CUSTOM® CRIMP

CC440 CRIMPER OPERATORS MANUAL WITH ACT™ CONTROLLER

SAFETY PRECAUTIONS

READ INSTRUCTIONS AND IDENTIFY ALL COMPONENT PARTS BEFORE USING CRIMPER

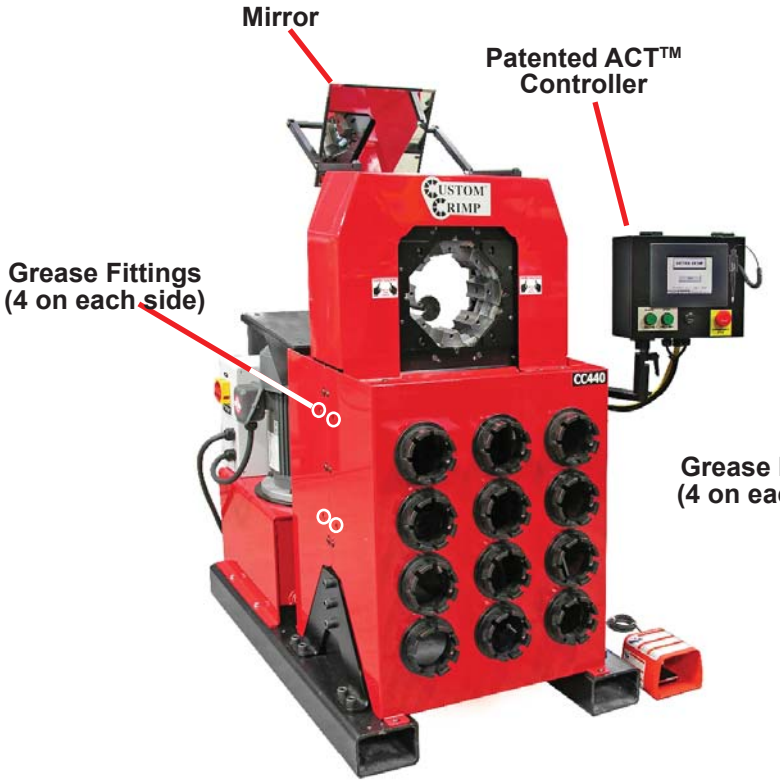
KEEP HANDS AWAY FROM PINCH POINTS

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

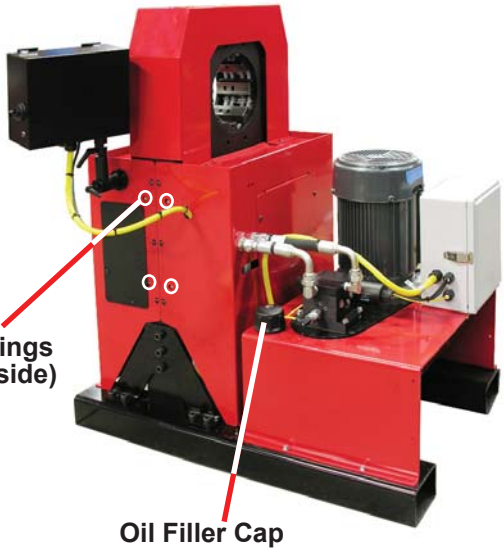
ALWAYS WEAR EYE PROTECTION

For Parts and Service, Contact:
Custom Machining Services, Inc.
326N County Rd. 400E
Valparaiso, In 46383
(219) 462-6128
Support at http://www.customcrimp.com

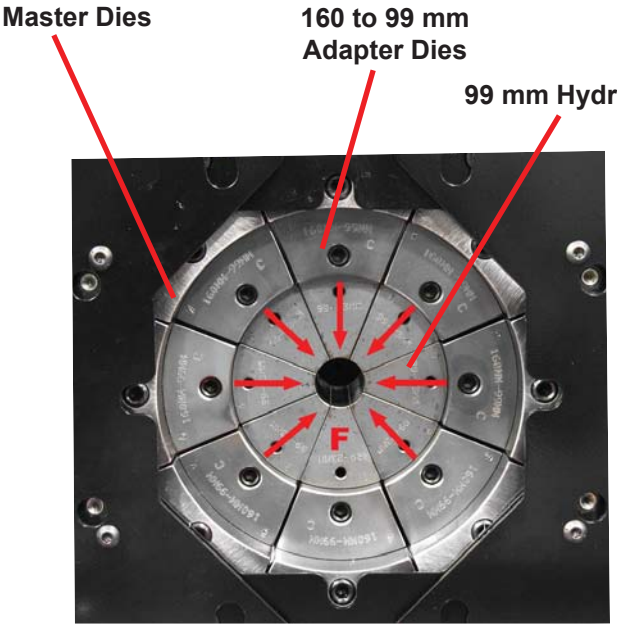
COMPONENT PART IDENTIFICATION



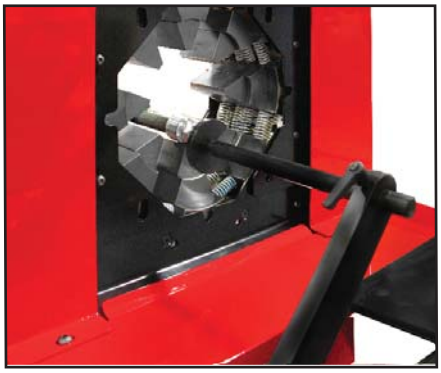
CC440 Hose Crimper



Master Die Location Holes



Fixed 6 o'clock die for easy positioning of fittings



Adjustable Back Stop

CRIMPER SPECIFICATIONS AND INITIAL SET UP

SPECIFICATIONS:

MAX HEAD OPENING W/O DIES ----------248 MM (9.75 IN)

MASTER DIE INSIDE DIAMETER ----------160 MM (6.3 IN)

MAXIMUM DIE OPENING ----------DIE CLOSED DIAMETER + 102 MM (4 IN)

CRIMPER SIZE ----------48 IN WIDE X 44 IN DEEP X 61 IN HIGH

WEIGHT ----------1840 LB. (835 KG)

ELECTRICAL REQUIREMENTS ----------230 VOLT 3 PHASE (STANDARD)

---------- 480 VOLT 3 PHASE (OPTIONAL)

----------5 HP 230 VOLT SINGLE PHASE (OPTIONAL)

MOTOR ----------7.5 HP (1 STAGE PUMP)

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

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

ADAPTER DIES ----------160 MM TO 99 MM

HOSE CAPACITY ----------2 INCH 4 SPIRAL

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

INITIAL CRIMPER SET UP

- CHECK RESERVOIR OIL LEVEL WITH SIGHT GLASS ON THE FRONT OF 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. (FOR 3 PHASE CIRCUITS)
- ALSO SEE ADDITIONAL INFORMATION ON THE INITIAL SET UP AND MAINTENANCE PAGE.

