The information contained in this manual is correct and accurate at the time of its publication. ITW reserves the right to change or alter any information or technical specifications at any time and without notice.

©2017 Illinois Tool Works Inc. All rights reserved.
Warranty:

The 4000 controllers and SMART-IDS, including all components unless otherwise specified, carry a limited warranty.

For all warranty terms and conditions, contact the manufacturer for a complete copy of the Limited Warranty Statement.
Appendix I: InkJet Demo Software for Windows ......................................................... 47
Appendix J: Software Interface .................................................................................... 47
Appendix K: Language Support .................................................................................. 48
Appendix L: Part Numbers .......................................................................................... 49
  IJ4000 System ........................................................................................................ 49
  IV4000 System ....................................................................................................... 50
  Service Parts - High Resolution ............................................................................ 51
  Service Parts - Integrated Valve ............................................................................ 52
Following is a list of safety symbols and their meanings, which are found throughout this manual. Pay attention to these symbols where they appear in the manual.

⚠️ Caution or Warning! Denotes possible personal injury and/or damage to the equipment.

⚠️ Caution or Warning! Denotes possible personal injury and/or equipment damage due to electrical hazard.

⚠️ Hand NOTE: (Will be followed by a brief comment or explanation.)

ESD protection should be worn when servicing internal printed circuit boards.
After service to the equipment is completed, replace all protective devices such as grounding cables and covers before operating the equipment.

It is extremely important to:
• Clean up all spills with the appropriate conditioner immediately and dispose of all waste according to local and state regulations.
• Wear safety glasses and protective clothing, including gloves, when handling all inks and conditioners.
• Store inks and conditioners under the recommended conditions found on the SDS (Safety Data Sheet).
**4000 Controllers**

**Section 2: Controller Functions**

**Home Screen**

**Message Window:**
- Displays the current print message
- Updated approximately every seven seconds.
- White and/or Beige bars represent the print heads in the daisy chain and are identified by their respective print head numbers.
- The Header displays the task number and file name of the message being printed, if no message is loaded to print, "None" is displayed.

**Task Select Drop-Down:**
- Places focus on the selected task and allows the user to toggle between tasks. This allows one to view what is being printed on either task in the home screen. Additional menu items will vary from one task to the other, depending on print technology.

**Print / Pause Button:**
- Starts and Stops print after an operator response to a confirmation dialog.
- If a message is currently printing, pressing the pause button will discontinue printing after the message finishes printing.
- When paused, Pause button will change to Play button. If the Play button is pushed, print will resume on the next product detected.

---

**Confirmation**

- ? Pause printing?
  - Cancel
  - OK

**Confirmation**

- ? Begin printing?
  - Cancel
  - OK
4000 Controllers

Print Button:
- Allows access to the Print dialog box.
- Select the desired message and press the Print button. The message will print at the next photocell trigger.

Purge Button:
- Fires all jets for a short period of time on the selected print head.

Status Button:
- Version of controller firmware is located in the upper right corner.
- Displays Product detect.
- Displays Printing or Paused status.
- Version of controller firmware.

Adjusts the amount of time between Automatic Cleaning Cycles.

Returns to home screen

Controller Firmware Version. Press version number to display detailed version information.

Print head status.

Return to Home Screen

Print Status

Line speed

Selected Task

Product Detect

Status messages

Task 1

OK
Message Editor

Message Button:
- Press the Message button on the Home Screen to bring up the Message dialog.
- To create a new message press the New button.
- To edit an existing message, select the message and then press the Open button.
- Editing a message or creating a new message will bring up the message editor.
- To delete a message, select the message and press the Delete button.
**On-Screen Keyboards & Numeric Keypads**

**Keyboard Button:**
- Edit Screen only: Press once to show the keyboard; press again to hide it.
- All other screens and dialogs: Keypad or keyboard appears when text or numeric input box is touched.

**Layer Select:**
- Pressing the Layer Select button cycles through; letters, numbers & symbols, and extended characters.

**Language Select Button:**
- Changes keyboard layout to that of the language selected. Changes keyboard layout only; user interface language does not change.

**ESC (Escape):**
- Undoes any changes made to any input entry box. If no changes made, hides the keypad or keyboard.
- Edit screen full keyboard: always hides the keyboard.

**Arrow Keys:**
- Moves highlighted fields or the cursor around in the Message Editor.

**Tab:**
- Switches focus between highlighted fields in the Message Editor.

**Backspace:**
- Deletes the character to the left of the cursor.
- On the edit screen, deletes a highlighted (red) field.

**Ctrl (Control) in Message Editor:**
- Amplifies the movement of the arrow keys.
- Press Ctrl-Enter to insert a new line in a text field.
- Can use ctrl-c then ctrl-v to copy and paste fields.

