



NOTE

All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Unless otherwise specified, dimensions have a tolerance of ± 0.13 mm [$\pm .005$ in.] and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for reference only and are not drawn to scale.

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 simply by changing out the die assembly and locators in accordance with factory specifications. The HDP-400 Power Crimp Tool (TE PN 1606312-1) is foot controlled. Power requirements: Air supply: 620-827 kPa [90-120 PSI]; Electrical: 120V, 8 W.

2. WIRE PREPARATION

Prior to crimping contacts, wire must be stripped per Information Drawing 0425-205-0000 for HD series contacts or Information Drawing 4025-003-0000 for 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.

3. AIR SUPPLY SETUP

3.1. Air Inlet Port

The air inlet port on the solenoid valve at the rear of the unit is tapped to accommodate 6.35 mm [$\frac{1}{4}$ -in.] NPT fittings (see Figure 1). Direct pipe threaded fitting or quick disconnect may 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 [$\frac{1}{4}$ -in.] inside diameter. The 6.35 mm [$\frac{1}{4}$ -in.] NPT threaded hole in the rear of the handle must remain sealed with a single pipe plug.

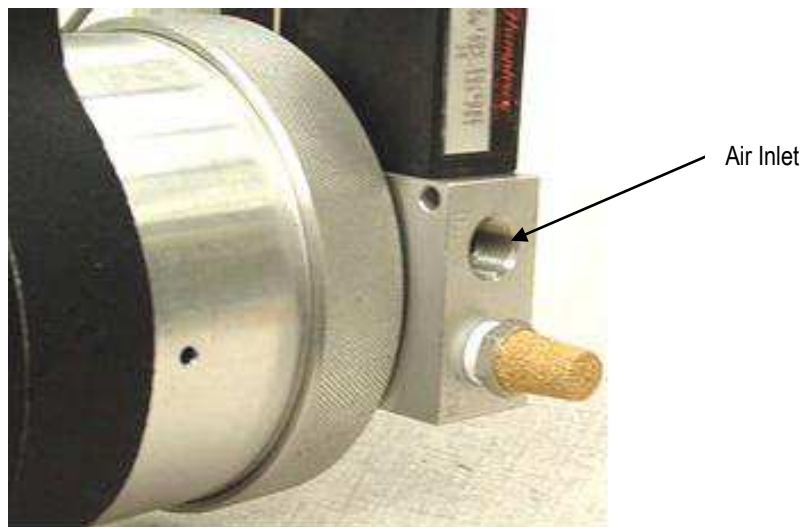


Figure 1

3.2. Air Requirements

Crimp tool operating pressure is 620 to 861 kPa [90 to 125 PSI] (1-2 CFM). Use a 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 completing Section 4.

4. CRIMP TOOL SETUP

1. Remove the open ended cover on the front of the tool housing. Insert the contact locator into the retainer (The retainer is the component thru which the four drive arms protrude and which has an opening in the center which accepts the contact locator.) Observe the notch on the locator flange. There is a pin in the face of the counter bore in the retainer. Orient the notch on the locator flange to coincide with the pin in the retainer. When properly installed, the front of the locator flange will be flush with the retainer face. Locator part number should be visible.
2. Next, install the crimp die assembly. There is an index pin in the face of the retainer. Observe the drilled hole in the rear of the die assembly. Orient this hole to fit over the index pin in the retainer and press the die assembly in place. There will be some resistance when the four drive arms come into contact with the indenters. The die assembly must sit flat on the retainer face. Replace the open ended cover on the housing (ensure the open ended cover O-ring is intact and in place). Tighten the open ended cover onto the tool housing until the O-ring contacts the crimp die assembly, then tighten approximately an additional 15°.



CAUTION

Never crimp without the correct locator in the tool. Contacts can fall into the tool causing the tool to jam and may cause damage to the unit.

3. With the air supply connected, turn on the air. Adjust the regulator to provide approximately 689 kPa [100 PSI]. Without a contact and wire in place, operate the foot pedal, observe the action of the indenters to be sure they operate freely.
4. Insert the contact and wire assembly and proceed to crimp. Proper locator and die assembly will produce a crimp centered between the inspection hole and crimp barrel end. After operating personnel have become accustomed to using the tool, the air supply need not be turned off while changing locators and die assemblies.



