3991 Green Park Road ● St. Louis, MO 63125 ● Phone – 314.631.1416 Fax – 314.631.3003

OPERATING and PROCEDURES MANUAL

TDFC POWER BRAKE

OPERATOR SAFETY REMINDERS

This manual contains important instructions for the TDFC Power Brake, that must be followed during installation, maintenance, and operation. The TDFC Power Brake is designed and tested according to international safety requirements, but as with all electrical equipment, certain precautions must be observed when installing and/or operating the brake. To reduce the risk of personal injury and to ensure the safe installation and operation of the TDFC Brake, you must carefully read and follow all instructions and safety precautions in this manual. Only personnel that have read and understand this manual should be allowed to operate the equipment.

The National Safety Council reminds us that many accidents are caused by the failure to follow fundamental safety or precautions. For this reason, you as a careful operator are the best insurance against an accident.

Unless otherwise noted. Do not make any adjustments or lubricate the machine(s) while in motion.

All Machine Guarding must be in place and properly secured whenever the Machine is running or under Power.

Disconnect POWER Before Servicing.

DO NOT ATTEMPT TO OPERATE THIS EQUIPMENT BEFORE READING AND UNDERSTANDING THE INFORMATION PRESENTED IN THIS MANUAL

If You Have Any Unresolved Questions You May Contact Customer Service at Ductfomer

TABLE OF CONTENTS

1. General Information

The TDFC Power Brake is designed to operate in either Automatic or Manual Mode. The Manual Mode is operated from a control box mounted on the front of the machine. A foot operated switch operates the machine in Automatic Mode. A programmable logic controller is mounted inside the electrical enclosure to control the machine operation while in automatic mode. In either mode the machine is exclusively a one (1) man operation. Unintended use, operator oversight and failure to operate in accordance with these instructions can result in severe injuries.

2. System Operation

The Power Brake performs two operations. First the press bar with upper die is driven down with pneumatic cylinders to clamp the part in place. Next the folding assembly swings up to brake the part. The operation can be performed three times to produce a full wrapper.

3. Unloading and Installation

3.1. **Receiving the Machine**

- Visibly check machine for possible shipping damage.
- If damage is evident, insist on a notation on the freight bill and photo document the damage immediately along with a hand written description of apparent damage.
- If repairs are necessary, contact Ductformer by phone at 314-631-1416 you may be requested to E-Mail or Fax your damage documentation to Ductformer.
- Fax – 314-631-3003
- E-mail – sales@customrollformproducts.com
- Do Not place damaged equipment under power until proper repairs have been made by a qualified service technician.

3.2. **Unloading Procedure**

- When unloading the machine off of the transport vehicle, the machine is best handled by lifting the machine under the frame. Make sure Forks extend through to the other side of the machine.
- Move the machine to the desired location and visually inspect machine thoroughly before installing power.
- Never LIFT the machine by anything other than under the frame, this would result in excessive damage to the machine and void warranty
- After moving the machine to desired location, level and secure the machine to the floor as required.

3.3. **Electrical Connections**

- Supply 110 or 220 Volt single phase electrical service to the electrical enclosure (Depending upon which model you have), in accordance with National and Local Electrical Codes. This machine is offered in both 110 Volt and 220 Volt versions

ONLY UPON THE SATIFACTORY COMPLETION OF ALL THE ABOVE CHECKS AND PERFORMANCE OF INITIAL INSTALLATION PROCEDURES SHOULD THE MACHINE BE POWERED UP OR RELEASED FOR PRODUCTION USE.

4. Schematics

Pneumatic Schematic: See end of manual
Electrical Schematics: See end of manual

5. Maintenance

No repair or maintenance should be performed while the machine is running or capable of running. Proper LOCKOUT/TAGOUT Procedures should be followed. Turn all machine controls off before shutting off the Main Electrical Disconnect to prevent startup when POWER is restored. Disconnect all Electrical POWER at the Main Electrical Disconnect before performing any maintenance or repairs to the Machine. It is important to realize that cylinders will eventually bleed down and release or lower their loads. When

working around such items, blocks should be used to prevent unintentional movements. After a repair remove the blocks and check the entire machine carefully to determine proper reassembly before POWER is restored.

