

CC440 CRIMPER OPERATORS MANUAL WITH ACT™ CONTROLLER



## **SAFETY PRECAUTIONS**



## **SAFETY PRECAUTIONS**



- READ INSTRUCTIONS AND IDENTIFY ALL COMPONENT PARTS BEFORE USING CRIMPER.
- CRIMPER CC440 CAN PRODUCE 265 TONS OF CRIMPING FORCE.
- KEEP BOTH HANDS AWAY FROM PINCH POINTS.
- CONSULT HOSE AND FITTING MANUFACTURER FOR CORRECT MACHINE SETTINGS AND CRIMP MEASUREMENTS.
- ALWAYS WEAR EYE PROTECTION.



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### **COMPONENT PARTS & TECHNICAL DATA**

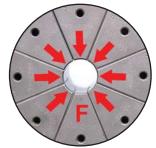
Adjustable Mirror Fixed 6 o'clock Die Position Manual Back Stop Patented ACT™ Controller **Back Shelf** 7.5 HP motor high capacity pump Main Power Switch Hvdraulic 99mm Die Storage Pockets Reservoir Foot Pedal for use in Semi 61" and Full automatic mode Small Footprint for minimum use of space

Technical Data
265 Ton
*Max 2SP: 2", 4SP: 2", 6SP: 1-1/2"
*Max Industrial: 4"
L: 44" x W: 48" x H: 61"
Weight: 1,840 lbs
Power: 7.5HP/230V/3Phase (Standard) 7.5HP/440V-480V/3Phase (Optional) 5HP/230V/1Phase (Optional)
Die series: 99P / 160S
Adjustability: Inch / Metric
Opening w/o dies: 248mm / 9.75"
Master die inside diameter: 160mm / 6.3"
Master die travel: 102mm / 4"
Reservoir capacity: 8 US Gallons

\*Crimper capacity is estimated based on typical 1-piece fitting. Actual results may vary depending on the hose and fitting manufacturer.



Max Head Opening W/O Dies: Can accommodate 4" 150 lbs SAE flange.



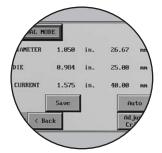
**Fixed 6 O'clock Die Position:** Allows the operator to place the fitting on bottom die and crimp.



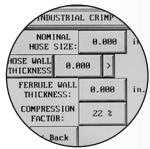
Oil type: ISO 46 Hydraulic Oil

Patented ACT™ Controller:

Offers 4 language settings to choose from English, Espanol, Deutsch and Francais.



Features Of Operator Interface:
User Friendly navigation, Manual Mode,
Semi Auto Mode, Full Auto Mode and
Production Features.



Industrial Crimp Calculator: Takes guesswork out of industrial crimping.



### **INITIAL SET UP**

- Check the oil level in the sight glass on the front of the reservoir.
- 8 U.S. gallons of ISO 46 hydraulic oil is required to completely refill the reservoir.

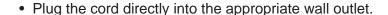
Note: Oil can be drained from either of the two ports at the bottom (front) of the reservoir.



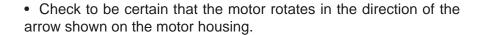
 Check electrical circuit to be certain that it matches to the crimper requirements as shown on the voltage tag attached on the electrical cord.

### **Electrical Requirements:**

7.5HP/230V/3Phase (20 Amp) 7.5HP/440V-480V/3Phase (20 Amp) 5HP/230V/1Phase (30 Amp)



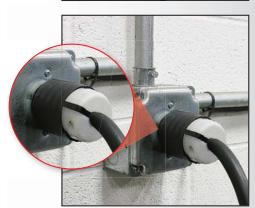
Caution: Do not run the crimper on an extension cord as low voltage can damage the motor and / or electrical components.



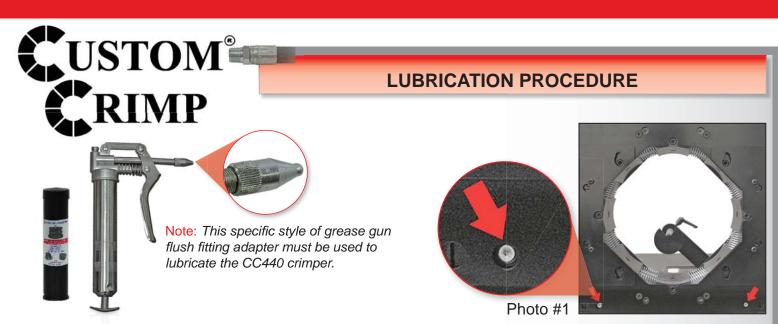
• If motor rotation is incorrect reverse any two hot wires in the crimper plug. (For 3 phase circuits only).

Note: Damage to the pump can result if the motor does not rotate in the correct direction.









Note: Use the mini grease gun w/ flush fitting adapter and CrimpX grease (supplied with crimper) or a high quality moly-disulfide grease.

### Failure to do so may result in damage to the wearing surfaces.

• Lubricate the crimping head after each 400 crimping cycles or at the start of each shift if the crimper is used in a production setting.

Note: Tap the START button then CHANGE DIES button in the lower left corner of the screen; it will start to flash. This button allows you to "jog" the crimper head in and out during die installation using the green CLOSE and OPEN button below the screen on the front of the ACT<sup>TM</sup> Controller.





- Bring the master dies to the fully opened position, and lubricate the fittings visible through the 2 bottom lubrication fittings in the protective plate (as shown in photo #1).
- Bring the master dies to the fully closed position, and lubricate the master dies through the 8 lubrication fittings in the protective plates (as shown in photo #2).
- With the master dies still in the fully closed position, lubricate the (4) lubrication fittings on each side of the crimper (as shown in the photo #3 and #4).

Note: Parking the crimper in the full open position when not in use will prolong the life of the master die springs.

• Check the wear surfaces for grease. If the surfaces show any signs of wear, apply more grease. If you touch the wear surfaces, you should see a thin layer of grease on your finger.

