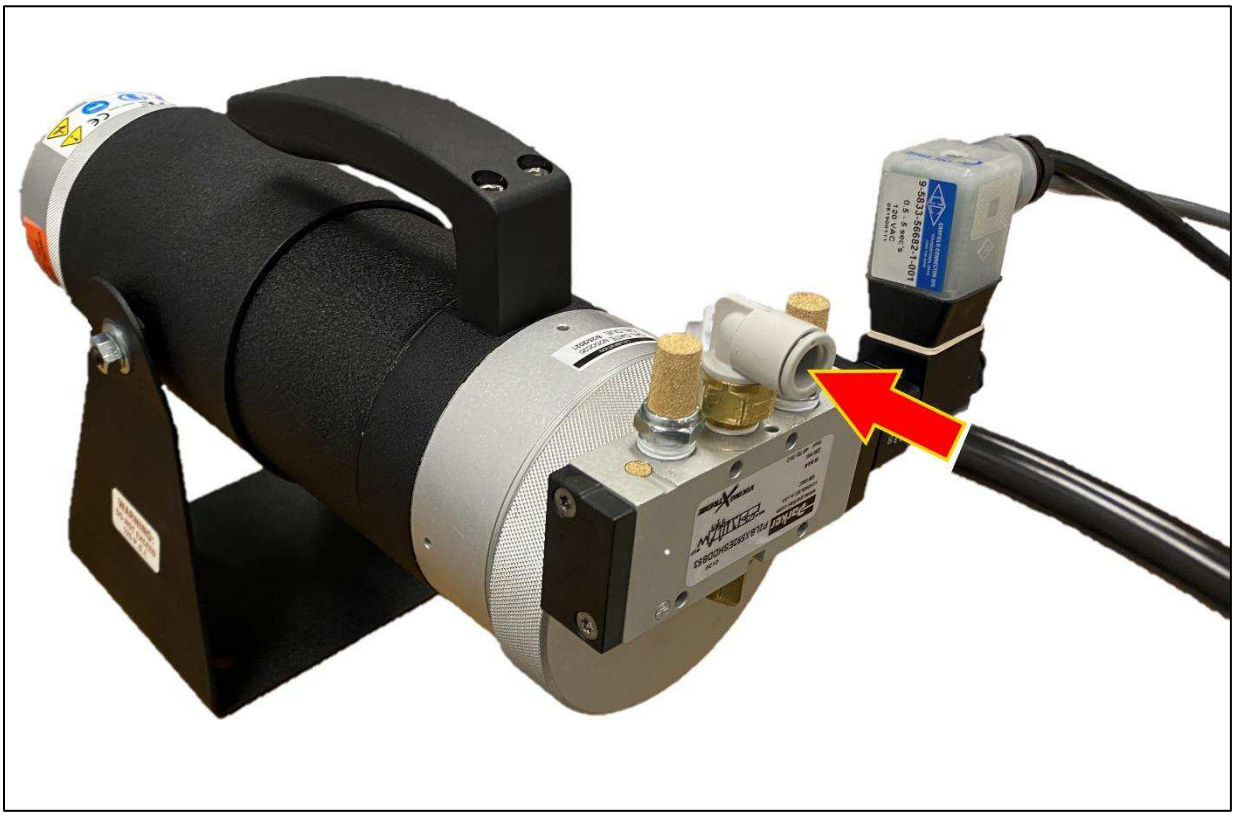
The air inlet port (Figure 2) is tapped to accommodate 6.35 mm [¼-in.] NPT fittings. Direct pipe threaded fitting or quick disconnect can be used with non-setting pipe thread compound. When installing connections, avoid leakage or damaged threads. Ensure that the connection is tight enough to prevent leaks. Recommended air hose: 6.35 mm [¼-in.] inside diameter. The 6.35 mm [¼-in.] NPT threaded hole in the rear of the handle must remain sealed with a single pipe plug.

Figure 2: Location of air inlet



The air hose must be connected to the port in the center of the valve (Figure 3).

