

**CC650 CRIMPER OPERATORS MANUAL** 

SAFETY PREC	
READ INSTRUCTIONS AND IDENTIF BEFORE USING CRIMPER	Y ALL COMPONENT PARTS
KEEP HANDS AWAY FROM PINCH P	OINTS
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For Parts and Service, Contact: Custom Machining Services, Inc. Valparaiso, In 46383 (219) 462-6128

# **COMPONENT PART IDENTIFICATION**



Protected by U.S. Patent 7,383,709 European Patent 06759019.0 Additional Patent(s) pending

# **CRIMPER SPECIFICATIONS AND INITIAL SET UP**

#### **SPECIFICATIONS:**

MAX HEAD OPENING W/O DIES	286 MM (11.25 IN)
MASTER DIE INSIDE DIAMETER	160 MM (6.29 IN)
MAXIMUM DIE OPENING	DIE CLOSED DIAMETER + 128 MM
CRIMPER SIZE	36 IN WIDE X 22 IN DEEP X 57 IN HIGH
WEIGHT	4000LB. (1814 KG)
ELECTRICAL REQUIREMENTS	220 VOLT 3 PHASE (STANDARD)
	440 VOLT 3 PHASE (OPTIONAL)
MOTOR	7.5 HP (2 STAGE PUMP)
RESERVOIR CAPACITY	24 US GAL
OIL TYPE	ISO 46 HYDRAULIC OIL
ADAPTER DIES	160 MM TO 99 MM
HOSE CAPACITY	2 INCH 6 SPIRAL
	6 INCH INDUSTRIAL

#### **INITIAL CRIMPER SET UP**

- CHECK RESERVOIR OIL LEVEL WITH SIGHT GLASS ON THE POWER UNIT.
- CHECK ELECTRICAL CIRCUIT TO BE CERTAIN THAT IT MATCHES THE CRIMPER REQUIREMENTS AS SHOWN ON THE TAG ATTACHED TO THE CRIMPER CORD.
- MAKE CERTAIN THAT MOTOR ROTATES IN THE DIRECTION OF THE ARROW SHOWN ON THE MOTOR HOUSING.
- IF MOTOR ROTATION IS INCORRECT REVERSE ANY TWO HOT WIRES IN THE CRIMPER PLUG.
- ALSO SEE ADDITIONAL INFORMATION ON THE INITIAL SET UP AND MAINTENANCE PAGE.

### AccuCrimp ACT<sup>™</sup> CONTROL PANEL

U.S. Patent No: 7,383,709



# ACT<sup>™</sup> CONTROLLER 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 in or mm).
- The finished crimp diameter (in either in or mm).

That's all you need to know. ACT<sup>™</sup> does the rest.



#### TO MAKE A MANUAL CRIMP:

- Press START MOTOR.
- Select CRIMP TO DIAMETER.
- Enter the closed diameter of the die set in either in or mm and press ENTER.

#### Note: for a 25 mm die, enter 2500. ACT<sup>™</sup> will add 2 decimal places. for a 1.5 inch die, enter 1500, ACT<sup>™</sup> will add 3 decimal places.

- 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.

# 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<sup>™</sup> 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 SAVE.
- 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<sup>TM</sup> 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.







# 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.











# 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 (1-150) 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 1-150.
- Press LOAD.

The saved crimp will appear on the manual screen.



# **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.



SEMI-AUTO				
DIAMETER	0.000	in.	0.00	mm
DIE	0.000	in.	0.00	mm
CURRENT	0.000	in.	0.00	mm
COUNT	0 Ad, Co	just unt	Man	ual
Production			Ad j Cri	ust imp





# **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<sup>™</sup> ADDITIONAL FEATURES**

- Additional features and functions of the ACT<sup>™</sup> controller can be accessed by pressing the MORE button on the MACHINE SETUP 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.





# **ACT™ ADDITIONAL FEATURES**

#### **Pre-Loaded Crimp Specifications**

In addition to the ability to store up to 50 user entered dies and 100 user entered crimp settings, the ACT<sup>™</sup> Controller has the capability of accepting pre loaded manufacturer's crimp specifications. Custom Crimp® does not maintain these specifications as they are proprietary to the individual hose and fitting manufacturer. If, however, your ACT<sup>™</sup> 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<sup>™</sup> 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<sup>™</sup> controller package on many Custom Crimp<sup>®</sup> 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>™</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<sup>™</sup> 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











# CC650 MIC MANUAL MICROMETER

The CC650 MIC is available with a manual micrometer in place of the ACT<sup>™</sup> controller. Set up and adapter and die installation are identical to the CC650 ACT model.

