

**OWNER'S MANUAL
FOR THE**

MODEL 202-N SLEEVE DISPENSER

By

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October, 1997

Introduction

The Model 202-N Sleeve Dispenser machine is a third generation machine designed and manufactured by SPARKS in Tyler, Texas. In 1995, at the request of a Cal-Maine plant, Sparks was asked to provide a solution to the automating of egg sleeves. The first unit, the model 100, was designed to mount to the left (or right) of a PKS belt and dispense sleeves, open them, date them on the narrow front panel, and hold the sleeve in place while it was filled. An optical sensor detected the operators hand position and released the sleeve when the operator picked it up. The cycle time of the model 100 was 4-5 seconds and it serviced only one lane. The prototype model 100 is still in use today at the plant in which it was first installed and is used regularly with "A" flute sleeves.

After a year of production of the model 100, SPARKS was encouraged to redesign the machine with two goals in mind: smaller and cheaper. *Smaller was good.* The new model sleeve, the Bombardier, was designed to fit in the narrow space in between PKS belts where the table mounts, and could be utilized by either PKS belt (although it was too slow to be used by two lanes at once). *Cheaper was bad.* In an effort to reduce cost, AC gearmotors were used to actuate a cam driven dispenser mechanism instead of the sophisticated stepper motors and drive controllers used in the model 100. A unique vacuum hold-down and folder mechanism was used that worked great on the cartons, but unfortunately would occasionally eat an egg, leaving it instantly inoperable. After installing fourteen Bombardiers, it became obvious that the design would not be as easy to use and maintain as the original model 100.

The concept of the first machine, the Model 100, with it's stepper motor and drive controller dispenser mechanism, and the concept of "smaller" were married by rotating the Model 100 design 90 degrees. It would now fit in the narrow space in between PKS belts where the table mounts, and could be utilized by either PKS belt, and improvements were added so that it could run fast enough to run and pack two lanes of sleeves at the same time. This unit was called the Model 200, and was introduced in September of 1997. A full trade-in allowance was given to anyone owning a Bombardier model that wanted to purchase a Model 200 machine. All of the Bombardiers have been traded in for Model 200 machines. Never name a machine "Bombardier" - it might live up to it's name!

The Model 202-N is the latest upgrade as of January, 2000, and features a new controller board, an improved drive system with a Delrin trolley, and improved software.

Model 202-N Features

The Model 202-N comes with many new innovations and features. The extractor mechanism is now a solid DELRIN block on steel rails to carry the weight of the stack of sleeves, reducing friction in the extractor drive system. The extractor mechanism now features a wide single shoe that can be quickly adjusted for sleeve thickness. The Model 202-N has a new dater with machined plastic parts. This dater dates the carton before it is folded, and can date anywhere on the narrow front panel or the first third of the top panel. Where this dater fires at can be set by a sensor or by adjusting a pot. Double dating is offered as an option if the customer needs a date on the front and top of the carton. This dater still uses the same slide on dater head as the Diamond packer dater.

The machine can handle "A" and "B" flute sleeves. Double faced sleeves can also be accommodated with a stronger folder motor option. Cycle time is now less than two seconds, so that two lanes of sleeves can be packed by one machine. The machine features an aluminum frame and stainless steel fasteners. The stepper motor drive is controlled by a new single board controller that handles all of the machines control functions and features a set of six LED indicator lights to indicate the state of the machine and the controller sensors to aid in diagnosing any problems. All the sensors on the machine are infrared optical sensors, and all of the sensors are sealed with plastic and attached to a single 34 conductor ribbon cable that runs the length of the machine providing a single integrated control harness.

Unpacking the Model 202-N Sleever

Before you install your Model 202-N Sleever, it first must be setup and checked out. The machine will come shipped to you in a box and will have the back uprights setting across the top of the machine, and the slide ramps reversed. The Model 202-N comes in a UPS shippable cardboard container. If opened properly this container will be reusable should you ever need to return your machine for service or updates to the factory. Please store it in a dry place.

GETTING IT OUT OF THE BOX: To open the carton, stand the box up with the heavy end down. Locate the seam around the middle of the box. Carefully cut the tape joining the seam, but be careful not to cut into the second layer of cardboard. Now lift off the top half of the box, and then lay the box down on the floor length wise and slide the machine out.