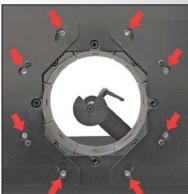


Photo #2



Photo #3

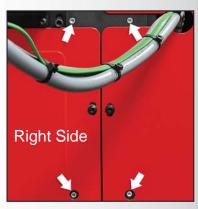


Photo #4



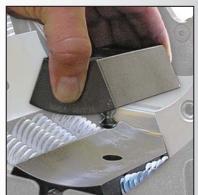
## **ADAPTER DIE INSTALLATION**

#### **ADAPTER DIE INSTALLATION:**

Note: 160 mm to 99 mm Adapter Dies are available with the crimper. Adapter dies are held in place by the die locking pins (as shown in photo #1).

The I.D. of the adapter dies must match the O.D. of the corresponding adapter die or hydraulic die or accurate crimps can not be made.

Photo #1



Note: Tap the START button then CHANGE DIES button in the lower left corner of the screen; it will start to flash. This button allows you to "jog" the crimper head in and out during die installation using the green CLOSE and OPEN button below the screen on the front of the ACT<sup>TM</sup> Controller.











• Bring the master dies to the fully opened position (as shown in photo #2). To have access to the (8) master die locking studs.

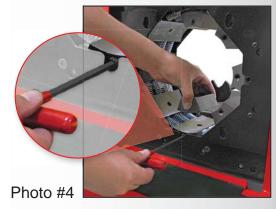
Install the 160 mm to 99 mm Adapter Dies (as shown in photo #3).



Photo #3

Note: The die size stamped on the face of the adapter dies should face toward the operator.

Note: Use the T-Handle Wrench provided to loosen and tighten the master die locking studs to secure the adapter dies (as shown in photo #4).





### HYDRAULIC DIE INSTALLATION

#### HYDRAULIC DIE INSTALLATION:

• With the 160 mm to 99 mm Adapter Dies installed, use the Quick Change Tool to install the hydraulic dies.

The I.D. of the adapter dies must match the O.D. of the corresponding hydraulic die or accurate crimps can not be made.

Note: Tap the START button then CHANGE DIES button in the lower left corner of the screen; it will start to flash. This button allows you to "jog" the crimper head in and out during die installation using the green CLOSE and OPEN button below the screen on the front of the ACT™ Controller.





• Bring the crimper head to fully opened position and install the Hydraulic Dies with the quick change tool (as shown in photo #1).

Note: The die size stamped on the face of the hydraulic dies should face toward the operator.

- Align the studs of the Hydraulic Dies with the holes in the Adapter Dies and with the crimper in manual mode SLOWLY close the crimper head on the hydraulic die set (as shown in photo #2).
- Bring the crimper head to a fully closed position (as shown in photo #3).
- Remove the guick change tool as shown in photo #4).

Note: The Hydraulic Dies may also be inserted manually with the crimper head in the fully open position.

Note: For Hydraulic Die removal, place the crimper in manual mode and bring the crimper head to a fully closed position. Insert the quick change tool and open the crimper head releasing the Hydraulic Dies form their spring retention holes.



Photo #1

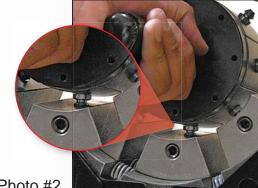


Photo #2



Photo #3

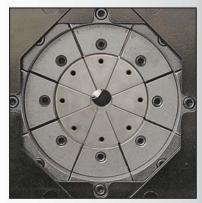
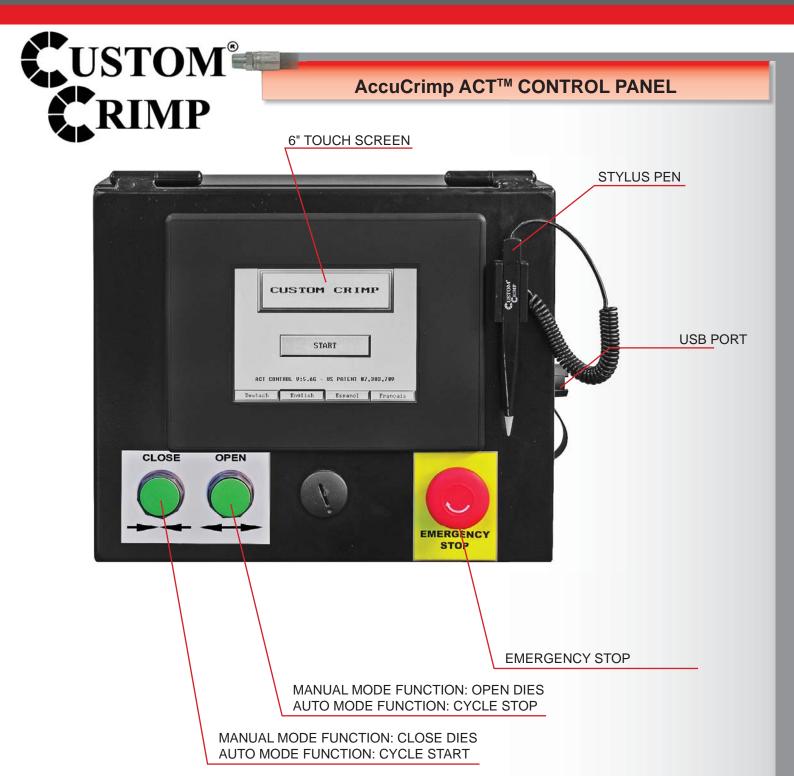


Photo #4



#### NOTE:

IF THE CRIMPER IS IN <u>MANUAL MODE</u>, THE GREEN OPEN/CLOSE BUTTONS WILL OPEN AND CLOSE THE CRIMPER HEAD.

IF THE CRIMPER IS IN <u>AUTO MODE</u>, THE BUTTONS FUNCTION AS CYCLE START AND CYCLE STOP BUTTONS. IF THE CRIMPER IS IN <u>SEMI-AUTO MODE</u>, PRESSING THE FOOT SWITCH OR THE CLOSE BUTTON WILL CLOSE THE CRIMPER HEAD AND RELEASING WILL HALT THE CLOSING ACTION.

