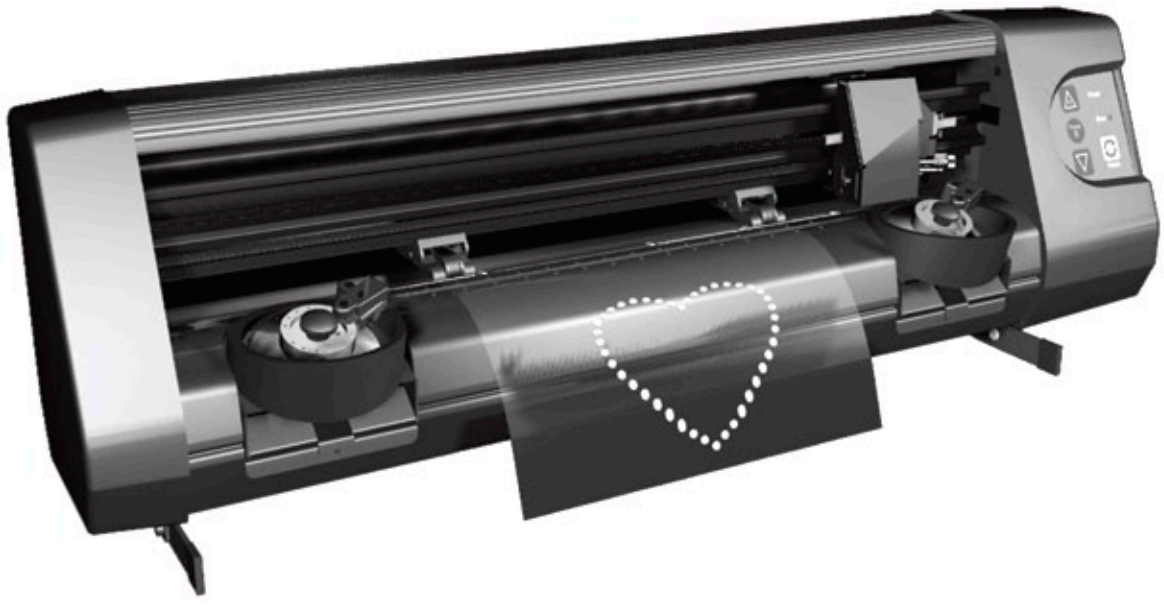
IOLINE™

User Guide



IOLINE CRYSTALPRESS™

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Ioline Corporation
14140 NE 200th Street
Woodinville, Washington 98072 U.S.A.

Ioline Customer Service Department
Monday through Friday
7:00 A.M. - 5:00 P.M. U.S. Pacific Time
Voice: 1.425.398.8282
Fax: 1.425.398.8383
support@ioline.com
www.ioline.com

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IOLINE™

CrystalPress™

User Guide

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Visual Reference Guide

KEY

- **A.** Left End Cover
- **B.** Left Pinch Wheel
- **C.** Right Pinch Wheel
- **D.** Carriage
- **E.** Pinch Wheel Lever *(hidden)*
- **F.** Right End Cover
- **G.** *Keypad*
- **H.** Foot (x2)
- **I.** Right Sorter Bowl *(Sorter #1)*
- **J.** Drive Shaft (x2)
- **K.** Transfer Sheet
- **L.** Left Sorter Bowl *(Sorter #2)*
- **M.** Platen
- **N.** Traverse

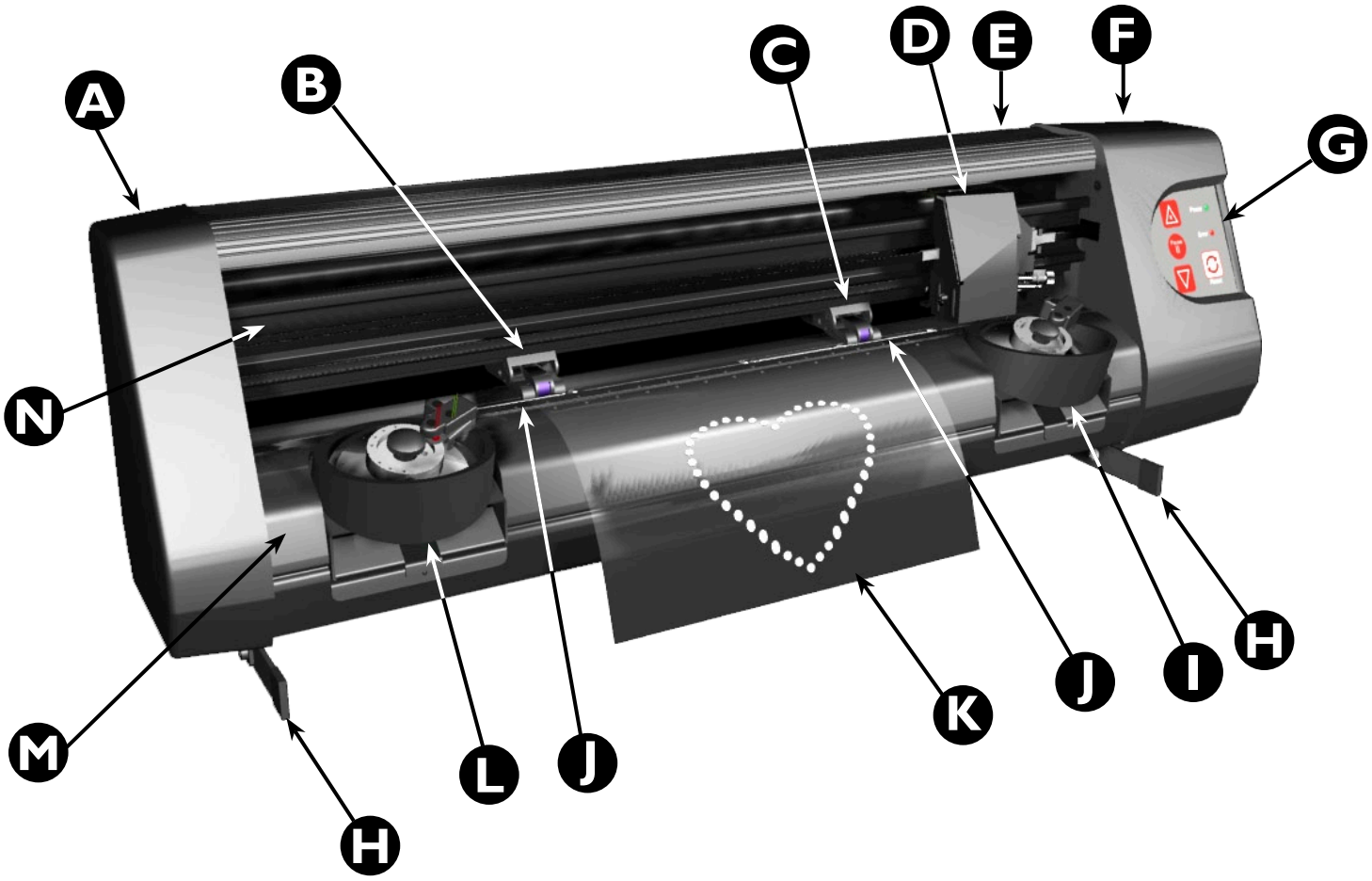


Figure 1. The Ioline **CrystalPress** front view.

Cautions and Guidelines

The Ioline **CrystalPress™** machine has many fast moving components. Please read and follow these safety guidelines before beginning operation of the machine:

- ***The Ioline CrystalPress Motif Maker is designed to use high quality Rhinestones and crystals like those from Preciosa and Swarovski ONLY.*** Using any other type or make of stones may cause one or all of the following to occur:
  a) Misplaced stones
  b) Upside-down stones
  c) Jammed sort wheel
  d) Dropped stones
  e) Low throughput due to many empty sort wheel slots
  f) Stones ejected from the bowl

- ***Do not try to repair the machine without factory authorization.*** Only qualified personnel should attempt any disassembly or access to internal components. If external mechanical adjustments are necessary, turn off the machine and disconnect it from all power sources (both the computer and the wall outlet).

- ***Be careful with hair, jewelry, or loose clothing near the machine.*** They can become caught in the moving mechanical parts.

- ***Never attempt to move the* Carriage *by hand when the power is on.*** The *Carriage* is moved automatically by the software.

- ***Keep hands away from the* Carriage *when the machine is in Operation.*** The *Carriage* will automatically move to touch the left end then back to the right end when the power is turned on.

- ***Keep fingers away from the* Drive Shaft *when the machine is in Operation. Serious injury could result.***

- ***Keep the face and hands away from the* Sorter Bowls *during Operation to avoid injury from moving parts.***

- ***Be careful when moving or lifting the machine.*** Moving the **CrystalPress** machine requires at least 2 people. Hold the bottom surfaces of the *End Covers* to lift or move the machine.

- Keep the **CrystalPress** away from direct sunlight while in use. Many sensors use light and can get 'blinded' by intense sun.

Safety Labels

The following labels are used to identify potential hazards on the equipment.

