CUSTOM® CRIMP

CC60 CRIMPER OPERATORS MANUAL WITH ACT™ CONTROLLER

SAFETY PRECAUTIONS

READ INSTRUCTIONS AND IDENTIFY ALL COMPONENT PARTS BEFORE USING CRIMPER

KEEP HANDS AWAY FROM PINCH POINTS

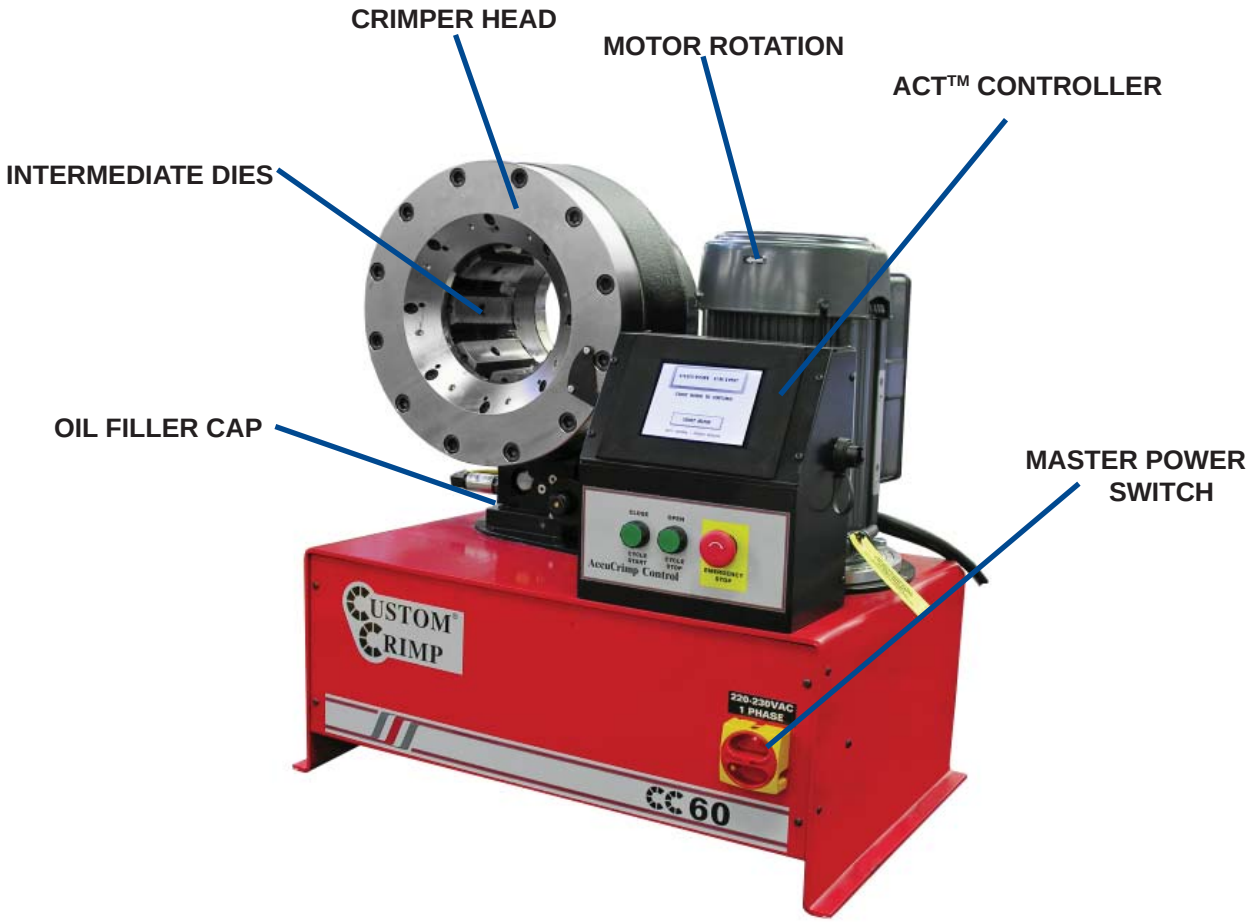
CONSULT HOSE AND FITTING MANUFACTURER'S SPECIFICATIONS FOR CORRECT MACHINE SETTINGS AND CRIMP MEASUREMENTS

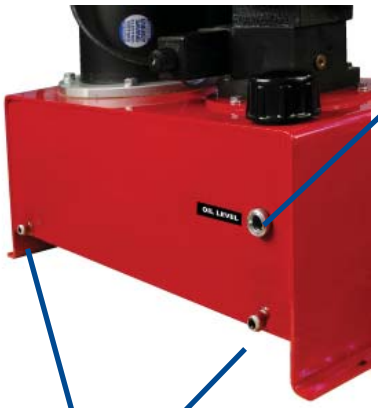
ALWAYS WEAR EYE PROTECTION

INDEX

For Parts and Service, Contact:
Custom Machining Services, Inc.
Valparaiso, In 46383
(219) 462-6128

CRIMPER COMPONENT PARTS





CRIMPER SPECIFICATIONS AND SET UP

SPECIFICATIONS:

MAX HEAD OPENING W/O DIES ----------182 MM (7.17 IN)

MASTER DIE INSIDE DIAMETER ----------145 MM (5.71 IN)

MAXIMUM DIE OPENING ----------DIE CLOSED DIAMETER + 60 MM

CRIMPER SIZE ----------29 IN LONG X 20 IN DEEP X 32 IN HIGH

WEIGHT ----------573 LB (269 KG)

ELECTRICAL REQUIREMENTS ----------220 VOLT 3 PHASE (STANDARD)

---------- 440 VOLT 3 PHASE (OPTIONAL)

MOTOR ----------7.5 HP

RESERVOIR CAPACITY ----------8 US GAL

OIL TYPE ----------ISO 46 HYDRAULIC OIL

ADAPTER DIES ----------99 MM I.D. ADAPTER DIES INCLUDED

HOSE CAPACITY ----------2 INCH 6 SPIRAL

----------4 INCH INDUSTRIAL

INITIAL CRIMPER SET UP

CHECK RESERVOIR OIL LEVEL WITH SIGHT GLASS AT REAR OF TANK

CHECK ELECTRICAL CIRCUIT TO BE CERTAIN THAT IT MATCHES THE CRIMPER REQUIREMENTS 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. (NOTE: THIS IS APPLICABLE TO 3 PHASE CIRCUITS ONLY)

ALSO SEE INITIAL SETUP AND MAINTENANCE Section

AccuCrimp ACT™ CONTROL PANEL

Patent No: 7,383,709

EMERGENCY STOP

MANUAL MODE FUNCTION: OPEN DIES
AUTO MODE FUNCTION: CYCLE STOP

MANUAL MODE FUNCTION: CLOSE DIES
AUTO MODE FUNCTION: CYCLE START

NOTE:

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

IF THE CRIMPER IS IN *AUTO MODE*, THE BUTTONS FUNCTION AS CYCLE START AND CYCLE STOP BUTTONS.