Products covered by all or some of these Patents: US 7,383,709; US 8,230,714; EP 1,909,987 and Patents Pending.



## AccuCrimp ACT™ CONTROL PANEL QUICK START

While the ACT<sup>™</sup> crimper has the ability to perform a number of fully automatic functions, manual operation is also possible. To make a manual crimp, two numbers are needed:

The closed diameter of the die (in either inches or mm).

The finished crimp diameter (in either in or mm) That's all you need to know. ACT™ does the rest.

#### TO MAKE A MANUAL CRIMP:

- Press START Button.
- Select CRIMP TO DIAMETER.
- Enter the closed diameter of the die set in either in or mm and press ENTER. Note: for a 25mm die, enter 2500.
   ACT<sup>TM</sup> will add the decimal point.

#### Decimal point entry:

For 1.56 inch entry, enter 1560 (Controller supplies 3 places for entries in inches).

For a 50.0 mm entry, enter 5000 (Controller will supply 2 decimal places for entries in mm).

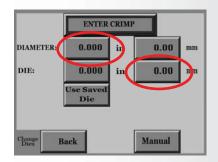
- Enter the finished crimp diameter and press **ENTER**.
- From the **ENTER CRIMP** screen, press the **MANUAL** button to put the crimper in manual mode.
- Confirm that the die and finished crimp diameters are correct and that MANUAL MODE is displayed.
- Press and hold the green CLOSE button until the crimper stops closing.
- Check the final crimp diameter. If a minor correction is required see HOW TO MAKE MINOR CORRECTIONS.

Tip: Pressing the **CHANGE DIES** button allows the crimper head to be fully opened or closed with the green **OPEN-CLOSE** buttons on the controller front panel When the **CHANGE DIES** button is blinking the dies can be opened and closed manually without altering any of the crimper settings.











## AccuCrimp ACT™ CONTROL PANEL QUICK START

#### **HOW TO MAKE MINOR CORRECTIONS**

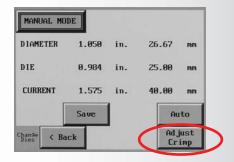
• Due to variations in hose and fitting tolerances a minor crimp adjustment may be required if the measured diameter of the final crimp is not within the hose and fitting manufacturer's specifications. ACT™ technology makes minor corrections a simple process which requires no addition or subtraction.

If the finished crimp diameter is not within the required specifications:

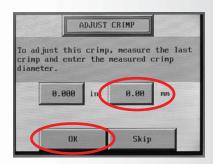
- Press the ADJUST CRIMP button.
- Enter the measured diameter of the fitting in either inches or mm (<u>Do not enter the amount of correction</u>) and press ENTER.
- · Press OK.
- Make another crimp and verify that the fitting is within specifications.

**EXAMPLE:** If the hose and fitting manufacturer specifies that the finished crimp should measure 1.500 to 1.520 and the measured crimp diameter was 1.530, simply enter the measured diameter (1530 - Controller will supply 3 decimal places) and press **SAVE**. The finished crimp diameter can be entered in either in or mm and  $ACT^{TM}$  will make the conversion.

While a single correction will usually bring the hose and fitting into specifications, the process can be repeated as many times as is required.









## AccuCrimp ACT™ CONTROL PANEL QUICK START

### **HOW TO ADD A SAVED DIE**

Up to 50 different dies can be saved in the computer memory. These dies can be recalled in the set up process eliminating the need to re-enter the die size each time.

To enter a saved die:

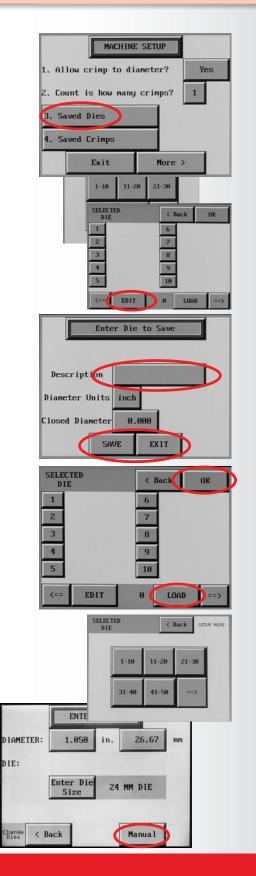
- From the **OPTION** screen, press **SETUP MODE**.
- Select SAVED DIES.
- Select the save position (1-50) where the die is to be saved and press the **EDIT** button.
- Enter a die description (up to 12 alpha/numeric characters).
- Enter diameter units (inch or metric).
- Enter the closed diameter of the die.
- Press SAVE and EXIT.
- The saved die will now appear on the SELECTED DIE screen. From this screen individual dies can be cleared or edited.

### **HOW TO RECALL A SAVED DIE**

- Select CRIMP TO DIAMETER, and from the OPTION screen, select USE SAVED DIE.
- Select the saved die (1-50) and press LOAD and then OK.
   The die parameters will now be used for the crimp process.

From the **ENTER CRIMP** screen press **MANUAL**.

 The saved die will now be shown on the crimp parameters screen.





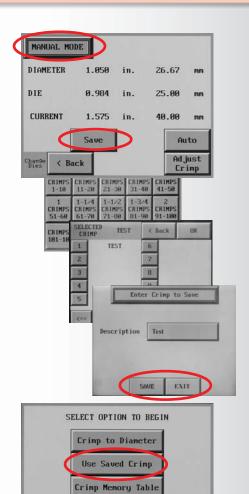
## AccuCrimp ACT™ CONTROL PANEL QUICK START

### **HOW TO ADD A SAVED CRIMP**

- Adjust the die diameter and crimp diameter as required and place the crimper in MANUAL mode.
- · Press SAVE.
- Select a location (1-100) and press EDIT.
- Enter a description (up to 12 characters).
- · Press SAVE and EXIT.
- The die and crimp setting can now be recalled from the saved location as required.