	**Shock Hazard** Dangerous voltages are located near this label. Beware of an electrical shock hazard during use and disassembly.
	**Crush Hazard** Machinery near this label may crush body parts. Beware of the mechanism.
	**Side Crush Hazard** Machinery near this label may crush body parts with a sideways force. Beware of moving parts.
	**Earth Ground** An electrical connection near this label provides an earth ground circuit.

See the maintenance section for information on proper procedures for keeping safety mechanisms in working order.

Specifications and Environment

System specifications and environment requirements for the Ioline **CrystalPress** are listed below:

Ioline Part Number	109770
Height	310 mm (12 in.)
Width	1120 mm (44 in.)
Depth	180 mm (7 in.)
Installed Weight	21 Kg (45 lbs.)
Motif Design Area	343 x 318 mm (13.5 x 12.5 in)
Crystal Sizes	6ss, 10ss 12ss, 16ss, 20ss, and 30ss
I/O	USB or RS-232 Serial
Data Type	HPGL 7475 or DXF
Input Voltage	85 - 264 VAC, single phase
Input Current	2.5 A maximum
Input Frequency	50-60 Hz
Short Circuit Protection	Protection on all outputs at 110-145% peak.
Operating Temperature	0° - 50°C (32° - 122° F)
Humidity	Non-condensing

Chapter 1

Overview

Getting Started

Thank you for purchasing the Ioline **CrystalPress**!

This manual is designed to work in conjunction with the *CrystalPress Quick Start Guide** to help you unpack, setup, and operate your **CrystalPress** machine with **CrystalStudio** software. Information about using the **CrystalStudio** software is provided in the electronic *CrystalStudio User Guide** included on the CD-ROM and installed during setup. The following components are needed to create motifs with the **CrystalPress** system:

- A **CrystalPress** machine assembled according to the directions outlined in the *CrystalPress Quick Start Guide***.**
- A computer system that is properly installed and has a functioning USB or serial port.
- Design software for creating motif outlines loaded onto the computer according to the installation instructions supplied with the product.
- *Transfer Sheet*(s) specifically designed for use with the **CrystalPress**.
- Crystals or Rhinestones that are certified to work with the Ioline **CrystalPress** and in sufficient numbers to properly fill the *Sorter Bowl* as described in the *Operation* chapter.
- A working installation of the **CrystalStudio™** software.

Note

In order to create designs on the **CrystalPress** you must output files from your design software in **HPGL 7475 PLT** or **DXF** formats then import them into the **CrystalStudio** software included with the machine. See the *CrystalStudio User Guide* for more information.

Note

Software included with the Ioline **CrystalPress** is only tested with **x32** and x64 versions of **Windows® XP, Vista, and Win7** operating systems. Contact Ioline customer service if you need assistance with software compatibility.

** Adobe Acrobat Reader™ is required to view all electronic manuals provided by Ioline. This software is included as part of the installation process or available online at http://get.adobe.com/reader/.*

How the CrystalPress Works

The **CrystalPress** machine creates a motif image through synchronized *Transfer Sheet* and *Carriage* motion. Design files created in programs like CorelDraw™ are imported into the **CrystalStudio** software from a local computer or file server. Crystals or Rhinestones are applied to the design in **CrystalStudio** then motif data are sent to the **CrystalPress** via a USB or serial connection.

When the machine receives data, the electronic logic system translates the instructions into X-Axis (*Transfer Sheet*) and Y-Axis (*Carriage*) motion and uses digital feedback to ensure accuracy.

Crystals are transferred from *Sorter Bowls* with the *C-Stick*. The machine compares the *Sorter Wheel* stone size with *Layer* assignments in **CrystalStudio(** error displayed on mismatch). This user must load the **CrystalPress** *Sorter Bowls* with the correct stones.

Note

CrystalStudio checks that the stone sizes assigned to design *Layers* match the *Sort Wheels* in the **CrystalPress**. It is up to the user to assure that the proper size stones are loaded into the *Sorter Bowls*.

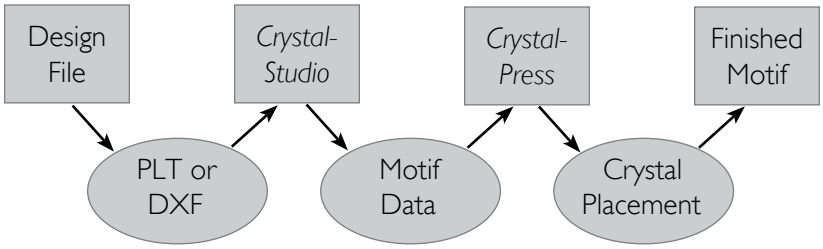


Figure 2. Work flow and data types for making a motif.

Coordinates

In this manual the right and left side refers to the right and left side of the front of the machine. Design software may refer to the *Origin* as "lower left" because it is the lower left corner of a image when viewed on screen. The plot is rotated 90 degrees counter clockwise in the machine as shown in ***Figure 3*** therefore the lower left corner of the plot is physically on the right side of the machine. This will not affect how the machine is used but you might notice this rotation when importing images into the **CrystalStudio**.

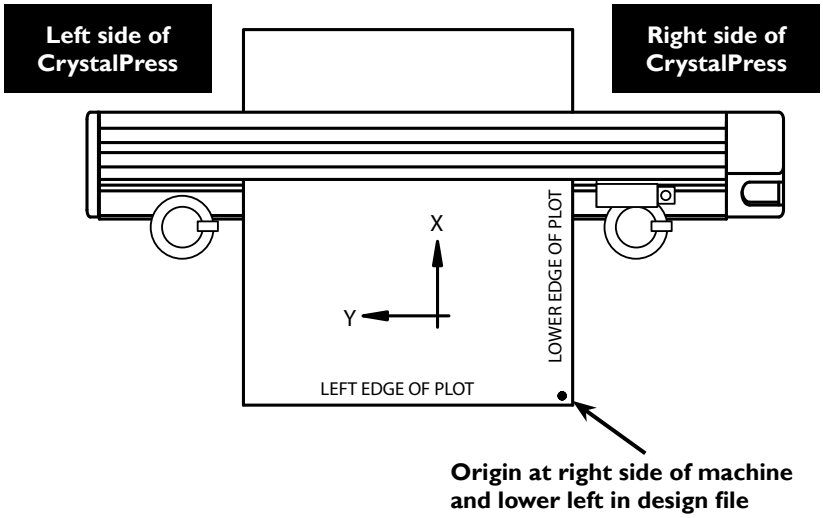


Figure 3. The X and Y axes and origin (top view).

Chapter 2

Installation

The **Installation** *chapter is an overview of setup procedures for the Ioline* **CrystalPress**. *The complete setup procedure is described in detail in the printed* **CrystalPress Quick Start Guide** *provided in the* Accessory Kit *and in electronic form on the CD-ROM. The electronic manual is also available from the* **Program** *menu in the* **Ioline** *folder if that option was selected during installation.*

Installation Overview

Unpack the Machine

Carefully remove the machine from the box and place it on a flat, stable surface. This procedure requires two people. Check the packing list to ensure that all of the accessories are present. See the *CrystalPress Quick Start Guide* for more information. Save all packing materials and the box. New boxes are expensive!

Attach the Feet

Attach the feet to the bottom of the end covers on both sides using the hardware included in the *Accessory Kit* and directions outlined in the *CrystalPress Quick Start Guide***.**

Install CrystalStudio and Manuals

Insert the CD-ROM into the Microsoft Windows XP, Vista or Win7 based computer. Installation should begin automatically. If it does not, browse the files on the CD-ROM and double left click on *iosetup.exe.* Follow the on screen directions to complete software installation. Ioline recommends that electronic user manuals are also installed as well as the Adobe Acrobat Reader™ required to view them. See the *CrystalPress Quick Start Guide* for step-by-step directions. For detailed information about using the **CrystalStudio** software, please read the electronic *CrystalStudio User Guide* on the CD-ROM or installed on the hard disk.

Install the CrystalStudio Hardlock Key

Insert the USB security hardlock key into an available USB port. Windows should recognize the key and automatically install the drivers. Windows displays a message when the process is complete.

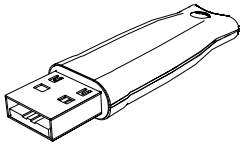


Figure 4. The **CrystalStudio** hardlock key.

Hint

Do not install the CrystalPress where direct sunlight falls on the platen or Sorter Bowls. This will blind the sensors that check for proper operation and can give false errors.

Note

Adobe Acrobat Reader® is required to view all electronic manuals provided by Ioline. This software is included as part of the installation process or available online at http://get.adobe.com/reader/.

Note

Do not connect the hardlock key to a USB hub. This combination is unreliable.

Hint

When you plug the hardlock key into a USB port you should see a red light turn on inside the body of the hardlock. If you do not see this light contact Ioline Tech Support for assistance.

Install the Sort Wheel(s)

Install the sort wheels in the *Sorter Bowls* if they do not come pre-installed. This process is outlined in the *CrystalPress Quick Start Guide* and also in the *Operation* chapter**.** Some machine configurations require more than one sort wheel.

Assemble and Install the C-Stick Tool

Follow the directions in the *CrystalPress Quick Start Guide* and or in the *Operation* chapter to assemble and install the *C-Stick* tool in the *Carriage*.

