9450 custom firmware V3.0.0 for PepsiCo
Software Manual for the Tamp applicator.

New with V3.0 two-step printing option for long labels

The applicator has two working modes that can be configured in the F1 Configuration Menu

Direct Cycle (Feed then apply):

1- Applicator waits for cycle start signal coming from Ishida
2- Applicator feeds label and turns on Venturi valve (vacuum)
3- Turn Print signal on for Dataflex if in continuous mode
4- Once the label is completely dispensed on the tamp pad, wait for "Delay BTW Cycles" time before turning on tamp valve
5- Turn Print signal on for Dataflex if in intermittent mode
6- Tamp moves forward waiting for Tamp End sensor to trigger
7- Tamp End sensor turns on when tamp reaches the box and label is applied. Once the Tamp End sensor is on, keep tamp activated during "Tamp Hold Time" additional time.
8- When tamp signal turns off, turn off tamp valve, turn off Venturi valve. Tamp returns home.
9- Wait for Tamp Home sensor to trigger or timeout error.
10- When tamp reaches home position, Cycle End signal is triggered for 100 ms, for Ishida to move box away
11- Ready for a new cycle

This cycle is slightly longer than the Reverse Cycle since label feed is part of the cycle but air consumption is smaller since vacuum is on only during label feed and tamp on time.

Reverse Cycle (Apply then feed):

1- Applicator waits for cycle start signal coming from Ishida. Venturi valve (vacuum) is on and a label is already in tamp pad from previous cycle
2- Turn on tamp valve. Tamp moves forward.
3- Wait for End Sensor to trigger once tamp reaches the box.
4- Tamp End sensor turns on when tamp reaches the box and label is applied. Turn venture valve off.
5- Once the Tamp End sensor is on, keep tamp activated during "Tamp Hold Time" additional time.
6- Turn tamp valve off, tamp returns to home position.
7- When tamp reaches home position, Cycle End signal is triggered for 100 ms, for Ishida to move box away
8- Feed next label and turn on Venturi valve.
9- Turn Print signal on for Dataflex if in continuous mode
10- Label completely dispensed on pad (vacuum is on)
11- Turn Print signal on for Dataflex if in intermittent mode
12- Ready for a new cycle

This cycle is slightly faster since the label is already dispensed on pad. Drawbacks are the noise level is higher since Venturi is on most of the time, if production stops the label remains on the tamp for a long time, it might fall or if environment is dusty adhesive can be neutralized by dust.

Printing labels longer than the maximum intermittent length in intermittent mode

If the option "ENA. 2STEPS FEED" is enabled in the Factory Settings menu then printing in intermittent mode print lengths higher than the printers limit is possible using the two steps feed sequence. The sequence works as follows:

1- Feed first part of the label. The initial feed length is defined in the EDIT menu with the parameter ***"INITL FEED DSTNC"*** the distance is in millimeters. Only a fraction of the label is dispensed on the tamp.
2- Send print signal to Dataflex printer
3- Wait a fixed amount of time for the printer to print the first part of the label intermittent mode. Actual print time MUST be lower than ***"1stSTP PRNT TIME"*** as set in the Factory Settings menu.
4- Feed the rest of the label
5- Send second print signal. The printer prints the second part of the label while the applicator applies the label fully dispensed on the tamp.

Keyboard Usage

Up Arrow: In the F1 and FACTORY menus, it increases by one parameter value or navigates forward between menu options.

Down Arrow: In the F1 and FACTORY menus, it decreases by one parameter value or navigates backward between menu options.

Right Arrow: ***PURGE Function***, feeds the necessary quantity of labels to remove the blank labels or previously printed labels remaining between the printer and the peel bar. In the F1 and EDIT menus, it changes sign for +/- values

Left Arrow: In the F1 and EDIT menus, it deletes last digit of value being edited

ESC: Exit parameter o menu

Enter: Select option or save parameter

0 – 9: Only available while editing a parameter field, to enter parameter value.