- **Note:** The machine is supplied with bearings pre lubricated; however the bearings should be lubricated after every 500 hours of running time.
- The machine should be inspected for dirt and debris that may have collected during Daily Usage.
- All bolts should be checked for tightness every 6-months.

6. General Construction, Factory Settings and Adjustments

6.1. **General Notes and Cautions**:

- This machine is designed for a maximum of 16 gauge Steel.
- Do not exceed the maximum material thickness for the machine.
- The machine has been adjusted at factory and should not require any changes.
- The TDFC Brake is exclusively designed as a one (1) man operation. Failure to follow this precaution can result in serious injury.

6.2. **Folder Adjustments**

- The Folder pivot position is located with pillow bearing blocks. Adjustment bolts push the bearing blocks back toward the rear of the machine, tightening the bend. To adjust, first remove the small guards around the pivot mechanisms, then loosen the two bolts that fasten the pillow block bearing to the table and rotate adjustment bolt to obtain desired brake.
- The Folder stop position is determined by the stop bolts located on the overhead press bar. Loosen the jam nuts and adjust to set desired brake angle.

7. Set-up of the Equipment

This system does not require any special flooring or grouting. The weight is evenly distributed and there is a minimum amount of impact or shock load involved in the operation. The area where the machine feet are located should be level and flat.

8. Wiring and Plumbing of the System

The electrical and pneumatic components have been pre-plumbed and wired for simple installation. The Pneumatics and Electrical require (1) service drop each.

Electric: 110 Volt or 220 Volt single phase power (This machine is offered in either 110 Volt or 220 Volt versions)

Air: 5 CFM at 90 PSI

9. Controls and Control Functions

The controls consist of a variety of buttons, selector switches and a Micro Processor Controller which all serve to control the functions of the machine.

NOTE: WHEN OPERATING ANY OF THE SELECTOR SWITCHES & PUSH BUTTONS IT IS CRITICAL THAT THE OPERATOR FULLY UNDERSTAND THEIR FUNCTION & VERIFIES THE MACHINE IS CLEAR FROM PERSONNEL OR ANY OTHER HAZARDS.

Button Description

The electrical enclosure has all of the main control selectors and buttons to operate the system. The following is a description of their individual functions.

POWER ON/OFF – This selector switch with green light indicates that power is supplied to the machine and ready for operation

CYCLE START (FOOT PEDAL): – This foot switch controls the automatic feed cycle of the Power Brake operation. When depressed, the press bar will come down to clamp the part in place, next the folder will swing up. After this operation the folder will swing back down and the press bar will retract. Machine must be selected to **AUTO** mode.

MANUAL/AUTO: - This selector switch will set the desired operation mode for the machine. Manual mode must be selected for the various manual push button operations. Automatic mode must be selected when running production.

PRESS DOWN – This push button operates simultaneously with the **MANUAL CLAMP** button to operate the press bar. Press and hold the **PRESS DOWN** button until the press is run all the way down; then without releasing simultaneously press the **MANUAL CLAMP** button to hold the press in the clamping position. After releasing both buttons press the **PRESS DOWN** button again to move the press back to the up position. Machine must be selected to **MANUAL** mode.

MANUAL CLAMP – This push button allows the press to stay down when the press is moved to the lowest position. Press and hold the **PRESS DOWN** button until the press is run all the way down; then without releasing simultaneously press the **MANUAL CLAMP** button to hold the clamp press in the clamping position. After releasing both buttons press the **PRESS DOWN** button again to move the press back to the up position. Machine must be selected to **MANUAL** mode.

FOLDER UP – This push button operates the folder mechanism. When pressed the folder assembly will swing up to brake the part. Machine must be selected to **MANUAL** mode and Press in the down clamp position to operate folder manually.

FOLDER DOWN – This push button operates the folder mechanism. When pressed the folder assembly will swing down off of the part. Machine must be selected to **MANUAL** mode and Press in the down clamp position to operate folder manually.

10. Understanding the machine

10.1 **Press Assembly**: The Press Assembly is driven up and down with a large pneumatic cylinder. In manual mode the Press Assembly can be raised or lowered with the push buttons on the front control panel. In Automatic mode the Press Assembly will lower at the beginning of the machine cycle and rise at the end.