NOTE

Do not adjust timer solenoid setting from factory preset, doing so may result in incomplete crimp cycles and out of specification crimps.



DANGER

Pinch point keep fingers away from indenter opening.

5. Test a few crimped contacts every day to be sure all quality requirements are within the limits of the 0425-205-0000 or 4025-003-0000 crimp information drawings.

5. CALIBRATING DIES

1. All die sets are marked with the nominal shut height setting. 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).

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

Refer to Information Drawing 0425-205-0000 (HD series) or 4025-003-0000 (CE series) for die assembly calibration information on all contacts.

2. To Calibrate: Select the proper NO-GO and GO gage for the die assembly which is in the tool. Depress and hold the red gage button (see Figure 2) which will cause the tool to actuate and remain in the closed position. The gage can then be used to check the opening between the indenters to determine if the die assembly is to the correct dimension. The "GO" gage should enter freely. The "NO-GO" gage should not enter.

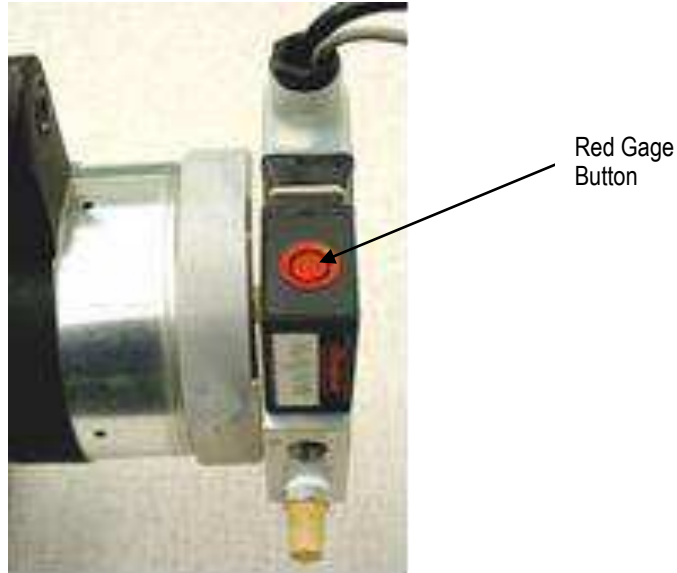


Figure 2


CAUTION

Do not crimp against a gage. To do so will damage the tool and void the warranty.

6. MAINTENANCE

HDP-400 (TE PN 1606312-1) tools should be supplied with clean, dry air. The tools are thoroughly lubricated at the factory and if dry air is provided they should not require additional lubrication for the first year. Use the following series of diagnostic steps to diagnose and remedy problems listed. Consult TE for any other symptoms.

If the tool completes a crimp cycle, but operates sluggishly:

1. Check the air supply to ensure that there is a minimum of 620 kPa [90 PSI] of clean, dry air supplied to the tool. Drain moisture traps near the tool and at the compressor accumulator tank. Remove contaminants from air supply lines and components. Listen for air leaks. Repair air lines as required to eliminate air leak components.
2. Check the airline size. It should be a 6.35 mm [1/4-in.] ID line. Inspect along full length of air lines for pinching or leaking. Repair air lines or reroute as required to eliminate pinching or air leak components. If air lines are outdoors during freezing conditions, check for ice blockage or line restrictions. Insulate or reroute if possible.

If these steps do not correct the condition, some other causes may be:

- ◆ Worn O-rings.
- ◆ A buildup of debris and congealed lubricant.

Contact TE at 1-800-526-5136 for repair service information for returning the tool. Contact the Tooling Assistance Number at the bottom of page 1 for advice on operation, maintenance and service issues.

7. REFERENCE

Tables 1 and 2 summarize data from DEUTSCH Information Drawing 0425-205-0000 (Rev. U). These tables are for reference only and are subject to change. Use current revisions of drawings listed in Paragraph 4.5 for crimp operations. TE reserves the right to improve tooling and performance at any time. The appearance of tooling received may not match illustrations and photographs in this instruction sheet. Contact TE for any questions regarding your version of HDP-400 (TE PN 1606312-1) power crimper.