Figure 3: Connecting the air hose



2.2 Installing the locator

The function of the locator is to orient the contact in the die housing so that the contact barrel is directly in line with the die indenters. This ensures that the crimp meets the specifications for the particular contact being processed.

The locator is matched to a specific contact and die configuration. Use of non-factory specifications in this regard can result in a poor crimp or damage to the tool and contact.

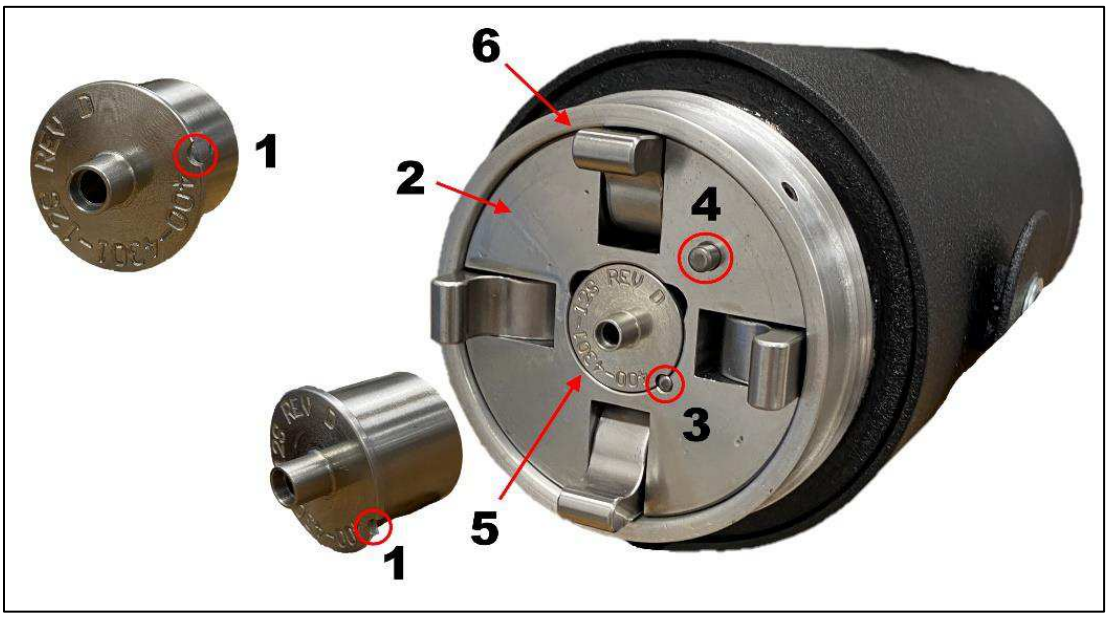
For help in choosing the correct die and locator solution, refer to the cross-reference guide included with your product or instruction sheet 408-35142.

NOTE
The tool is not shipped from the factory with the die installed. If the die is installed, it must be removed before the locator can be installed.

To install the locator, complete the following steps.

1. Disconnect the air supply from the tool.
2. Remove the open-ended cover on the front of the tool housing.
3. Insert the contact locator into the retainer (Figure 4). The retainer is the component through which the four drive arms protrude. An opening in the center accepts the locator.

Figure 4: Installing the locator



1 Locator notch
2 Retainer
3 Locator orientation pin
4 Die orientation pin
5 Locator installed
6 Drive arm

4. Find the notch on the locator flange, and the corresponding pin in the face of the counterbore in the retainer.
5. Orient the notch on the locator flange so that it lines up with the pin in the retainer. When properly installed, the front of the locator flange is flush with the retainer face. The locator part number should be visible.

CAUTION
Never crimp without the correct locator in the tool. Contacts can fall into the tool causing the tool to jam and possibly damaging the unit.

2.3 Installing the die

To install the crimping die assembly, complete the following steps.