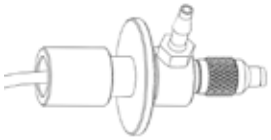


Figure 5. The *C-Stick* pick-and-place tool.

Insert a Transfer Sheet

Follow the directions in the *CrystalPress Quick Start Guide* and or in the *Operation* chapter to insert a *Transfer Sheet* between the *Pinch Wheel*s and the *Drive Shaft*. Make sure to lower the *Pinch Wheel Lever* to lock the sheet in place before proceeding.

Connect the Power Cord

Find the power switch on the bottom of the back of the right *End Cover*. Make sure the switch is in the OFF 'O' position. Connect the power cord to the machine and then to a power outlet.

CAUTION

Ioline recommends using a surge protector power strip for both the machine and the computer.

Connect the Machine to the Computer

With machine power off, connect the **CrystalPress** to your computer with the provided USB cable. Before powering on the machine, make sure the software is installed so that the correct drivers are available. See the *Operation* chapter if a serial port connection is required.

Power On

With the computer already powered on, turn the **CrystalPress** power switch to ON 'I'. The *Carriage* will initialize itself by moving right until it touches the right end plate then moving left until it touches the left end plate. It will travel back to the right end plate and stop, then the sort wheels will turn then stop when initialization is complete. The **CrystalPress** machine is ready to use as soon as the green *Status* light on the *Keypad* is visible.

CAUTION

Keep hands and loose clothing away from all moving parts of the machine.

Note

The **CrystalPress** will always perform the initialization sequence at power ON. The initialization sequence will not start unless the *Wiper Arm Clamps* are completely locked closed.

Start CrystalStudio

With the *Status* light showing green, start the **CrystalStudio** software. It will automatically connect to the **CrystalPress** if the setup process was successful.

Continue to the *Operation* chapter for details on using the **CrystalPress** and making a motif.

Chapter 3

Operation

The **Operation** *chapter describes all processes and procedures related to use of the* **CrystalPress** *equipment for making motifs. A number of hints and suggestions for the motif transfer process are also included to help the user fit the* **CrystalPress** *and* **CrystalStudio** *software into their business.*

Keypad Controls

The *Keypad* provides access to the main functions of the machine.

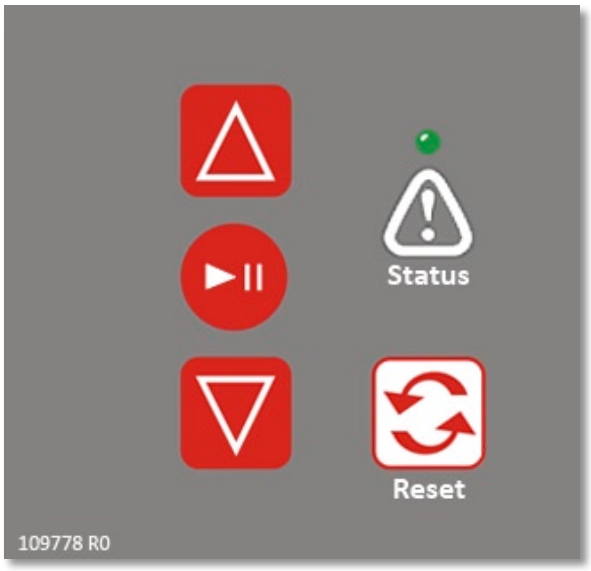


Figure 6. The **CrystalPress** *Keypad*.

Print/Pause

The **Print/Pause** key switches the machine between printing (online) and paused (offline). If the **Print/Pause** key is pressed during printing, the *Status* light turns red and the machine will stop. The **Arrow** and **Reset** keys are active when in *Pause* mode. When the **Print/Pause** key is pressed again, the machine enters *Print* mode, the *Status* light turns green and printing resumes exactly where it stopped, even if the *Transfer Sheet* was moved while paused.

Figure 7. Print/Pause Key

PRINT mode	*Status* = Green	**Arrow** keys inoperable, machine *online* (ready to receive instructions).
PAUSE mode	*Status* = Red	**Arrow** keys operable, machine *offline* (*not* ready to receive instructions).

Figure 8. Arrow Keys

Arrow Keys

Pressing the **Arrow** keys moves the *Drive Shaft* (X-Axis). When a *Transfer Sheet* is installed, the *Arrow* keys move it in and out of the machine. The **Arrow** keys only work when the machine is paused with a red *Status* light (see **Print/Pause** above).

Use the **Arrow** keys to position where the bottom edge of the motif will start. The *White Pounce Strip* shows where printing begins. See *Figure 7* below. Position at least 1/4 inch of the *Transfer Sheet* past the *White Pounce Strip* to avoid rough edges tangling the *C-Stick*.

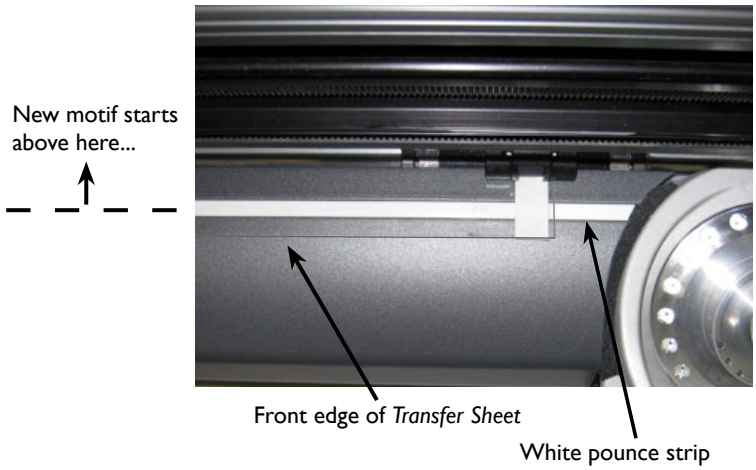


Figure 9. Position *Transfer Sheet* with **Arrow** keys.

Figure 10. Reset Key

Reset

Pressing the **Reset** key will stop printing, clear the memory including the motif that the machine is currently making, and turn the *Status* light green. It also makes a new zero point so that any part of the *Transfer Sheet* that is beyond the *White Pounce Strip* is not used.

Use this key to clear a design that was accidentally sent to the **CrystalPress** and to choose a position where new motifs will start printing. Make sure that all motifs that are already on the *Transfer Sheet* are PAST the *White Pounce Strip*.

The **Reset** key works even if the machine is printing so be careful when pressing it. Press the **Print/Pause** key to change to *Pause* (red *Status* light) mode and use the **Arrow** keys if it is necessary to reposition the starting point after the **Reset** key is pressed.

Figure 11. Status Indicator Light

Status

The *Status* light indicates if the **CrystalPress** ready to print (online) or paused (offline). Press the **Print/Pause** key to change modes. A red or green blinking *Status* light might also indicate an error. See the *Troubleshooting* chapter for more information.

Status = Green	**PRINT** mode	**Arrow** keys inoperable, machine *online* (ready to receive instructions).
Status = Red	**PAUSE** mode	**Arrow** keys operable, machine *offline* (not ready to receive instructions).

Install the Sorter Wheel

Rhinestones and crystals are prepared for delivery to the *Transfer Sheet* by the *Sorter Bowl*(s). Each size of crystal (6ss to 30ss) requires a separate *Sorter Wheel* that has alignment pits designed to fit the element. In some cases, different brands also require special *Sorter Wheel*s. The customer service specialists at Ioline will assist customers with choosing the correct *Sorter Wheel*s for brands and sizes of supported crystals. Sizes are listed in the *Optional Equipment* section later in this chapter.

Turn ON machine power then use the following steps to install a *Sorter Wheel* in the *Sorter Bowl*. Removing a *Sorter Wheel* is covered later in the *Operation* chapter.

Step 1: Unlock the Wiper Arm

Rotate the *Wiper Arm Clamp* clockwise to unlock the wiper assembly.

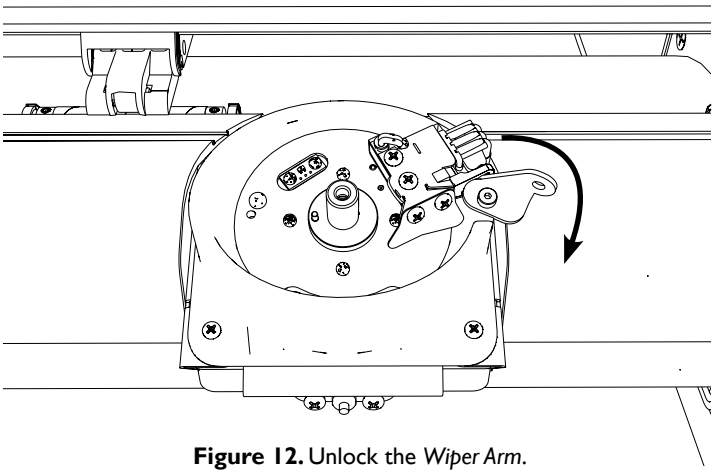


Figure 12. Unlock the *Wiper Arm*.

Note

It is recommended that *Sort Wheels* are installed with machine power turned ON because the locating pin is held in place when the motor has power. It is possible to install the wheel with power off but it will likely take longer.

