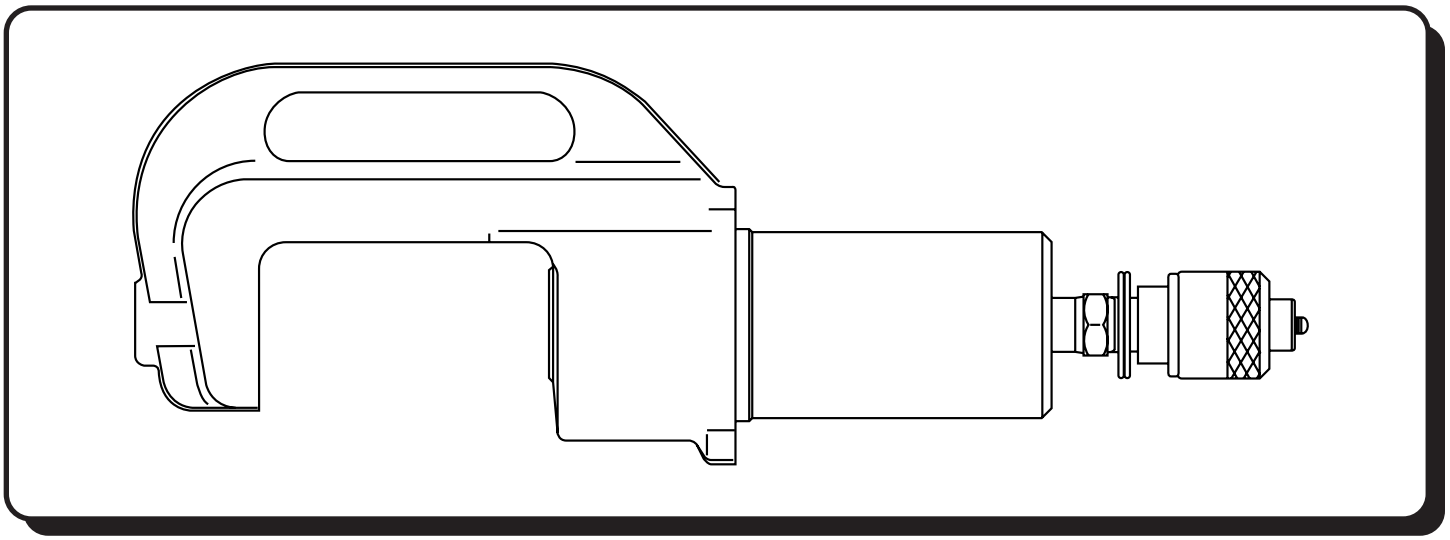
Thomas&Betts

13700A

14 Ton C-Yoke Crimping Tool
Instruction Manual



Read and **understand** all of the instructions and safety information in this manual before operating or servicing this tool.

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1.0 GENERAL INFORMATION

⚠ WARNING ⚠

Improper use of this tool can be dangerous. It should only be use with pumps, hoses, fittings and accessories rated for 10,000 psi working pressure. (Burst or proof pressures are not working pressures.)

⚠ CAUTION ⚠

Use only a listed (UL and/or CSA) Thomas & Betts connector with this tool. Any other combination may result in a connection which does not meet established standards.

⚠ WARNING ⚠

The hydraulic fluid used in the system is petroleum based and, as such, proper care should be exercised in its use. Ordinary care, avoidance of continued skin contact, and normal personal hygiene are advised. Avoid contact with the eyes and oral ingestion. The tool (pump hose, etc.) should not be used where a failure would cause the hydraulic fluid to contact personnel, open fire, electric heater, hot surfaces, electrical wiring, food material intended for human consumption, etc.

The use of this or other hydraulic equipment may be restricted by Government Regulation in particular situations. O.S.H.A., Bu. Mines, F.D.A., etc. are examples. Check before using.

This tool is shipped filled with oil.