**Shift:**
- Press Shift once to make the next character upper case.
- Press Shift twice for shift lock. Press Shift again to exit shift lock.
Time and Date Codes
Product Counts, Variable Fields, Logos

**Maximum 9-digit count**

**Incrementing Count**
Count increments when the 'Start at' value is less than the 'Stop at' value.

**Decrementing Count**
Count decrements when the 'Start at' value is greater than the 'Stop at' value.

**Variable Field Data Source**
- **User**: Print data entered when print message containing the variable field is selected to print.
- **COM1, COM2**: Data is received through COM1 or COM2 serial port. Data must be received before the message is selected to print.
- **Data 1-10**: Data is retrieved from corresponding system variable. User has the option to change the data when the message is selected to print.

**Scroll through logo images or select from list**
Barcodes, Product Setup, & Menu

- Reverts message to the last saved
- Clears contents of message editor
- Calculates estimated ink usage for the selected message
- Exits the editor to the home screen
- Prints the contents of the editor on the next photocell trigger
- Quick save of current message

Increase or decrease Barcode width
Increase or decrease barcode height
Increase or decrease value of selected property

Bleed Factor (Default = 2)
Direct Entry of Cursor or Field Position

Field: Selecting the Direct Entry Box while having a field selected will allow the user to manually input the X & Y location of the selected field

Cursor: When no fields are selected the Direct Entry Box will allow the user to manually input the X & Y location of the cursor

Print Head Number
The Apps Screen

Apps Button

(See “Appendix C: File System Backup and Restore” on page 37.)
User Access

Controls within this box set the user access level. Buttons outside the box mirror the Home Screen and indicate which functions are password protected and which are open.

The factory set password is Manager. Passwords are case sensitive.

NOTE: Users can either select a pre-defined access level from the list or they can select "User Defined" and customize their Access settings by selecting icons on the User Access screen.
User Codes are user-defined time and date codes for printing hour, minute, date, month, and week of the year information.

Apply allows the user to save and apply changes without exiting the User Codes screen.

Restore all user codes to the factory default settings.
I/O (Inputs and Outputs) Status

The I/O Status Screen becomes available when a function is assigned to one or more of the I/O channels. (See the I/O Board Kit Installation Instructions, 5760-392N, included in the I/O Board Kit, for directions on setting up the I/O card.) Indicators on the I/O Status screen show the current state of the I/O card’s relay outputs and isolated inputs, and are updated every two seconds.

Relay Output Indicators:

Indicates the output function is undefined, or "None".

Indicates the relay is de-energized (common contact and normally closed contact are red).

Indicates the relay is energized (common contact and normally open contact are green).

Input Indicators:

Indicates the input function is undefined, or "None".

Indicator is on (green); the input signal is active.

Indicator is off (gray); the input signal is inactive.

Manual Control of Relay Outputs

An output relay assigned the Manual On/Off function may be manually energized and de-energized from the I/O Status screen by touching the relay’s on-screen indicator. Touch it once to energize the relay; touch it again to de-energize it.
Appendix A: Specifications

HMI Controller

**Size**
- Weight: 2.18kg [4.6lb]
- Height: 196.1mm [7.72in]
- Width: 330.7mm [13.02in]
- Depth: 41.5mm [1.63in]

**IP Rating**
- IP34 (estimated)

**Enclosure**
- Stainless Steel

**User Interface**
- Graphical User Interface with on screen keyboard

**Fonts**
- Unicode

**Display**
- 10.2in [259.08mm] LCD with touch screen, 800 x 480 pixels

**Storage**
- 512 MB flash memory

**Ports**
- (2) RS-232 ports, 1 USB port,
- (1) 100 Base-T Ethernet port
- Factory set IP Address: 10.1.2.6

**Electrical**
- 15 VDC from SMART-IDS to controller.
  - Power supply: 90-260 VAC, 50/0 Hz, 1.5A max.

**Environment**
- Ambient operating temperature: 5°C to 40°C (40°F to 104°F)
- Operating humidity: 10% - 90%, non-condensing
**HH Controller**

**Size**
Weight: .50kg [1.1lb]
Height: 133.4mm [5.25in]
Width: 240.0mm [9.45in]
Depth: 39.4mm [1.55in]

**Enclosure**
Black ABS Plastic

**User Interface**
Graphical User Interface with on screen QWERTY keyboard

**Fonts**
Unicode

**Display**
178mm [7in] LCD with touch screen, 800 x 480 pixels

**Storage**
512 MB flash memory

**Environment**
Ambient operating temperature: 5°C to 40°C (40°F to 104°F)
Operating humidity: 10% - 90%, non condensing

**Ports**
(2) RS-232 ports, 1 USB port,
(1) 100 Base-T Ethernet port
Factory set IP Address: 10.1.2.6

**Electrical**
15 VDC supplied from print head power supply: 90-260 VAC, 50/0 Hz, 1.5A max.
**IJ4000 SMART-IDS**

**Size**
- Weight: 10.0 kg [22.1 lb]
- Height: 304.8mm [12.0in]
- Width: 520.7mm [20.5in]
- Depth: 143.5mm [5.65in]
- Cable and tube Clearance: 127mm [5in] from the bottom of the enclosure.