Step 2: Rotate the Wiper Arm Up

Rotate the *Wiper Arm a*ssembly all the way up away from the *Sorter Bowl*.

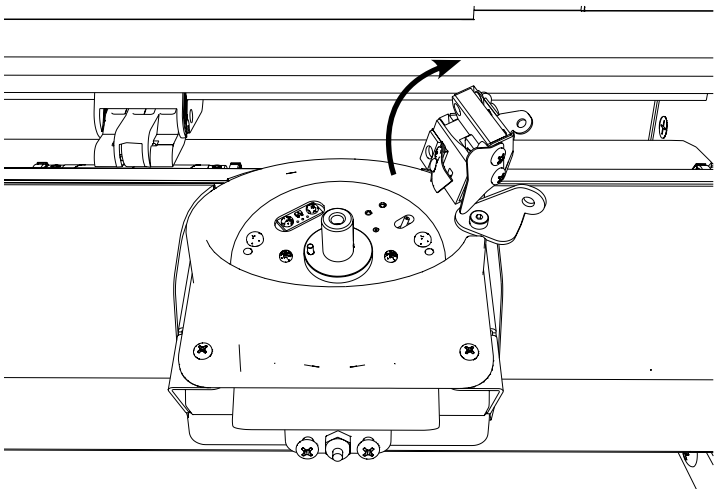


Figure 13. Rotate *Wiper Arm*.

Hint

Make sure that all Rhinestones are cleared from the *Sorter Bowl* before inserting a wheel. It is possible to leave them behind in the sorter (especially the smaller sizes) when a wheel is removed. They can get lodged under the wheel and keep it from working properly. See the *Troubleshooting* chapter for more information.

Step 3: Insert Sorter Wheel

Slide the *Sorter Wheel* onto the shaft in the *Sorter Bowl*. Turn the wheel until it drops into position.

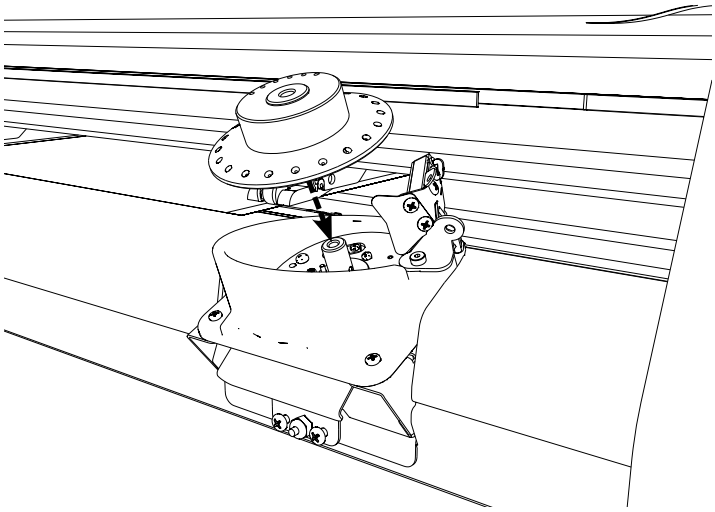


Figure 14. Insert *Sorter Wheel*.

The edge of the wheel will sit flush against the *Sorter Bowl* with no visible gaps when properly seated.

Sorter Wheel **not** seated on shaft or large stone(s) under wheel.	*Sorter Wheel* **not** seated. Check for small stone(s) under wheel.	*Sorter Wheel* seated properly.

Figure 15. Check for proper seating of the *Sorter Wheel*.

Step 4: Secure the Sorter Wheel

Insert the *Thumbscrew* through the top of the *Sorter Wheel* and into the threaded hole in the sorter mechanism shaft. Tighten the *Thumbscrew* only until snug. Do not over tighten.

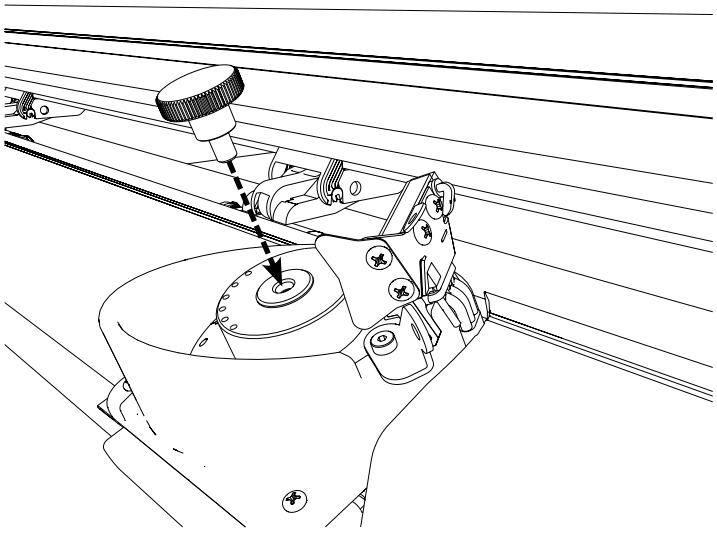


Figure 16. Tighten the *Sorter Wheel t*humbscrew.

Step 5: Lock the Wiper Arm

Rotate the *Wiper Arm* down into operating position. Turn the *Wiper Arm Clamp* counter-clockwise until it stops to lock the *Wiper Arm* in place.

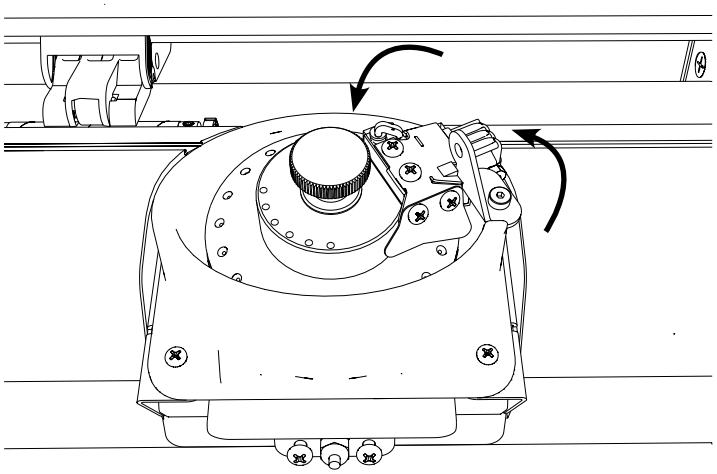


Figure 17. Rotate the *Wiper Arm* into place then lock it down.

Note

The **CrystalPress** will not operate unless the *Wiper Arm Clamp* is fully rotated into position. The *Sorter Bowl* light will blink and the *Carriage* will not move if the *Wiper Arm* is not completely locked in place with the *Wiper Arm Clamp*.

Assemble and Install the C-Stick

The *Carriage* moves Rhinestones and crystals from the sorters to the *Transfer Sheet* with the *C-Stick* tool. It is important to keep the CP-I *C-Stick Tip* clean and working properly to ensure the fastest throughput and trouble free operation of the **CrystalPress**. See the *Maintenance* chapter for more information on proper care of the *C-Stick* tool. The *Troubleshooting* chapter has hints for identifying and resolving issues related to the *C-Stick*.

Turn off power then use the following steps to install the *C-Stick* into the *Carriage*.

Step 1: Install C-Stick Tip on the C-Stick Body

Remove a *C-Stick Tip* and the *C-Stick Body* from the protective bags. Install the tip on the body by rotating counter clockwise as shown.

Note

Do not overtighten the tip as it will make later removal difficult.

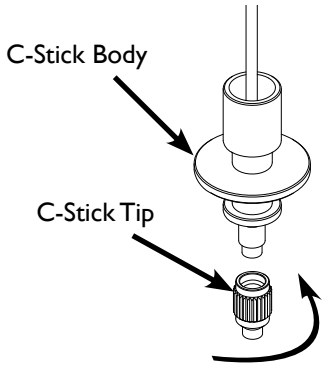


Figure 18. Install the *C-Stick* Tip onto the *C-Stick* Body.

Step 2: Insert the C-Stick in the Carriage Jaw

Loosen the *Carriage Thumbscrew* by turning it counter-clockwise. Rotate the clamp out of the way then insert the *C-Stick* into the *Carriage* as shown. Ensure the flange on the tool slips into the slot in the jaw.

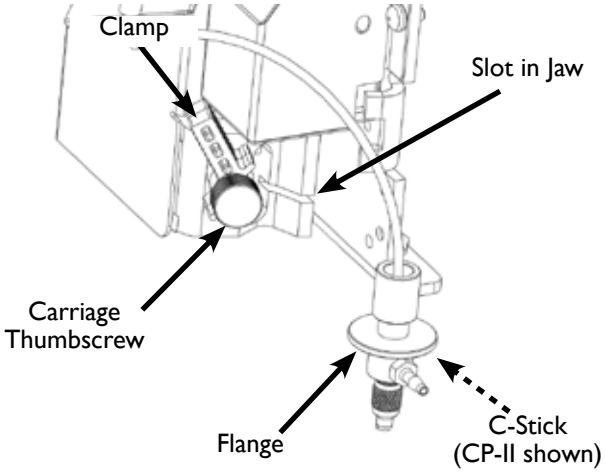


Figure 19. Insert the *C-Stick* in the *Carriage*.