AccuCrimp ACT™ CONTROL PANEL

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

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

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 in inches or mm)
- The finished crimp diameter (in either in inches or mm)

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

TO MAKE A MANUAL CRIMP:

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

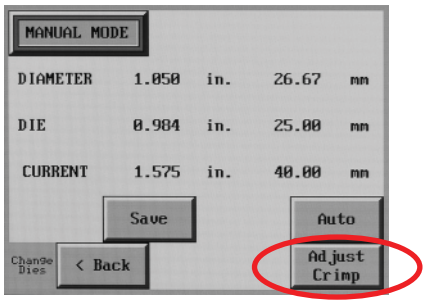
Note: for a 25 mm die, enter 2500. ACT™ will add 2 decimal places.
for a 1.5 inch die, enter 1500, ACT™ will add 3 decimal places.

- 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.

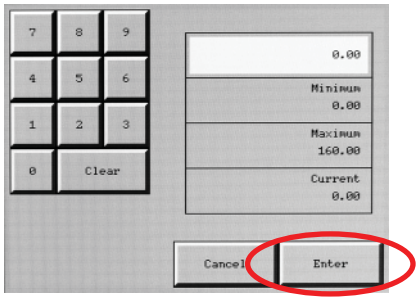
HOW TO MAKE MINOR CORRECTIONS

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™ technology makes minor corrections a simple process which requires no addition or subtraction.

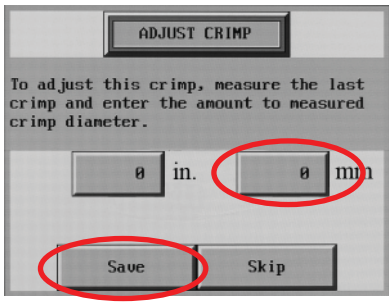


If the finished crimp diameter is not within the required specifications:

- 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.

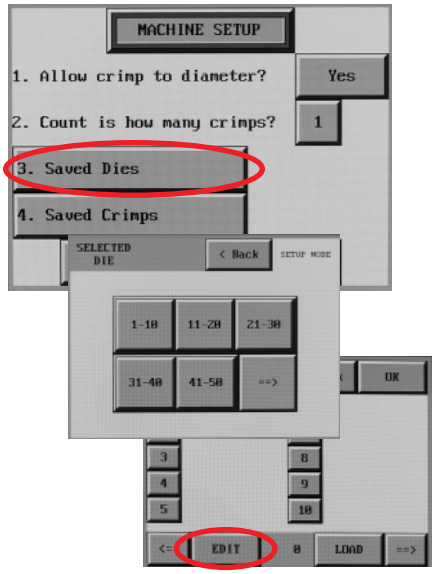
HOW TO ADD A SAVED DIE

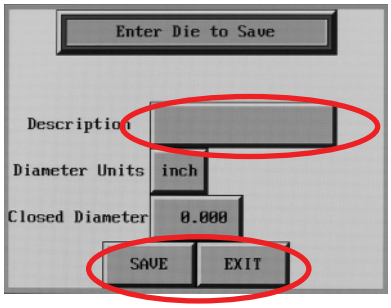
Up to 50 different dies can be saved in the computer memory. These dies can be recalled in the set up process eliminating the need to re-enter the die size each time.

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.

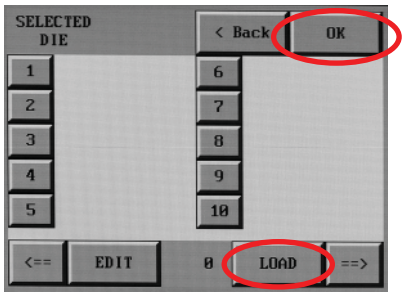
The saved die will now appear on the SELECTED DIE screen. From this screen individual dies can be cleared or edited.

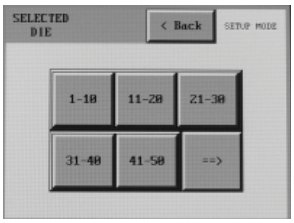


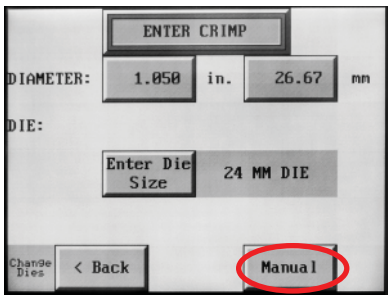


HOW TO RECALL A SAVED DIE

- 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.



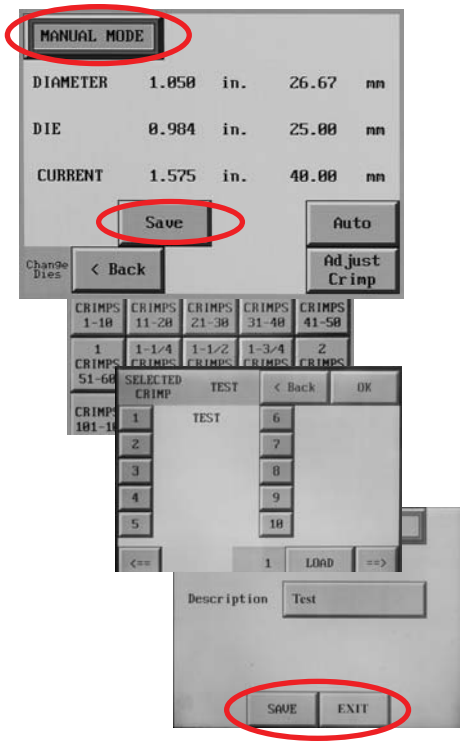




HOW TO ADD A SAVED CRIMP

- 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.

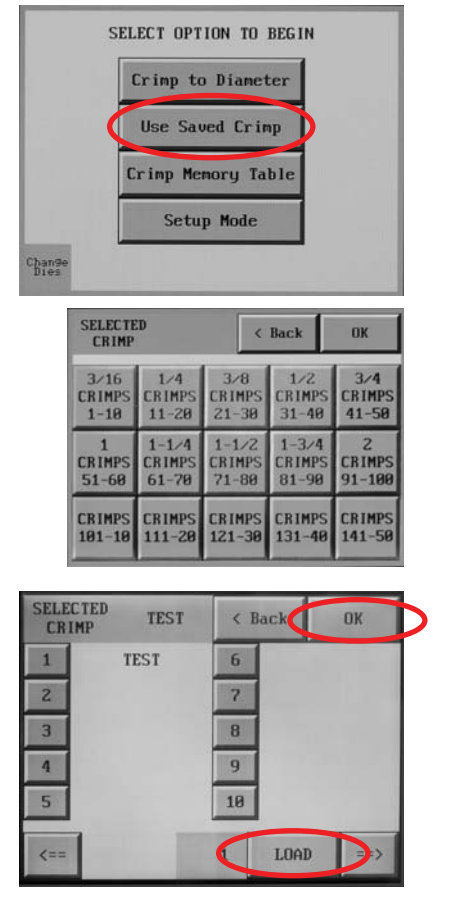
The die and crimp setting can now be recalled from the saved location as required.