HDP-400 (TE PN 1606312-1) CRIMP REFERENCE DATA SIZES 4 THROUGH 12 (REF 0425-034-0000 AND 0425-205-0000)									
REF (SEE LEGEND)	SOLID CONTACT PART NUMBER	SIZE, TYPE (11)	WIRE RANGE mm ² [AWG]	TENSILE (REF) N [lbs] (4)	TOOLING PART NUMBERS		GAGES		STRIP RANGE mm ² [in.]
					CRIMP DIE	LOCATOR	GO (1, 18)	NO-GO	
---	5960-203-04• 5962-203-04•	4-Pin 4-Skt	21 [4]	1334 [300]	400-414DA-4SPEC	400-4301-4S	4.32 [.170]	4.50 [.177]	10.92-12.50 [.430-.492]
---	0460-204-04• 0462-203-04•	4-Pin 4-Skt	13 [6]						
---	0460-204-08• 0462-203-08•	8-Pin 8-Skt	6-8 [8]	556 [125]	400-414DA-8SPEC	400-4301-8S	3.28 [.129]	3.45 [.136]	10.92-12.50 [.430-.492]
(15)	0460-204-12• 0462-203-12•	12-Pin 12-Skt	2.5-3 [12] 2 [14]	334 [75] 311 [70]	400-414DA-12N	400-4301-12S	1.60 [.063]	1.78 [.070]	5.64-7.21 [.222-.284]
---	0460-211-12• 0462-210-12•	12-Pin 12-Skt							
(15)	0460-220-12• 0462-214-12•	12-Pin 12-Skt							
(10)	0460-235-12• 0462-215-12•	12-Pin 12-Skt							
---	0460-258-12•	12-Pin	2.5-4 [12]	334 [75]	400-414DA-12N	400-4301-12S	1.60 [.063]	1.78 [.070]	5.64-7.21 [.222-.284]
---	3962-025-12603 3962-014-12603	12-Pin 12-Skt							
---	0460-256-12•	12-Pin							

Table 1

- (1) Minimum ± 0.013 mm [.0005 in.] tolerance steel gage pins. Do NOT crimp gage pins. This will damage the crimp indenters and void warranty. Close die first, then gage pins.
- (2) When $\square = 31$, contact plating is GOLD
When $\square = 90$ or 141 , contact plating is NICKEL (size 4-pin only)
When $\square = 141$, contact plating is NICKEL
When $\square = 603$, contact plating is SILVER
- (3) Locator material is steel.
- (4) Pull rate of 25.4 mm [1.0 in.] per minute maximum. Actual strength depends on wire size.
- (5) Optional HDP-400 (TE PN 1606312-1) foot pedal: part number 400-104, and pneumatic accelerator, part number 0417-050-0001 (for <1 second crimp cycle), are available and recommended.
- (6) For contact performance, material specifications, and application details, see Envelope Drawing 0425-015-0000.
- (7) Conductor strands must be visible thru the inspection hole prior to (3-second full-cycle) non-accelerated crimp.
- (8) Proper locator and die assembly will produce a crimp centered between the inspection hole and the crimp barrel end.

- (9) 0460-215-16• and 0462-209-16• are identified by one green stripe on the crimp barrel.
- (10) 0462-215-12• has one narrow gray, one narrow brown, and one broad brown stripe for identification on the crimp barrel. Sequence is from inboard to outboard.
- (11) Wire sizes per SAE J1128 and J1560 (DIN 72551-6).
- (12) Reference 0425-034-0000 instruction manual for HDP-400 (TE PN 1606312-1) power crimper.
- (13) 0460-002-16• and 0462-004-16• are identified by one blue stripe on the crimp barrel. These contacts are used on high durability applications.