HARDWARE KIT: There will be a plastic bag taped to the folder deck containing four flat head 1/4"-20 X 1" stainless steel machine screws with washers and nuts. These will be needed to mount the machine to your PKS belts. Also included are four 1/4-20 X 3/4" stainless steel bolts, eight flat washers, four lock washers, and four nuts. These will be used to mount the back uprights that make up the back of the sleeve hopper.

Machine Setup

Refer to figure 4 to identify machine components

INSTALLING THE BACK UPRIGHTS. Remove the back up rights from the top of the machine. Place the back uprights notch down on the frame about one inch in front of the control box. Refer to the picture on the front of this manual to clarify placement of the back uprights. Locate two holes on either side of the machine that mach the holes in the back uprights. Place a flat washer over each bolt before inserting it into the hole. The upright mounting bolts ***must come from the inside of the frame*** (just like the front uprights are secured) and a flat washer, lock washer and nut must secure it from the outside. If the bolts are inserted from the outside they will jam the extractor trolley. Square the uprights with the frame and tighten the four nuts securely.

SLIDE RAMP INSTALLATION: Next remove the two 1/4-20 X 3/4" flat head stainless steel screws from each slide ramp and turn the ramps around so that they protrude from each side of the machine about four inches. The lip of each slide ramp should hook over the front stop lip. Replace the screws loosely.

Installation

CAUTION! Please read and understand completely the installation instructions given below before attempting to install the Model 202-N sleeve. Any questions that you have are best answered before you begin. Please refer to the Contact page for phone numbers to call for technical assistance.

- REMOVE ALL POWER FROM PKS BELTS AND ANY OTHER ADJACENT MACHINERY BEFORE ATTEMPTING INSTALLATION.

- CLEAR WORK AREA, DISCONNECT ALL MACHINE POWER AND USE TAG AND LOCK OUT PROCEDURES.

- USE POWER TOOLS WITH CAUTION.

- MAKE SURE ALL PROTECTIVE GUARDS ARE IN PLACE.

- WEAR EYE PROTECTION WHEN WORKING WITH TOOLS.

- SAFETY FIRST

The Model 202-N comes with mounting hardware for a standard installation in the narrow space between two roller type PKS belts on a Diamond machine. The table that is generally mounted in this space can be notched out and replaced after installation of the Model 202-N. Installation on a canvas PKS belt is done in the same manner as the roller belt installation.

Note: Installation on other brands of egg grader systems has been done readily, and requires just a little bit of ingenuity and possibly an little bit of bracket fabrication.

Step 1: Remove the stainless steel table mounted over the two packer PKS belts were the Model 202-N is to be installed.

Step 2. Measure twelve and one half inches (12 1/2") from the inside vertical surface of the front stop lip of the PKS belt, back toward the packer, and mark the left lip of the right belt and the right lip of the left belt at this distance. (see figure 1)

Step 3. Using a jig saw or other reciprocating saw, make two cuts strait down vertically from the top of the belt lip to the floor of the belt tray. The first cut will be at the front of the belt flush with the back of the front stop lip, and the second cut will be at the mark made in step 2. (see figure 1)

Figure 1: Lip cut outs in left and right PKS belt tray.

Figure 2. Model 202-N placement on the PKS belts.

Step 4. Set the Model 202-N machine in place as shown in figure 2. The rear of the machine rests on the angle iron support that holds up the PKS belt trays. The two slide ramps on the machine, one on the left and one on the right, fit flush *underneath* the PKS belts and set temporarily on the packer toggle switch brackets. Make sure that there is 1/8" inch clearance between the top of toggle switch bracket and the bottom of the belt tray.

Step 5. With the Model 202-N in place on the belts, open a sleeve and place it in the folder mechanism. Be sure it is centered and pushed all the way down onto the folder deck. Now take a filler flat and try sliding it in from the left and right sides of the machine. Keep adjusting the machine's position until the flat slides smoothly in from either side. When the machine is in the proper place, install the provided flat head 1/4-20 X 1" stainless screws through the PKS belt through the slide ramps. If your PKS belts does not have holes, use the holes in the ramps as guides and drill through the PKS belt tray from underneath. If your belts have holes, they may or may not line up with the holes in the ramps. Drill or ream the holes as needed.

Step 6. Plug power cord into a standard 120 VAC receptacle. Be sure to unplug the machine when servicing or adjusting. If the unit needs to be wired in, use a dedicated circuit fused at 15 AMPS, and be sure to implement all standard lockout and tagging procedures when servicing or adjusting the machine.