TO RECALL SAVED CRIMP

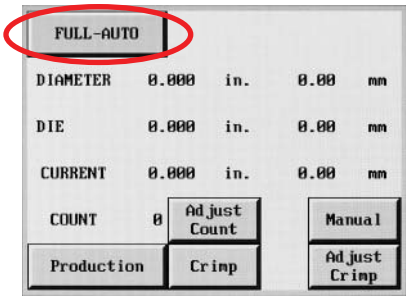
- Select USE SAVED CRIMP from the option screen.
- Select a previously saved crimp from location 1-150.
- Press LOAD.

The saved crimp will appear on the manual screen.

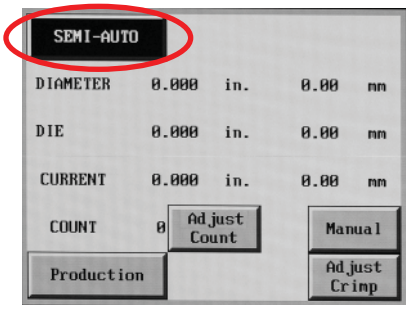


FULL AUTO MODE

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



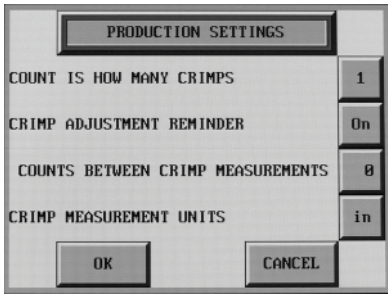
- The crimper will cycle automatically from the CRIMP button on the touch screen, the green CYCLE START button on the panel, or the foot switch.
- To set the position to which the dies will retract, close the crimper to the desired retract position prior to pressing the FULL AUTO button.
- Pressing the 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.

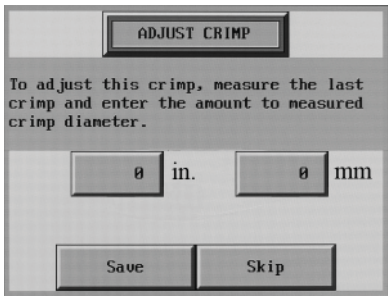


In FULL AUTO mode pressing the foot switch will start the crimp cycle and the dies will stop closing when the crimp cycle is complete

- 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



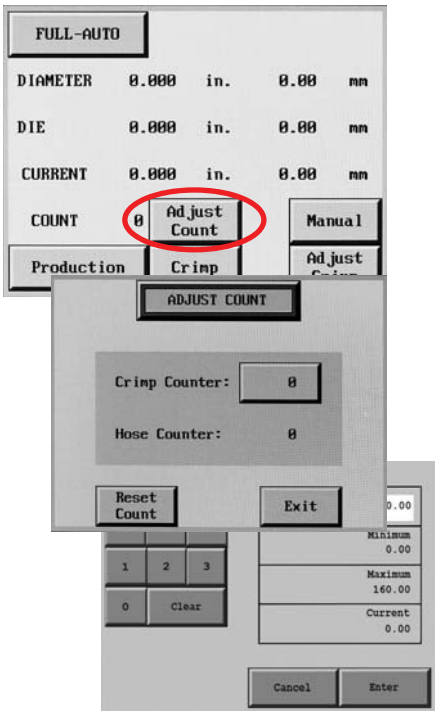


- Press the PRODUCTION button.
- Determine if 1 or 2 crimps will count as a crimp.
- Toggle the CRIMP ADJUSTMENT REMINDER to ON.
- Set the COUNTS BETWEEN CRIMP MEASUREMENTS to the desired number and press OK.
- At the set interval, the ADJUST CRIMP screen will come up and the operator will be asked to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

ADJUST CRIMP COUNT

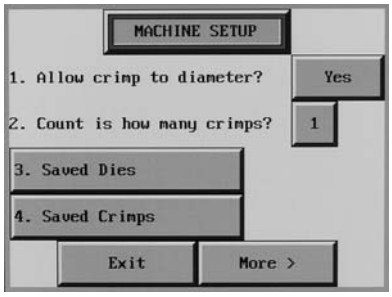
If a production operation is interrupted for some reason, it is possible to reset the counter to where the operation was at the point of interruption.

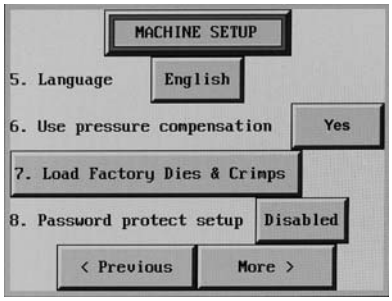
- Press the Adjust Count button from the auto crimp screen.
- Press the Crimp Counter and reset the count to the desired point.



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.



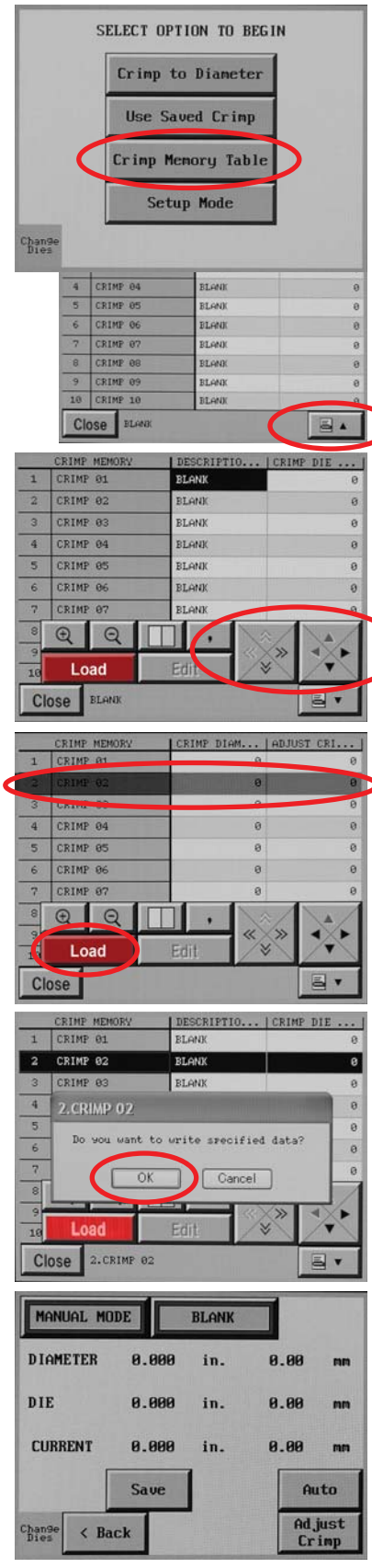


ACT™ ADDITIONAL FEATURES

Pre-Loaded Crimp Specifications

In addition to the ability to store up to 50 user entered dies and 100 user entered crimp settings, the ACT™ 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™ 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™ 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.