Step 3: Tighten the Clamp

Rotate the *Clamp* clockwise and tighten the *Carriage Thumbscrew* until the *C-Stick* is snug. Excess force is NOT required. Do not overtighten.

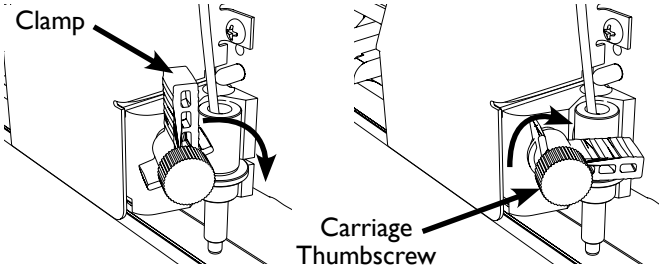


Figure 20. Tighten the *Carriage* clamp thumbscrew.

Step 4: Insert the Cable

Loosen the *Socket Nut* at the top left hand corner of the *Carriage* cover by rotating counter-clockwise. Pinch the cable end about 1 cm below the tip then insert the end into the socket. Push the cable into the socket until it stops. Lightly tighten the *Socket Nut* clockwise.

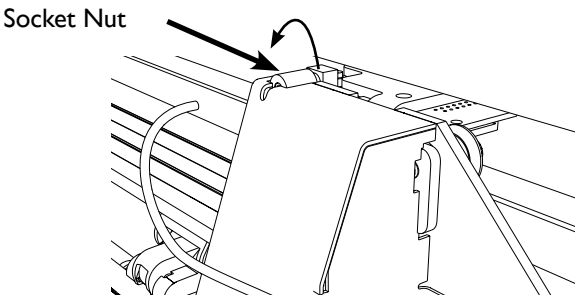


Figure 21. Loosen the *Socket Nut (CP-II pump removed for clarity)*.

Figure 22. Insert the *C-Stick* cable into the socket.

Step 5: Attach Pump Hose to Tool

CP-II Only: Press the loose end of the vacuum hose fully onto the tool body barb until it stops.

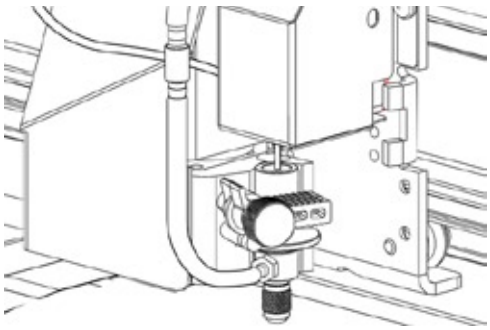


Figure 23. Attach pump hose to tool (CP-II only).

Load a Transfer Sheet

The *Transfer Sheet* holds Rhinestones and crystals in place as the *C-Stick* transfers them from the *Sorter Bowls*. The heat-activated adhesive side of the stones faces up after placement so that it contacts the garment when inserted into a heat press. For this reason, the motif image looks backwards on the *Transfer Sheet* until it is flipped over for use.

Use the following steps to load a *Transfer Sheet* in the **CrystalPress**.

Step 1: Find the Pinch Wheel Lever

Locate the *Pinch Wheel Lever* on the back of the **CrystalPress**. It is behind the machine, close to the right *End Cover*. The diagram shows the position of the lever when the *Pinch Wheels* are locked down.

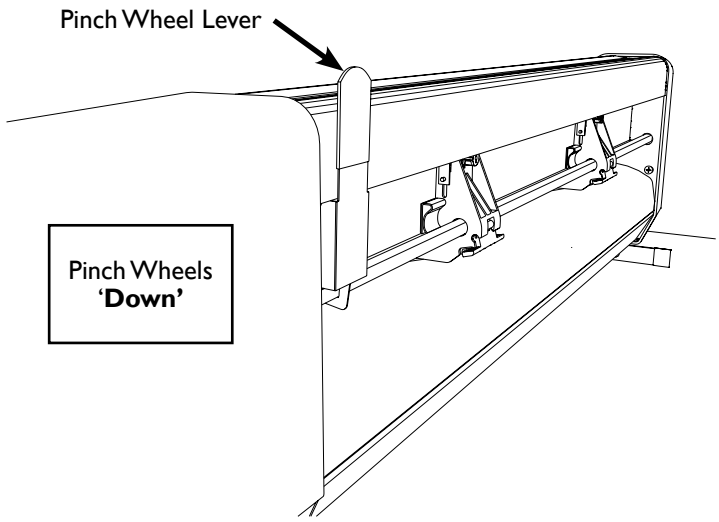


Figure 24. The *Pinch Wheel Lever* when wheels are locked down.

Step 2: Raise the Pinch Wheels

Push the lever away from the machine to raise the *Pinch Wheels*.

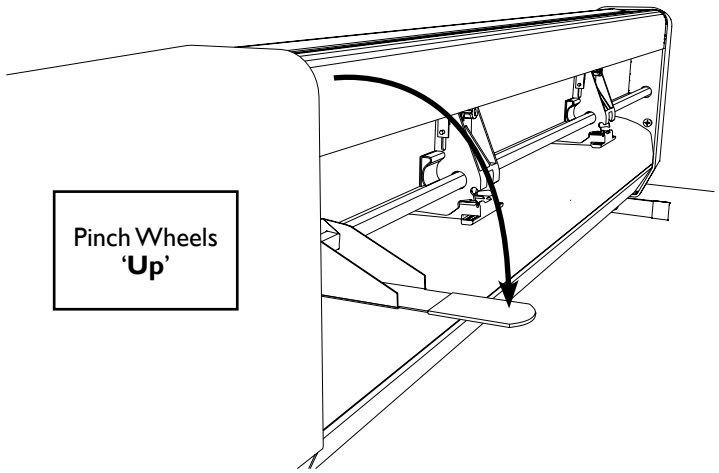


Figure 25. The *Pinch Wheel Lever* when wheels are locked up.

Step 3: Load the Transfer Sheet

Peel the backing off a *Transfer Sheet*. With the sticky side up, slide the *Transfer Sheet* into the machine from the front or rear. Align the right and left wheels with the white strips on each side of the *Transfer Sheet*. Align the front edge of the sheet with the *White Pounce Strip*. Hold the sheet in place then pull the *Pinch Wheel Lever* forward to lower the *Pinch Wheels* and lock the *Transfer Sheet* in place.

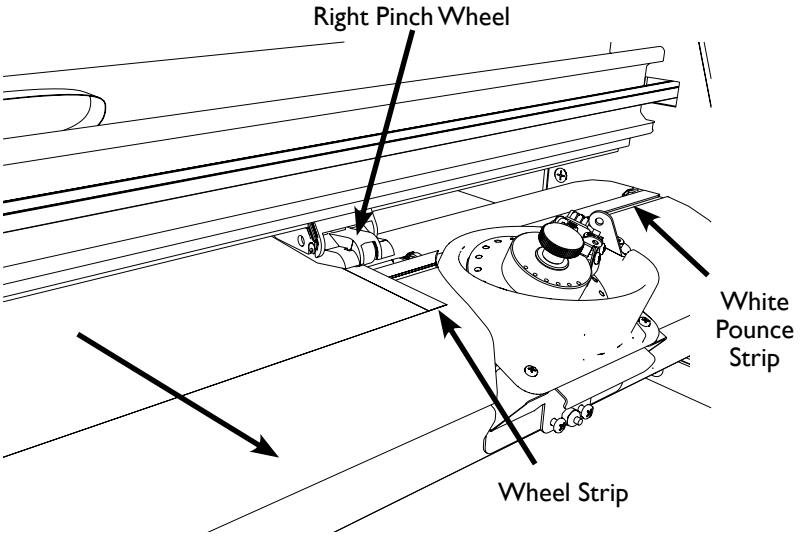


Figure 26. Insert a *Transfer Sheet* then lock the *Pinch Wheels* down.

Step 4: Position the Transfer Sheet

Press the *Print/Pause* key on the *Keypad* until the *Status* light turns red. Use the *Arrow* keys to position the *Transfer Sheet* and set where the bottom edge of the motif will start. The W*hite Pounce Strip* shows where printing begins. Position at least 1/4 inch of the *Transfer Sheet* past the *White Pounce Strip* to ensure smooth operation.

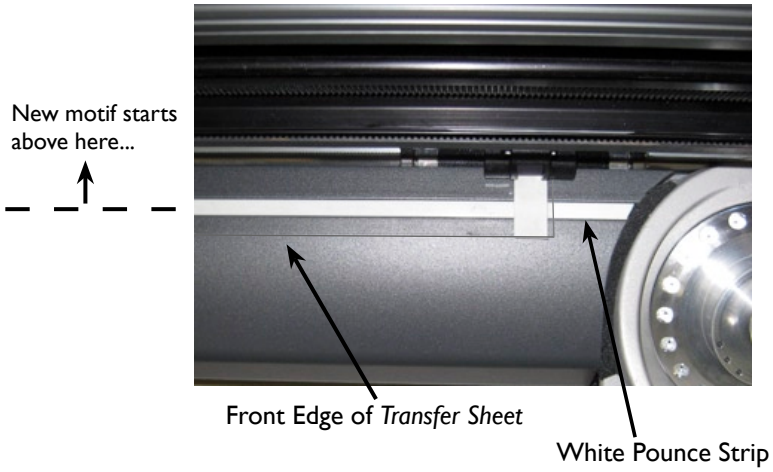


Figure 27. Insert a *Transfer Sheet* then lock the *Pinch Wheels* down.