1.1 SAFETY RULES

1) **FAMILIARIZE YOURSELF WITH THE NEW TOOL** Read the instruction manual. Become aware of its proper usage as well as the potential hazards that could occur.
2) **KEEP WORK AREA CLEAN AND WELL LIT.** Poor lighting and cluttered area invite accidents.
3) **USE SAFETY GLASSES.**
4) **DON'T ABUSE TOOL OR HOSE.** Never carry or yank tool by the hose. Protect hose from heat , oil, sharp edges and heavy weights.
5) **MAINTAIN TOOL WITH CARE.** Keep tool in good condition at all times. Keep it clean for best and safest performance.
6) **DISCONNECT PUMP FROM POWER SUPPLY** when not operating tool or when performing any type of service or repair.
7) **REMOVE WRENCHES** from tool before operation.
8) **AVOID ACCIDENTAL STARTING.** Remove hand or foot control switch when not actually operating tool.
9) **DON'T OVER-REACH.** Keep proper footing and balance at all times.
10) **BENCH MOUNT OR HANG TOOL ON A TOOL BALANCER.** This frees the operator to better operate the tool.
11) **NEVER ATTEMPT TO MAKE A CONNECTION TO A "HOT" LINE.** Never assume the power Is OFF! Determine beforehand if any electrical hazard could exist when making a connection to a line or wire.

The 13700A is a high pressure hydraulic crimping tool. Properly used and maintained, it will provide long, dependable service.

1.2 DESCRIPTION

The 13700A is a portable hydraulically actuated "C" shaped frame installing tool utilizing dies to crimp electrical connectors. All parts are made from heat treated high strength machine steel and ground to close tolerances to assure efficient operation and long life. It is designed to be operated with the following Thomas & Betts equipment.

Type of Pump	Hydraulic Hose Catalog Number	External Control
Hydraulic Foot Pump Cat. No. 13606	Typical for all pumps Plastic Hose Cat. No. 13619 10 feet long Cat. No. 13618 20 feet long Steel Braided Hose Cat. No. 13613 6 feet long Cat. No. 13614 10 feet long	N/A
Hydraulic Hand Pump Cat. No. 13604		N/A
Electric Hydraulic Pump Cat. No. 13610A		Hand Switch Cat. No.13611 Foot Switch Cat. No.13612
Electric Hydraulic Pump Cat. No. 13810		
Electric Hydraulic Pump Cat. No. 13600		Hand Switch 13620 Foot Switch 13589A
Pneumatic Hydraulic Pump Cat. No. 13760		Treadle control with the pump

1.3 SPECIFICATIONS

Output	14 Tons (nominal)
Hyd. Operating Pressure	10,000 psi, 120 cu in (max)
Length (with coupling)	13.75 in.
Width	2.83 in.
Height	4.88 in.
Weight (wet)	13.5 lbs. (without dies)
Finish	Black Oxide
Hydraulic Hose Coupler	Pioneer Type
Oil	T&B 21061

2.0 OPERATING INSTRUCTIONS

2.1 CONNECTING HEAD TO PUMP

IMPORTANT: Refer to pump instructions for pump setup and operation.

⚠ WARNING ⚠

Disconnect the pump from its power supply before connecting or disconnecting the tool from hose, installing or removing dies, or performing any maintenance or service.

⚠ CAUTION ⚠

Connections should only be tight enough to be snug and leak free. Overtightening can distort the threads and weaken the fittings. Inspect couplers regularly and replace as necessary.

The greatest single cause of failure in hydraulic systems is dirt. Exercise extreme caution to prevent the introduction of foreign matter into the unit.

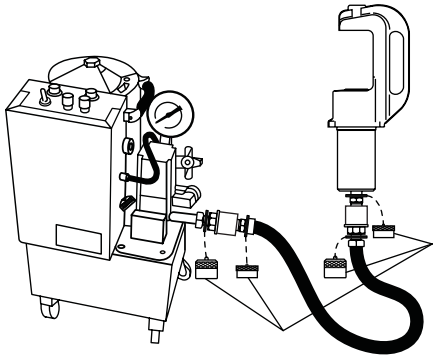
Never operate this tool without a set of dies.

Connect tool to output hose by removing the dust caps from both ends and tighten the couplings together, see Figure 1. **IMPORTANT:** Make sure all hose connections are snug.

NOTE: Quick disconnect hydraulic couplers are intended to facilitate the periodic disconnection and reconnection of hydraulic equipment.

This tool is shipped full of clean hydraulic oil. Make sure the hose and pump are also filled with clean oil. Dirty fluid in the hose and pump will mix with the clean fluid in the tool and contaminate it. Flush and refill if necessary.