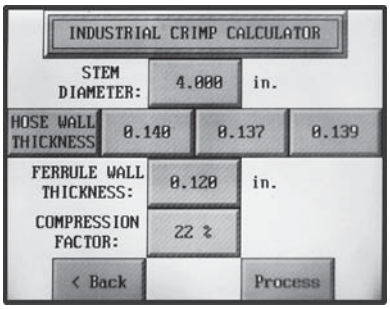
- Measure and enter the wall thickness of the ferrule

- 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

DIE INSTALLATION AND REMOVAL

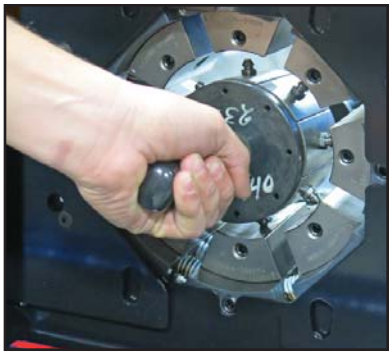
Adapter Die Installation
160 mm to 99 mm Adapter Dies are available with the crimper. Adapter dies are held in place by the locking screws as shown in the illustration. Hydraulic dies can either be installed manually or with the die removal tool as shown.

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.
- 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.



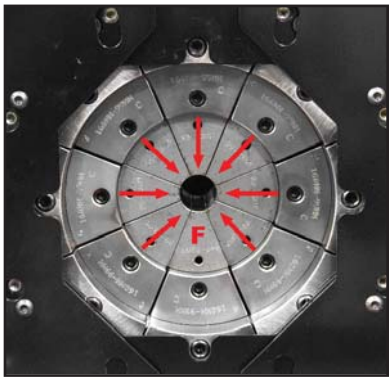
- Bring the crimper head to a fully closed position and remove the die insertion tool.

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

Proceed to the ACT™ controller operating instructions to set up the crimper for the hose and fitting being crimped. Note that the fixed 6 o'clock die makes it easier to more accurately position the fitting.

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 from their spring retention holes.

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



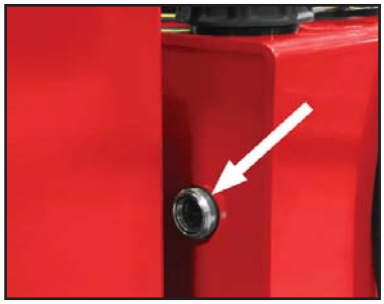
Note that on the CC440, the master dies must be slightly closed in order to completely insert the die removal tool.

INITIAL SET UP

Initial Setup

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, for a 3 phase circuit, 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 front of the tank. 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 tank.

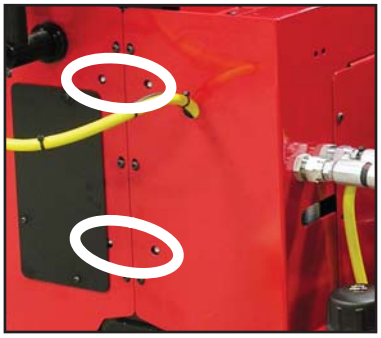
MAINTENANCE

Lubrication

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.

- Bring the master dies to the fully closed position, and lubricate the master dies through the 10 holes in the protective plates as illustrated.

- With the dies still in the fully closed position lubricate the fittings visible through the 2 bottom lubrication holes in the protective plate of the crimper.
- Note that there are also 4 lubrication fittings on either side of the machine as shown.



- Use CrimpX grease or a high quality moly-disulfide grease Failure to do so may result in damage to the wearing surfaces.
- CrimpX Grease P/N: 103887 3 oz Tube for mini grease gun
  103888 14 oz Tube for standard grease gun
  103889 Mini grease gun w/ 3 oz tube

- 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 signsof wear, apply more grease. If you touch the wear surfaces, you should et a thin layer of grease on your finger.

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 to be certain that the correct amount of oil in the 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