**IP Rating**
- IP54 (estimated)

**Enclosure**
- Stainless steel

**Ink Filtration**
- 25 micron built-in supply reservoir

**Electrical**
- 24 VDC, 100W and 12 VDC, 3.34A, 40W Internal Power Supply
- 90-260 VAC, 50/0 Hz, 1.5A max

**Normal Operating Pressure Range**
- 0 psi to 30 psi (approximate) pump output when operating

**Storage**
- 512 MB flash memory

**Ports**
- (2) RS-232 Ports, (1) USB Port
- (1) 100 base-T Ethernet Port
- Factory set IP Address: 10.1.2.3

**Environment**
- Ambient operating temperature: 5°C to 40°C (40°F to 104°F)
- Operating humidity: 10% - 90%, non condensing

**Tubing Limitations**
- Maximum vertical tube length (bottom of SMART-IDS to bottom of highest print head) = 6.1m (20ft) ink pump limitation.
- Maximum height of SMART-IDS or tubing above print head = 914.4mm (36in) vacuum pump limitation.

**Number of Heads Allowed**
- 4
IV4000 SMART-IDS

Size
Weight: 10.1kg [22.2lb]
Height: 336.6mm [13.25in]
Width: 455.8mm [17.95in]
Depth: 142.5mm [5.61in]
Cable and tube Clearance: 76.2mm [3in] from the bottom of the enclosure.

IP Rating
IP54 (estimated)

Enclosure
Stainless steel

Ink Filtration
100 micron absolute
(5760-319 Kit, Ink Filter Assembly)

Electrical
15 VDC, 75W and 12 VDC, 3.34A, 40W
Internal Power Supply
90-260 VAC, 50/0 Hz, 1.5A max

Normal Operating Pressure Range
18 psi to 26 psi (approximately)

Ports
(2) RS-232 Ports, (1) USB Port
(1) 100 base-T Ethernet Port
Factory set IP Address: 10.1.2.3

Environment
Ambient operating temperature: 5°C to 40°C (40°F to 104°F)
Operating humidity: 10% - 90%, non condensing

Number of Heads Allowed
Eight (8) IV9Dot or four (4) IV18Dot Print Heads (72 dots total)

Tubing Limitations
Maximum horizontal tube length = 100 ft
Maximum vertical tube length (bottom of SMART-IDS to bottom of highest print head) = 20 ft

Ink Supply Limitations
Maximum height above SMART-IDS (top of ink supply to bottom of SMART-IDS) = 8 ft
Maximum distance below SMART-IDS (top of ink supply to bottom of SMART-IDS) = 8 ft
Maximum horizontal distance between top of SMART-IDS and bottom of supply = 8 ft
System Interconnect Diagram

HMI Controller CPU Board
IV4000 SMART-IDS Wiring Diagram

For 230 VAC versions, connect cable harness between switch and PCB power to transformer secondary. Connect the primary to the switch.

(ALTERNATE TRANSFORMER)

For 230 VAC versions, connect cable harness between switch and PCB power to transformer secondary. Connect the primary to the switch.
Test Points:
- TP1: 12VDC, power for display backlight. Turns on/off with soft powerswitch.
- TP2: 5VDC, power for 5V logic. Also supplies the input voltage to the 3.3V regulator.
- TP3: 3.3VDC, power for 3.3V logic. Also supplies the input voltage to the 1.8V regulator.
- TP4: 1.8VDC, power for the CPU core.

LEDs:
- D1: Ethernet connector, Green. Flashes to indicate network traffic.
- D2: Ethernet connector, Green. Indicates valid network connection.
- D1: Yellow, flashes when the CPU is running. (On CPU module)
- D4: Green, indicates 3.3V is present.
- D2: Green, indicates 3.3V is present. (On CPU module)
IJ4000 SMART-IDS Ink Supply Board

LEDs:

- **LED1**: NOT DEFINED.
- **LED2**: Red; indicates a print head is signalling that the print head reservoir is low and the ink out timer has expired.
- **LED3**: Green; indicates a print head is signalling for the vacuum pump to turn on.
- **LED4**: Green; indicates a print head is signalling for the liquid pump to turn on.
- **LED5**: Red; indicates that the waste bottle is full.
- **LED6**: Red; turns on, off, and flashes with the beacon. Off indicates ink is OK, on indicates ink is low, slow flash (1 Hz) indicates ink is out, and fast flash (6 Hz) indicates that the waste bottle is full or the pump was turned on for more than 10 seconds.
- **LED7**: Yellow; indicates ink is low in the SMART-IDS reservoir.