### TO RECALL SAVED CRIMP

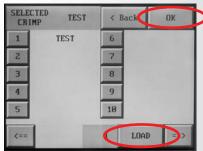
- Select USE SAVED CRIMP from the option screen.
- Select a previously saved crimp from location 1-100.
- · Press LOAD.
- · Press OK.
- The saved crimp will appear on the manual screen.





Setup Mode

Change Dies





## AccuCrimp ACT™ CONTROL PANEL QUICK START

## **FULL AUTO MODE**

With the crimper in **FULL AUTO** mode additional functions are available:

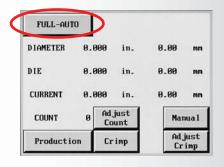
- The crimper will cycle automatically from the **CRIMP** button on the touch screen, the green **CYCLE START** button on the panel, or the foot switch.
- To set the position to which the dies will retract, close the crimper to the desired retract position prior to pressing the **FULL AUTO** button.
- Pressing the FULL AUTO button will toggle the crimper into
   SEMI-AUTO mode. In SEMI-AUTO mode, pressing the FOOT SWITCH or the CLOSE button will close the crimper head and releasing it will cause the head to stop closing. This mode allows the crimper to be jogged into position allowing more precise positioning of a fitting in the dies.
   Pressing the SEMI AUTO button will toggle the crimper back to FULL AUTO mode

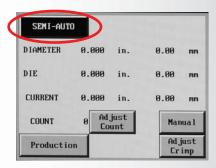
In **FULL AUTO** mode pressing the foot switch will start the crimp cycle and the dies will stop closing when the crimp cycle is complete.

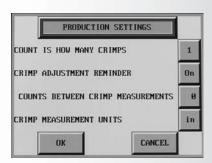
- The **COUNT** function is activated allowing the operator to monitor the number of crimps made.
- A measurement can be required after a preset number of crimps. See SET REQUIRED MEASUREMENT

#### SET REQUIRED MEASUREMENT

- Press the **PRODUCTION** button.
- Determine if 1 or 2 crimps will count as a crimp
- Toggle the CRIMP ADJUSTMENT REMINDER to ON.
- Set the **COUNTS BETWEEN CRIMP MEASUREMENTS** to the desired number and press **OK**.
- At the set interval, the ADJUST CRIMP screen will come up and the operator will be asked to measure the last crimp and enter a correction if required.











## AccuCrimp ACT™ CONTROL PANEL QUICK START

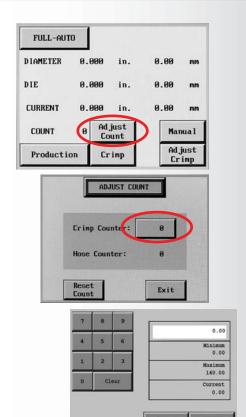
## **ADJUST CRIMP COUNT**

If a production operation is interrupted for some reason, it is possible to reset the counter to where the operation was at the point of interruption.

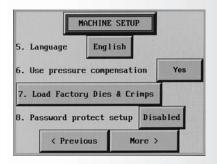
- Press the Adjust Count button from the auto crimp screen.
- Press the Crimp Counter and reset the count to the desired point.

### **ACT™ ADDITIONAL FEATURES**

- Additional features and functions of the ACT<sup>™</sup> controller can be accessed by pressing the MORE button on the MACHINE SET UP screen.
- When "Allow Crimp to Diameter" is set to "YES", all of the adjustment functions of the crimper are available. When "Allow Crimp to Diameter" is set to "NO" only the settings entered as a saved crimp can be used.
- English or Spanish language options are available.
- The "Use Pressure Compensation" is set to "YES" for all crimpers equipped with a pressure transducer. A security code is required to turn this function on or off.









## AccuCrimp ACT™ CONTROL PANEL QUICK START

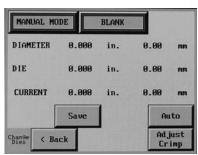
## **ACT™ ADDITIONAL FEATURES**

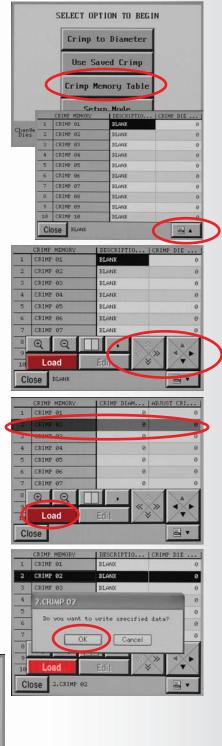
Pre-Loaded Crimp Specifications

In addition to the ability to store up to 50 user entered dies and 150 user entered crimp settings, the ACT™ Controller has the capability of accepting pre loaded manufacturer's crimp specifications.

CustomCrimp® does not maintain these specifications as they are proprietary to the individual hose and fitting manufacturer. If, however, your ACT™ Controller was pre loaded with a manufacturer's crimp specifications or if they are available to you, they are accessed in the following manner:

- · Press the Crimp Memory Table Button.
- Press the access button to bring up the stored crimp specifications.
- Scroll through the crimp specifications to select the correct one. The right hand rocker button moves through the crimp specs one line at a time and the left hand rocker button moves one screen at a time.
- When the correct crimp specification is selected, press the highlighted selection and then the Load button and select OK to write the data to the ACT™ Controller.
- This will bring up the familiar crimp screen and the crimper can then be operated in the normal manner.







### INDUSTRIAL CRIMP CALCULATOR

The Industrial Hose Crimp Calculator is part of the ACT™ controller package on many Custom Crimp® crimpers capable of crimping industrial hoses. With a few simple measurements, it takes the guess work out of industrial hose crimping and eliminates the need for charts and graphs.

Note: Not all ACT<sup>TM</sup> controllers have the Industrial Crimp Calculator software. Contact your sales specialist for information on a specific crimper.

- Press the CRIMP TO DIAMETER button.
- Press the INDUSTRIAL CRIMP Button.
- Press MEASURE.