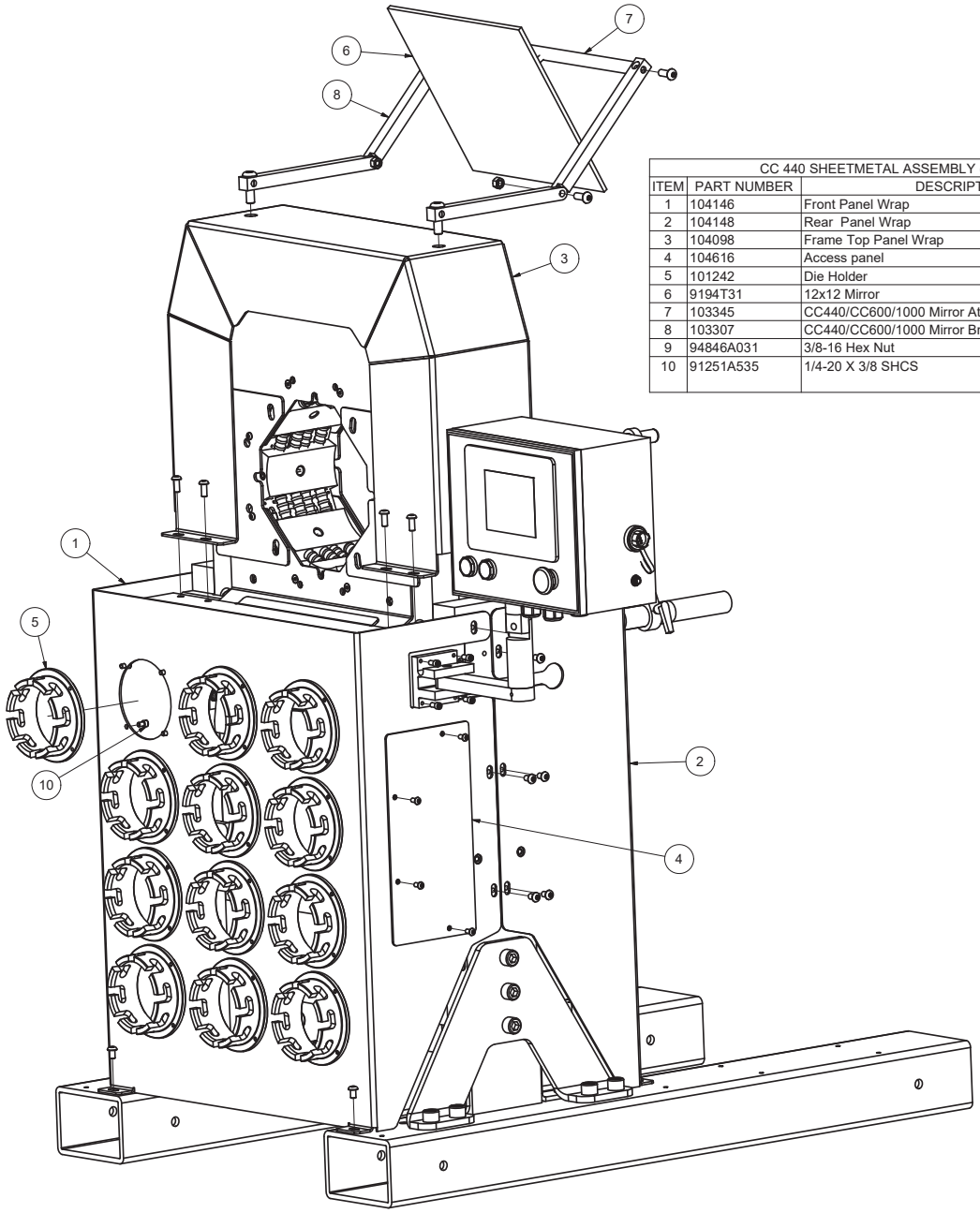
PLC RESET PROCEDURE

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

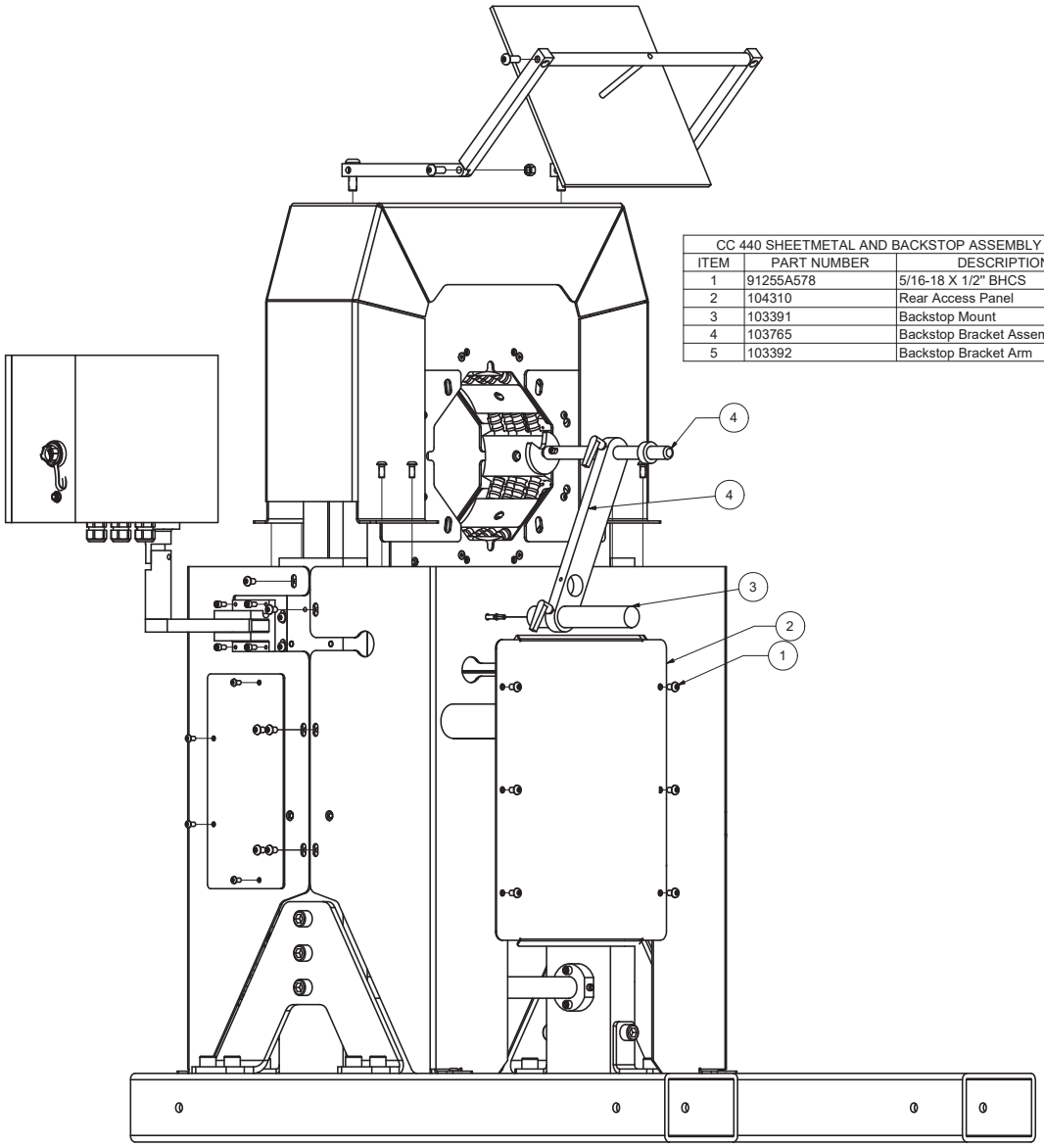
- Turn the main power switch to OFF.
- Open the front of the Control Panel.
- Power up the crimper from the main power switch. The crimper must be powered on during the PLC reset procedure.
- Move the three position toggle switch on top of the PLC right to the STOP position and then left to the RUN position.
- 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.

EXPLODED PARTS VIEW



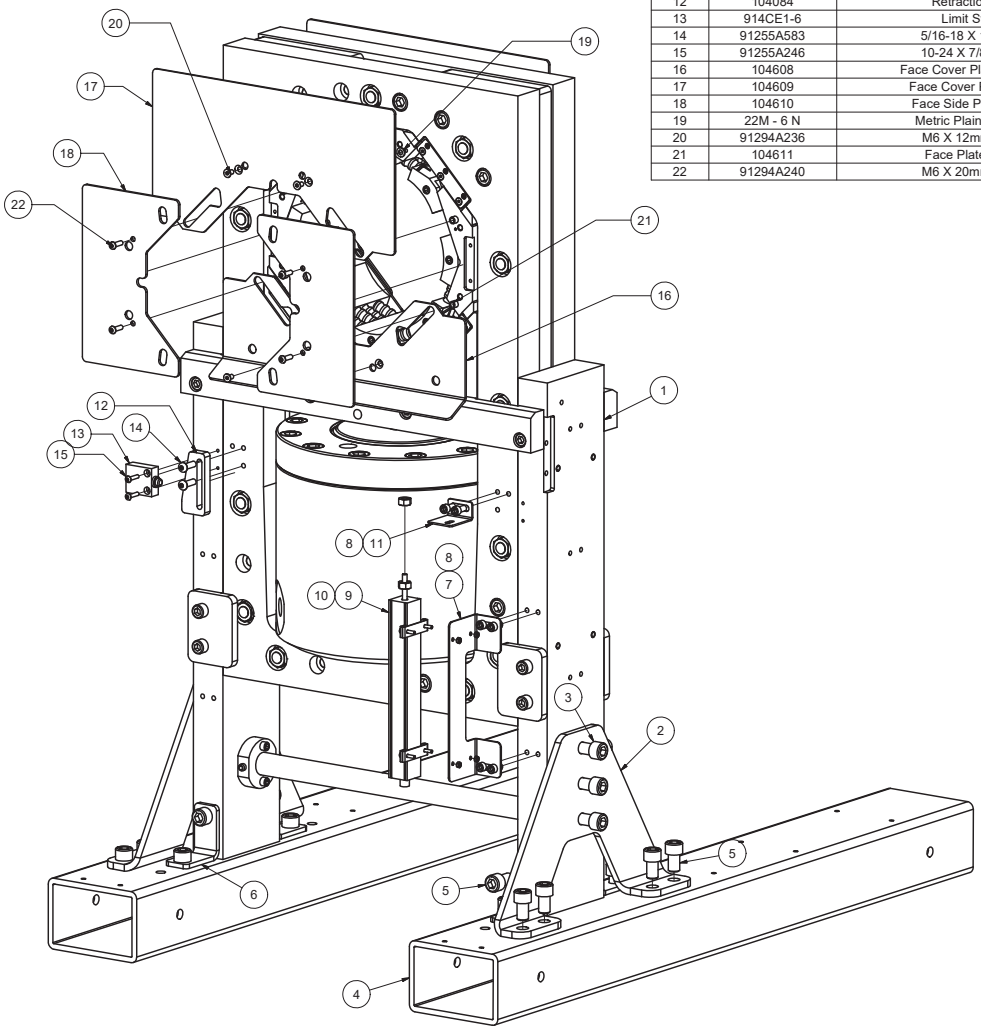
CC 440 SHEETMETAL ASSEMBLY (104659-1)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	104146	Front Panel Wrap	1
2	104148	Rear Panel Wrap	1
3	104098	Frame Top Panel Wrap	1
4	104616	Access panel	1
5	101242	Die Holder	12
6	9194T31	12x12 Mirror	1
7	103345	CC440/CC600/1000 Mirror Attachment Bracket	1
8	103307	CC440/CC600/1000 Mirror Bracket Support Arms	4
9	94846A031	3/8-16 Hex Nut	2
10	91251A535	1/4-20 X 3/8 SHCS	48