Connectors:

- **SW1**: NOT DEFINED.
- **P1**: SMART-IDS I/O connector.
- **J1**: Beacon.
- **J2**: External beacon.
- **J3**: Liquid pump.
- **J4**: Vacuum pump.
- **J5**: Power (12V).
- **J6**: Reservoir float switch.
- **J7**: Waste bottle float switch.
- **J8**: Programming port, for programming U1 via a PC.
- **J10**: Pressure sensor for flushing solvent
- **J11**: RFID communication
**IV4000 SMART-IDS Ink Supply Board**

Test Points:
- TP1, TP4: (TP1 - TP4) = 1.2mV/PSI at the pressure sensor
- TP2: 0.1V/PSI of pressure
- TP3: Toggles at the end of a pressure sampling period

- TP8: 12VDC
- TP9: 5VDC

LEDs:
- LED1: Yellow; indicates the pump is running

Fuses:
- F1: Beacon fuse, 125V, 1A
IJ4000 Print Head Interface Board

Test Points:

TP1: 5VDC.
TP2: 3.3VDC.
TP3: 2.5VDC.
TP4: GND.
TP5: (FPGA) PROGRAM; pulses low to initiate FPGA programming.
TP6: (FPGA) INIT; goes LOW to indicate an FPGA programming error.
TP7: (FPGA) DONE. LOW when the FPGA is being programmed. High when FPGA programming is complete.
TP8: SMART-IDS error signal, active low.
TP9: Print head vacuum signal, active high.
TP10: SMART-IDS ink low signal, active low.
TP11: Print head pump signal, active high.
TP12: SMART-IDS ink out signal, active low.
TP13: Print head at temperature signal, active low.
TP14: SMART-IDS vacuum signal, active low.
TP15: Print head ink out signal, active high.
TP16: SMART-IDS pump signal, active low.
TP17: DC power in (24V).
TP18: Print head CLOCK signal.
TP19: Print head DATA2 signal.
TP20: Print head DATA signal.
TP21: Print head LATCH signal.
TP22: PHOTORESISTER signal, active high.
TP23: External ENCODER signal.
IV4000 Print Head Interface Boards

Test Points:

- TP1: 5VDC
- TP2: 3.3VDC
- TP4: GND
- TP5: (FPGA) PROGRAM; pulses low to initiate FPGA programming
- TP6: (FPGA) INIT; goes low to indicate an FPGA programming error
- TP7: (FPGA) DONE. L when the FPGA is being programmed. High when FPGA programming is complete.
- TP17: DC power in (15V)
- TP18: Print head CLOCK signal
- TP20: Print head DATA signal
- TP21: Print head LATCH signal
- TP22: PHOTORESISTOR signal
- TP23: External ENCODER signal
IV4000 Print Head Interface Boards (continued)
**4000 Controllers**

**Controller Connections**

**NOTE:** The High Resolution Interface Board requires use of the 24 VDC Power Supply. The Integrated ValveJet Interface Board requires use of the 15 VDC Power Supply.

---

**IJ4000 SMART-IDS**

---

**IV4000 SMART-IDS**
Appendix B: Theory of Operations

The ijRemote program on the PC and the 4000 controller utilizes a graphical desktop sharing protocol to remotely control the SMART-IDS. The program transmits keyboard and mouse events from the PC/controller to the SMART-IDS. In turn, graphical screen updates are relayed back to the HMI/HH Controller from the SMART-IDS. Print head data control is maintained by the SMART-IDS.
Appendix C: File System Backup and Restore

Backup
1. Insert a USB jump drive into the USB port on the HMI.
2. From the Home screen touch Apps then Utilities.
3. From the Utilities screen select Backup.
4. Enter a file name at the Backup dialog popup. "backup" is the default name. This creates a "backup.tgz" file.
5. From the System Utilities screen select Safely remove USB memory.

Restore
6. Insert a USB jump drive containing a "backup.tgz" file into the USB port on the HMI.
7. From the Home screen touch Apps then Utilities.
8. From the Utilities screen select Restore.
9. Select the appropriate backup file from the Restore dialog popup.
10. From the System Utilities screen select Safely remove USB memory.
Appendix D: Configuring a PC to Communicate with a Controller and SMART-IDS

**Window 7®**

1. Open the **Start Menu**; select **Control Panel**; then **Network and Sharing Center**.

2. Click **Local Area Connection**, then click the **Properties** button.

3. Select **Internet Protocol Version 4 (TCP/IPv4)**. Then click the **Properties** button.

4. Click **Use the following IP address** radio button. Enter and IP address of **10.1.2.4**, a subnet mask of **255.255.255.0**, and click the **OK** button.
Appendix E: Controller and Print Head File Management

File Manager

1. If logo or font files are to be transferred, place them on a portable USB storage device and insert it into the HMI USB port.