Refer to adjustment procedures for initial set up.

Figure 4. Machine components

Adjustment procedures

- DISCONNECT ALL MACHINE POWER AND USE TAG AND LOCK OUT PROCEDURES WHEN YOU ARE WORKING ON THE MACHINE.**

☑ **ADJUSTING THE FOLDER DECK:** Make sure that the machine is empty of all cartons and that the power is disconnected from the machine. Remove the back panel that covers the controller board and power supply. Locate the brake clapper on the folder gearmotor. It is on the top right side of the motor. Depress the clapper against the motor and turn the fan on top of the motor clockwise until the crank arm directly below the motor points to the front of the machine and the folder platen is straight up and down.

☑ Place one of your sleeves in the folder platen and push it down until the bottom panel of the sleeve is in complete contact with the folder deck. Check the sleeve for squareness. The sleeve should be squarely open but not tight against the front stop lip of the machine. You should be able to lift the front of the sleeve up to the top of the front stop lip with very little effort. Adjustment to the folder deck length (the distance from the front stop lip and the folder platen) is made by loosening the two flat head 1/4"-20 machine screws on the slide ramp on each side of the machine. Note that these are not the screws that attach the machine to the PKS belt trays, rather they are the two screws on each side that attach the slide ramps to the rest of the machine.

☑ **Caution! Only loosen these screws! Removal will cause the machine to fall!**

☑ With all four screws loosened the machine can be pushed or pulled from the back to open up or close up the distance between the folder platen and the front stop lip.

☑ **ADJUSTING THE FOLDER PLATEN:** When the crank arm directly below the folder motor points to the front of the machine the folder platen should be straight up and down, perpendicular to the folder deck. If it needs adjustment, use the rod ends on the all thread to make the rod longer or shorter to properly position the platen. Make sure that the folder mechanism moves freely through out its travel by depressing the clapper against the motor and turning the fan on top of the motor clockwise until the folder goes through a complete cycle. The back stop for the folder platen may have to be adjusted by bending so that it does not cause binding in the mechanism. Be sure to re-tighten rod end nuts.

☑

☑ **ADJUSTING THE SLEEVE GATE:** The gap for sleeves can be adjusted by turning the two screws located on the left and right side of the front uprights until the gap is equal to $1 \frac{1}{3}$ of your sleeve's thickness measured at its thickest.

☑ **ADJUSTING THE DATER:** Loosen the four nuts that hold the dater assembly to the front uprights. Raise or lower the entire dater assembly until the ink tray wheel just clears the brace bar. Swing the ink tray in and out and see that it never touches the brace bar at any time. When hanging straight down the wheel should clear the brace bar by about $\frac{1}{32}$ " to $\frac{1}{16}$ ". Tighten the four dater mounting nuts securely.

☑ Notice that the dater can be moved left or right on the rod. Position the dater in the best place for the art work on your sleeve. The dater firing sensor can also be moved so that the vertical position of the date can also be adjusted. Refer to the sensor adjustment page to learn how to do this.

☑ **INK PAD:** The ink tray is designed to hold two pre-inked pads side by side. Thicker pads may be used as long spacers are used so they cannot move sideways, and they clear the letters on the date head.

☑ **DATE HEAD:** The dater uses a standard slide on dater head and letters. If you experience missed letters, try *soft type* from your type supplier

☑ **ADJUSTING THE EXTRACTOR TROLLEY:** The extractor trolley is the device that slides forward and back on the two rails under the sleeves. It consists of a top tooth, and a Delrin frame. The top tooth has a bottom lip plate attached under it. The top tooth is raised by turning the nuts on the top and bottom of the Delrin block until it barely clears the opening in the sleeve gate. The bottom lip plate is bent down until it barely clears the bottom of the sleeve gate opening. Check the operation of the trolley to see that the tooth grabs only one sleeve at a time.

☑ The main thing to remember about the extractor is to keep the tooth high as possible (by adjusting the nuts on the front screw) so that it just barely clears the top of the sleeve gate opening, and to have the bottom lip plate bent down as low as possible without hitting the brace bar underneath the dater.

NOTE: If the sleeve is not falling down into the folder bed and is going over the front stop lip, then the spacers need to be moved forward so that the tooth overhang is reduced, and does not catch on the top of the sleeve keeping it from falling down into the folder deck.