IF THE CRIMPER IS IN *SEMI-AUTO MODE*, PRESSING THE FOOT SWITCH OR THE CLOSE BUTTON WILL CLOSE THE CRIMPER HEAD AND RELEASING WILL HALT THE CLOSING ACTION

ACT™ CONTROLLER QUICK START

Patent No: 7,383,709

While the ACT™ 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)

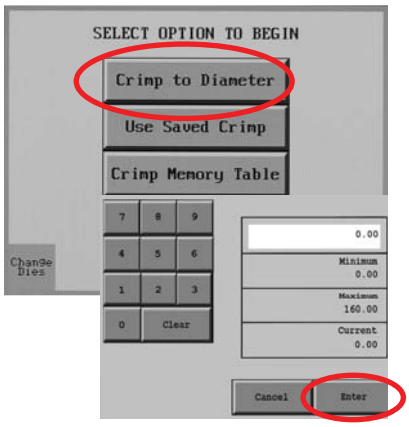
That's all you need to know. ACT™ does the rest.

TO MAKE A MANUAL CRIMP:

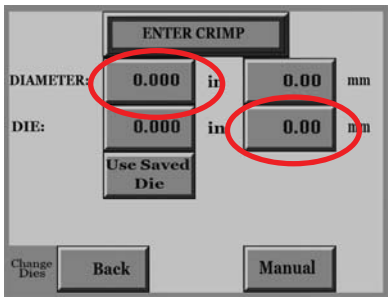
- Press **START MOTOR**
- Select **CRIMP TO DIAMETER**
- Enter the closed diameter of the die set in either in or mm and press **ENTER**. ***Note: for a 25mm die, enter 2500. ACT™ will add the decimal point.***

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.***



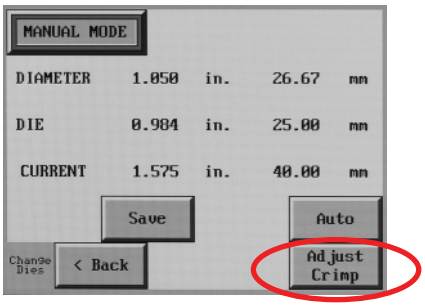
*Tip: Pressing the **CHANGE DIES** button allows the crimper head to be fully opened or closed with the green **OPEN-CLOSE** buttons on the controller front panel When the **CHANGE DIES** button is blinking the dies can be opened and closed manually without altering any of the crimper settings.*



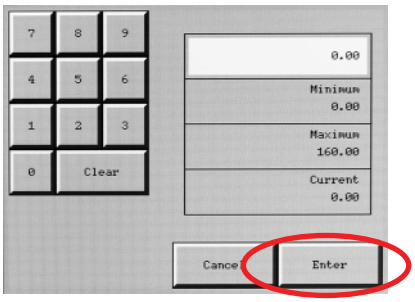
HOW TO MAKE MINOR CORRECTIONS

- 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.

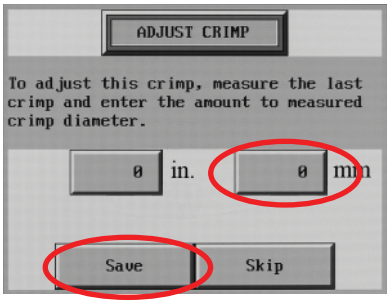


- Enter the measured diameter of the fitting in either inches or mm (***Do not enter the amount of correction***) and press **ENTER**

- 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™ 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.

PATENTED ACT™ TECHNOLOGY

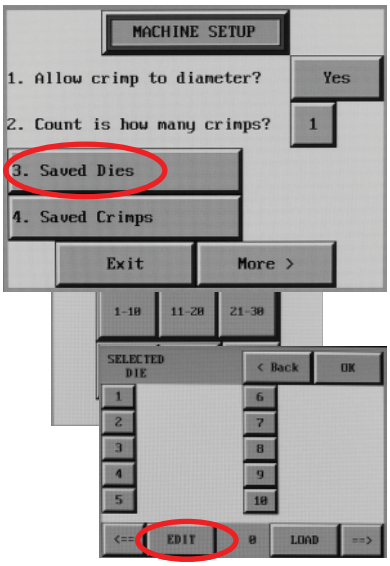
On crimpers equipped with ACT™ controllers the sensors which sense the position of the dies are supplemented by a pressure transducer which senses the "effort" required to make a crimp and compensates for variations in hose and fitting combinations. This unique feature means that the operator can enter the finished crimp diameter and will seldom, if ever, have to enter an offset to achieve the correct finished crimp diameter.

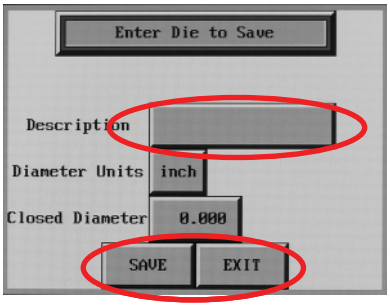
HOW TO ADD A SAVED DIE

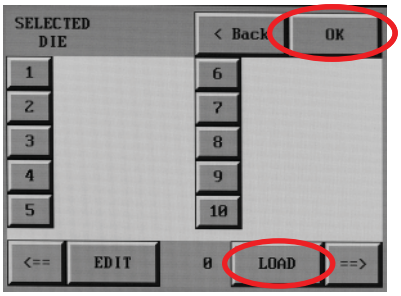
Up to 50 different dies can be saved in the computer memory. These dies can be recalled in the set up process eliminating the need to re-enter the die size each time.

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.



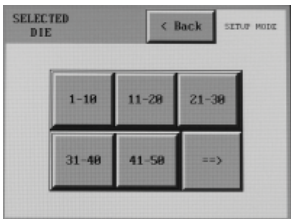




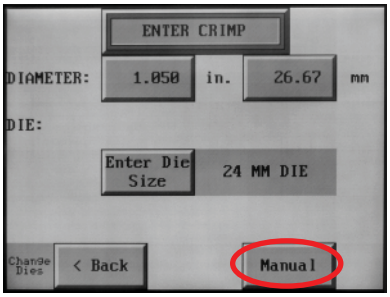
HOW TO RECALL A SAVED DIE

- 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.