2. Touch the Apps button on the Home screen menu, and then select the Utilities button.

3. Scroll to the bottom of the Select Function list and select File manager. Press the Do Function button; the File manager screen is displayed.

The home folder contains all folders and files related to controller operation.

The usb (HMI) folder contains all folders and files resident on the USB storage device.

NOTE: Cut, Copy, Paste, and Delete function the same way as any software. Navigate to any file in any of the folders and perform the desired function.
NOTE: Files cannot be transferred to the print head while printing. Pause print first.

1. As shown in the “File Manager” section, make sure USB storage device is installed and the File manager selection screen is present on the controller.

2. Select the **usb (HMI)** folder and press the **Open Folder** icon button.

3. Navigate to a previously saved file, highlight the file and press the **Copy** button. The file is now stored in temporary memory. In this example, a logo file will be transferred.

4. Press the **Close Folder**, then the **Go Up One Level** button until the File manager selection screen is present.

5. Select the **home** folder, press the **Open Folder** button, and select the **bmps** folder.

6. Press the **Paste** button. The logo (bmp) file will appear in the **bmps** folder.

7. When all desired file transfers are complete, press the **Exit** button.

8. From the System Utilities menu, press the **Safely remove USB memory** button, and then **Done**.

9. The file is now available for message creation in the message editor.
Appendix G: ijRemote Application and Multiple SMART-IDSs

ijRemote Application

The ijRemote application allows the user to connect remotely from their desktop to the IJ4000 system located at the point of printing. An icon will be located on your Desktop after installing IJ4000 Ink Jet Demo software on your PC.

- Connects to the selected IJ4000 / IV4000 SMART-IDS.
- Save any changes made to the list of SMART-IDS.
- Undo any unsaved changes.
- Adds another SMART-IDS to the list.
- Edit existing SMART-IDS in the list.
- Deletes a SMART-IDS from the list.
- Shows the current firmware version of the HMI.
- Sets the Network settings of an HMI, HH or SMART-IDS using the device’s MAC address.
Operating Multiple SMART-IDSs with One IJ4000 HMI or IJ4000 HH

This section describes how to configure a system where one IJ4000 HMI controls up to ten IJ4000 SMART-IDSs via Ethernet.

What's Needed
- A PC.
- Ink Jet Demo software (on USB drive shipped with HMI).
- RJ45 CAT5E in-line crossover coupler, part number 5765-379 or equivalent.
- IJ4000 HMI.
- IJ4000 SMART-IDSs.
- An Ethernet drop for the PC, the IJ4000 HMI, and each SMART-IDS.

Summary of Procedure
This procedure assumes all SMART-IDSs and the HMI have their factory set IP addresses.
1. Install the Ink Jet Demo software on the PC and start the ijRemote application.
2. Attach a SMART-IDS to the network.
3. Set the SMART-IDS’s IP address.
4. Add the SMART-IDS to the ijRemote controller list.
5. Repeat steps 2, 3, and 4 for each of the remaining SMART-IDSs.
6. Tell the HMI where to find the SMART-IDSs

Procedure
1. Attach the PC to the network, and then install the Ink Jet Demo software:
   - Insert the USB flash drive that came with your system into a USB port on your computer. Open the drive, open the Software folder, and double-click the demo.exe file. An installation wizard will start, giving step by step instructions for installing the software.
   - Start the ijRemote application. If a desktop icon was created when the software was installed, double-click the icon. If an icon was not created, navigate to c:\InkJet and double-click the ijRemote.exe file. It may take up to 10-15 seconds for the program to initialize and begin running, after which the screen will look like the image to the right.
   - The error dialog is displayed because no SMART-IDSs are attached to the network yet. Click OK to close the dialog.
2. Attach a SMART-IDS to the network. One Ethernet drop is required if attaching a SMART-IDS and HMI. An Ethernet Switch (5765-461) is also required when attaching an HMI.

To connect to the network:

A. Make sure the SMART-IDS is turned off and unplugged from its power source.

B. Remove the cover from the SMART-IDS.

C. Disconnect Ethernet cable (A) from CPU board and connect to Ethernet Switch (C). The other end of the cable assembly plugs into the HMI.

D. Feed a cable from an Ethernet drop (B) into the cabinet through its strain relief and plug it into the Ethernet Switch (C).

E. Plug one end of an Ethernet cable (D) into the Ethernet Switch, and the other end into the CPU Board's (bottom board) RJ45 connector.

F. Plug the USB power cable (E) that runs from the Ethernet Switch into the unpopulated USB port on the CPU board.

G. Replace the cover on the SMART-IDS, plug it into its power source, and turn it on.
3. Set the SMART-IDS’s IP address:

- On the PC, wait for the Connected icon to the left of IP address 10.1.2.3 to turn green (it may take a few moments), then select the SMART-IDS and click the **Connect** button. The Home Screen of the SMART-IDS will be shown (below left).
- Open the **More…** menu and click the **Apps** button (below right).