EXPLODED PARTS VIEW



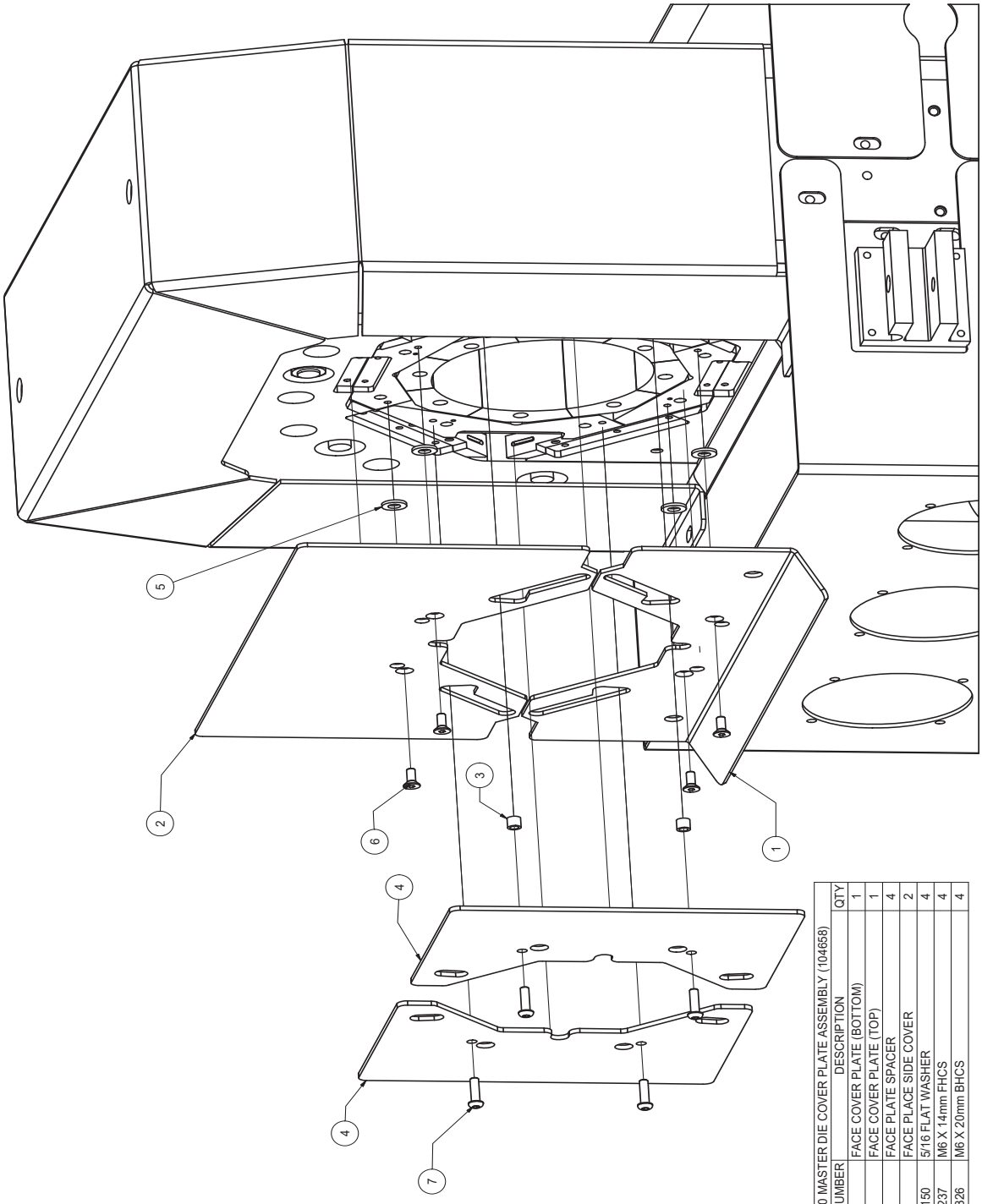
CC 440 SHEETMETAL AND BACKSTOP ASSEMBLY (104659-2)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	91255A578	5/16-18 X 1/2" BHCS	24
2	104310	Rear Access Panel	1
3	103391	Backstop Mount	1
4	103765	Backstop Bracket Assembly	1
5	103392	Backstop Bracket Arm	1

EXPLODED PARTS VIEW



CC440 FRAME/LEG/POTENTIOMETER ASSEMBLY (104083-MAN)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	104082	Frame/Master Die Assy	1
2	104173	Leg Brace	2
3	91251A798	5/8-11 X 1.50 SHCS	6
4	104094	Base Leg	2
5	91251A794	5/8-11 X 1.00 SHCS	16
6	104227	Leg Mounting Bracket	4
7	104267	Transducer Mtg Bracket	1
8	91251A580	5/16-18 X 5/8 SHCS	6
9	103472	150MM Transducer	1
10	90576A103	M4x0.7 Nyloc Hex Nut	4
11	104268	Transducer Rod Bracket	1
12	104084	Retraction Stop	1
13	914CE1-6	Limit Switch	1
14	91255A583	5/16-18 X 1" BHCS	2
15	91255A246	10-24 X 7/8" BHCS	2
16	104608	Face Cover Plate (Bottom)	2
17	104609	Face Cover Plate (Top)	2
18	104610	Face Side Plate Cover	4
19	22M - 6 N	Metric Plain Washers	8
20	91294A236	M6 X 12mm FHCS	8
21	104611	Face Plate Spacer	8
22	91294A240	M6 X 20mm BHCS	8