Note

Make sure the *Transfer Sheet* extends at least 1/4 inch beyond the *White Pounce Strip* so that rough edges or turned up corners on the sheet do not catch on the *C-Stick* tool.

Fill the Sorter

Adding Rhinestones and crystals to the sorters is very easy. Filling the sorters to a minimum level is required to ensure proper operation of the sorting mechanism. See the table below for the proper amount based on the size of the stones. The following steps and information will help prepare the sorters for use.

CAUTION

Be extra careful with small stones when filling the *Sorter Bowls*. Spilling them into the machine can cause internal failures.

CAUTION

DO NOT OVERFILL THE SORTER BOWL. Too many stones in the sort bowl might jam the sort wheel.

Hint

1 Gross = 144 stones

1. Turn the **CrystalPress** OFF by pressing the power switch on the back of the *Right End Cover* to the 'O' position.
2. Empty all undesired stones from the sorter. See the *Empty the Sorter* section later in this chapter.
3. Change the *Sorter Wheel* to match the desired stone size. See the *Install the Sorter Wheel* section earlier in this chapter.
4. Ensure you have enough Rhinestones or crystals to properly fill the bowl for use. The table below provides the recommended amount.

Size	Minimum Gross Required	Maximum Gross Allowed
6ss	6	35
10ss	1	22
12ss	1	18
16ss	1	9
20ss	0.5	6
30ss	0.5	1

5. Slowly pour stones into the lower portion of the *Sorter Bowl*. **Important:** DO NOT OVERFILL THE BOWL (see table above). The stones should not pile higher than the crease inside the bowl casing as shown below. Too many stones in the *Sorter Bowl* cause upsidedown placements.

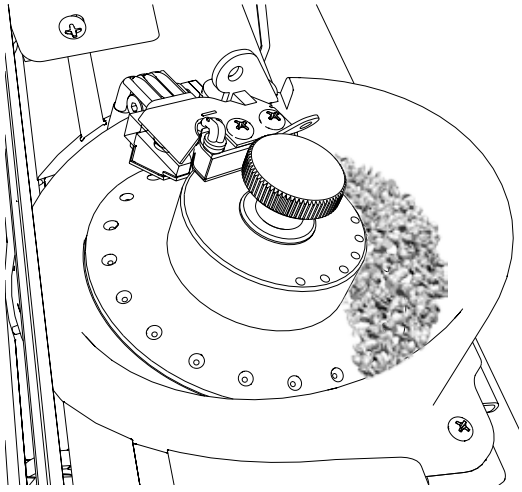


Figure 28. A properly filled *Sorter Bowl*.

Empty the Sorter/Remove Wheel

Removing Rhinestones and crystals from the sorters requires a few quick steps and ensures little or no waste. Recover unused crystals from the sorters with the following process:

1. Unlock the *Wiper Arm Clamp* by turning the lock clockwise.
2. Rotate the *Wiper Arm* all the way up until it stops.
3. Loosen the *Sorter Wheel Thumbscrew* and remove it.
4. Slowly pull the *Sorter Wheel* up off the *Sorter Bowl* shaft. Tilt the *Sorter Wheel* once it clears the shaft, allowing the stones to fall into the empty *Sorter Bowl*. Once all the stones are off the *Sorter Wheel*, remove it and set aside.

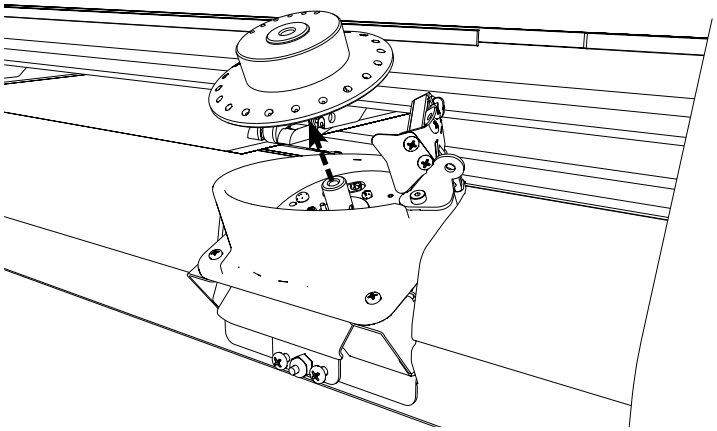


Figure 29. Removing the *Sorter Wheel* from the *Sorter Bowl*.

5. Position an empty container under the small door in the front of the *Sorter Bowl*.
6. Pull the release door down and the stones will fall into the container. Gently sweep remaining stones into the container making sure to clean ALL stones from inside the bowl.

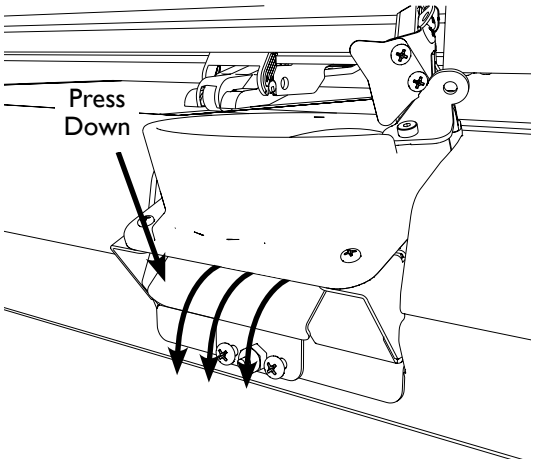


Figure 30. Direction of falling stones when *Stone Release Door* open.

CAUTION

Never remove a *Sorter Wheel* while the machine is printing. Always keep the face away from the *Sorter Bowls* when they are moving.

Note

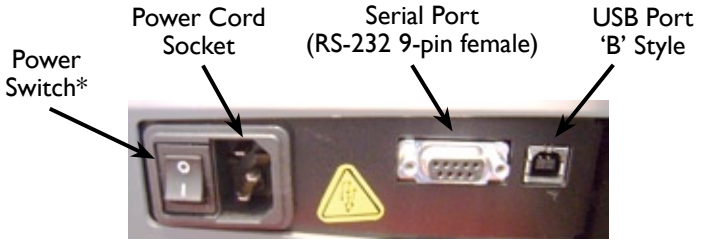
If the design requires more colors or sizes than the **CrystalPress** has *Sorter Bowls*, you will have to change *Sorter Wheels* in the middle of printing the motif. Do NOT turn OFF power during the switch so that the current printing location is preserved and the motif continues from where it left off.

CAUTION

Make sure every stone is removed from the *Sorter Bowl*, especially small sizes. Stones caught under the *Sorter Wheel* can cause the *C-Stick* to malfunction and drastically lower throughput.

Communication Setup

The **CrystalPress** allows communication between the **CrystalStudio** software via USB (preferred) or a standard RS-232 9-pin PC serial port. The **CrystalStudio** software will automatically find the **CrystalPress** when connected to either port. Check communications in **CrystalStudio** in the *Setup* menu under *Communication Status*.



** ON/OFF symbol (O/I) locations may vary*

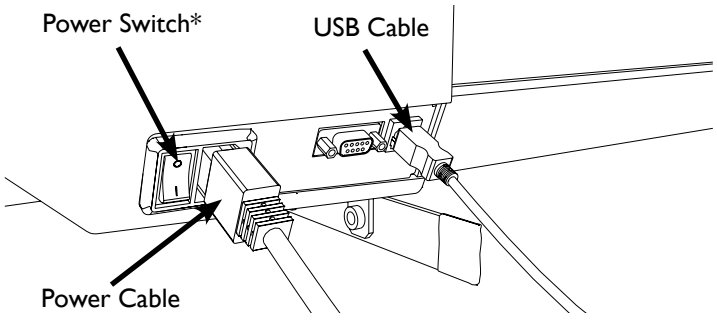
Figure 31. Connectors on the back of the **CrystalPress**.

USB (Preferred)

The preferred method for connecting the **CrystalPress** to the **CrystalStudio** is by Universal Serial Bus (USB). The alternative is making a connection over an RS-232 Serial Port (see next section).

The USB installation process is fully described in the *USB Installation Procedure* included with the **CrystalPress** Accessory Kit. The following steps assume the machine is completely setup as described in the *CrystalPress Quick Start Guide* including installation of the software and drivers from the CD-ROM.

1. Turn power OFF to the **CrystalPress** by pressing the power switch at the bottom of the *Right End Cover* to the 'O' position.
2. Find the included USB cable in the *Accessory Kit*. Connect the 'A' end to a free USB port on the computer and the 'B' end to the machine.
3. Turn power ON to the **CrystalPress** by pressing the power switch at the bottom of the *Right End Cover* to the 'I' position.



** ON/OFF symbol (O/I) locations may vary*

Figure 32. USB connection on the back of the **CrystalPress**.

