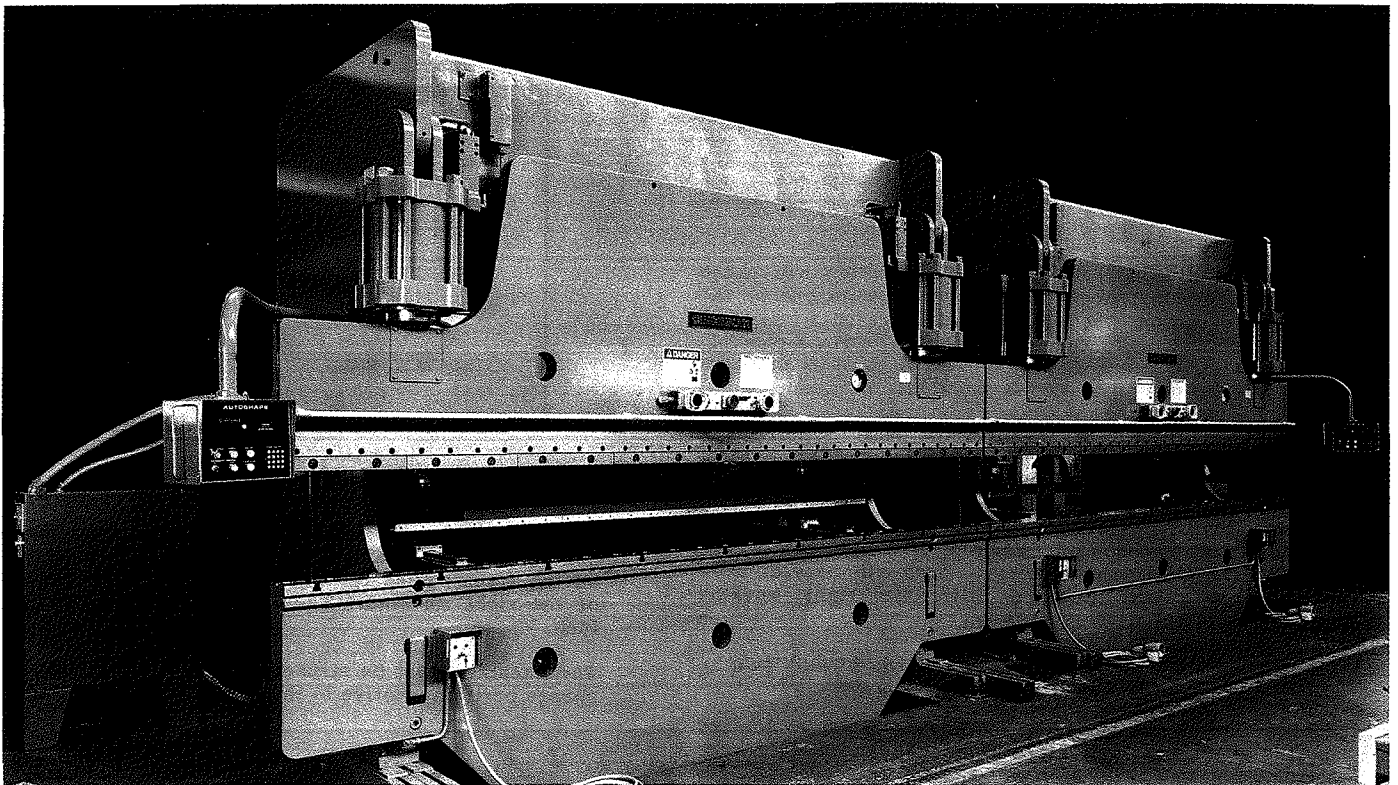


OPERATION AND MAINTENANCE MANUAL SUPPLEMENT FOR

CINNATI AUTOSHAPE CNC FORMING CENTER MANUAL EM-286

SET-UP FOR TANDEM OPERATION



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SET-UP FOR TANDEM OPERATION

1. Remove the separator plate located between the rams of the two machines.
2. Select "DUAL" on the "SINGLE-OFF-DUAL" keylock selector switch on the freestanding control box located at the right side of the right machine.
3. Set-up the control stations located on the right housing of the right machine and the left housing of the left machine. (See Operation and Maintenance Manual, Section 4.)

RIGHT MACHINE

- a. Set SPEED SELECT keylock selector switches as desired.
- b. Set MODE keylock selector switch as desired.
- c. Set STROKE CONTROL keylock selector switch to "ON".
- d. Set TONNAGE CONTROL to limit tonnage for tooling protection or for reversing on tonnage as necessary.
- e. MAIN DRIVE pushbuttons will start and stop the main drive motors of both machines when dual operation is selected.

LEFT MACHINE

- a. SPEED SELECT keylock switches are inoperable when dual operation is selected.
- b. MODE keylock selector switch is inoperable when dual operation is selected, but it is recommended that this switch be set in "INCH" mode. This will provide a back-up to the built-in control checks and possibly prevent any transient voltages from causing a valve fault.
- c. Set STROKE CONTROL keylock selector switch to "ON".
- d. The TONNAGE CONTROL on this station will cause both rams to reverse if the pressure in one of the cylinders on the left machine reaches a level corresponding to the setting of the tonnage control. (NOTE: Tonnage display on left machine is inoperable when dual operation is selected.
 1. Set TONNAGE CONTROL the same as setting on the right control station if the tonnage control is being used for tooling protection.
 2. Set TONNAGE CONTROL slightly higher than setting on right machine if the machines are reversing on tonnage. This will provide more consistent reversal with the right machine controlling every stroke.
- e. The MAIN DRIVE START and STOP pushbuttons are inoperable when dual operation is selected.

4. Set-Up Operator Stations & Footswitch selectors located on the front of beds. (See Operation and Maintenance Manual, Section 4.)

RIGHT MACHINE

- a. Set FOOTSWITCH selector(s) to "ON" or "OFF" based on selected mode of operation (Step 3-b).
- b. Set OPERATOR STATION selector to "ON" or "OFF" based on selected mode of operation.
- c. EMERGENCY STOP button will stop the main drive motors on both machines.
- d. RAM UP button will cause the rams of both machines to go up.

- e. TONNAGE display shows tonnage developed on right machine, assuming a centered load on right machine.

LEFT MACHINE

- a. The footswitch is inoperable when dual operation is selected, but it is recommended that the selector be set to "OFF" to help avoid possible confusion.
 - b. The operator station is inoperable when dual operation is selected, but it is recommended that the selector be set to "OFF".
 - c. EMERGENCY STOP button will stop the main drive motors on both machines.
 - d. RAM UP button is inoperable when dual operation is selected.
 - e. TONNAGE display is inoperable when dual operation is selected.
5. After reading and understanding the AUTOSHAPE OPERATION AND MAINTENANCE MANUAL, start the main drive motors and program the AUTOSHAPE control. (See Operation and Maintenance Manual, Section 5.)
 - a. Right machine is the controlling machine in dual operation.
 - b. Left machine displays the following message on its CRT:

TANDEM MODE

*** *** ***

SEE RIGHT HAND CONTROL

6. Adjust tilt of the rams as required.
7. Adjust the left ram to match the upper dies on the right and left machines at adjacent ends. The adjustment is on the freestanding control box located at the right side of the right machine. The adjustment increment is .001 inch.

The machines must be stroked in order for the left ram to change position relative to the right ram.