F1: Configuration Menu. General parameters setup.
TEST: Manual feed of one label. Same as triggering product sensor.
F2: Not Used
F3: Not Used
CALIB: Label Autosensing routine. Performs a label sensor calibration measuring the analogue input for gap and label and determining label length and label stop position. The obtained parameters are stores for the currently selected program.
F4: Not Used
F3+F4: When pressing both keys at the same time USER COUNTER can be reset
F5: Not Used

PROG: Selects active program. Range 0-50.
F6: Not Used
EDIT: Modifies the parameters associated to the currently selected program.

Keyboard Usage during Power-up

Left Arrow + ENTER: Access to Factory Menu

TEST: Self-Test or DEMO Mode, perpetual cycle with or without label.

F1 – Configuration Menu

Pressing “4” + “5” during power on will grant access to the Configuration Menu. Pressing F1 at any time will open Configuration Menu only if “Edit Mode” is enabled.

"LBL SENSOR VALUE"
Reads the analogue input corresponding to the label sensor in order to calibrate sensor gain. If label sensor logic is set to “GAP”, label should yield a high value (100 to 255) and gap should yield a low reading (0 to 50). If label sensor logic is set to “MARK” values are reversed. This is a read only parameter.
Range: 0-255
Unit: -
Default Value: none

" PEELBAR OFFSET "
Distance between label sensor and peel bar edge.
Range: 0-10000
Unit: millimeters
Default Value: 310

"* PROD COUNTER *"
Absolute, non-erasable product counter. Count is updated when product detector is triggered. This is a read only parameter.
Range: 0-99999999
Unit: labels
Default Value: 0

" EDIT PROGRAM "
" 0=N/1=T/2=L"
Setting Edit to 1 (TOTAL) grants access to ALL menus and options.
Setting Edit to 2 (Limited) disables access to “Calib” and “F1- Config” functions and limits access to certain options of the Edit menu.
Setting Edit to 0 (No Access) disables access to “Edit”, “Calib” and “F1-Config” functions.
Access to “Prog” menu is ALWAYS enabled.
Pressing “EDIT” or “F1” during power up and entering the master password will temporarily enable access to all menus until power off.
Range: 0-2
Unit: -
Default Value: 1

" ACCELERATION "
Slope value from initial speed to final speed acceleration. A higher value represents a shorter acceleration time to reach the final speed

(also reducing starting motor torque). Reducing the value will make motor start smoother and increase initial torque.
Range: 1-255
Unit: -
Default Value: 70

" INITIAL SPEED "
Motor speed for calibration procedure and starting speed for acceleration ramp. Reduce initial speed when starting torque required is high. If labels are small (starting torque is low), increasing initial speed will shorten acceleration ramp.
Range: 0-25.5
Unit: meters/minute
Default Value: 8.0

" ISHIDA SIG TYPE "
" 0=NC 1=NO"
Ishida start of Cycle input. Signal can be NPN or PNP please see wiring diagram. 0=Normally Close 1=Normally Open
This signal indicates a box is in place and has to be labeled.
Range: 0-1
Unit: -
Default Value: 0

"ISHIDA SIG. TEST"
This is a read only parameter used to check if input coming from Ishida is working ok. Use this option to troubleshoot Start of Cycle signal coming from Ishida machine.
Value = 1 if sensor is activated, otherwise Value = 0
" START CYCLE SIG."
"VALUE = 1 "

" MODE 3=SMARTTAMP"
" READ ONLY"
Tamp has an ‘End Tamp’ sensor mounted to sense label reaches the box. Tamp stroke is variable depending on the box depth.
Label application mode: 3=Smart Tamp.
Range: 3-3
Unit: -
Default Value: 3 Fixed setting cannot be changed

"CYCL 0=NOR 1=REV"
Normal cycle is: Product is detected, after product delay, label is dispensed. If Tamp or blow, after label is dispensed and “Delay between cycles” time is elapsed tamp or blow is actuated during dwell time. Once “Cycle End Delay” is elapsed the application cycle ends.
Reverse cycle is: Label is dispensed and waits until product is detected and product delay is over. If Tamp or blow, after “Delay between cycles” time is elapsed tamp or blow is actuated during dwell time. Once “Cycle End Delay” is elapsed the application cycle ends.
0 = Normal, 1 = Reverse
Range: 0-1
Unit: -
Default Value: 0