Figure 33. USB connectors used with the **CrystalPress**.

4. If the driver software was pre-installed correctly from the CD-ROM, a few messages will appear on the computer screen indicating that new hardware was found and that drivers are installing. A final message will appear indicating that the hardware is ready for use.
5. Make sure the *Status* light on the *Keypad* is green. If it is not, press the *Reset* key until it is.
6. Start the **CrystalStudio** software. If everything is working, the software will start normally and the picture of the machine in the lower right hand corner will turn green. Review the *Operations* chapter for information on using the **CrystalPress**.

RS-232 9-Pin Serial Port

If a USB port is not available, connect the **CrystalPress** to the **CrystalStudio** over a RS-232 9-pin Serial Port. A male-female 9-pin straight-through (non-NULL) cable (not included) is required for this configuration. No special drivers are necessary for a serial connection. The following steps assume the machine is completely setup as described in the *CrystalPress Quick Start Guide*:

1. Turn power OFF to the **CrystalPress** by pressing the power switch at the bottom of the *Right End Cover* to the 'O' position.
2. Connect the male end of the serial cable to the machine and female side to a serial port on the computer.
3. Turn power ON to the **CrystalPress** by pressing the power switch at the bottom of the *Right End Cover* to the 'I' position.

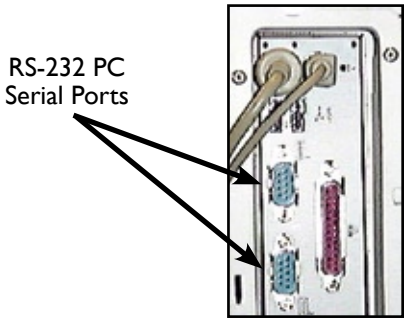


Figure 34. Serial Ports on a computer.

4. Make sure the *Status* light on the *Keypad* is green. If it is not, press the *Reset* key until it is.
5. Start the **CrystalStudio** software. If everything is working, the software will start normally and the picture of the machine in the lower right hand corner will turn green. Review the *Operations* chapter for information on using the **CrystalPress**.

Recommended port settings (if required):

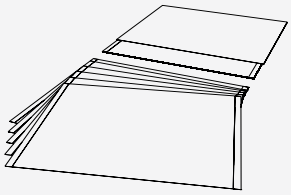
Baud Rate:	9600
Data Bits:	8
Parity:	None
Stop Bits:	1
Flow Control:	Hardware CTS/RTS

Note

Consumables are not covered under warranty.

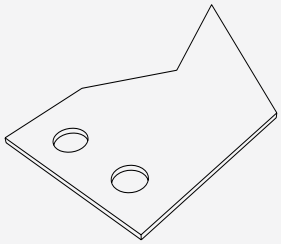
Consumables

There a few items that are consumed or wear during normal use of the **CrystalPress**. These items are available directly from **Ioline Customer Service** or online at http://www.ioline.com.



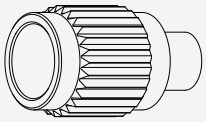
Motif Transfer Sheets
Available in a 26 pack of 13.25" x 12"
or 10 pack of 13.25" x 30"

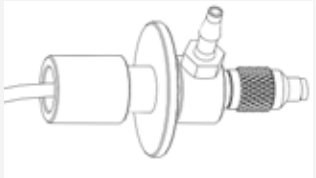
Used to transfer the motif from the **CrystalPress** to the garment for the heat transfer process.



Sorter Wiper
Available individually

Ensures Rhinestones and crystals are properly aligned in the *Sorter Wheel* before transfer.



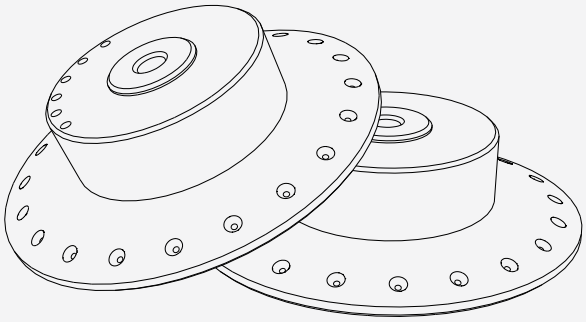


Replacement C-Stick Tips and Bodies
Available in packs of five or singly (respectively)

Used to transfer the Rhinestones and crystals from the *Sorter Bowl* to the *Transfer Sheet*.

Optional Equipment

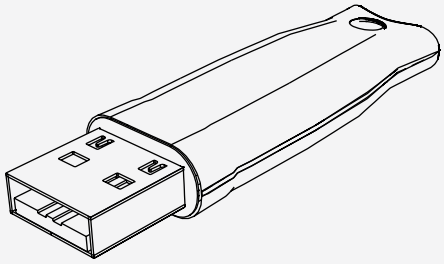
A few items are available to extend the utility of the **CrystalPress.** These items are available directly from **Ioline Customer Service** or online at http://www.ioline.com.



Extra Sorter Wheels Available individually

Captures and orients Rhinestones and crystals for transfer by the *C-Stick*. Each stone size (and some brands) require a specific *Sorter Wheel*.

Size	A	B	C
6ss	**Swarovski**	**Ioline /Preciosa**	-
10ss	**Swarovski**	**Ioline/Preciosa**	**3mm Stud**
12ss	*all*		
16ss	*all*		
4mm	*Stud*		
20ss	*all*		
30ss	*all*		



CrystalStudio USB Hardlock Key Available individually

Hardware key that enables one copy of **CrystalStudio** to operate. Buy additional keys for multiple simultaneous users.

Hint

Always test stones, materials, and the heat press together before starting full production of a motif embellished garment or accessory. All guidelines in this manual will not work as described in every situation.

Heat Press Guidelines

Ioline has collected and tested heat press processes that improve results when transferring flat-back-hotfix Rhinestones and crystals from motifs to garments and accessories. General guidelines and advice are included below. There is no 'right' answer for all materials, brands of stones, or heat press models. Always use the following information as a starting point and test both the stones and materials with the heat press before starting full production of a design.

Heat Press Settings

1. **Optimal Temperatures** are between 120° C (250° F) - 170° C (340° F) depending on material and press time. The goal is to get the glue hot enough to absorb into, and bond with, the material but not to get absorbed completely away from the crystal.
    a. If the adhesive soaks into the fabric, shorten the application time first then reduce the pressure or temperature.
    b. Larger stones require longer times OR increased temperature and pressure.
    c. Mixing stones with large size differences, 30ss and 6ss for example, may cause problems. The glue melts much faster on the small stones and may get completely absorbed into the material by the time the glue on the large stone is melted.
    d. When applying stones to thicker fabric (pile knit, artificial fur, denim, etc.), increase the pressure and application time.
    e. When applying stones to delicate fabrics, decrease the pressure and application time. Also test whether a Teflon® sheet is required between the stones and heating element.
2. **Arm Pressure** set to LOW. Excessive pressure may damage the stones or cause an undesirable finished product.
3. **Press Time** (heat press closed on design) depends on the temperature and the material. The table below provides generic combinations to start testing with.

Material	Press Time (seconds) @ 163° C (325° F)					
	6ss	10ss	12ss	16ss	20ss	30ss
Cotton	8	12	15	20	25	28
Wool	13	17	20	25	30	33
Denim	18	22	25	30	35	38
Lycra	10	14	17	22	27	30
Silk	8	12	15	20	25	28
Synthetics	7	11	14	19	24	27
Synthetic Suede	20	24	27	32	37	40
Artificial Fur	30	34	37	42	47	50

Process Hints

1. Proper adhesion depends on adsorption of the adhesive into the substrate when used with textiles. Materials with water-proofing treatments do not work well as they resist absorption.

   To test for an incompatible coating, lay a sample flat and sprinkle water on it. If the water beads up instead of absorbing, the adhesive on the stones will not work with the material.

2. Pre-heat the garment or accessory in the heat press WITHOUT the motif for 5-10 seconds. This removes moisture from the material and improves the bond during adhesive melting.

3. Cut the excess *Transfer Sheet* away from the motif before application. Get the edges close to the motif outlines. This will reduce marks on the fabric from the unused *Transfer Sheet* adhesive.

4. Protect the heat press with a *Protective Sheet* between the top and bottom *Platens* of the press. The most common protective material is a Teflon® sheet although heavy craft paper (like a brown paper bag) will work too.

5. Don't remove the *Transfer Sheet* until the design has cooled. This takes from 1 to 5 minutes. Test the time to make sure.

6. Protect *Synthetic Suede* and *Fur* fabrics after application by peeling off the *Transfer Sheet* in the direction of the nap.

7. If crystals do not set properly during the first process attempt, re-apply heat with adjusted pressure and/or temperature.

8. The adhesive will continue to harden for 24 hours after application so do not subject the product to wear or washing for one day after production.

9. It is possible to bond crystals to materials other than textiles. Metal, glass, wood and paper are possible. Testing is critical to determine correct process steps and product life.