- On the **Apps** Screen (below left) touch the **Network** button to open the Network Settings Dialog (below right), and then touch the **IP Addresses** tab.
- Locate the MAC address at the top of the page and record it for later use.
- Return to the Home Screen, open the **More…** menu, and click the **Back** button to return to the ijRemote main screen.
• On the ijRemote Main Screen, click the **Network** button to open the Send Network Setting Dialog.

• Complete the **Send to MAC** line using the last two digit pairs of the previously recorded MAC address. In the case of the first SMART-IDS of this example, it would be **38 48**.

• Enter the SMART-IDS’s desired IP address on the **HMI/Hub IP** line. Do NOT use 10.1.2.3 or 10.1.2.6, which are the factory set IP addresses for the SMART-IDS and HMI, respectively.

• The **IP Subnet Mask** is typically set to 255.255.255.0. If this is not suitable to your application, ask your network administrator for an appropriate address.

• If appropriate to your application, enter a **Gateway IP** address; otherwise leave it blank.

• When complete, the dialog will look similar to that at right.

• Click the **Send** button.

---

4. Add the SMART-IDS to the ijRemote controller list:

• On the ijRemote Main Screen click the **Add** button to open the Add a Host Dialog.

• Enter the SMART-IDS’s IP address (as configured in previous step).

• Enter a name for the SMART-IDS (optional).

• Click the **OK** button. The SMART-IDS is added to the list.
5. Repeat steps 2, 3, and 4 for the remaining SMART-IDSs.

6. Click the **Save** button to save the list and generate a **vnc.cfg** file.

7. Tell the HMI where to find the SMART-IDSs:
   
   - On the PC, open a web browser, enter a URL of 10.1.2.6 (the HMI default IP address), and press **Return**.
   
   - Click the **Transfer file from PC to controller** link.
   
   - Click the **Browse...** button. When the File Upload dialog appears, navigate to `c:\InkJet\cfg`.
   
   - Select the **vnc.cfg** file and click the **Open** button.
   
   - Click the **upload** button.
   
   - Reboot the HMI by cycling power to its SMART-IDS.
Appendix H: Updating the HMI & SMART-IDS via USB or Ethernet

For instructions on updating the controller and ink delivery system, please refer to document 5765-390N Updating the Controller and Ink Delivery System via USB or Ethernet.

Appendix I: InkJet Demo Software for Windows

For information on the InkJet Demo software, please refer to document 5765-388N InkJet Demo Software for Windows.

Appendix J: Software Interface

For information on interfacing with the software, please refer to document 5760-113 Software Interface Document.
Appendix K: Language Support

The following languages are supported by the IJ4000 User Interface and/or Print Messages:

<table>
<thead>
<tr>
<th>User Interface (via Regional Settings)</th>
<th>Print Messages (via Message Editor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(not available)</td>
<td>Arabic</td>
</tr>
<tr>
<td>中文 (Chinese)</td>
<td>中文 (Chinese)</td>
</tr>
<tr>
<td>Deutsch (German)</td>
<td>Deutsch (German)</td>
</tr>
<tr>
<td>English</td>
<td>English</td>
</tr>
<tr>
<td>Español (Spanish)</td>
<td>Español (Spanish)</td>
</tr>
<tr>
<td>Français (French)</td>
<td>Français (French)</td>
</tr>
<tr>
<td>(not available)</td>
<td>עברית (Hebrew)</td>
</tr>
<tr>
<td>Italiano (Italian)</td>
<td>Italiano (Italian)</td>
</tr>
<tr>
<td>한국어 (Korean)</td>
<td>한국어 (Korean)</td>
</tr>
<tr>
<td>Nederlands (Dutch)</td>
<td>Nederlands (Dutch)</td>
</tr>
<tr>
<td>Português (Portuguese)</td>
<td>Português (Portuguese)</td>
</tr>
<tr>
<td>Русский (Russian)</td>
<td>Русский (Russian)</td>
</tr>
<tr>
<td>Svenska (Swedish)</td>
<td>Svenska (Swedish)</td>
</tr>
<tr>
<td>(not available)</td>
<td>Türk (Turkish)</td>
</tr>
</tbody>
</table>
## IJ4000 System