- Use only clean hydraulic oil.
- Be careful when making hose connections. Protect couplers with the dust covers when not in use.
- Be sure that the equipment to which the tool is to be connected is free from dirt and grit.



Remove Dust Caps and tighten couplings together.

FIGURE 1

2.2 INSTALLING DIES IN HEAD

All dies have a similar semi-circular shaped outer shell for mounting into a groove in tool as shown in figure 4.

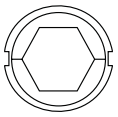


FIGURE 2

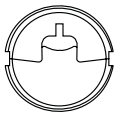


FIGURE 3

Each die set consists of two halves. Figure 2 shows a typical type of 15500 series hexagonal shaped die set for crimping COLOR-KEYED® connectors, while figure 3 shows a typical die set for installing magnet wire connectors.

⚠ WARNING ⚠

Dies must be properly Installed to prevent damage and possible operator injury.

KEEP HANDS CLEAR OF DIES WHEN OPERATING TOOL. Serious injury may result if hand is caught in die during crimping.

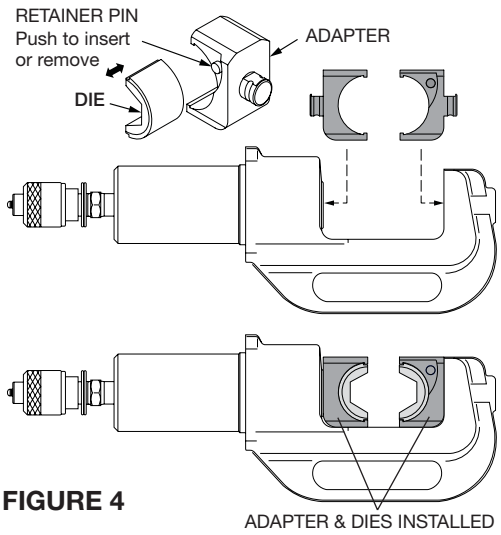


FIGURE 4

1. **TURN OFF POWER.** Disconnect head and pump from power supply before installing dies.
2. Select appropriate die set for the connector. (Refer to instruction sheets enclosed with the dies and connectors for information regarding proper use.)
3. Insert adapters into tool head as shown in Figure 4. Tighten set screws to secure apapters.
4. Insert dies into the adaptors by pushing the retaining pin and sliding the die into the adapter (see Figure 4).
5. After installing dies and adapters in tool head, the tool is ready to be operated.
6. Turn on power and operate several times checking for proper operation and leaks.

2.3 TYPICAL CRIMPING PROCEDURE

⚠ WARNING ⚠

KEEP HANDS CLEAR OF DIES WHEN OPERATING TOOL. Serious injury may result if hand is caught in die during crimping.

⚠ CAUTION ⚠

Never operate this tool without a set of dies.

Refer to Instruction sheets enclosed with the dies and connectors for information on the dies, wire sizes, material, die codes, color-coding, number of compressions, etc.

1) Select correct die set and install in tool. **MAKE SURE PUMP DEVELOPS PROPER PRESSURE PRIOR TO MAKING DESIRED CRIMPS**. Refer to pump manual for instructions.
2) Select connector to be crimped to wire(s). Insert the connector with the wire(s) into the die nest.
3) Make crimp by operating pump using the foot or hand control switch. Turn pump off to retract tool.

3.0 ADDITIONAL INSTRUCTIONS

3.1 GENERAL

1) Be certain that all hoses, fittings, couplers, accessories, etc. are the proper size and pressure rating. Tighten them fully. Use NPT pipe connection where required. Seal threaded joints with a high quality pipe thread sealer.

   NOTE: TEFLON* tape may be used if properly applied. One layer should be applied to the male thread. The tape must not extend past the end of the pipe as the excess may break off in the hydraulic system and clog or damage the pump or tool.

   * Teflon is a registered trademark of E.I. Dupont & Co.

3.2 HYDRAULIC FLUID

1) Check the oil level in the pump once every 40 hours of use or as indicated in the Trouble Shooting Guide. Refer to Pump Manual for proper instructions.
2) Use only approved hydraulic fluid Thomas & Betts Cat. No. 21061.
3) Consult your Thomas & Betts representative for operating information if the tool Is to be used in temperatures below 32° F.
4) Do not use hydraulic brake fluid, motor oil, silicone oil, synthetic fluids, etc. These materials have poor lubricating qualities and are not compatible with the materials used in this tool.
5) Do not add oil while the pump is connected to its electrical supply.
6) Make sure the tool is fully retracted, before adding oil.