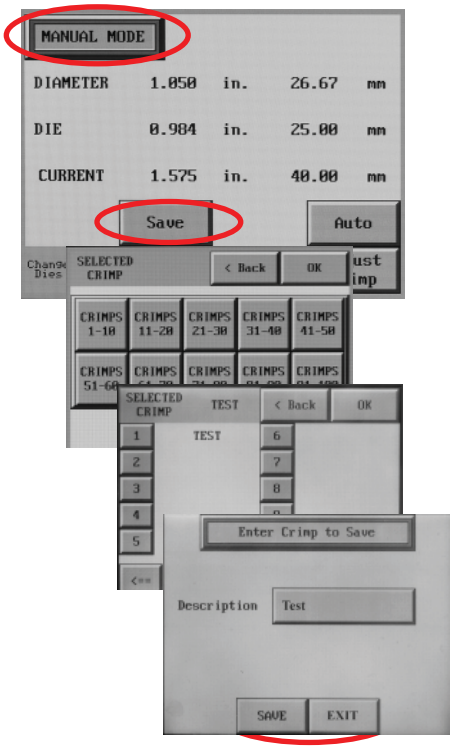


- The saved die will now be shown on the crimp parameters screen



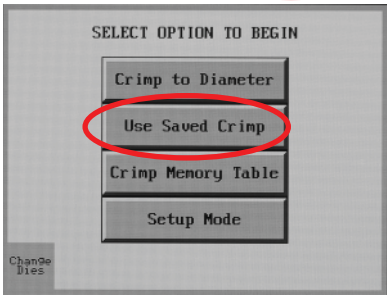
HOW TO ADD A SAVED CRIMP

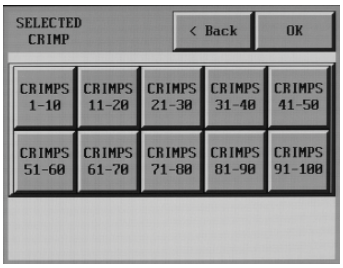
- Adjust the die diameter and crimp diameter as required and place the crimper in **MANUAL** mode.
- Press **SAVE**
- Select a location (1-100) and press **EDIT**
- Enter a description (up to 12 characters)
- Press **SAVE** and **EXIT**
- The die and crimp setting can now be recalled from the saved location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

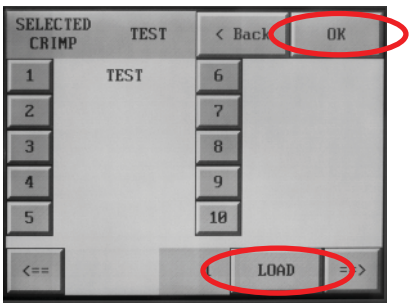


TO RECALL SAVED CRIMP

- 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

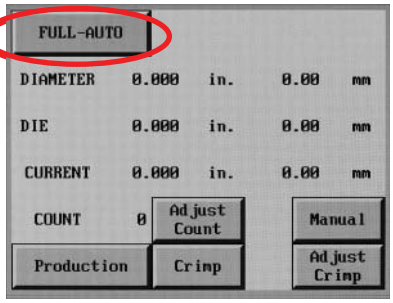






FULL AUTO MODE

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

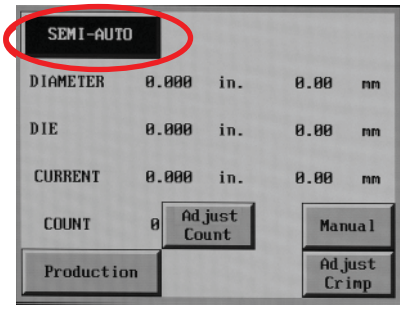


- The crimper will cycle automatically from the **CRIMP** button on the touch screen, the green **CYCLE START** button on the panel, or the foot switch.

- 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.

Note: The retraction position must be set a minimum amount above the finished crimp diameter or the crimper will not retract. The minimum retraction diameters are:

CC38 - Crimp Diameter plus 2 mm
CC4-50 - Crimp Diameter plus 2 mm
CC60 - Crimp Diameter plus 3 mm

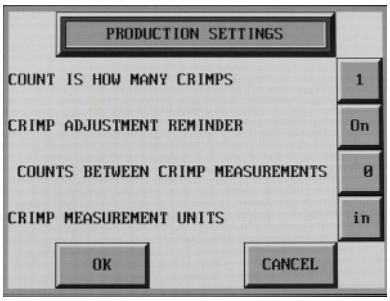


- Pressing the **FULL AUTO** button will toggle the crimper into **SEMI-AUTO** mode. In **SEMI-AUTO** mode, pressing the **FOOT SWITCH** or the **CLOSE** button will close the crimper head and releasing it will cause the head to stop closing. This mode allows the crimper to be jogged into position allowing 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

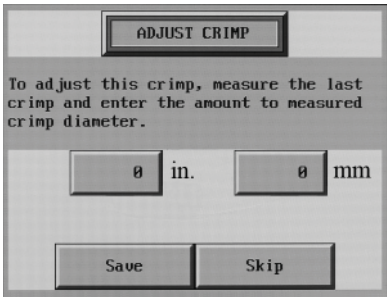
- Press the **PRODUCTION** button.

- 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**.

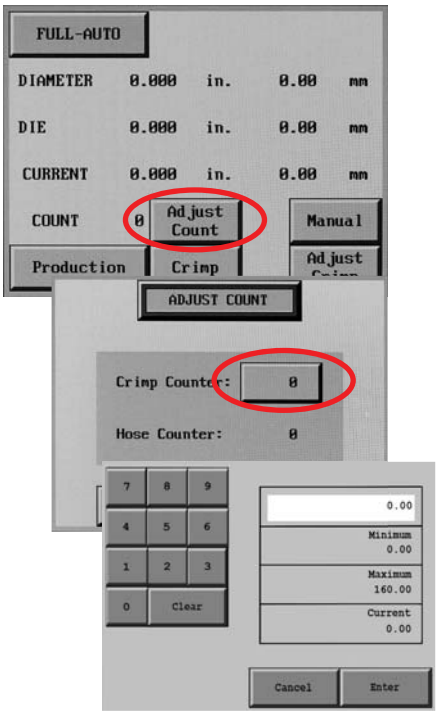
- At the set interval, the **ADJUST CRIMP** screen will come up and the operator will be asked to measure the last crimp and enter a correction if required.



ADJUST CRIMP COUNT

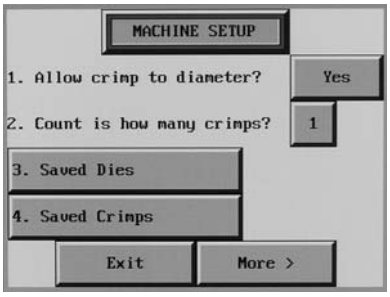
If a production operation is interrupted for some reason, it is possible to reset the counter to where the operation was at the point of interruption.