If the hose diameter is known or a pi tape is being used, enter the hose O.D.

If hose O.D. is not known, press **MEASURE** for wall thickness options.

- Measure the wall thickness of the hose. Press the right arrow and take 2 more measurements of the hose wall thickness.
- The Industrial Crimp Calculator will average the three measurements.
- Enter the stem diameter of the fitting. For example: If the stem diameter is 4 inches, you would enter 4000 and the ACT™ controller would supply the decimal place.
- Measure and enter the wall thickness of the ferrule.
- Next enter a compression factor. While this can vary depending upon the specific hose and manufacturer, the following guidelines are a starting point:

Standard Industrial hose (approximately 1/4 inch wall thickness): 22%

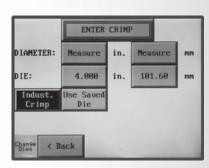
Standard lay flat hose: 11%

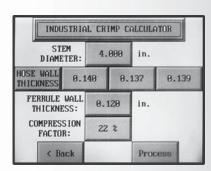
Note: Contact your hose and fitting manufacturer for the compression factor to use on a specific hose and ferrule,

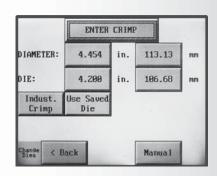
- Press PROCESS and enter the die diameter if you have not already done so.
- Select and install the correct die set for the combination of hose and fitting being crimped.
- Press MANUAL and proceed to crimp the hose.













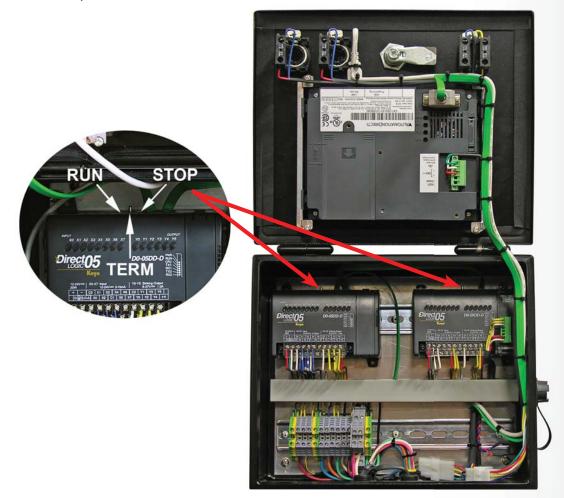
### PLC RESET PROCEDURE

### **PLC RESET PROCEDURE:**

The PLC (Programmable Logic Controller) requires a relatively constant source of electrical power. Power surges, outages or drops in power can cause the PLC to lose its settings. This may result in missing or misplaced information on the controller screen.

#### RESETTING THE PLC TO ITS ORIGINAL SETTINGS IS A SIMPLE PROCEDURE:

- · Open the front of the Control Panel.
- Power up the crimper from the main power switch. The crimper must be powered on during the PLC reset procedure.
- Move the three position toggle switch on top of the PLC right to the STOP position and then left to the RUN position.
- Return the toggle switch to the center TERM position.
- · Repeat for the other PLC Unit.
- Cycle the main power off and back on.
- The PLC and the crimper should now operate normally.
- · Close the control panel.





### **TROUBLESHOOTING**

## PROBLEM: CRIMPER WILL NOT RUN AT ALL

- Check the E-Stop switch to be certain that it is not depressed. A slight twist is required to release switch after it has been depressed.
- PLC (Programmable Logic Control) must be reset. See instructions on the previous page.

#### PROBLEM: CRIMPER RUNS BUT IS SLOW OR NON-FUNCTIONAL

- Check supply voltage to see that it matches the voltage specified on the tag attached to the crimper.
   Many performance problems are the result of low voltage or inadequate electrical service.
- Check motor rotation and be certain that the motor rotates in the direction of the arrow on the motor housing. For three phase units rotation can be reversed by switching any two wires in the plug.

## PROBLEM: CRIMPER WILL CLOSE ON FITTING BUT DOES NOT DEVELOP POWER TO COMPLETE THE CRIMP

Check oil level. Position dies to the fully open position and check oil sight gage in rear of machine. Be sure the oil level is
in the middle of the sight glass. Use ISO 32 or 46 weight hydraulic oil.

#### PROBLEM: CRIMPER WILL NOT OPEN TO RETRACT POSITION IN AUTO MODE

• Retract position must be at least 3 mm larger than the final crimp diameter.

If problem (s) persist contact Customer Service for additional troubleshooting assistance.



## **CC440 REPLACEMENT ACCESSORIES**



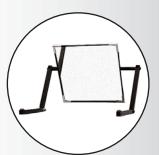
6" Touch Screen Panel P/N:102600-ACT



CC-Foot Switch P/N:CC-FOOTSWITCH



99mm Quick Change Tool P/N:102571



CC-Mirror P/N:103471



Manual Back Stop P/N:MBS-60



Electronic Back Stop P/N:EBS-60



Industrial Die Shelf P/N:103572



Industrial Hose O.D Tape (Pi Tape) P/N:103901



Mini Grease Gun w/ CRIMPX Die Lubricant 3 oz mini grease tube P/N:103889



CRIMPX Die Lubricant 3 oz mini grease tube P/N:103887



CRIMPX Die Lubricant 14 oz large grease tube P/N:103888



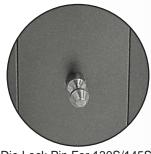
CustomCrimp® Notched Digital Caliper IN/MM P/N:CC-Caliper