10.1 **Folder Assembly**: The Folder Assembly is moved up and down with a large pneumatic cylinder. In manual mode the Folder Assembly can be raised or lowered with the push buttons on the front control panel. In Automatic mode the Folder Assembly will rise up at the beginning of the machine cycle and down at the end.

11. Procedure to operate

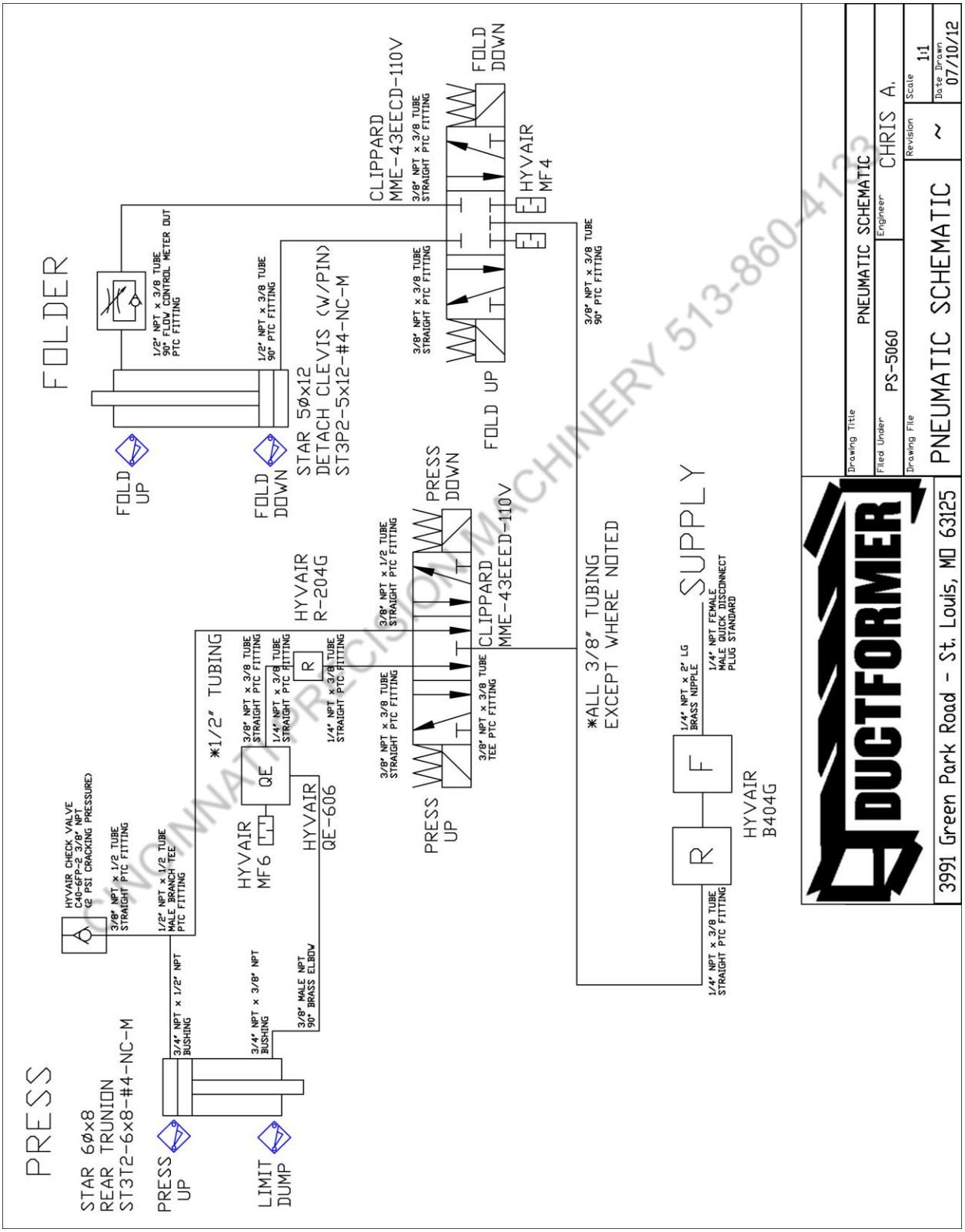
To operate the Power Brake in **AUTO** mode, first place part in machine with flanges down. A Notch Locator Blade is located in the brake area of the table to locate the flange notches. Once the part is in the correct location and table is clear of any other obstructions the operator can cycle the foot pedal. At this point the Press Bar assembly will lower to clamp the part to table. Next the folder will swing up to brake the part. The Folder will now swing down and the Press Bar will rise up off of the part. The part can now be removed or repositioned for another brake. At any time during the sequence the operator removes his foot from the pedal, the upper press bar and folding beam will automatically return to its home position. Again it is imperative that the machine is set-up and controlled with a single operator. Failure to do so can result in severe injury. The brake is to be operated in compliance with its intended use. Any other purpose does not constitute intended use. The manufacturer is not responsible for any damages or injuries resulting from unintended use.