HDP-400 (TE PN 1606312-1) CRIMP REFERENCE DATA SIZES 16 AND 12 (REF 0425-034-0000 AND 0425-205-0000)										
REF (SEE LEGEND)	SOLID CONTACT PART NUMBER	SIZE, TYPE (11)	WIRE RANGE mm² [AWG]	TENSILE (REF) N [lbs] (4)	TOOLING PART NUMBERS		GAGES		STRIP RANGE mm² [in.]	
					CRIMP DIE	LOCATOR (3)	GO (1, 18)	NO-GO		
---	0460-202-16• 0462-201-16•	16-Pin 16-Skt	0.75-1.5 [18-16] 0.50 [20]	158 [35] 111 [25] 89 [20]	400-414DA-16N048 Use for 0.75-1.5 [18-16]	400-4301-16S	1.09 [.043]	1.27 [.050]	6.35-7.92 [.250-.312]	
(19)	2325529-1 2325584-1	16-Pin 16-Skt								
(13)	0460-002-16• 0462-004-16•	16-Pin 16-Skt								
---	0460-211-16• 0462-214-16•	16-Pin 16-Skt								
---	0460-235-16• 0460-264-16•	16-Pin 16-Pin								
---	8960-020-16603 8962-011-16603	16-Pin 16-Skt								
---	0462-221-16•	16-Skt	0.75-1.5 [18-16]	156 [35] 111 [25]	400-414-16N048	0417-208-1600	1.09 [.043]	1.27 [.050]	6.35-7.92 [.250-.312]	
---	0462-222-16•	16-Skt			400-414-16N048	0417-207-1600				
---	0460-247-16•	16-Pin			400-414-16N048	400-7053-16S				
---	0462-221-16•	16-Skt	0.50 [20]	89 [20]	400-414DA-20N	0417-208-1600	0.84 [.033]	1.01 [.040]		
---	0462-222-16•	16-Skt				0417-207-1600				
---	0460-247-16•	16-Pin				400-4301-16S				
---	0462-223-16•	16-Skt	1.0-1.5 [16]	156 [35]	400-414DA-16N048	0417-209-1600	1.23 [.049]	1.42 [.056]		4.49-6.02 [.177-.237]
(9)	0460-215-16• 0462-209-16•	16-Pin 16-Skt	2.0 [14]	311 [70]	400-414DA-16N048	400-4301-16S	1.09 [.043]	1.27 [.050]		6.35-7.92 [.250-.312]
(17)	0460-010-20• 0462-005-20•	20-Pin 20-Skt	0.75-1.0 [18-16]	89 [20]	400-414DA-20N	400-4301-20S	0.84 [.033]	1.01 [.040]		3.96-5.54 [.156-.218]
---	0460-202-20• 0462-201-20•	20-Pin 20-Skt	0.35-0.50 [22-20]							
(19)	2325531-1 2325530-1	20-Pin 20-Skt	0.50 [20]							

Table 2

- (14) N/A
- (15) 0460-204-12• comes in NICKEL plate only. Use 0460-220-12• for GOLD plate.
- (16) See page 5 for contact part numbers and tooling specifications.
- (17) 0460-010-20• and 0462-005-20• are identified by one purple stripe on the crimp barrel.

- (18) T dimension horizontal or vertical after crimping (see Figure 3) may be larger or smaller than values listed for “GO” or “NO-GO” gage pins. This varies with wire size and “springback”.

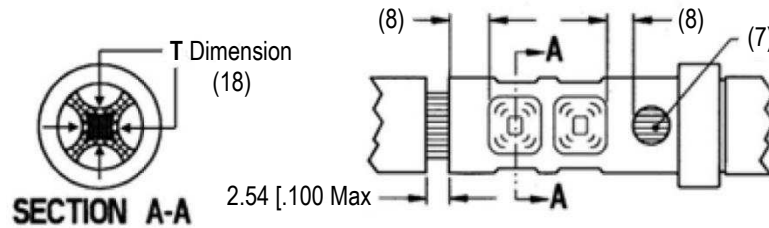


Figure 3

- (19) PN 2325529-1 (pin) is gold plated and identified by BROWN, BROWN, BROWN stripes.
 PN 2325584-1 (socket) is gold plated and identified by BROWN, BROWN, BLUE stripes.
 PN 2325531-1 (pin) is gold plated and identified by BROWN, BROWN, BLACK stripes.
 PN 2325530-1 (socket) is gold plated and identified by BROWN, BROWN, GREEN stripes.

8. REVISION SUMMARY

- ◆ Updated headers, footers, logo, enterprise name and formatting to most up to date.
- ◆ Added DEUTSCH to title
- ◆ Added PN's 2325529-1, 2325584-1, 2325531-1, and 2325530-1
- ◆ Paragraph 7(2), added “141” to identify plating description
- ◆ Added Footnote (19) describing PN's 2325529-1, 2325584-1, 2325531-1, and 2325530-1
- ◆ Added Table 1 and 2 designations
- ◆ Added Figure 3 designation and reference in applicable paragraph