"DELAY BTW CYCLES"
“Delay Between Cycles”

Delay after label is dispensed before starting application cycle.
Range: 0-255
Unit: 10 milliseconds per unit (0 to 2550 milliseconds)
Default Value: 0

"CYCLE END DELAY "
“Cycle End Delay”
Delay prior to starting next label cycle. This delay allows tamp to return to home position.
If intelligent Tamp option is enabled this parameter serves as timeout limit for the end of tamp sensor activation.
If the timeout limit is reached a label missing error will display.
Range: 0-255
Unit: 10 milliseconds per unit (0 to 2550 milliseconds)
Unit: 30 milliseconds per unit (0 to 7650 milliseconds) for intelligent Tamp
Default Value: 0

"ASSIST ON DELAY "
Option available if Mode is set to Tamp/Blow
Length of dispensed label before Assist valve is activated. Activation ends when the label is completely fed if “Assist Off Delay” is 0. See “Assist Off Delay” parameter.
Range: 0-255
Unit: millimeters
Default Value: 0

"LBL SENSOR LOGIC"
" 0=GAP 1=MRK"
Type of labels being used. 0=Gap between labels, 1= Black Mark between labels.
Range: 0-1
Unit: -
Default Value: 0

"END TAMP LOGIC "
" 0=NC 1=NO "
End Tamp sensor logic used in Smart Tamp mode. 0=Normally Open sensor, 1= Normally closed sensor.
Range: 0-1
Unit: -
Default Value: 0

"PURGE QTY (0-50)"
Number of labels to feed during the PURGE cycle. This parameter is used during the PURGE function, pressing LEFT ARROW, to clear the buffer of labels between the printer and the peel bar.
Range: 0-50
Unit: labels
Default Value: 5

"MAX LABEL LENGTH"
Length of the largest label being used. This parameter is used during calibration procedure to feed media and sense label and gap. Adjusting this value to the size of the label will allow minimum label scrap during calibration.
Range: 0-1000

Unit: millimeters
Default Value: 150

"SENSOR HOME TAMP"
" 0=NC 1=NO "
Tamp Home sensor logic. 0=Normally Closed and 1=Normally Open.
Range: 0-1
Unit: -
Default Value: 0

"TEST HOME TAMP "
This is a read only parameter used to check if Home Tamp sensor is working ok.
Value = 1 if sensor is activated, otherwise Value = 0
"SENSOR HOME TAMP"
"VALUE = 1 "

" TEST TAMP VALVE"
Allows manual activation and deactivation of the TAMP valve. Press ENTER to access this option. To exit press ENTER or ESC. ON is active, OFF is inactive. Use UP & DOWN arrows to toggle the output state.
" TAMP CYL IS ON "
"TOGGLE W/UP &DWN"

" TEST ASSIST VALV"
Allows manual activation and deactivation of the ASSIST valve. Press ENTER to access this option. To exit press ENTER or ESC. ON is active, OFF is inactive. Use UP & DOWN arrows to toggle the output state.
" ASSIST VALVE ON "
"TOGGLE W/UP &DWN"

" TEST VENTURI "
Allows manual activation and deactivation of the Venturi (vacuum) valve. Press ENTER to access this option. To exit press ENTER or ESC. ON is active, OFF is inactive. Use UP & DOWN arrows to toggle the output state.
" VENTURI VALVE ON"
"TOGGLE W/UP &DWN"

" TEST ENCODER OUT"
Allows manual activation and deactivation of the Encoder output signal for the Dataflex. Press ENTER to access this option. To exit press ENTER or ESC. ON is active, OFF is inactive. Use UP & DOWN arrows to toggle the output state.
" ENCODER OUTPT ON"
"TOGGLE W/UP &DWN"

" DFX PRINT OUTPT"
Allows manual activation and deactivation of the output that triggers the print cycle of the Dataflex. Press ENTER to access this option. To exit press ENTER or ESC. ON is active, OFF is inactive. Use UP & DOWN arrows to toggle the output state.
" PRINT ->DFX ON"
"TOGGLE W/UP &DWN"