The micrometer is a direct reading metric micrometer. With the micrometer set at zero, the die set will close to the fully closed diameter stamped on the face of the die. The number set on the micrometer will be the amount **ABOVE** the closed diameter of the die at which the dies will stop closing.

#### Example:

If the required final crimp diameter for the hose and fitting being crimped is 65.5 mm, the correct die set to use would be a 63 mm die set. The micrometer would be set at 2.5 mm as shown, and the final crimp diameter would be 65.5 mm (63 mm-closed die diameter plus 2.5 mm)

Opening and closing of the crimper head is controlled with the foot switch. Press and hold the foot switch until the crimp is complete and the dies stop closing.

Always check the hose and fitting with a caliper to be certain that the final crimp diameter is in accordance with the hose and fitting manufacturers specifications.







# **DIE INSTALLATION AND REMOVAL**

#### Adapter Die Installation

160 mm to 99 mm Adapter Dies are furnished with the crimper. Adapter dies are held in place by the locking screws as shown in the illustration. Hydraulic dies can either be installed manually or with the die removal tool as shown. (84 mm adapter dies are also available)

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

#### Hydraulic Die Installation

- Install the 160 mm to 99 mm Intermediate Adapter Dies as shown making certain that the Intermediate Adapter Die I.D. matches the Hydraulic Die O.D.
- Remove the Hydraulic Dies from their holder with the magnetic die insertion tool as shown.
- The die size stamped on the face of the die should face toward the operator.

Press the **CHANGE DIES** button on the ACT<sup>™</sup> controller to easily open and close the master dies without affecting crimper settings.

- Align the studs of the Hydraulic Dies with the holes in the Adapter Dies and with the crimper in die change mode SLOWLY close the crimper head on the die set.
- Bring the crimper head to a fully closed position and remove the die insertion tool.

The dies may also be inserted manually with the crimper head in the fully open position.

Proceed to the ACT<sup>™</sup> operating instructions to set up the crimper for the hose and fitting being crimped, or adjust the manual micrometer to the correct crimp diameter.

For Hydraulic Die removal, place the crimper in die change mode and bring the crimper head to the fully closed position. Insert the die removal tool and open the crimper head releasing the Hydraulic Dies from their spring retention holes.







# **INITIAL SET UP AND PLC RESET**

#### **Initial Setup**

Check to be certain that the motor rotates in the direction of the arrow shown on the motor housing and that the voltage is correct as indicated on the tag attached to the plug. If motor rotation is opposite of the direction of the arrow, reverse any two hot wires in the electrical plug.

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

Check the oil level in the sight glass on the tank. 24 U.S. gallons of ISO 46 hydraulic oil are required to completely refill the tank.

Oil can be drained from either of the two ports at the bottom of the tank.

An additional oil cooler, while not normally required, can be plumbed into the two ports at the rear of the tank.





ΡΗΟΤΟ Α

#### Lubrication

Flush Fitting Adapter

Lubricate the crimping head after each 100 crimping cycles or at the start of each shift if the

crimper is used in a production setting. Use only a high pressure molydi-sulfide grease and a grease gun with a flush fitting adapter.

#### Failure to lubricate the crimper can cause premature failure, loss of accuracy and may result in costly repairs to the crimper.

Bring the master dies to the fully closed position, and lubricate the master dies through the 8 holes in the protective plates as illustrated in Photo "A". With the dies still in the fully closed position grease the fittings visible through the two top grease holes in the face of the crimper as shown in Photo "B".

Bring the master dies to the fully open position and lubricate the crimper through the fittings visible through the two bottom grease holes in the face of the crimper as shown in Photo "C".





#### **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

- Turn the main power switch to OFF.
- 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.
- Turn the main power switch to OFF and replace the front panel.
- The PLC and the crimper should now operate normally.

# TROUBLESHOOTING

#### PROBLEM: CRIMPER WILL NOT RUN AT ALL

RÜN

STOP

- 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 problems persist contact Customer Service for additional troubleshooting assistance.