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

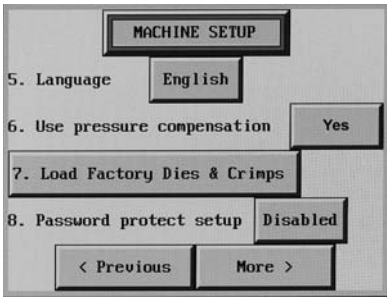


ACT™ ADDITIONAL FEATURES

- Additional features and functions of the ACT™ 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.



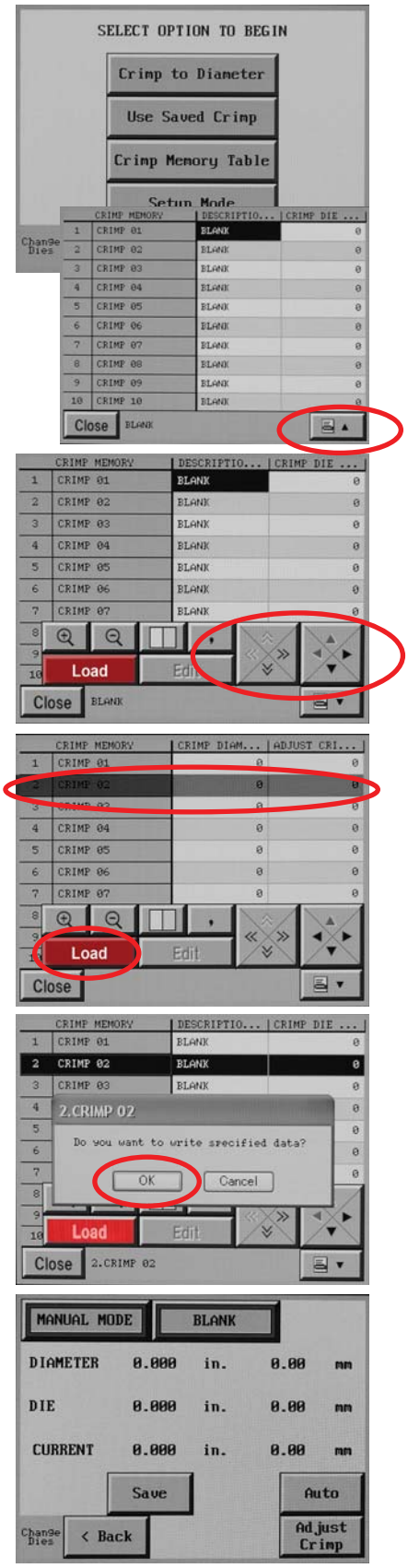
- The “Use Pressure Compensation” is set to “**YES**” for all crimpers equipped with a pressure transducer. A security code is required to turn this function on or off.

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 ACTTM 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 ACTTM 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.

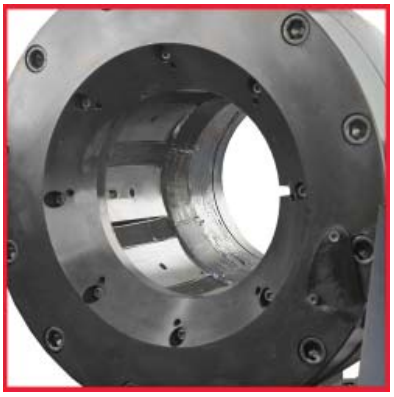


DIE SET UP AND INSTALLATION

84S, 99s, and 145S series dies are available for the CC60 Crimper. (84S series dies have an 84mm O.D. etc)

A set of 145mm O.D. to 99mm I.D. Intermediate Dies is furnished with the CC60 crimper. The Master Dies in the CC60 Crimper have an I.D. of 145mm.

The I.D. of the intermediate die must match the O.D. of the hydraulic die or accurate crimps are not possible.



INDUSTRIAL DIE INSTALLATION
INTERMEDIATE ADAPTER DIE INSTALLATION

Turn on the crimper at the master power switch (See AccuCrimp Controller Instructions) and go to Manual mode.

Insert the die removal tool in the release hole to release the retaining spring and attach either an Intermediate Adapter Die or a 145mm O.D. Die to the Master Die. The numbers stamped on the face of the die should face the operator.

Note that on the CC60, the master dies must be slightly closed in order to completely insert the die removal tool.

Mount all 8 dies in a similar manner.

If 145mm O.D. Dies are being used, proceed to the AccuCrimp Operating instructions and set up the crimper for the correct crimp diameter.

If an Intermediate Die is being used, see Hydraulic Die Installation instructions.

HYDRAULIC DIE INSTALLATION

Install Intermediate Adapter Dies as shown previously making certain that the Intermediate Adapter Die I.D. matches the Hydraulic Die O.D.

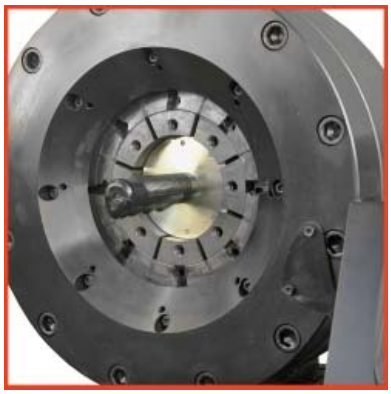
Remove the Hydraulic Dies from their holder with the magnetic die insertion tool as shown.

The die size stamped on the face of the die should face toward the operator

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 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 AccuCrimp operating instructions to set up the crimper for the hose and fitting being crimped.

For Hydraulic Die removal, place the crimper in manual 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 form their spring retention holes.

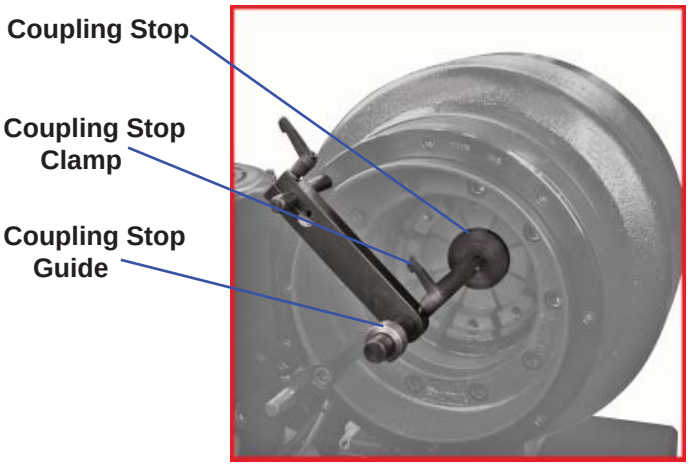
*Press the **CHANGE DIES** button on the controller to easily open and close the master dies without affecting crimper settings*

AccuStop™ COUPLING STOP (OPTIONAL)

The optional AccuStop™ coupling stop eliminates guesswork allowing the operator to visually observe exactly where the crimp will be positioned on the fitting without the need for trial and error and product scrap due to poor crimp positioning.