SENSOR ADJUSTMENTS

USING THE TEST MODE: Turn of the machine and disconnect the power cord. Remove the back cover from the controller box. Refer to figure 6 to locate the Test / Run JUMPER. Using needle nose pliers pull the black cap off the middle and upper pins and slide back over the middle and lower pin. Plug the machine back in and turn on. None of the motors or actuators will receive power and all of the mechanisms can be operated by hand and the action of the sensors noted.

The Sensor indicator LED's on the front of the controller board change color depending on the sensor they are associated with. A sensor indicator LED will be green for no contact and red when detecting an object.

ADJUSTING THE CARRIAGE BACK SENSOR: Slide the extractor trolley all the was back until it hits the folder motor shaft. Loosen the sensor directly under the rear of the carrier frame. Move the sensor until the carriage back LED light turns red. Tighten the sensor mounting screw.

ADJUSTING THE CARRIAGE FRONT SENSOR: Slide the extractor trolley all the was forward until the white DELRIN bumps at the front aluminum plate that the slide rod attaches to. Loosen the sensor directly under the front of the carrier frame. Move the sensor until the carriage front LED light turns red. Tighten the sensor mounting screw.

ADJUSTING THE DATER SENSOR: Slide the extractor trolley forward with a sleeve in it until the place where you want the date is right under the dater head. Loosen the middle sensor and place it directly under the front of the carrier flag. Use the hole nearest to the desired position. Move the sensor until the dater LED light turns red. Tighten the sensor mounting screw.

ADJUSTING THE FOLDER UP & DOWN SENSORS: Hold in the brake clapper on the folder gearmotor and turn the fan clockwise until the Folder is straight up and down and has opened a carton completely. Loosen the screw on top of the folder motor gear box and turn the folder flag until it is directly in front of the forward sensor and the folder up LED turns red. Tighten the flag mounting screw. Hold in the brake clapper on the folder gearmotor and turn the fan clockwise until the crank arm bolt is directly in front of the back sensor. Check to see that the Folder down LED light turns red. The sensors may need to be pointed slightly off center to the gearmotor shaft to avoid false reflection from the shaft instead of the flag.

ADJUSTING THE CARTON DETECT SENSOR: When in the TEST MODE the power indicator LED and the CARTON DETECT LED will turn red when an object is placed in front of the sensor hole. The CARTON DETECT sensor is located underneath the left side of the front stop lip and "sees" through a hole looking on to the folder deck. There is no physical adjustment of this sensor. Instead, the sensor's sensitivity is adjusted by turning an adjustment pot located on the controller board. Turn this pot until the covering of the sensor's hole with your finger causes the CARTON DETECT LED to turn red, and uncovering the hole turns the LED green. When in the test mode, the front light on the machine will have the same colors of the CARTON DETECT LED and show the action of the CARTON DETECT sensor.

Instructions for the
 MODEL M202N Controller Board

Description

Controller Label

The CARTON SENSOR INDICATOR LED indicates whether or not a sleeve
CARTON SENSOR

Is present on the folder deck. Red indicates a sleeve, green indicates the deck is clear
RED = CARTON ON DECK

The FRONT SLIDE SENSOR INDICATOR LED. Red indicates the pusher slide is at the
FRONT SLIDE SENSOR

front end of it's travel.

SLIDE @ FRONT RED =

The DATER STOP SENSOR LED. Red indicates that the pusher slide is over the dater
DATER STOP SENSOR

sensor where the machine stops and dates the carton. (See DATE POSITION POT)
RED = FIRE DATER

The FOLDER DOWN SENSOR LED. Red indicates that the folder mechanism is in the
FOLD DOWN SENSOR

down position. Timing is adjusted by rotating the sensor flag on the gearmotor.
RED = FOLDER DWN

The FOLDER UP SENSOR LED. Red indicates that the folder mechanism is in the up
FOLDER UP SENSOR

(Sleeve opened) position. Timing is adjusted by rotating the sensor flag on the gearmotor.
RED = FOLDER UP

The BACK SLIDE SENSOR LED. Red indicates the pusher slide is at the back end of it's
BACK SLIDE SENSOR

travel.
RED = SLIDE @ BACK

Sleever

The CARTON SENSOR SENSITIVITY ADJUSTMENT.
CARTON
SENSOR

SENSITIVITY

This adjustment allows you to vary the sensitivity of the carton sensor. Turn this adjustment

CCW or CW until placing your finger over the sensor hole on the front left of the folder deck

causes

the CARTON SENSOR LED to reliably turn red. The sensor is affected by extreme temperature changes.