	CC 650 Feet and Leg Assembly (103947)		
ITEM	PART NUMBER	DESCRIPTION	QTY
1	103323	CC600 Frame	1
2	103377	CC600 Left Foot	1
3	103378	CC600 Right Foot	1
4	103376-R	CC600 Right Leg Assembly	2
5	103376-L	CC600 Left Leg Assembly	2
6	MTS15612	M12 X 35 SHCS	16
7	WS23558	1/2 Flat Washer	16









CC	CC600/650 Potentiometer/Limit Switch Assembly (103952)				
ITEM	PART NUMBER	DESCRIPTION	QTY		
1	103473	Roller Limit Switch	1		
2	103349	Limit Switch Adjustable Bracket	1		
3	SKC2095	10-24 X 3/4 SHCS	4		
4	103381	Potentiometer Bracket	1		
5	91290A548	M10 X 100 SHCS	1		
6	103472	CC600/1000 Linear Potentiometer	1		
7	103472	M4 X 20 SHCS	4		
8	MTS15615	M12 X 50 SHCS	2		
9	91390A181	M12 X 70 Set Screw	1		





![](_page_25_Picture_1.jpeg)

![](_page_26_Figure_1.jpeg)

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	CC600 Electrical Enclosure Assembly (103759)				
	PART NUMBER	DESCRIPTION	QTY		
	103796	Electrical Enclosure	1		
	103797	Electrical Enclosure Circuit Panel	1		
	102371-120/230	230V Power Supply	1		
	102371-480	480V Power Supply	1		
	103827-2500	230VAC-5HP/7.5HP Overload Relay	3		
	103827-1300	480VAC Overload Relay	1		
	102369-230-25A	230VAC-5HP/7.5HP Motor Contactor	1		
	103151	63 Amp Disconnect Switch	1		
	103050	50 Amp Disconnect Switch	1		
	103788	8.75" Din Rail	2		
	102365	Ground Terminal Block	2		
_	102367	Fuse Block	1		
	103775	2 Level Terminal Block	2		
	102368	Relay Block	4		
	102368	White Relay Block (Motor)	1		
	103782	Black Relay Block	3		
	103777	Midget 5 AMP Fuse Holder (230V)	1		
	103882	Midget 5 AMP Fuse Holder (480V)	1		
	103778	Midget 5 AMP Fuse	2		
	103868	8.75" Plastic Wire Duct	1		
	103799	3/4" NPT Cord Grip	2		
	103798	1/2" NPT Romex Cord Grip	3		
	103780	9 Pole Female Receptacle w/Pigtails	1		

![](_page_27_Figure_1.jpeg)

	CC600/1000/Nut Crimper Tower Box Assembly (103761)			
ITEM	PART NUMBER	DESCRIPTION	QTY	
1	103802	CC600/1000/Nut Crimper Tower Box	1	
2	103761	Tower Box Electrical Panel	1	
3	103788	11" Din Rail	2	
4	102370-PLC	DL05 PLC	2	
5	102370-ACT	0-10V Analog In/Out Card	1	
6	103868	11" Plastic Wire Duct	1	
7	102365	Ground Terminal Block	3	
8	103775	2 Level Terminal Block	2	
9	103785	Terminal Block	9	
10	101545-GREEN	Open/Close Push Button	2	
11	101545-RED	Emergency Stop Button	1	
12	102600-ACT	6" Touch Screen Text Panel	1	
13	103792	USB Connector	1	
14	103874	Foot Pedal Receptical	1	
15	103828	3/4" NPT Cord Grip	1	
16	103800	1/2" NPT Romex Cord Grip	1	
17	103801	3/8" NPT Cord Grip	2	

![](_page_28_Figure_1.jpeg)

ITEM	PART NUMBER	DESCRIPTION	QTY
1	103278	24 Gallon Tank	1
2	102523	CC1000/600 Manifold Block Assembly	1
3	103760	CC1000/600 Motor and Pump Assembly	1
4	102618-03	Reservoir Top Plate	1
5	SKF14342	5/16-18 x 3/4 FHCS	12
6	91290A466	M8 x 90 SHCS	4
7	NC51622-Z	1/2-13 x 1 1/4 HHS	4
8	WLK3508-Z	1/2 Lock Washer	4
9	103048	Venter Filler Cap	1
10	103759	Electrical Sub Assembly	1
11	103808	Sight Filler Glass	1
12	101539-01	Flange Gasket	1

# CC650 WARRANTY

![](_page_29_Picture_1.jpeg)

# **Custom Crimp "No-Nonsense" Warranty Statement**

All Custom Crimp 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 Custom Crimp 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. 326 North Co. Rd 400 East Valparaiso IN 46383

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

Custom Crimp® Custom Machining Services, Inc. 326 N. County Rd. 400 East Valparaiso, IN 46383 Ph: (219) 462-6128 Fax: (219) 464-2773 www.customcrimp.com

![](_page_30_Picture_1.jpeg)

CustomCrimp<sup>®</sup>

See the complete line of CustomCrimp® Crimpers and Accessories at: <u>www.customcrimp.com</u>

(219) 462-6128