With the Coupling Stop retracted, load the appropriate set of dies and set crimp diameters as required.

With the crimper in the **MANUAL** mode, bring the dies to a fully closed position.

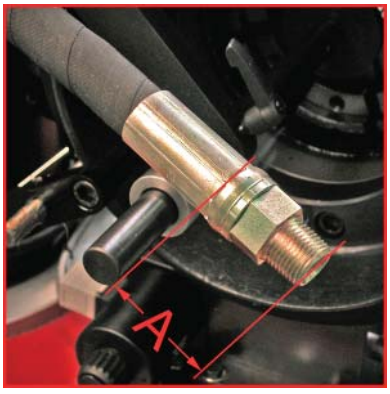


Loosen the Coupling Stop Clamp and position the Coupling Stop against the back face of the dies.

Slide the Coupling Stop Guide against the Coupling Stop Arm.

Hold the fitting against the Coupling Stop Arm withdraw the Coupling Stop Rod such that the Guide is aligned with the desired crimp position. Lock the Coupling Stop Clamp.

Position the fitting against the Coupling Stop and actuate the crimper in the normal manner.



The dimension from the face of the fitting to the crimp position will now be the dimension established in the previous step.

An electronic Coupling Stop is available. Set up is identical, but when the fitting touches the Coupling Stop, the crimp cycle will start automatically.

CAUTION: When using an electronic Coupling Stop, disconnect it from the controller prior to setup. Failure to do so will cause the crimper to actuate during the set up process.

INITIAL SET UP & MAINTENANCE

Do not lift the machine by the crimper head. Lift with a fork lift under the tank.

Mount the crimper on a sturdy surface

Electrical Requirements:

220 Volt 3 Phase Current (Standard)
440 Volt 3 Phase Current (Optional)

DO NOT RUN CRIMPER ON AN EXTENSION CORD

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

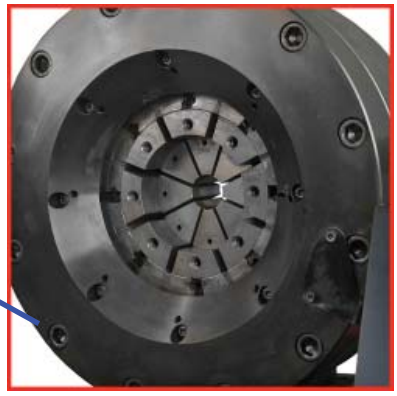
Damage to the pump can result if the motor does not rotate in the correct direction.

Check the oil level in the sight glass on the rear of the crimper. 8 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 crimper

Front Flange Bolts: Periodically, every 6-12 months depending upon usage, the front flange bolt torque should be checked. The correct torque is 330NM (243 Ft Lbs)



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.

- Bring the master dies to the fully closed position and lubricate the die fingers through the 8 lubrication fittings in the front flange face.
- Bring the dies to the fully open position and lubricate all 8 fittings again.

Use only a high quality moly-disulfide grease. Failure to do so may result in damage to the wearing surfaces.

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 following 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

- Fitting is to large for selected crimp die. Select a crimp die that is closer to final crimp diameter. Machine has built-in safety bypass to protect internal components from damage due to incorrect die selection.

- 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.

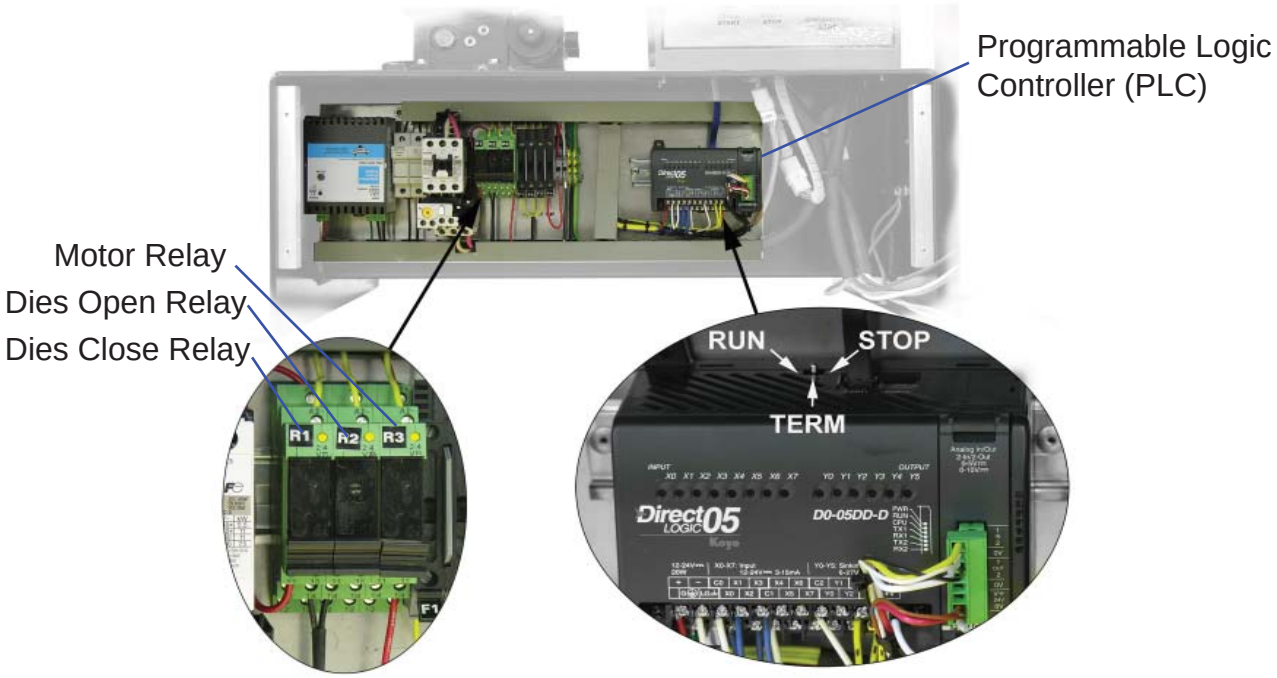
PROBLEM: CRIMPER WILL NOT OPEN TO RETRACT POSITION IN AUTO MODE

- 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

PLC RESET/RELAY REPLACEMENT

Electrical Panel (Front Cover Removed)



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.