### Major Components

<table>
<thead>
<tr>
<th>Item</th>
<th>Kit No.</th>
<th>Description</th>
<th>Item</th>
<th>Kit No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5765-004J</td>
<td>IJ4000-HMI, Controller (Domestic or European)</td>
<td>6</td>
<td>5765-017EJ1</td>
<td>IJ4000 SMART-IDS, 1 Card (European)</td>
</tr>
<tr>
<td>2</td>
<td>5765-017DJ1</td>
<td>IJ4000 SMART-IDS, 1 Card (Domestic)</td>
<td>7</td>
<td>5765-017EJ2</td>
<td>IJ4000 SMART-IDS, 2 Cards (European)</td>
</tr>
<tr>
<td>3</td>
<td>5765-017DJ2</td>
<td>IJ4000 SMART-IDS, 2 Cards (Domestic)</td>
<td>8</td>
<td>5765-017EJ1-S</td>
<td>IJ4000 SMART-IDS, 1 Card, I/O (European)</td>
</tr>
<tr>
<td>4</td>
<td>5765-017DJ1-S</td>
<td>IJ4000 SMART-IDS, 1 Card, I/O (Domestic)</td>
<td>9</td>
<td>5765-017EJ2-S</td>
<td>IJ4000 SMART-IDS, 2 Cards, I/O (European)</td>
</tr>
</tbody>
</table>
## Major Components

<table>
<thead>
<tr>
<th>Item</th>
<th>Kit No.</th>
<th>Description</th>
<th>Item</th>
<th>Kit No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5780-017</td>
<td>Handheld Controller (Domestic or European)</td>
<td>2</td>
<td>5780-017V</td>
<td>Handheld Controller, IV (Domestic or European)</td>
</tr>
<tr>
<td>3</td>
<td>5770-016DV1P</td>
<td>IV4000 SMART-IDS, 1 Card, Porous (Domestic)</td>
<td>4</td>
<td>5770-016DV1P-S</td>
<td>IV4000 SMART-IDS, 1 Card, I/O, Porous (Domestic)</td>
</tr>
<tr>
<td>5</td>
<td>5770-016DV1N</td>
<td>IV4000 SMART-IDS, 1 Card, Non-Porous (Domestic)</td>
<td>6</td>
<td>5770-016DV1N-S</td>
<td>IV4000 SMART-IDS, 1 Card, I/O, Non-Porous (Domestic)</td>
</tr>
<tr>
<td>7</td>
<td>5770-016EV1P</td>
<td>IV4000 SMART-IDS, 1 Card, Porous, (European)</td>
<td>8</td>
<td>5770-016EV1P-S</td>
<td>IV4000 SMART-IDS, 1 Card, I/O, Porous, (European)</td>
</tr>
<tr>
<td>9</td>
<td>5770-016EV1N</td>
<td>IV4000 SMART-IDS, 1 Cards, Non-Porous (European)</td>
<td>10</td>
<td>5770-016EV1N-S</td>
<td>IV4000 SMART-IDS, 1 Cards, I/O, Non-Porous (European)</td>
</tr>
<tr>
<td>11</td>
<td>5770-016DV2P</td>
<td>IV4000 SMART-IDS, 2 Cards, Porous (Domestic)</td>
<td>12</td>
<td>5770-016DV2P-S</td>
<td>IV4000 SMART-IDS, 2 Cards, I/O, Porous (Domestic)</td>
</tr>
<tr>
<td>13</td>
<td>5770-016DV2N</td>
<td>IV4000 SMART-IDS, 2 Cards, Non-Porous (Domestic)</td>
<td>14</td>
<td>5770-016DV2N-S</td>
<td>IV4000 SMART-IDS, 2 Cards, I/O, Non-Porous (Domestic)</td>
</tr>
<tr>
<td>15</td>
<td>5770-016EV2P</td>
<td>IV4000 SMART-IDS, 2 Cards, Porous (European)</td>
<td>16</td>
<td>5770-016EV2P-S</td>
<td>IV4000 SMART-IDS, 2 Cards, I/O, Porous (European)</td>
</tr>
<tr>
<td>17</td>
<td>5770-016EV2N</td>
<td>IV4000 SMART-IDS, 2 Cards, Non-Porous (European)</td>
<td>18</td>
<td>5770-016EV2N-S</td>
<td>IV4000 SMART-IDS, 2 Cards, I/O, Non-Porous (European)</td>
</tr>
</tbody>
</table>
## Service Parts - High Resolution

### Print Head Cables

<table>
<thead>
<tr>
<th>Item</th>
<th>Kit No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>5760-614-02</td>
<td>Cable, IJ4000 SMART-IDS to Print Head, 2’</td>
</tr>
<tr>
<td></td>
<td>5760-614-10</td>
<td>Cable, IJ4000 SMART-IDS to Print Head, 10’</td>
</tr>
<tr>
<td></td>
<td>5760-614-25</td>
<td>Cable, IJ4000 SMART-IDS To Print Head, 25’</td>
</tr>
</tbody>
</table>