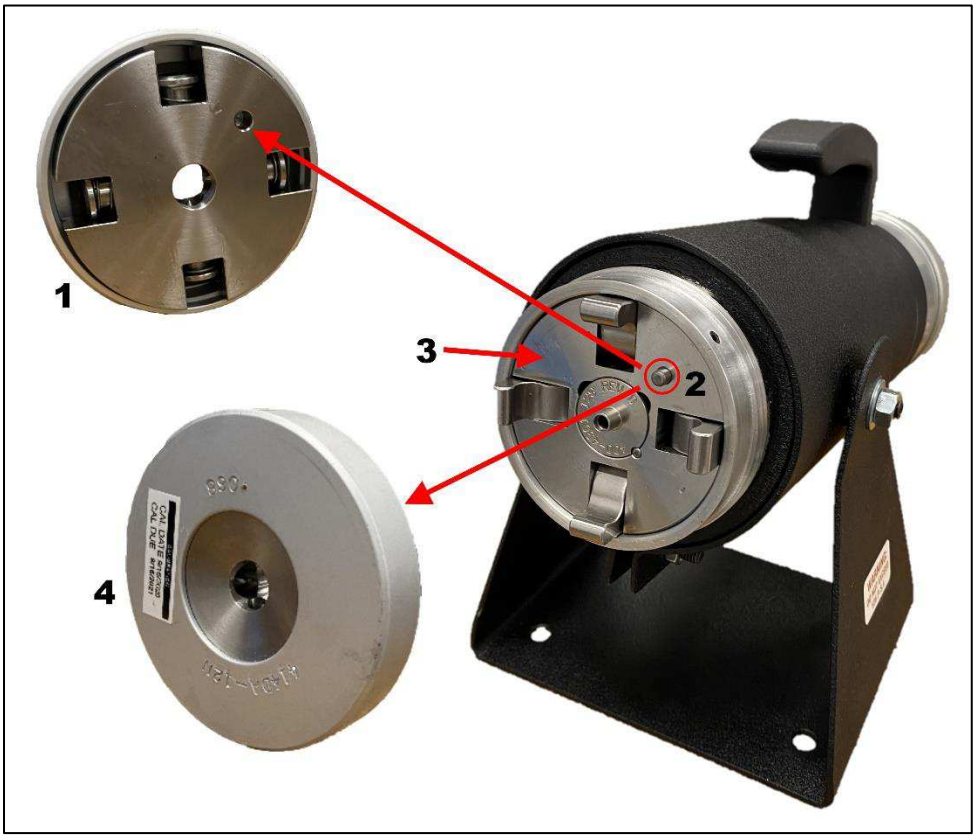
NOTE
The locator must be installed before you install the die assembly.

1. Disconnect the air supply from the tool.
2. Find the index pin in the face of the retainer, and the drilled hole in the rear of the die assembly (Figure 5).
3. Orient this hole to fit over the index pin in the retainer and press the die assembly in place. The die assembly must sit flat on the retainer face.

NOTE
Expect to feel some resistance when the four drive arms come into contact with the indenters.

4. Replace the open-ended cover on the housing. Ensure that the open-ended cover O-ring is intact and in place.
5. Tighten the open-ended cover onto the tool housing until the O-ring contacts the crimp die assembly, then tighten approximately an additional 15°.
6. When the die set is flush with the face of the retainer, the cover nut can be installed (see section 2.4).

Figure 5: Installing the die



1 Rear view of die and index pin hole
2 Die orientation pin
3 Retainer
4 Die

2.4 Installing the cover nut

The O-ring (part number 6230-11) is located on the inside face of the cover nut (Figure 6). During the process of crimping, the contact or terminal grows in length with the displacement of material. The O-ring allows the die set to move forward as the contact is crimped. This prevents excessive side load from being applied to the side of the indenters, reduces wear, and prevents the contact from bending.

Install the cover nut with fingertip pressure only. Turn the nut until you feel the O-ring come in contact with the die face, then tighten approximately an additional 15°.

NOTE
Do not overtighten the cover nut. Doing so prevents the O-ring from performing its intended purpose.