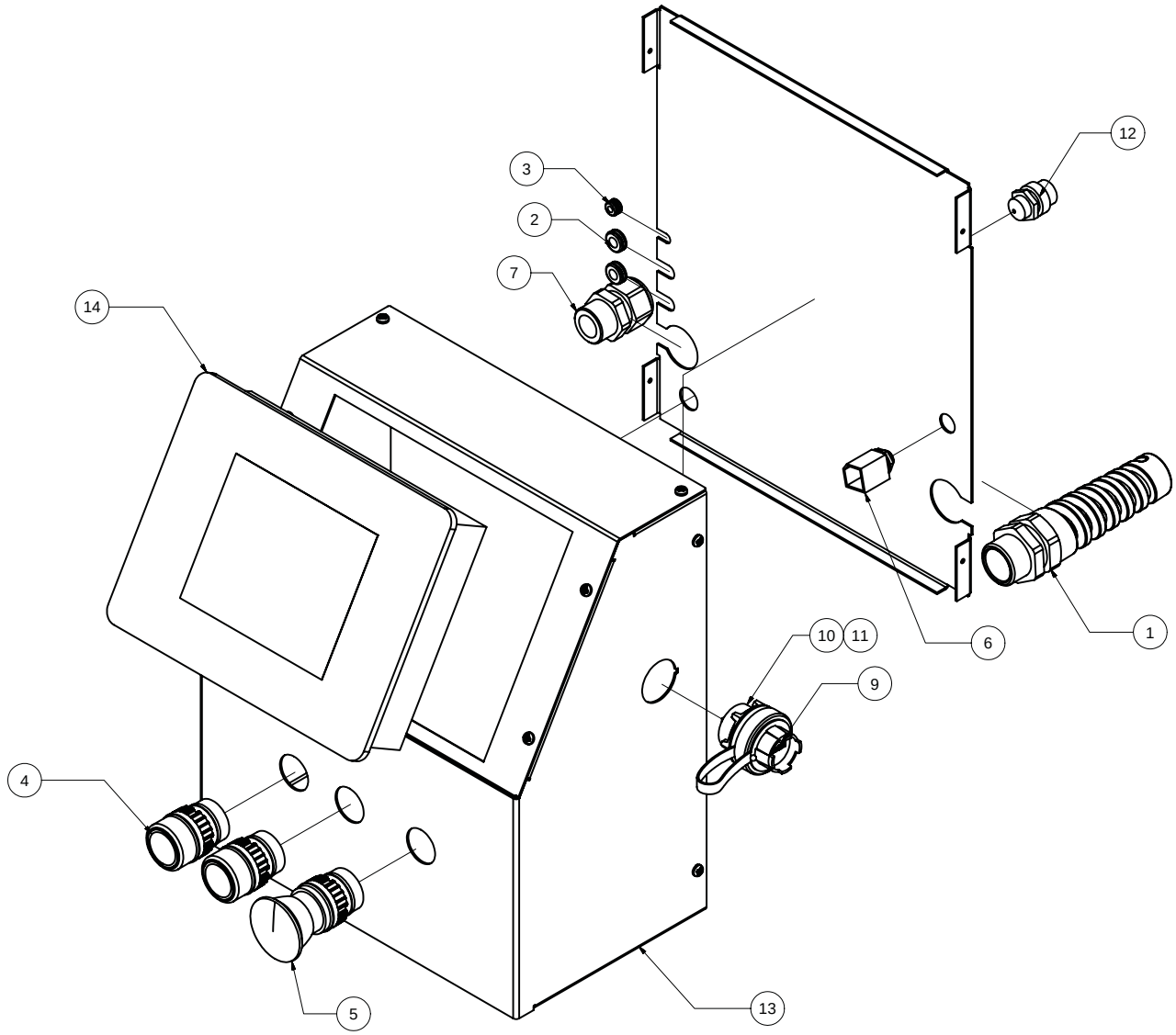
Resetting the PLC to its original settings is a simple procedure

- Turn the main power switch to OFF.
- Remove the 4 screws holding the front panel in place and set the panel aside without disconnecting any wires.
- 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.
- Turn the main power switch to OFF and replace the front panel.
- The PLC and the crimper should now operate normally.

Relay Replacement

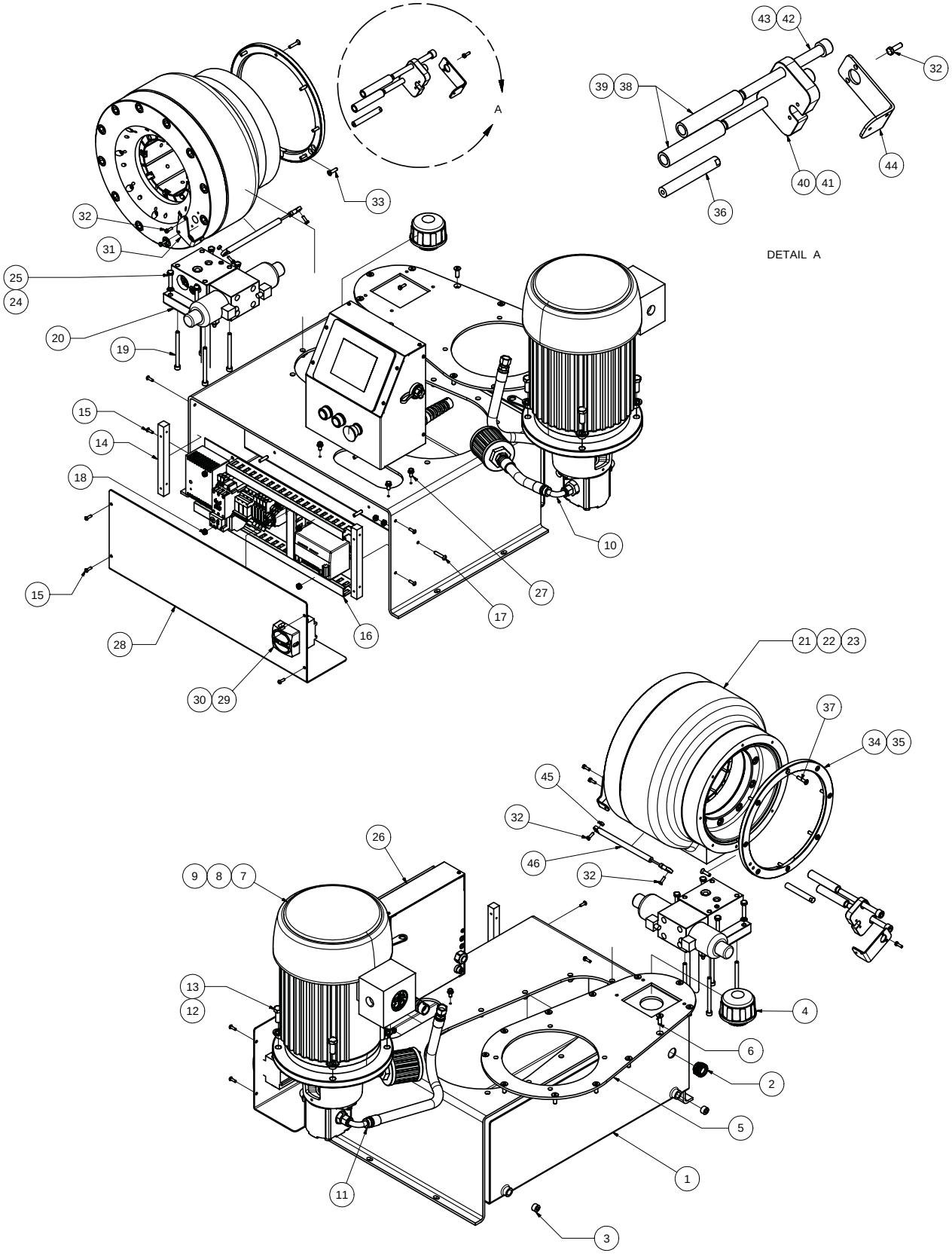
- There are 3 relays which control the motor operation and dies open and dies close functions of the crimper. If one of these functions is inoperable these relays can be replaced.
- If the pilot light adjacent to the “R1”, “R2”, and “R3” is lit and the function does not operate. This indicates that the relay is receiving power but not performing its function.
- All 3 relays are identical and interchangeable.