"TEST EOC OUTPUT "
Allows manual activation and deactivation of the END OF CYCLE output for the Ishida machine. Press ENTER to access this option. To exit press

ENTER or ESC. ON is active, OFF is inactive. Use UP & DOWN arrows to toggle the output state.
"END OF CYCLE ON"
"TOGGLE W/UP &DWN"

"TST KETANERR OUT"
Allows manual activation and deactivation of the LABEL MISSING alarm for Dataflex. Press ENTER to access this option. To exit press ENTER or ESC. ON is active, OFF is inactive. Use UP & DOWN arrows to toggle the output state.
"K-ERR->DTFLX ON"
"TOGGLE W/UP &DWN"

"TST ENABLE MOTOR"
Allows manual enabling and disabling of the stepper motor. Disabling the motor removes energy applied to the motor by the driver, leaving the shaft free to turn. Press ENTER to access this option. To exit press ENTER or ESC. ON is active, OFF is inactive. Use UP & DOWN arrows to toggle the output state.
"MOTOR ENABLE ON"
"TOGGLE W/UP &DWN"

" DATAFLEX MODE   "
"   1=I 2=C"
Dataflex trigger signal can have the following modes: 1=Intermittent (Trigger after label stops feeding), 2=Continuous (trigger after label starts feeding).
Range: 0-2
Unit: -
Default Value: 0

" CODER DELAY "
Option available if Coder is enabled
Time (intermittent mode) or distance (continuous mode), the trigger signal is delayed.
Range: 0-255
Unit: millimeters (continuous mode) or milliseconds (intermittent mode)
Default Value: 0

"CODER PULSE WDTH"
Option available if Coder is enabled
Trigger pulse width.
Range: 0-255
Unit: millimeters (continuous mode) or milliseconds (intermittent mode)
Default Value: 10

"* FIRMWARE VER *"
Software Version. This is a read only parameter.
" 9450i VJUS-PEPSC"
" V3.0.0 AUG/15/16"

Calib - Autosensing Procedure

First feeds “Max Label Length” of media to measure label sensor analogue input for gap and label. Then feeds a label to measure label length and calculate label stop position. Finally feeds another label positioning

the label at the peel bar edge (according to peel bar offset value). If calibration is successful it will display:

"GAP=15 LBL=192"
"AVG=74 L=106.5"

GAP: Is the is the analogue sensor input for the liner (media without label)
LBL: Is the analogue sensor input for the label
AVG: Is the calculated threshold value used to discriminate label from gap.
L: Is the measured label length in millimeters.

Edit - Modify program parameters

" SPEED   1-30 "
Option available if Encoder is and Edit level set to 1.
Label feed speed. Label starts feeding at “Initial Speed” and accelerates until it reaches the speed defined here.
Range: 1-30.0
Unit: meters/minute
Default Value: 25.0

"TAMP HOLD TIME "
Is the time the tamp remains activated once the Tamp End sensor is triggered. During this time Venturi valve is off and tamp remains pressing label against the box.
Range: 0-255
Unit: 10 milliseconds per unit (0 to 2550 milliseconds)
Default Value: 0

"LBL STP POSITION"
Offset used to position the leading edge of the label aligned with the peel bar tip. This value is automatically set during calibration and can be manually adjusted with this option.
Range: 0-1000.0
Unit: millimeters
Default Value: 0

"INITL FEED DSTNC"
Option available if the "ENA. 2STEPS FEED" option is enabled in the Factory Settings menu and print mode is set to intermittent. For labels longer than the maximum print length in intermittent mode, tis value is the initial feed distance in order to print the first part of the label.
Range: 0-1000.0
Unit: millimeters
Default Value: 0

" LABEL LENGTH(mm)"
Option available if login with Master password and “Enable 1 label Missing” option is enabled in the factory settings menu. Allows manual editing of label length calculated during calibration procedure.
Range: 0-6500.0
Unit: millimeters
Default Value: 0

Factory Settings Menu

The only way to access this menu is during power-up pressing and holding LEFT ARROW + ENTER
In order to access the menu you will be required a password, default password is “1111”, and this password can be changed using this same menu.