The DATER IMPACT ADJUSTMENT.

DATER

IMPACT

This adjustment allows you to vary how much current is sent to the dater coil. Normal setting CCW > HARDER

is half way between full CCW & CW. Running full CCW will shorten the life of the date coil.

The use of SOFTTYPE in the dater clip will improve date quality without needing harder impact.

Turning this pot full CW will turn off the dater.

The DATER POSITION ADJUSTMENT.

DATER POSITION

This adjustment will allow you to date at the position dictated by the DATER SENSOR when 0 = USE SENSOR

set fully CW. When turned CCW, the dater will fire in a position relative to this pot's setting.

If the machine is overloaded and dragging

The SLIDE OVERTRAVEL ADJUSTMENT.

SLIDE

OVERTRAVEL

This adjustment allows you to set pusher slide overtravel past the front slide sensor.

CCW=MORE, CW=LESS

This over travel allows you to set the slide travel so that it bumps against the front stops and

throws the sleeve out on to the folder deck. With the machine empty & cycling by placing

your finger over the CARTON SENSOR hole, turn this pot CCW until a slight Knock is heard

when the pusher slide hits the front stops.

The SLIDE SPEED ADJUSTMENT.

SLIDE

SPEED

Turning this pot CCW makes the stepper motor cycle faster and CW slows down the

CCW=FAST, CW=SLOW

stepper motor. If the machine is adjusted properly, it will dispense sleeves at the slowest setting,

but most prefer a setting 3/4 CCW. The faster a stepper motor is run the less torque it will have,

so if more power is required, turn this pot CW and slow down the stepper motor.

MODEL M202N

CONTROLLER CONNECTIONS

DISCONNECT ALL MACHINE POWER AND USE TAG AND LOCK OUT PROCEDURES WHEN YOU ARE WORKING ON THE MACHINE.

Power Connector connections (left to right):

1. 24 VDC from power supply connection CN2 pin 1 & 2.

2. DC Ground from power supply connection CN3 pin 6 & 7.

3. AC neutral from AC power cord.

4. Green wire from Dater coil.

5. Switched AC line out to power supply connection CN1 pin 3.

6. AC line from AC power cord.

7. Red wire from Dater coil.

8. Black wire from Folder motor.

Motor Connector connections (left to right):

Model 202N Black motor Model 202A Silver motor Model 200 Silver

<input checked="" type="checkbox"/>	1. Black	White with orange	White with red
<input checked="" type="checkbox"/>	2. N/C	White with black	White with yellow
<input checked="" type="checkbox"/>	3. White	White with yellow	White with black
<input checked="" type="checkbox"/>	4. N/C	White with red stripe.	White with orange
<input checked="" type="checkbox"/>	5. Green	Orange	Red
<input checked="" type="checkbox"/>	6. White with a Green stripe	Black	Yellow
<input checked="" type="checkbox"/>	7. White with a Red stripe	Yellow	Black
<input checked="" type="checkbox"/>	8. Red	Red	Orange

Sensor Cable:

The Sensor Cable is a 34 conductor ribbon cable that plugs on to a 34 pin male header connector. There is a red stripe on the top edge of the cable that identifies pin 1. Pin 1 on the controller board ribbon cable connector male header is the top left pin in this drawing.

Test / Run Jumper

With the jumper on the middle and top pin the board is in the normal run mode.

When the jumper is over the middle and lower pin the unit is in the test mode. In the test mode all of the sensors work but none of the motors will run, allowing for the moving of parts by hand and the testing of the position and carton sensors.

Controller Board Features

The Model 202-N features a single controller board that integrates all of the control, motor drives, sensor reading, power management, and diagnostics on one printed circuit board. AC power comes from the power cord to the board, sent through a five amp slo-blo fuse, and is then distributed by the board to the DC power supply, dater, folder motor, and the on board stepper motor controller.

The most unique feature of the controller board is the six LED lights. These are lit either red or green depending on the individual state of the six sensors on the machine. Although they constantly indicate the state of the sensors at all times, a JUMPER on the board will allow the system to run in a test state where none of the motors are powered and the mechanisms can be moved by hand and the state of the sensors monitored. This test mode is handy for sensor alignment and checking sensor operation.