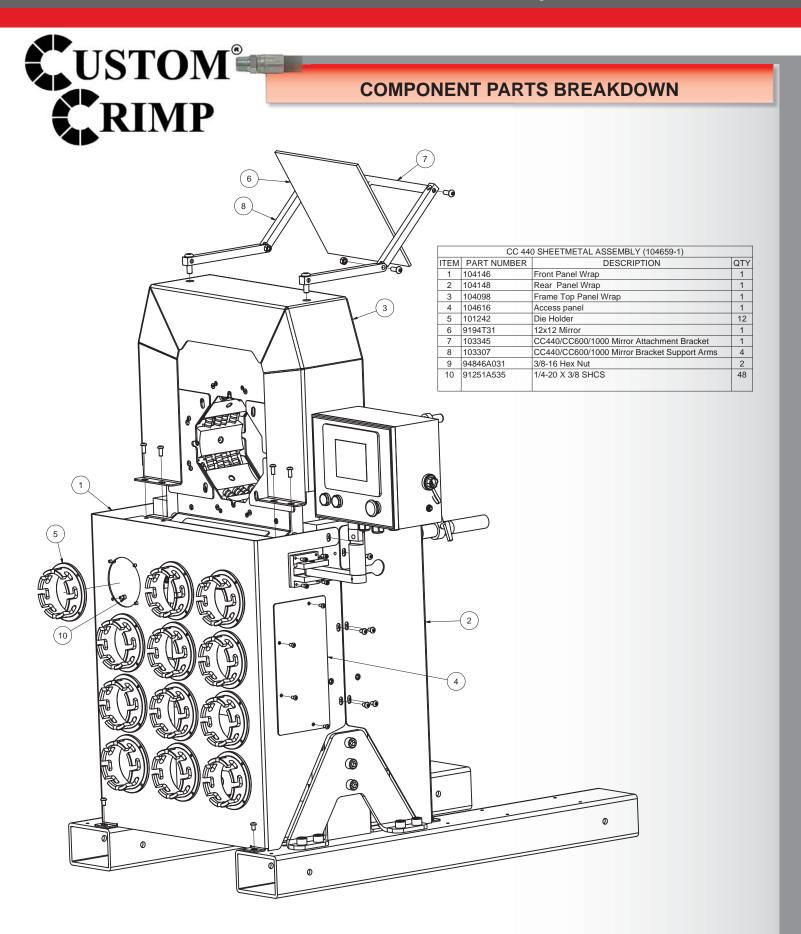
Adapter Die Set 160mm OD to 99mm ID P/N: 104618

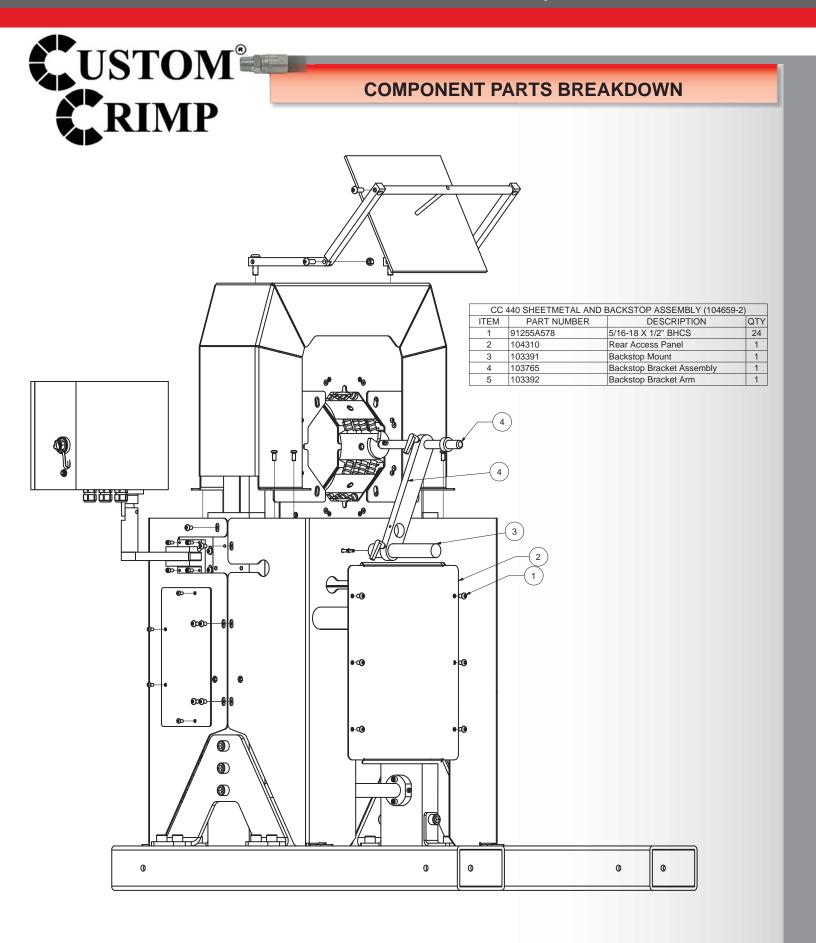


Die Lock Pin For 84S/99S Die Series P/N:101582



Die Lock Pin For 130S/145S Die Series P/N:101403







## **COMPONENT PARTS BREAKDOWN**

PART NUMBER

91251A798

CC440 FRAME/LEG/POTENTIOMETER ASSEMBLY (104083-MAN)