To operate the Power Brake in **MANUAL** mode, place the part in machine and operate either the Press Bar or Folder assembly independently to set up the machine. Once the part is located within the press the operator cycles the Press Down button. After confirming the part location the operator will then cycle the Manual Clamp button (while still holding down the Press Down button). The Press Bar is operated manually up and down with two buttons on the control box (Folder Up and Folder Down). Again it is imperative that the machine is set-up and controlled with a single operator. Failure to do so can result in severe injury. The brake is to be operated in compliance with its intended use. Any other purpose does not constitute intended use. The manufacturer is not responsible for any damages or injuries resulting from unintended use.

12. Ordering Replacement Machine PARTS

Replacement Machine PARTS may be ordered directly from Ductformer. All of the following information is necessary to ensure the correct replacement PARTS are provided:

- Machine Model Number
- Machine Serial Number
- Replacement PART Number(s) – Description(s)
- Quantity of PARTS (each)
- Shipping and Billing Information
- Contact Name, Company Name, Address and Phone Number
  (PO Boxes are not acceptable addresses for shipment)
- Preferred Shipping Method


PRESS
STAR 6Ø×8
REAR TRUNION
ST3T2-6×8-#4-NC-M
PRESS UP
LIMIT DUMP
3/4" NPT x 1/2" NPT BUSHING
3/4" NPT x 3/8" NPT BUSHING
3/8" MALE NPT 90° BRASS ELBOW
1/2" NPT x 1/2 TUBE MALE BRANCH TEE PTC FITTING
3/8" NPT x 1/2 TUBE STRAIGHT PTC FITTING
HYVAIR CHECK VALVE C40-6FP-2 3/8" NPT <2 PSI CRACKING PRESSURE>
*1/2" TUBING
HYVAIR MF6
QE
HYVAIR QE-606
3/8" NPT x 3/8 TUBE STRAIGHT PTC FITTING
1/4" NPT x 3/8 TUBE STRAIGHT PTC FITTING
R
HYVAIR R-204G
FOLDER
FOLD UP
FOLD DOWN
1/2" NPT x 3/8 TUBE 90° FLOW CONTROL METER OUT PTC FITTING
1/2" NPT x 3/8 TUBE 90° PTC FITTING
STAR 5Ø×12 DETACH CLEVIS (W/PIN) ST3P2-5×12-#4-NC-M
CLIPPARD MME-43EECD-110V
3/8" NPT x 3/8 TUBE STRAIGHT PTC FITTING
HYVAIR MF4
FOLD DOWN
FOLD UP
3/8" NPT x 3/8 TUBE STRAIGHT PTC FITTING
3/8" NPT x 1/2 TUBE STRAIGHT PTC FITTING
PRESS DOWN
PRESS UP
CLIPPARD MME-43EEED-110V
3/8" NPT x 3/8 TUBE TEE PTC FITTING
3/8" NPT x 3/8 TUBE 90° PTC FITTING
*ALL 3/8" TUBING EXCEPT WHERE NOTED
SUPPLY
1/4" NPT x 2" LG BRASS NIPPLE
1/4" NPT FEMALE MALE QUICK DISCONNECT PLUG STANDARD
F
R
HYVAIR B404G
1/4" NPT x 3/8 TUBE STRAIGHT PTC FITTING
CINCINNATI PRECISION MACHINERY 513-860-4133
DUCTFORMER
3991 Green Park Road - St. Louis, MO 63125
Drawing Title
PNEUMATIC SCHEMATIC
Filed Under
PS-5060
Engineer
CHRIS A.
Drawing File
PNEUMATIC SCHEMATIC
Revision
~
Scale
1:1
Date Drawn
07/10/12