Figure 6: Installing the cover nut

1 400-26 cover nut
2 6230-11 O-ring

2.5 Calibrating the dies

All die sets are marked with the nominal shut height setting (Figure 7). This is the fully closed diameter when the tool is actuated. The dies can be easily checked with NO GO and GO gages. The tolerance, unless otherwise specified, is plus (+) 0.05 mm [.002 in.] (NO GO), minus (-) 0.13 mm [.005 in.] (GO).

Example:

- Die assembly 400-414DA 16N.048 has a nominal shut height of 1.22 mm [.048 in.].
- The GO dimension for this die is 1.09 mm [.043 in.] (1.22 minus 0.13 mm [.048 minus .005 in.]).
- The NO GO is 1.27 mm [.050 in.] (1.22 plus 0.05 mm [.048 plus .002 in.]).

For die assembly calibration information on all contacts, refer to the following documents:

- Customer drawing 0425-205-0000 (HD series)
- Customer drawing 4025-003-0000 (CE series)
- Instruction sheet 408-35142

If a die set fails to calibrate within an acceptable range, calibrate the tool to ensure that the tool is within specification (see section 4).

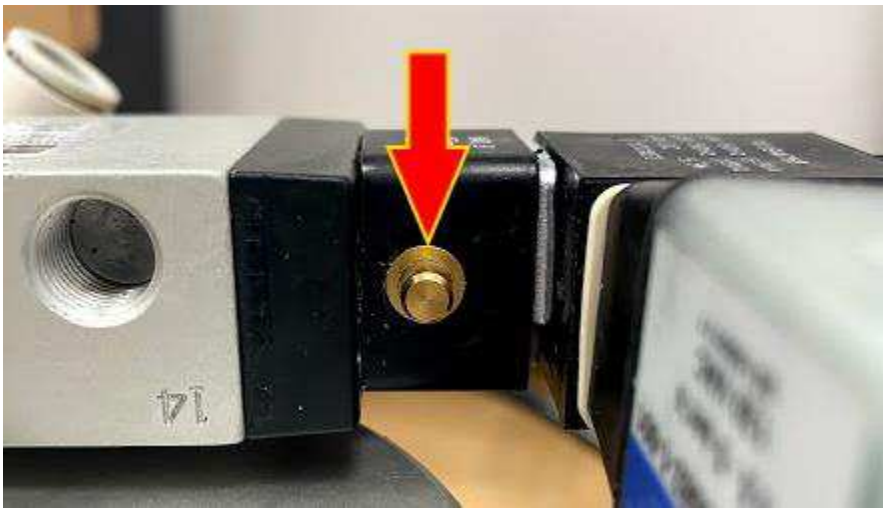
Figure 7: Die markings

1 Die part number
2 Nominal shut height

To calibrate the dies, complete the following steps.

1. Select the proper NO GO and GO gage for the die assembly that is in the tool.
2. Depress and hold the gage button on the air inlet side of the tool (Figure 8). The tool actuates and remains in the closed position.

Figure 8: Gage button



3. Use the gage to check the opening between the indenters (Figure 9) to determine if the die assembly is to the correct dimension.

   - The GO gage should enter freely. A snug fit is acceptable. If the GO gage does not enter freely into the die, check to see that you have the correct GO/NO GO gage.
   - The NO GO gage should not enter. If the NO GO gage enters freely into the die, this indicates wear to the indenters, or (less probable) wear to the drive arms. Confirm that the tool is within specification (see section 4).

NOTE
The indenters are manufactured using S-7 tool steel, and are heat treated to Rc 56-58. As a result, they have a life expectancy of many thousand cycles. Indenters are available for purchase separately from a die assembly. See section 6 or contact your local sales and field service representative.

CAUTION
Do not crimp against a gage. To do so damages the tool and voids the warranty.

Figure 9: Location of GO/NO GO gage

3 Operation and adjustment

1. Adjust regulator: With the air supply connected, adjust the regulator to provide approximately 80 psi.
2. Test crimp cycle: Without a contact and wire in place, operate the trigger. Observe the action of the indenters to be sure they operate freely.
3. Normal operation: Insert the contact or terminal and wire assembly and proceed to crimp.

After operating personnel have become accustomed to using the tool, the air need not be turned off while changing dies and locators.