DESCRIPTION

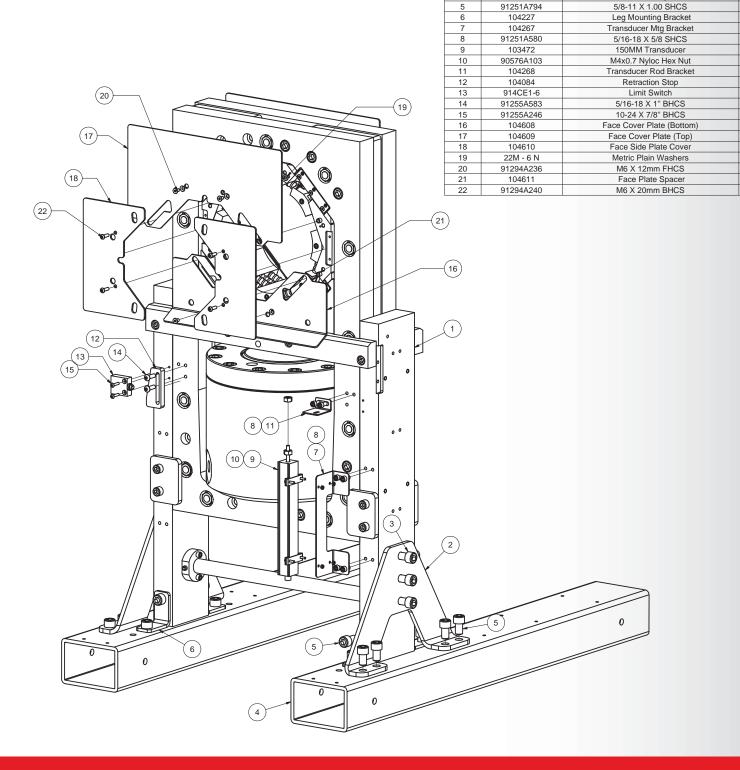
Frame/Master Die Assy

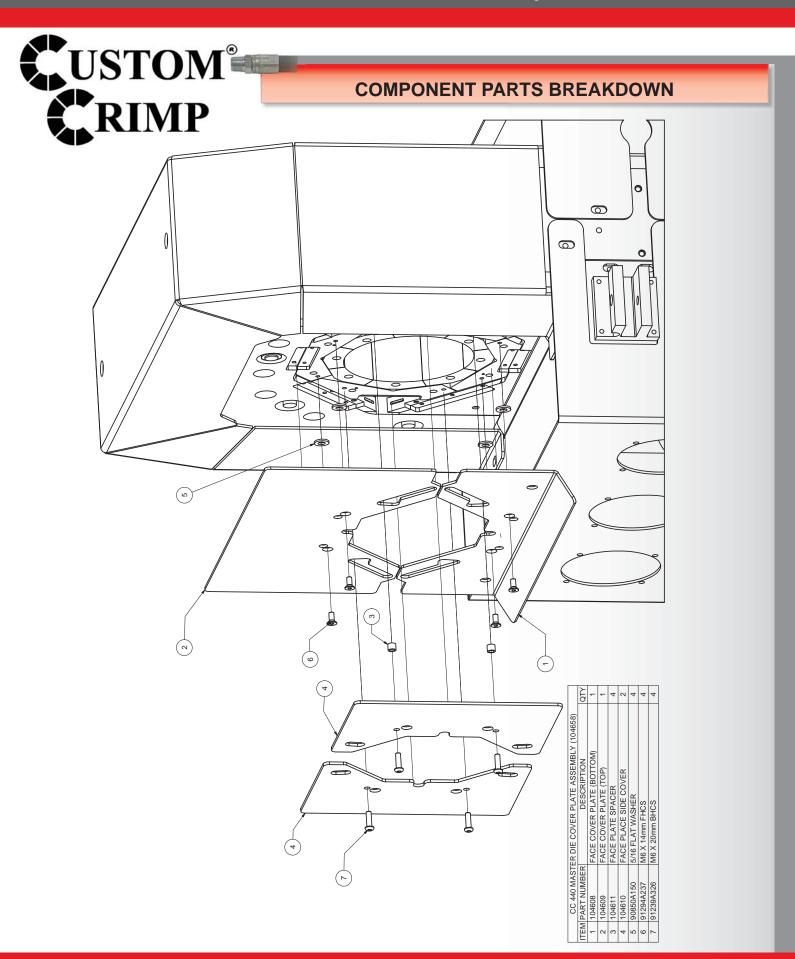
Leg Brace

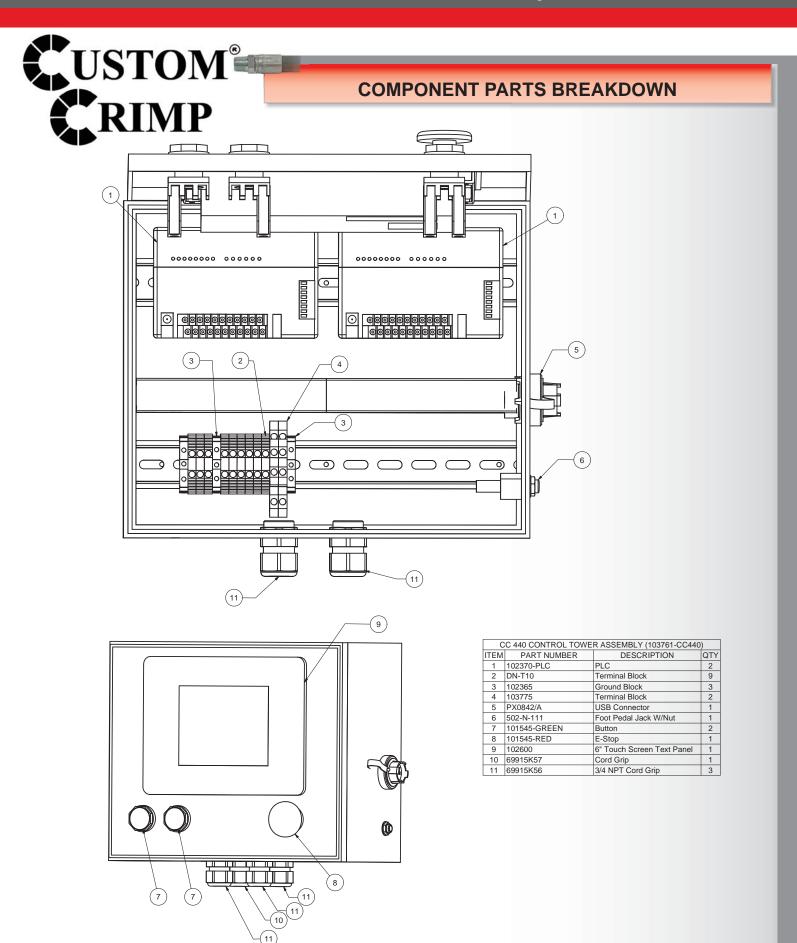
5/8-11 X 1.50 SHCS

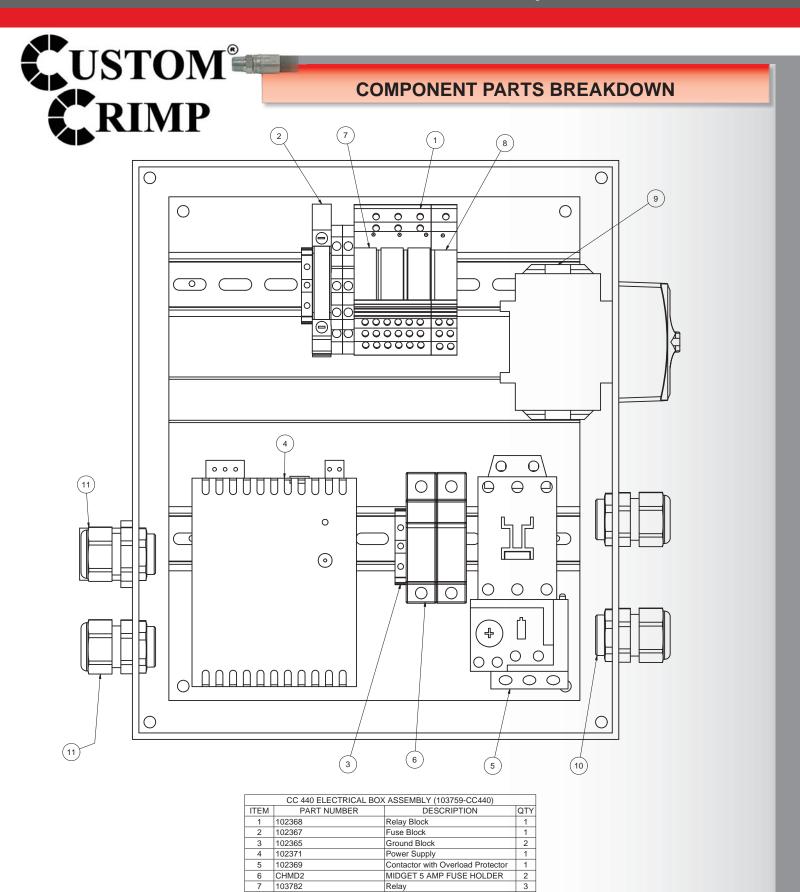
Base Leg

QTY









102368-White Motor Block

103050

11 69915K57

69915K56

9

Relay

Cord Grip

50 Amp Disconnect Switch

3/4 NPT Cord Grip

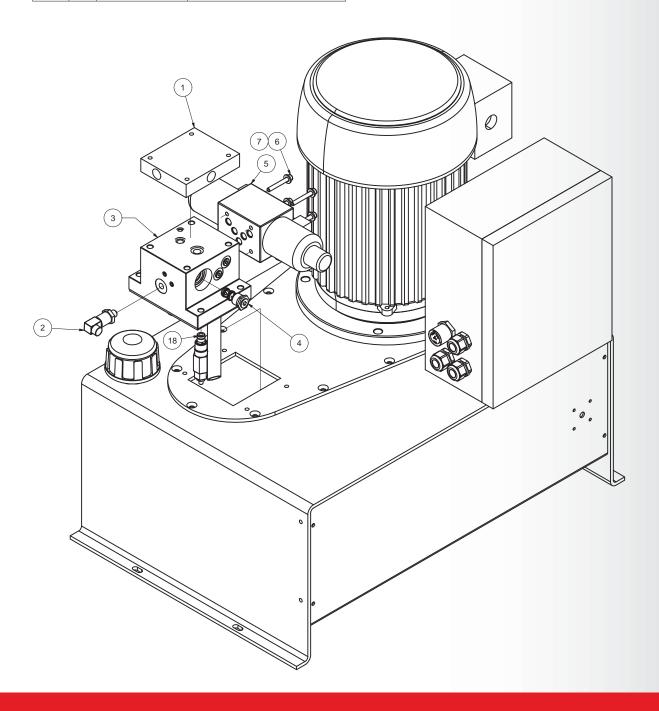
1

2



## **COMPONENT PARTS BREAKDOWN**

CC 440 POWER UNIT (104261)					
ITEM	QTY	PART NUMBER	DESCRIPTION		
1	1	104483	CC440 Manifold Intermediate Block		
2	1	103723	Pressure Transducer		
3	1	102523	CC-60/CC-450 Manifold Block		
4	1	102525	Single Pilot Check Valve		
5	1	102826	D05 Directional Valve		
6	4	91251A548	1/4-20 X 1 3/4" SHCS		
7	4	98023A030	5/16 FLAT WASHER		





**CUSTOMCRIMP® "NO-NONSENSE" WARRANTY STATEMENT** 



## CustomCrimp® "No-Nonsense" Warranty Statement

All CustomCrimp® Products are warranted to be free of defects in workmanship and materials for one year from the date of installation. This warranty ends when the product becomes unusable for reasons other than defects in workmanship or material.

Any CustomCrimp® Product proven to be defective in workmanship or material will be repaired or replaced at no charge. To obtain benefits of this warranty, first, contact Warranty Repair Department at Custom Machining Services at (219) 462-6128 and then deliver via prepaid transportation the complete hydraulic product to:

ATTN: WARRANTY REPAIR DEPT. Custom Machining Services, Inc. 318 North Co. Rd 400 East Valparaiso IN 46383

If any product or part manufactured by CustomCrimp® is found to be defective by CustomCrimp®, at its option, CustomCrimp® will either repair or replace the defective part or product and return via ground transportation, freight prepaid.

CustomCrimp® will not cover any incoming or outgoing freight charges for machines sold outside The United States.

This warranty does not cover any product or part which is worn out, abused, altered, used for a purpose other than for which it was intended, or used in a manner which was inconsistent with any instructions regarding its use.

Electric motors are separately warranted by their manufacturer under the conditions stated in their separate warranty.



### **CONTACT US**

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Valparaiso, IN 46383
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