### Display, Power Supply and PCBs

<table>
<thead>
<tr>
<th>Item</th>
<th>Kit No.</th>
<th>Description</th>
<th>Item</th>
<th>Kit No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5765-221</td>
<td>Kit, Replacement Display, IJ4000-SS, 10.2”</td>
<td>9</td>
<td>5765-255</td>
<td>Kit, Internal Tubing &amp; Fitting Replacement</td>
</tr>
<tr>
<td>2</td>
<td>5765-222</td>
<td>Kit, Replacement, CPU, IJ4000 HMI</td>
<td>10</td>
<td>5760-339</td>
<td>Kit, Reservoir Replacement, ScanTrue</td>
</tr>
<tr>
<td>3</td>
<td>5760-332</td>
<td>Kit, Replacement, High Resolution Interface Board</td>
<td>11</td>
<td>5760-336</td>
<td>Kit, Vacuum Pump Replacement</td>
</tr>
<tr>
<td>4</td>
<td>5760-392</td>
<td>Kit, I/O Board</td>
<td>12</td>
<td>5760-340</td>
<td>Kit, Separator Replacement</td>
</tr>
<tr>
<td>5</td>
<td>5765-247</td>
<td>Kit, Replacement &amp; Upgrade, Power Supply, SMART-IDS</td>
<td>13</td>
<td>5760-337</td>
<td>Kit, PCB Replacement, Ink Supply</td>
</tr>
<tr>
<td>6</td>
<td>5760-372</td>
<td>Kit, Beacon Replacement</td>
<td>14</td>
<td>5760-338</td>
<td>Kit, Power Supply Replacement, 12V</td>
</tr>
<tr>
<td>7</td>
<td>5765-381</td>
<td>Kit, Replacement, CPU, SMART-IDS</td>
<td>15</td>
<td>5765-461</td>
<td>Kit, Switch, USB</td>
</tr>
<tr>
<td>8</td>
<td>5760-335</td>
<td>Kit, Liquid Pump Replacement</td>
<td></td>
<td>(not shown)</td>
<td>Kit, Interface Board Upgrade, IJ</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(includes Power Supply, Interface Board and Cables)</td>
</tr>
</tbody>
</table>

---

![IJ4000 Stainless Steel Display](image1)

![IJ4000 SMART-IDS](image2)
# 4000 Controllers

## Service Parts - Integrated Valve

### Print Head Cables

<table>
<thead>
<tr>
<th>Kit No.</th>
<th>Description</th>
<th>Kit No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5700-245-002</td>
<td>Cable, Print Head, 2’</td>
<td>2464-182-010</td>
<td>Kit, Extension Cable, DB9, 10’</td>
</tr>
<tr>
<td>5700-245-010</td>
<td>Cable, Print Head, 10’</td>
<td>2464-182-025</td>
<td>Kit, Extension Cable, DB9, 25’</td>
</tr>
<tr>
<td>5700-245-025</td>
<td>Cable, Print Head, 25’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Display, Power Supply and PCBs

<table>
<thead>
<tr>
<th>Item</th>
<th>Kit No.</th>
<th>Description</th>
<th>Item</th>
<th>Kit No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5780-232</td>
<td>Kit, Replacement Display, Handheld</td>
<td>9</td>
<td>5770-247</td>
<td>Kit, Internal Tubing &amp; Fitting Replacement</td>
</tr>
<tr>
<td>2</td>
<td>5765-228</td>
<td>Kit, Replacement, CPU, IJ4000 HH</td>
<td>10</td>
<td>5770-234P</td>
<td>Kit, Fluid Capacitor Replacement, Porous</td>
</tr>
<tr>
<td>3</td>
<td>5760-304</td>
<td>Kit, Replacement, Integrated Valve Interface Board</td>
<td>11</td>
<td>5770-234NP</td>
<td>Kit, Fluid Capacitor Replacement, Non-Porous</td>
</tr>
<tr>
<td>4</td>
<td>5760-392</td>
<td>Kit, I/O Board</td>
<td>12</td>
<td>5770-234NP</td>
<td>Kit, Transformer, Ink Supply</td>
</tr>
<tr>
<td>5</td>
<td>5770-253</td>
<td>Kit, Replacement, Power Supply, IV4000 SMART-IDS</td>
<td>13</td>
<td>5760-338</td>
<td>Kit, Power Supply Replacement, 12V</td>
</tr>
<tr>
<td>6</td>
<td>5770-252</td>
<td>Kit, Beacon Replacement, 3-Color</td>
<td>14</td>
<td>5765-461</td>
<td>Kit, Switch, USB</td>
</tr>
<tr>
<td>7</td>
<td>5765-381</td>
<td>Kit, Replacement, CPU, SMART-IDS</td>
<td></td>
<td>5770-260</td>
<td>Kit, Interface Board Upgrade, IV</td>
</tr>
<tr>
<td>8</td>
<td>5760-315</td>
<td>Kit, Pump &amp; Thermal Cut-Off, 115 VAC</td>
<td></td>
<td>(not shown)</td>
<td>Kit, Interface Board Upgrade, IV</td>
</tr>
</tbody>
</table>

IJ4000 Hand-Held Display

IV4000 SMART-IDS