Prior to crimping contacts, wire must be stripped per 408-35142 for HD or CE series contacts. Correctly stripped wire should show no signs of insulation tearing or stretching or conductor strand damage. Conductor strands should be visible through the contact inspection hole prior to crimping.

4 Calibrating the tool

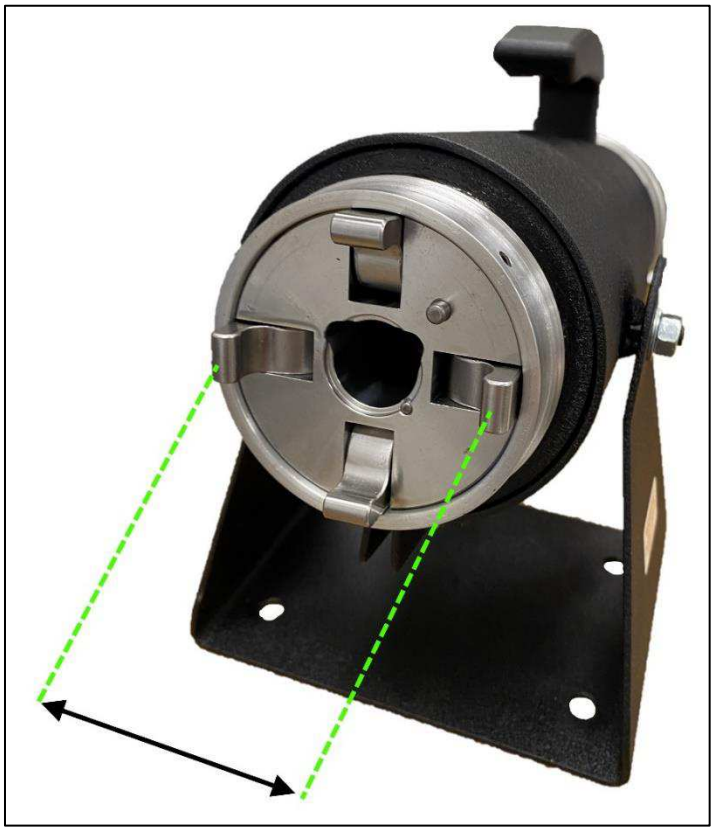
If a die set fails to calibrate within an acceptable range, calibrate the tool. Complete the following steps to ensure that the tool is within specification.

To gage the tool, remove the cover nut and die set.

Depress and hold the gage button on the air inlet side of the tool. The tool actuates and remains in the closed position.

Measure the distance between the face of two opposing arms (Figure 10). It must be between 1.885 and 2.003. A value outside this range indicates that the arms are out of alignment or worn. For replacement, see section 7.

Figure 10: Calibrating the tool



5 Maintenance

The HDP-400 requires filtered, dry air. The tool is thoroughly lubricated at the factory and if clean, filtered, dry air is provided, it should not require additional lubrication for the first year. The tool is assembled with the highest quality O-ring lubrication, which should provide adequate lubrication under normal conditions for the lifetime of the tool. If it becomes necessary to lubricate the tool, Dow Corning Molykote® DC-55 O-Ring Grease is recommended.

6 Replacement and repair

To obtain replacement parts, refer to the applicable instruction sheet or customer manual and order parts through your TE representative. You can also order parts by any of the following methods:

- Go to TE.com and click the **Shop TE Store** link at the top of the page.
- Call +1 800-522-6752.
- Write to:

  CUSTOMER SERVICE (038-035)
  TE CONNECTIVITY CORPORATION
  PO BOX 3608
  HARRISBURG PA 17105-3608

For customer repair services, call +1 800-522-6752.

7 Revision summary

Since the last revision of this document, the following changes were made:

- Reformatted to current standard for customer manuals
- Corrected sequence of steps in section 2
- Corrected errors in section 2.1
- Added step 1 in section 2.2
- Added step 1 in section 2.3
- Updated document references in section 2.5
- Updated note on page 15
- Corrected errors in section 4