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OPERATOR INSTRUCTIONS

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The Model 202-N Sleever must be in good working order and properly adjusted for the sleeve that you are using in order to operate properly. Excessive jams, missed folds, bad dates, etc. are generally an indication that the machine is broken, out of adjustment, or the sleeves are defective. When in good working order and properly adjusted, the Model 202-N Sleever is usually fast, efficient, and reliable.

-

The orientation of the sleeves in the hopper is generally with the art work right side up in front of you with the "paper tape" seam on the bottom and toward the back. They will dispense normally either way, but they will only fold right when placed in the hopper the right way.

-

Sleeves can be loaded into the hopper at any time, usually a half a box at a time, and the hopper can be filled to the top of the back uprights if the sleeves are feeding well and not dragging. When the hopper gets too low, the machine's extractor plate can slip under a sleeve and cause a jam. Always add sleeves when the hopper gets down to three or four inches of sleeves left.

-

The dater uses the same slide on dater clip as the Diamond Packer dater, and the same ink and ink pads. The ink tray was designed to hold two pre-inked pads. These are generally placed in side by side, or with one in the center and the other cut in half and a half placed on either side. Some covered cloth and felt pads may stick up too high and catch on the dater letters. These can usually be trimmed to work.

-

BE CAREFUL SLIDING THE DATER CLIP ON AND OFF -

YOU CAN BEND THE DATER PLUNGER SHAFT!

Load the hopper two thirds full, make sure that the folder deck is clear of obstacles, and press the recessed start button on the control panel. The machine will first stamp the dater into the ink pad, then slide a sleeve out towards you until it reaches the place for a date. It will then pause and date the sleeve, and then send the sleeve on out towards you and with a quick motion and a "knock" sound, drop it onto the folder deck. The folder platen in the back of the folder deck will raise up and open the sleeve. The machine will then bring another sleeve out and date it. It will then wait until it sees that you have removed the sleeve currently open on the folder deck.

The Model 202-N Sleever can be loaded with and egg flat from either side. As you push in the flat notice that the sleeve is held within a recess and, although it will move a little, can be load using just one hand to push the flat into the sleeve. Once the flat is in the sleeve, lift the sleeve in the front until it can be slid out towards you. You must do this quickly! As soon as you lift the front of the loaded sleeve, another sleeve will immediately start coming out of the dispenser. Do not lift the loaded sleeve any higher that the front stop lip on the machine until you have pulled it free of the folder platen. This will prevent the folder platen from cracking any eggs on the back row of the flat.

If a sleeve does not fold properly, it will still be dated, so just load it by hand and go on to the next sleeve. If a missed fold leaves the folder deck empty and the machine does not index another sleeve, place your finger over the hole located in the left front of the stop lip, then remove your finger. The machine should dispense another sleeve. If it does not, push the red stop button, wait five seconds, and press the start button.

If the dispenser jams or hangs on a sleeve, press the red stop button. Then remove the sleeves from the hopper and push the extractor trolley all the way to the back uprights until it stops. Remove the jammed sleeve and throw it away. Replace the sleeves in the hopper and turn the machine back on.

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EGG MACHINE PARTS PRICE LIST

6-29-99



MODEL 200 & 202A SLEEVER

- SENSOR \$ 18.00
- SENSOR RAIL & FLAG W/O ELECTRONICS \$ 50.00
- SENSOR RAIL W/ HARNESS & FLAG \$ 250.00
- (We have an instruction sheet to convert from the older model 200 sensors with bare wire leads to the newer model 202A sensors with the colored wire leads.)
- RELAY- (for DATER or Folder motor) \$ 29.50
- INK TRAY \$ 45.00
- DATER ASSEMBLY W/ WIRE \$ 225.00
- GATE KIT \$ 250.00
- DELRIN SLIDER TROLLEY W/PUSHER PLATE \$ 195.00
-
- 202N CONTROLLER BOARD (NEW) \$ 650.00 (available August 99)
- 200(A) CONTROLLER BOARD (REBUILT) \$ 350.00
- CONTROLLER BOARD CORE (must be returned) \$ 200.00
- (We have an instruction sheet to convert from the older model 200 & 202-A controller board to the newer model 202-N board.)
- STEPPER MOTOR (APPLIED MOTION) \$ 375.00
- MODEL 200 TO 202-A CONVERSION KIT
- INCLUDES:
 - STEPPER MOTOR (APPLIED MOTION)
 - MOTOR MOUNTING PLATE
 - BELT & PULLEYS
 - BACK SHAFT
 - SOFTWARE (M20299.OBJ) \$550.00
- NOTE: Must have newer controller board with big heatsink.
- (We have an instruction sheet to convert from the older model 200 stepper motor to the newer model 202A Applied Motion stepper motor.)
-
- FOLDER BELL CRANK \$ 48.00
- FOLDER MOTOR (GRAINGER 4Z150) \$ 83.00
- COUNTER \$ 60.00
- START BUTTON (4B683 & 4B763) \$ 35.00
- STOP BUTTON (4B692 & 4B766) \$ 35.00