COMPONENT PARTS BREAKDOWN



Touch Panel Housing Assembly (102633)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	69915K55	Cable Strain Relief	1
2	9600K24	Grommet - 1/4"	2
3	9600K11	Grommet - 1/8"	1
4	E22PB3A	Pushbutton Switch	2
5	E22LLB2B/E22B1	Emergency Stop Switch	1
6	502-N-111	Foot Pedal Jack W/Nut	1
7	69915K57	Cable Strain Relief	1
8	90935A240	#10 Sheet Metal Screw	1
9	PX0842/A	USB Connector	1
10	PX0842-A	USB Connector Cap	1
11	4974T7	USB Cable	1
12	6897K38	Receptacle	1
13	102508-BT	Touch Panel Housing Assembly	1
14	EA7-S6M-R	6" Touch Screen Text Panel	1

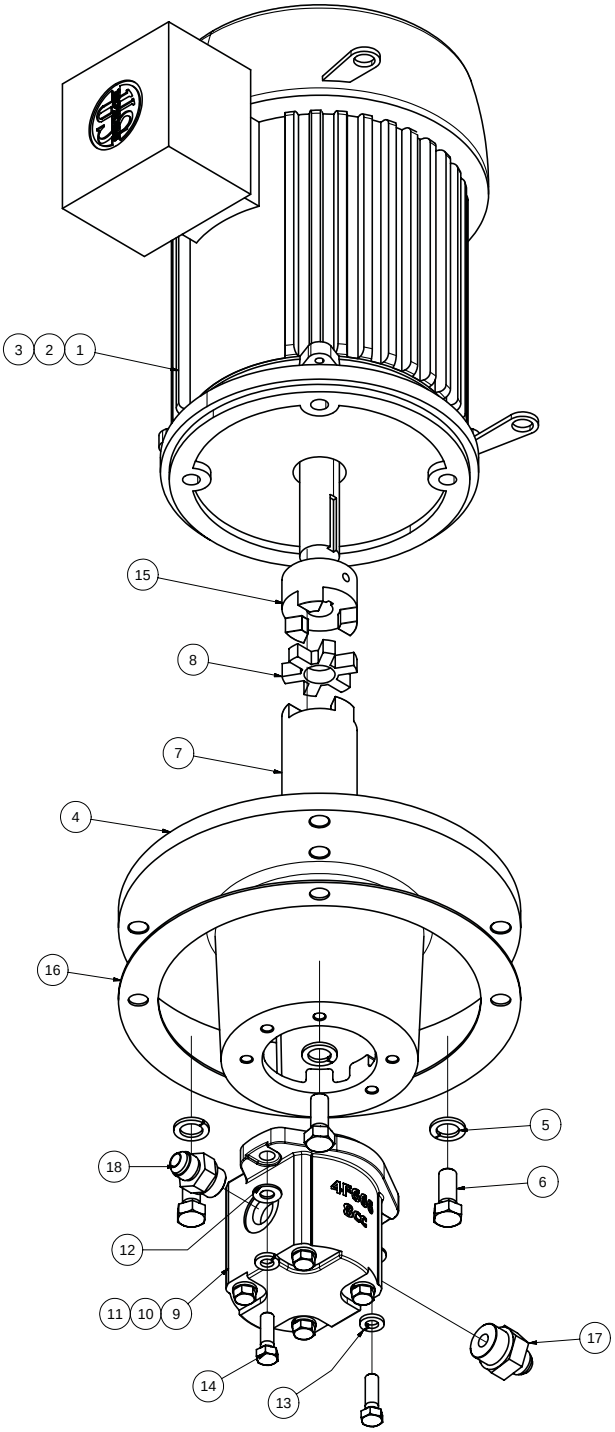
COMPONENT PARTS BREAKDOWN



COMPONENT PARTS BREAKDOWN

Crimper Assembly - CC38 (101547) / CC4-50 (101832) / CC60 (101551)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	102618-WELD	CC Crimper Reservoir	1
2	103049	Sight Glass	1
3	4534K43	3/8-18 NPTF Hex Socket Pipe Plug	2
4	103048	Venter Filler Cap	1
5	102618-03	CC Reservoir Top Plate	1
6	91253A583	5/16-18 x 1 FHCS	12
7	101714-7.5-11	7.5 HP/3 Ph/11cc Motor and Pump Assembly	1
8	101714-5-8	5HP Motor/8cc Pump Assembly	1
9	101714-10-14	10HP Motor/14cc Pump Assembly	1
10	101733	Suction Strainer Hose Assembly	1
11	101734	Output Hose Assembly	1
12	91101A033	1/2 Lock Washer	4
13	92865A714	1/2-13 x 1 1/4" Hex Bolt	4
14	102303	Front Electrical Panel Bracket	2
15	91255A244	#10-24 x 5/8 BHCS	8
16	*Sub-Assembly	Assembled Electrical Board	1
17	91255A544	1/4-20 x 1 1/4 BHCS	1
18	90675A029	1/4-20 Nut with Tooth Washer	6
19	91290A468	M8 x 100mm SHCS	4
20	102523	Assembled Manifold Block	1
21	102800	CC-60 Head Assembly	1
22	102513	CC-450 Head Assembly	1
23	102594	CC-38 Head Assembly	1
24	91106A131	M8 Internal Tooth Lock Washer	4
25	91310A542	M8 x 40mm Hex Bolt	4
26	102633	CC Tower w/ Touch Panel	1
27	92323A512	1/4-20 x 1/2 SHFCS	4
28	102302	Front Electrical Cover Panel	1
29	103050	50 Amp Disconnect Switch	1
30	103051	63 Amp Disconnect Switch	1
31	101687	Potentiometer Mounting Plate	1
32	91280A226	M5 x 16mm Hex Bolt	6
33	91253A542	1/4-20 x 1 FHCS	1
34	102500	CC-60/450 Rear Face Ring	1
35	102471	CC-38 Rear Face Ring	1
36	101689	Anti-Rotation Guide Pin	1
37	6DU67	M6 x 30mm FHCS	1
38	101688_04	CC-60/450 Potentiometer Bracket Standoff	2
39	101790_02	CC-38 Potentiometer Bracket Standoff	2
40	102980	CC-60/450 Potentiometer Bracket Base	1
41	102982	CC-38 Potentiometer Bracket Base	1
42	91290A649	M12 x 130mm SHCS (CC-60/450)	2
43	6DE37	M10 x 120mm SHCS (CC-38)	1
44	102981	CC-60/450/38 Potentiometer Bracket Flange	1
45	102817	CC-60 Potentiometer Stand Off	1
46	101719	Potentiometer	1