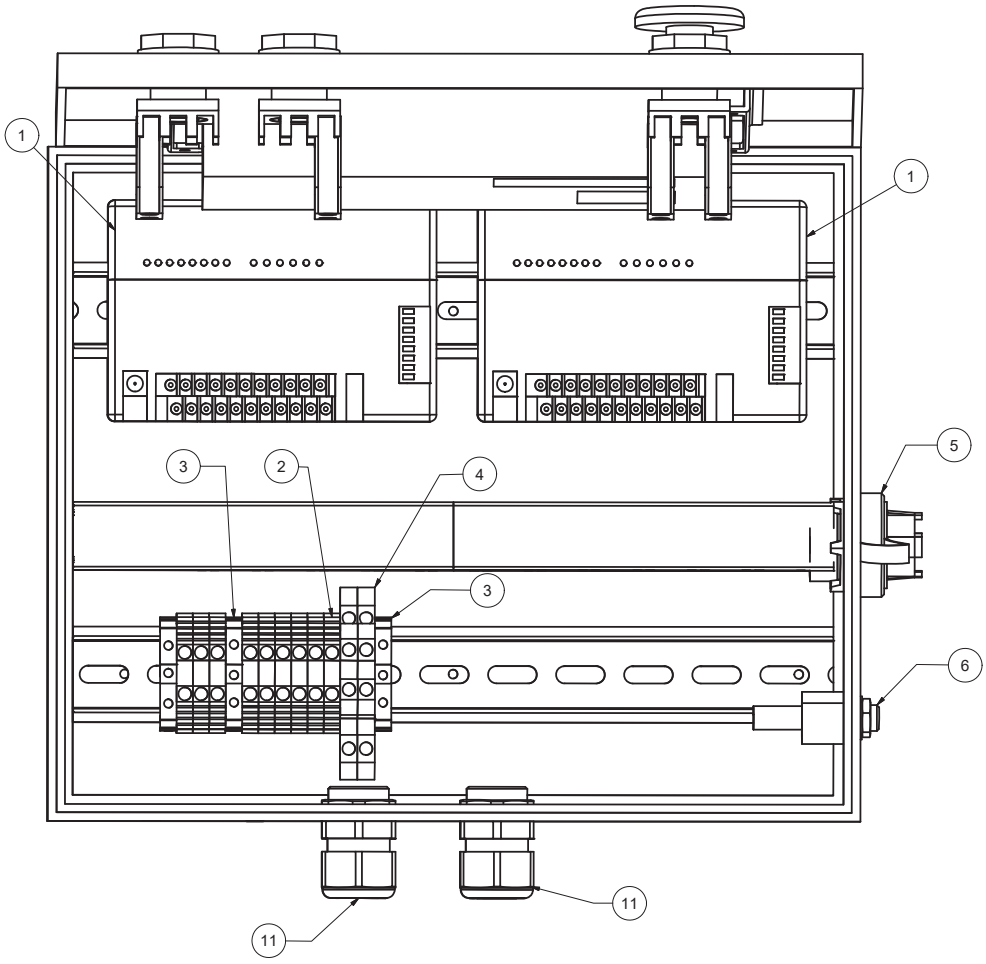
EXPLODED PARTS VIEW

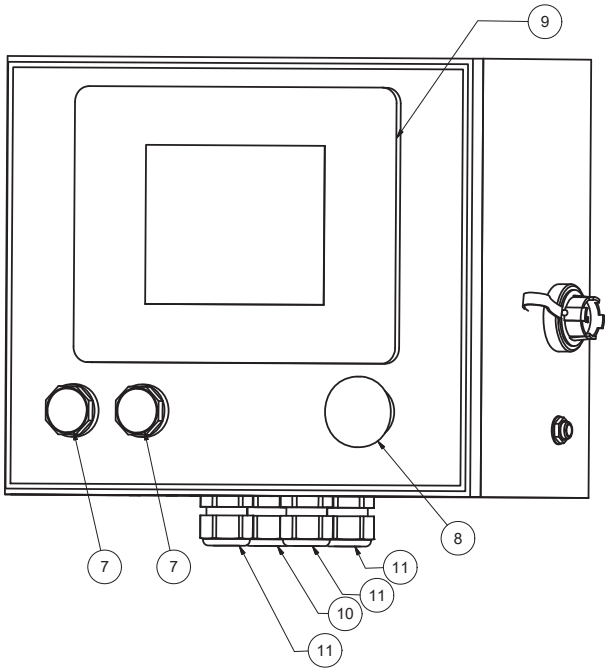


CC 440 MASTER DIE COVER PLATE ASSEMBLY (104668)

ITEM	PART NUMBER	DESCRIPTION	QTY
1	104608	FACE COVER PLATE (BOTTOM)	1
2	104609	FACE COVER PLATE (TOP)	1
3	104611	FACE PLATE SPACER	4
4	104610	FACE PLACE SIDE COVER	2
5	90850A150	5/16 FLAT WASHER	4
6	91294A237	M6 X 14mm FHCS	4
7	91239A326	M6 X 20mm BHCS	4