3/8" FLANGE BEARING \$ 21.00

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Sleever Sensor Replacement

Your machine has one of the two sensors installed on it. They are both electrically identical. They can be used interchangeably to replace each other. The drawing above shows the proper orientation of each type of sensor so that either one can be installed and wired properly.

Start with one wire at a time. Cut loose the wire from the old sensor being sure to leave plenty of slack in the wire. Slip a piece of the heat shrink tubing supplied with the new sensors over the wire. Make connection to the same wire on the new sensor by twisting the wires together. SOLDER the connection. Center the tubing over the joint and apply heat with a heat gun to shrink the tubing. This tubing has hot glue in it and will provide a water proof joint if used correctly. Make the other three connections using the same method.

NOTE: *The connections for either sensor are the same. Red = 1, Black = 2,*

Green = 3, White = 4. The ribbon cable wires connect in order, either left to right or right to left without any wires crossing each other. Examine the old sensor connections to the ribbon cable before beginning.

FOR ASSISTANCE CALL SPARKS AT 1-888-581-9891

Travis Sparks
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Telephone 903-581-

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Flint, Tx. 75762

Description Grainger part #

GREEN START BUTTON 4B683

N.O. CONTACT BLOCK 4B763

RED MUSHROOM BUTTON 4B692

N.C. CONTACT BLOCK 4B766

Make sure that the end of the ribbon cable has heavy gauge wire on the ends going to the switch and the junction of the ribbon cable to the heavy gauge wire has heat shrink over it to prevent breakage due to vibration. Use the heat shrink tubing supplied with replacement switches.

NOTE: *If the machine will not stay on after pushing the "ON" button, DO NOT BLOCK OR TAPE THE GREEN "ON" BUTTON DOWN to continue running the machine. Doing so will permanently damage components on the controller board in a short period of time.*

FOR ASSISTANCE CALL SPARKS 1-888-581-9891

Model 202-N Check out sheet

Model 200 serial # _____ Ship via _____

Prepared for _____

Ship to: _____

Address: _____, City: _____

State: _____, Zip: _____ Phone: _____

- Att: _____
- Machine options: _____
- "A" Flute
- "B" Flute
- Other _____

Mechanical:

- All frame, uprights, dater, deck, cover, motor, and bearing bolts tight.
- Check belt tension, even tension on both sides
- Make sure extractor trolley moves freely
- Make sure ink tray swings freely.
- Check folder travel, lower stop position, and folder up is perpendicular.
- Check sleeve gate is set for proper height.
- All set screws, shaft collars, and bearing collars, dater coil screws, extractor trolley belt clamp screws, and folder coupler have Loctite and are secure.
- All cable ties in place, dater cable and wiring harness secure, all cables in control box are secured and clear fan.
- Check ribbon cable and wiring for chafing.
- Check controller board, power supply (inside and out), relays, and folder motor mounting screws.

Electrical:

- Check mounting of each sensor for correct spacing and secure mounting.
- Make sure cable clamps on power cord, stepper motor, and dater wiring are tight.
- Check setting on motor adjust *before* power up. Set at 50%.
- Check power up, power supply 24VDC, controller board 12VDC and 5VDC.
- Run test mode and check sensor operation. Adjust carton sensor sensitivity.
- Test run sleeves
- Fine tune motor pot and apply seal to motor pot.
- Set speed and bump pots.
- Check counter operation.
- Run burn-in test. Number of test cycles: _____
- Check temperature rise on heat sink, power supply, and dater coil during burn-in.

Shipping Prep:

- Rotate and secure slide ramps, remove back uprights and secure in shipping position.
- Tape down extractor trolley, ink tray, and hardware kit.
- Check address label on carton against the address on this sheet.
- Place owners manual, invoice, and a copy of this sheet in envelope. Secure to deck.

Checked out by _____ date ____/____/____

□