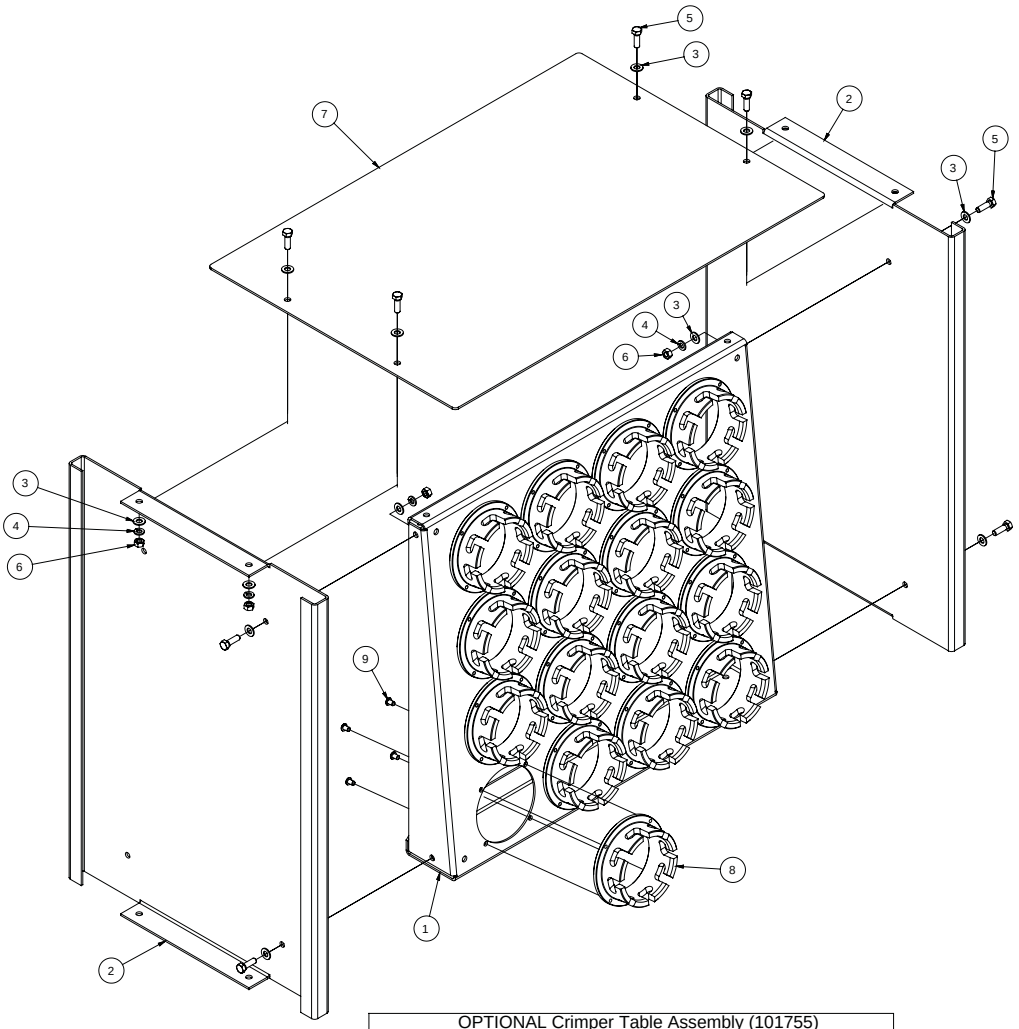
COMPONENT PARTS BREAKDOWN



CC Motor and Pump Assembly (101714)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	101541	5 HP 1800 RPM Motor	1
2	101540	7.5 HP 1800 RPM Motor	1
3	102994	10 HP 1800 RPM Motor	1
4	101539	Motor Mounting Flange	1
5	91101A033	1/2 Lock Washer	4
6	92865A714	1/2-13 x 1 1/4" Bolt	4
7	101543-01	Motor Coupling	1
8	101543-03	Coupling Spider Insert	1
9	101713	8cc Gear Pump	1
10	101542	11cc Gear Pump	1
11	102992	14cc Gear Pump	1
12	98023A31	3/8 Washer	2
13	91102A031	3/8 Lock Washer	2
14	92865A626	3/8-16 x 1 1/4" Bolt	2
15	101543-02	3/4" Shaft Coupling	1
16	101539-01	Flange Gasket	1
17	6400-8-12	8 JIC 37 M to 12 SAE Adapter	1
18	6400-8-10	8 JIC 37 M to 10 SAE Adapter	1

FINAL ASSEMBLY PART NUMBER CREATION:
101714-"MOTOR HP"-"PUMP SIZE"-"PHASE (IF REQ'D)"
EX. 7.5 HP MOTOR WITH 11cc PUMP: 101714-7.5-11
EX. 5 HP MOTOR WITH 8cc PUMP, SINGLE PHASE:101714-5-8-1

COMPONENT PARTS BREAKDOWN



OPTIONAL Crimper Table Assembly (101755)			
Item	Part Number	Description	Qty
1	101244	Die Panel	1
2	101246	End Panel	2
3	90108A030	5/16 Flat Washer	16
4	91102A030	5/16 Lock Washer	8
5	92865A581	5/16-18 X 1 Hex Bolt	8
6	95462A030	5/16-18 Hex Nut	8
7	101754	Crimper Table Top	1
8	101242	99MM Die Holder	16
8	101243	84MM Die Holder	16
9	91255A535	1/4-20 X 3/8 BHCS	64

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