" HAND 0=LFT 1=RGT"
Motor turn direction. 0=clockwise, 1=counterclockwise
Range: 0-1
Unit: -
Default Value: 1

" DRIVER STEP MODE"
" (0 – 3) "
The stepper motor driver is capable of operating in 4 micro stepping modes. 0 = Full Step (200 steps per turn), 1= Half Step (400 steps per turn), 2 = 5 uSteps (1000 steps per turn) and 3 = 10 uSteps (2000 steps per turn). Full step mode provides higher torque. Micro stepping modes provide better label stop precision sacrificing torque.
Range: 0-3
Unit: -
Default Value: 0

"DRIVER VREFERENC"
" 0=BA 1=AL"
Depending on the driver model the driver’s voltage reference can be low or high. Use this option to select the correct voltage reference for the installed driver. 0=Low and 1=High
Range: 0-1
Unit: -
Default Value: 0

" GEAR RATIO "
This parameter is related to number of stepper pulses per millimeter of label feed.
Set it to 20 for KFlex 110 mm.
Set it to 32 for K200 with 1:2.5 gearing.
Range: 1-100
Unit: -
Default Value: 20

" MAXIMUM SPEED "
Maximum allowable speed in the EDIT menu.
Set it to 30 for KFlex.
Set it to 30 for K200
Range: 10.0-50.0
Unit: meters/minute
Default Value: 30.0

" DIS. TRIGG STOP "
" 0=NO 1=YES"
“Disable Trigger on Stop” set to 1 to avoid feeding labels by accidentally triggering the product sensor while the system is halted. If set to 0 the labeler will feed a label every time the product sensor is triggered even if the conveyors are not running.

Range: 0-1
Unit: -
Default Value: 0

"ENA. 2STEPS FEED"
" 0=NO 1=YES"
Enable partial feed of label to allow printing long labels in intermittent mode. Enable this option when printing labels longer than the maximum print length in intermittent mode to feed first part of the label, send first print trigger signal, print then feed the rest of the label and print again.

0 = NO, 1 = YES
Range: 0-1
Unit: -
Default Value: 0

"1stSTP PRNT TIME"
Pause to allow Dataflex to print first part of the label in the two-step mode. The printer MUST complete the print cycle before this time elapses. Not applicable if the two steps mode is disabled or printing in continuous mode.
Range: 5 – 200 (50 to 2000 ms)
Unit: 10 ms per unit
Default Value: 50 (500 ms)

" ENA 1 LBL MISSNG"
" 0=NO 1=YES"
“Enable One Label Missing” set to 1 to trigger alarm of label missing in the roll based on the length of the label measured during the calibration procedure. Length is dependent on the selected program.
If set to 0, label-missing error will be triggered when label feed distance exceeds “MAXIMUM LABEL LENGTH” set on the configuration menu F1. Length is not dependent on the selected program.
0 = NO, 1 = YES
Range: 0-1
Unit: -
Default Value: 0

"MASTER PASSWORD "
“Master Password” Password to access this menu.
Range: 0-65000
Unit: -
Default Value: 1111

"RCL FCTRY CONFIG"
" 0=N/1=Y "
Recalls copy of configuration and programs settings from external memory back to internal EEPROM, replacing actual contents.
This option requires optional hardware (serial memory chip). If memory chip is not present “MEM NOT FOUND” error will be displayed.
0 = NO, 1 = YES
Range: 0-1
Unit: -
Default Value: 0

"LVD THRSHLD 0-14"

Sets Low Voltage Detect Threshold. 0 disables Low Voltage Detect feature.
Range: 0-14
Unit: -
Default Value: 6

"SAVE FCTRY CONFG"
" 0=N/1=Y "
Copies internal EEPROM content into external memory, saving a copy of the configuration and programs settings.
This option requires optional hardware (serial memory chip). If memory chip is not present “MEM NOT FOUND” error will be displayed.
0 = NO, 1 = YES
Range: 0-1
Unit: -
Default Value: 0