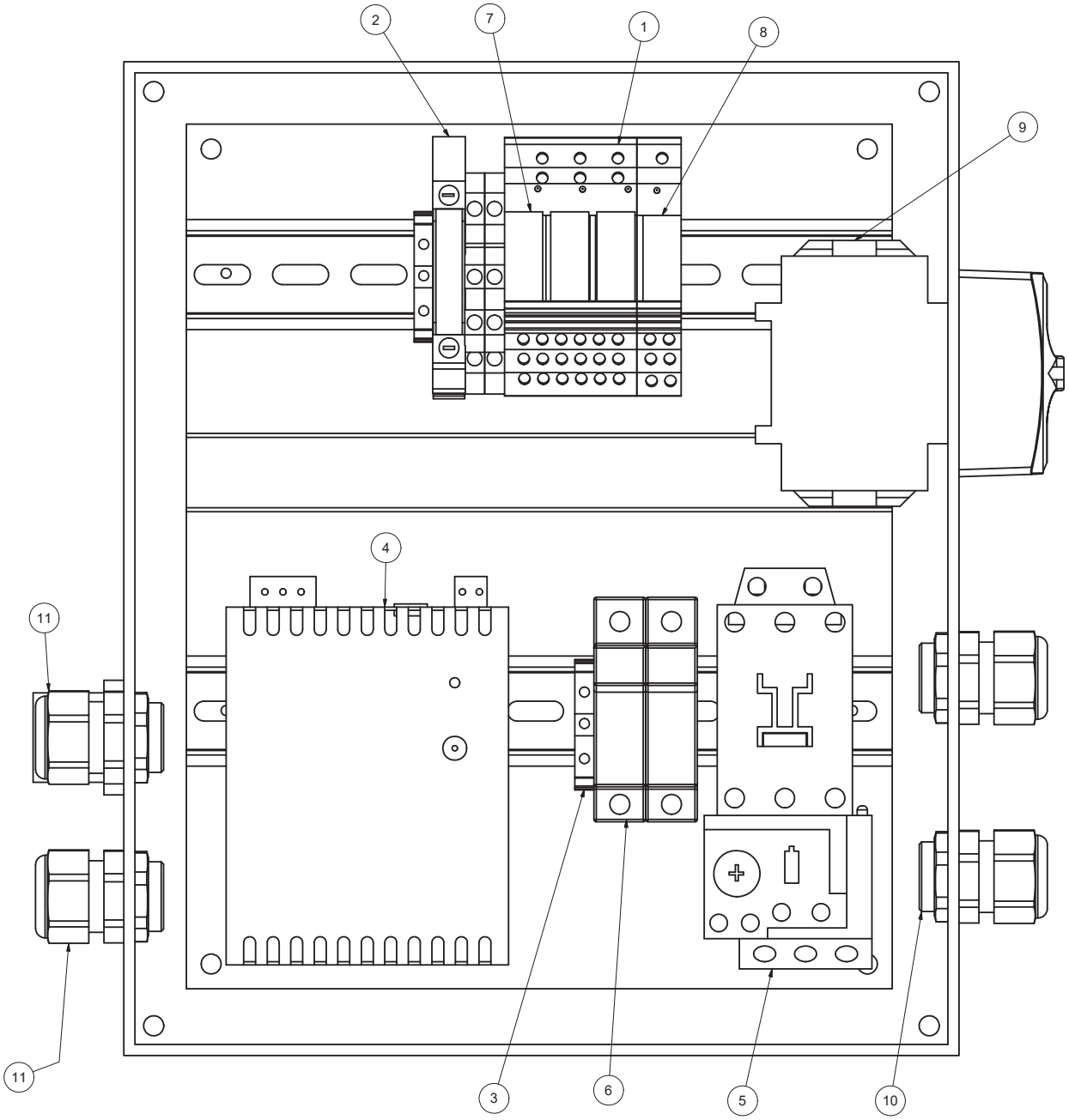
EXPLODED PARTS VIEW





CC 440 CONTROL TOWER ASSEMBLY (103761-CC440)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	102370-PLC	PLC	2
2	DN-T10	Terminal Block	9
3	102365	Ground Block	3
4	103775	Terminal Block	2
5	PX0842/A	USB Connector	1
6	502-N-111	Foot Pedal Jack W/Nut	1
7	101545-GREEN	Button	2
8	101545-RED	E-Stop	1
9	102600	6" Touch Screen Text Panel	1
10	69915K57	Cord Grip	1
11	69915K56	3/4 NPT Cord Grip	3

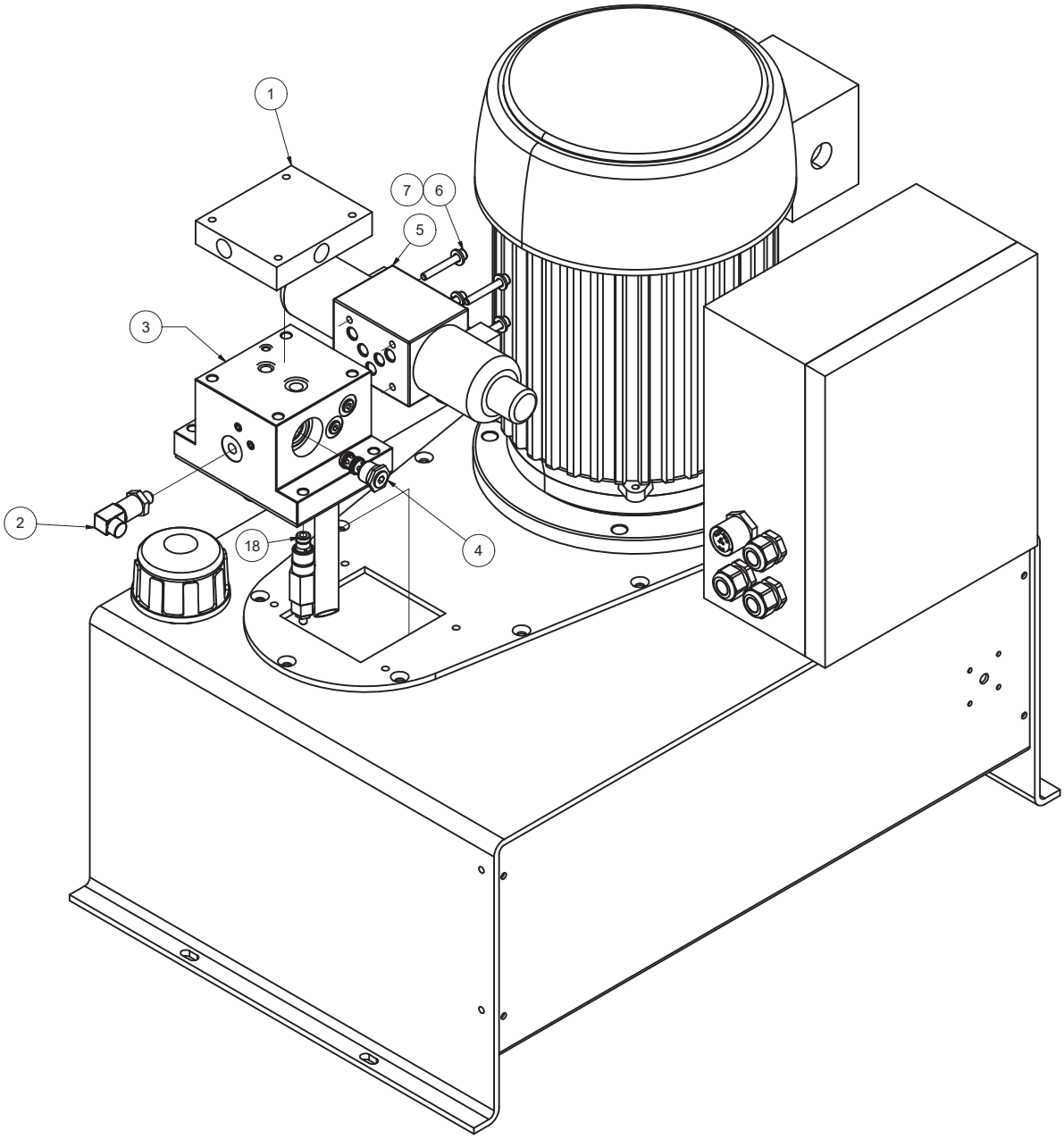
EXPLODED PARTS VIEW



CC 440 ELECTRICAL BOX ASSEMBLY (103759-CC440)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	102368	Relay Block	1
2	102367	Fuse Block	1
3	102365	Ground Block	2
4	102371	Power Supply	1
5	102369	Contactor with Overload Protector	1
6	CHMD2	MIDGET 5 AMP FUSE HOLDER	2
7	103782	Relay	3
8	102368-White Motor Block	Relay	1
9	103050	50 Amp Disconnect Switch	1
10	69915K56	3/4 NPT Cord Grip	2
11	69915K57	Cord Grip	3

EXPLODED PARTS VIEW

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



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.

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