3.3 BLEEDING OF HYDRAULIC SYSTEM

⚠ WARNING ⚠

IF A HOSE DEVELOPS A LEAK, DO NOT PUT YOUR HAND OVER THE LEAK.
The high pressure fluid can cause injury.

1) When the tool is connected to the hose or the pump, some air is introduced into the hydraulic system. For satisfactory operation, this air must be removed. Sluggish or erratic cylinder action is a sign of entrapped air.
2) Air can generally be removed by operating the system several times by fully advancing and retracting the ram of the tool (a die must be in place in the tool when thus cycling.) For optimum air removal, the pump should be the highest point in the system.
3) Cycle the pump and tool several times before using it the first time or after the unit has not been used for a while. Cycling will warm the fluid and lubricate the system before being heavily loaded.

3.4 REPAIRS AND ADJUSTMENTS

1) Only minor repairs should be performed such as the replacement of parts illustrated in the Repair Parts List. For major repairs such as disassembly of the piston and replacement of seals require special fixtures, it is recommended the tool be returned to an authorized Thomas & Betts Tool Service Center.

3.5 TROUBLE SHOOTING

Piston does not advance	a) No oil or low oil in pump. b) Air in system. c) Couplers not fully tightened. d) Defective coupler. e) Blockage in hydraulic lines. f) Defective pump. g) Improper oil used (viscosity too heavy).
Piston advances slowly, part-way, or erratically.	a) No oil level in pump. b) Air in system. c) Tool piston binding. d) Leakage of hydraulic fluid. e) Loose coupler. f) Blockage in hydraulic lines.
Piston does not retract, does not release pressure, or retracts erratically.	a) Defective pump. b) Coupler not fully tightened. c) Defective coupler. d) Weak or broken return spring in tool. e) Binding tool piston or sticking dies. f) Excess oil in pump. g) Blockage in hydraulic pump. h) Ram not properly lubricated.
Pump develops excessive pressure.	a) Defective pump.
Pump does not develop full pressure.	a) Defective pump. b) Air in system. c) Leakage in pump, tool or hose. d) Low oil in pump. e) Dirt in hydraulic system.

3.6 ORDERING REPAIR PARTS

All parts listed on the following pages may be ordered through the Tool Service Center. When ordering repair parts always give the following information as shown in the list.

1) The Part Number
2) The Part Description
3) The Catalog Number (CAT. No. 13700A)
4) The Name of the item: 14 Ton C-Yoke Crimping Tool

No.	DESCRIPTION	CODE	QTY
1	M6 X 10 Screw (C.P.)	46-06	3
4	Head	50K-03	1
5	M5 X Screw (C.P.)	P55A-02	1
8	SER-38 Scraper	L100-10	1
9	Spring Anchor Screw (2)	510K-04	1
10	P-7 Back-up Ring (B.C.)	RB-49	1
11	P-7 O-Ring	16-60	1
12	Cylinder	510K-05	1
13	M5 X 5 Screw (C.P.)	RD-16	1
14	Ram	510K-07	1
15	P-36 Back-Up Ring (B.C.)	55-21	2
16	P-36 O-Ring	55-22	2
17	Spring (307)	510K-06	1
18	End Cap	510K-08	1
19	Female Coupler	FC-8/DP-8	1

3.7 MAINTENANCE / ROUTINE SERVICE

⚠ WARNING ⚠

DISCONNECT THE PUMP FROM ITS POWER SUPPLY FOR ALL MAINTENANCE AND SERVICE EXCEPT WHEN IT IS ACTUALLY REQUIRED TO OPERATE THE PUMP.

⚠ CAUTION ⚠

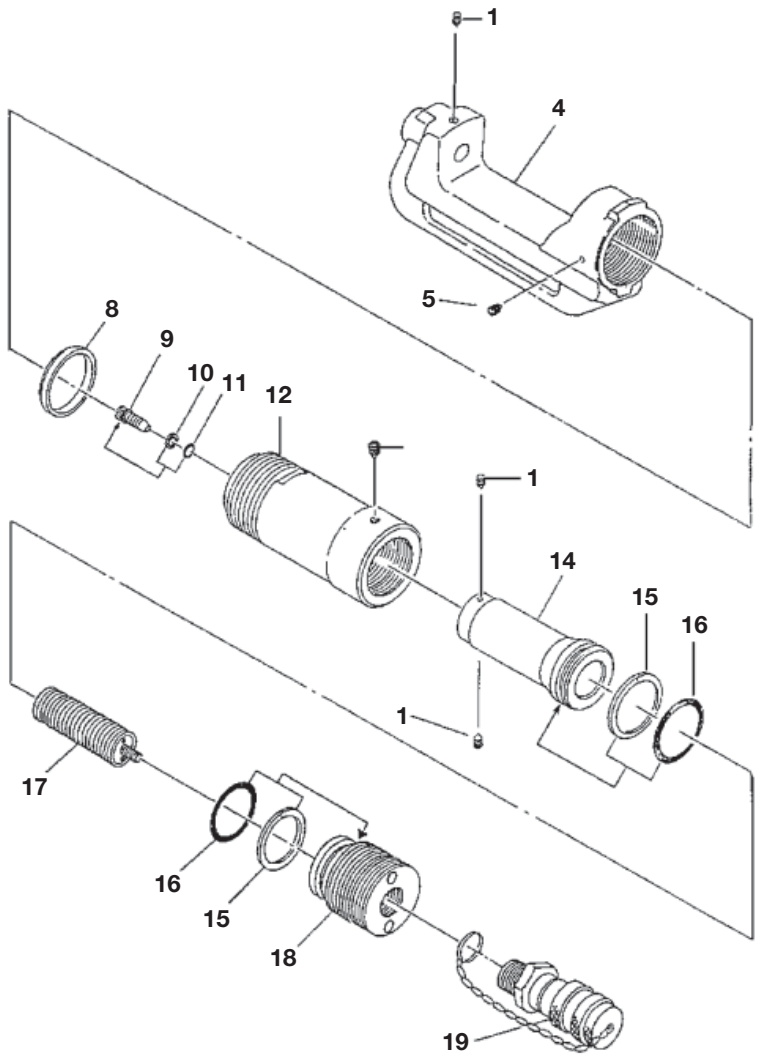
The greatest single cause of failure in hydraulic equipment is dirt. Extreme care should be exercised to prevent the introduction of foreign matter into the unit.

1) Make sure all hose connections are tight and that a die is properly in place in the tool.
2) Check pump pressure periodically.
3) Pump should be disconnected from its power supply for all maintenance and service.
4) When not in use, the pump should be disconnected from the power source.
5) Hydraulic hoses should be carefully handled. Avoid sharp bends, kinks and twists. Do not cut or nick the hose and keep the hose from twisting when installing fittings.
6) Proper care will maximize hose life.
7) A program of routine maintenance will keep your tool and hydraulic equipment operating at top efficiency. In particular, equipment should be kept clean and small leaks should be repaired before they become serious.

4.0 EXPLODED ASSEMBLY

⚠ WARNING ⚠

- **DO NOT ATTEMPT TO MODIFY THE TOOL OR ANY OF ITS COMPONENTS.**
- **DO NOT OPERATE THE TOOL UNLESS IT IS IN ITS ORIGINAL FACTORY CONFIGURATION**
- **DO NOT OPERATE THE TOOL WITH ANY OF ITS COMPONENTS DAMAGED, MISSING OR ASSEMBLED IN ANY MANNER OTHER THAN AS ORIGINALLY RECEIVED.**
- **SUCH MODIFICATION AND/OR OPERATION COULD RESULT IN A HAZARDOUS CONDITION WHICH COULD CAUSE SERIOUS INJURY OR PROPERTY DAMAGE.**



For parts or service, contact tool service center at 1-800-284-TOOL (8665)

WARRANTY: Thomas & Betts sells this product with the understanding that the user will perform all necessary tests to determine the suitability of this product for the user's intended application. Thomas & Betts warrants that this product will be free from defects in materials and workmanship for the period stated on the enclosed warranty card. Upon prompt notification of any warranted defect, Thomas & Betts will, at its option, repair or replace the defective product or refund the purchase price. Proof of purchase is required. Misuse or unauthorized modification of the product voids all warranties.

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