Embellished Garment Care

The following guidelines are generic hints specific to an embellished garment or accessory. *It is absolutely necessary to follow the cleaning instructions of the garment over those listed below.*

1. To increase the life of the embellished garment or accessory, do not wash them for 24 hours after the transfer.

2. **Washing Instructions**:

   a. Water temperature 16° C (60° F)
   b. Gentle cycle
   c. Mild detergent
   d. Turn garment inside out or place in soft wash bag
   e. Do not use chlorine bleach

3. **Drying Options:**

   a. Hang dry
   b. Turn garment inside out, tumble dry low heat, gentle cycle.
   c. Professional dry cleaning is possible with some crystal brands. Check stone manufacturer specifications first.

Note

Always follow your garment care instructions before following the *Embellished Garment Care* guidelines. These always supersede the generic suggestions in this manual.

Embellishing with a Motif

This section outlines steps required to make a Rhinestone embellished garment or accessory. It also shows how the Ioline **CrystalPress** and **CrystalStudio** fit in the process. Start with the design and end with a finished product ready to sell. Familiarity with the *Operation* chapter and the *CrystalStudio User Guide* is required.

Before You Start

Ensure you have the following ready before starting the project:

1. Properly setup **CrystalPress** and **CrystalStudio** software according to directions in the *CrystalPress Quick Start Guide*.
2. Design software like Ioline Design or CorelDraw®.
4. *Transfer Sheet* and enough crystals to complete the design and maintain minimums stated in the *Operation* chapter.
5. A heat press, protective sheets, and garment or accessory for the motif transfer.

Process Step Symbols

The following process steps have symbols that indicate which equipment or software is involved. They are identified below.

Computer or Software

Requires computer or software activity not related to Ioline **CrystalPress** products. Consult vendor documentation for help.

CrystalPress Equipment

These steps involve use of the **CrystalPress** machine. Read the *Operation* chapter for information and instructions.

CrystalStudio Software

CrystalStudio software is used for these steps. Read the *CrystalStudio User Guide* for help using the program.

Heat Press Equipment

These steps require use of the heat press. Consult vendor documentation and the *Operation* chapter for advice.

Finished Product

Information and processes related to the finished product after the transfer is complete.

Create the Motif Design

Create a Design
1

Use a *Vector* based design program like Ioline Design, CorelDraw®, or Adobe Illustrator® to make a motif design outline.

Export Design
2

Output the design in HPGL (.plt) or DXF (.dxf) *Vector* formats.

Import Design
3

Import the design into the **CrystalStudio** software and make sure all the outlines are visible.

Create Motif from Design
4

In **CrystalStudio**, apply stones to the design outlines to create a motif. Use *Layers* to combine different sizes and colors.

Prepare Job
5

Adjust settings like multiple copies and spacing between stones. Assign stone sizes to the sorters to match layers.

Produce the Motif

Setup Sorter Bowls
1

Install the correct *Sorter Wheels* into the **CrystalPress**. Ensure stone sizes in machine match **CrystalStudio** *Layers*.

Load Consumables
2

Load a *Transfer Sheet* and pour stones into the *Sorter Bowls*. Make sure to load the proper amount.

Power On
3

Power on the **CrystalPress** by pressing the power switch to the 'O' position. Stay clear of moving parts during initialization.

Hint

The **CrystalStudio** software requires *Vector* based design images to create motifs. *Vector* images are a collection of outlines with defined coordinates for the end point of each line.

Bitmap images are NOT compatible with **CrystalStudio**. A bitmap image is similar to a photograph in that it is a collection of dots, each with a specific color.

Note

Make sure that the *Layers* in the **CrystalStudio** are assigned the correct stone sizes to match what is loaded in the *Sorter Bowls* in the **CrystalPress**.

Produce the Motif (continued)

Prepare to Print
4

Press the *Print/Pause* key so the *Status* light is red. Move the *Transfer Sheet* with *Arrow* keys to position where the motif will start.

CrystalPress Ready
5

Press the *Reset* key on the *Keypad* to set the beginning point for the motif. The *Status* light will turn green.

Print Motif
6

Press the 'GO' button in **CrystalStudio**. The **CrystalPress** will make the motif to match what is displayed in **CrystalStudio**.

Transfer the Motif

Remove the Motif
1

When the motif is finished, lift the *Pinch Wheels* then remove the motif from the **CrystalPress**.

Check the Motif
2

Inspect the motif to ensure that no stones were placed upside down or fell off during the process of removal.

Pre-Heat the Heat Press
3

Set the heat press temperature and pressure that is appropriate for the stone size and material then turn on to pre-heat.

Pre-Heat the Material
4

Line the heat press *Platen* with a *Protective Sheet* then place the material on the *Platen*. Pre-heat the material for 5-10 seconds.

Position the Motif
5

Remove the cover sheet from the motif (if used). Position the motif on the material making sure adhesive side is down.

Transfer the Motif (continued)

Press the Motif
6

Close the heat press arm onto the material and lock it down. Leave it locked in place for the time required for your design.

Remove the Material
7

Open the heat press arm after enough time. Remove the material then set it aside to cool for as long as the design requires.

Finishing

Remove the Backing
1

After the motif has cooled, slowly remove the *Transfer Tape* backing. Make sure the stones stay adhered to the material.

Check the Product
2

Check the motif to ensure that all the stones are in place and that they are all bonded properly.

Deliver the Product
3

Provide the finished product to the customer. Remind them not to wash the garment for 24 hours from the transfer time.

Additional Operation Hints

Note

Printing more than two layers depends on the transfer sheet remaining undisturbed in the machine. Do not move it with the keypad keys or by hand!

Printing More than Two Layers

The **CrystalPress** and **CrystalStudio** are able to print up to 100 layers in a single design. The CrystalPress can place two stones during one printing operation so a few extra steps are required to print more than two layers.

1. Make the first two layers for printing visible in the **CrystalStudio** by checking the *Visible* box in the *Layer Manager* and print them following directions stated above and in the *CrystalStudio User Guide*.
2. Once the print is complete, empty the crystals from the *Sorter Bowls* and replace with crystals for the third and fourth layers.
3. In **CrystalStudio**, hide the first two layers by un-checking the *Visible* box then make the third and fourth layers visible by checking the *Visible* box.
4. Print the third and fourth layers. The **CrystalPress** will automatically back-up to the front of the *Transfer Sheet* and place crystals for the third and fourth layers among the crystals from the first two layers.
5. Repeat this process for each additional layer, printing no more than two at a time.

Pause Printing

It is sometimes helpful to pause the printing process to inspect a design. To do this:

1. Press the *Print/Pause* key on the *Keypad* until the *Status* light turns red.
2. The *Arrow* keys will work and allow movement of the motif for inspection.
3. When finished, press the *Print/Pause* key again. The *Transfer Sheet* will move back to where it was working then continue making the motif.

Cancel a Print

If it is necessary to cancel a print job, the data in the machine must get cleared from memory. To do this:

1. Press the *Print/Pause* key on the *Keypad* until the *Status* light turns red.
2. Use the *Arrow* keys to position the *Transfer Sheet* where the next file should start OR remove the *Transfer Sheet* by lifting the *Pinch Wheels* with the lever.
3. Press the *Reset* key to delete motif data from machine memory and prepare to print the next motif.
4. The machine will notify the **CrystalStudio** that the plot was cancelled.

Chapter 4

Routine Maintenance

The **Routine Maintenance** *chapter provides suggestions for keeping the* **CrystalPress** *equipment working in top condition for its entire service life. All of these processes are designed for the end user to accomplish with no training. Advanced procedures are only recommended for trained service personnel and not included here. Contact Ioline Customer Service if additional service is required.*

Clean the Drive Shaft

Check the *Drive Shaft* regularly. If debris has accumulated, remove as described below:

1. Turn off the machine.
2. Gently remove any accumulated dust and residue with a stiff-non-metal bristle brush (an old tooth brush works great).

Figure 35. Cleaning the *Drive Shaft*.

CAUTION

Do not spray the machine with water, solvents or other liquids. Use a non-metal bristle brush or a cloth dampened with water or isopropyl alcohol. Keep the *Drive Shaft* bearings free of all liquids.

Clean the Platen and Traverse

Dust and fiber residue accumulate on the *Platen* and *Traverse*. Under regular use, clean every month:

1. Turn off power to the machine.
2. Dampen a lint-free cloth with isopropyl (pharmacy) alcohol and gently wipe the *Traverse* rails until accumulated residue is removed. Pay special attention to the parts of the rail where the *Carriage* wheels roll.
3. With the same cloth, wipe the *Platen* surface, especially where the *Transfer Sheet* moves over it.

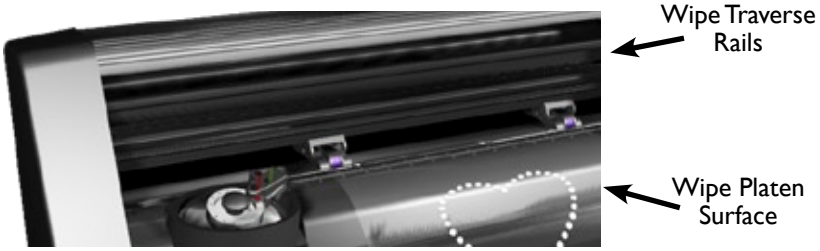


Figure 36. The *Traverse* and *Platen* surfaces.

Note

A quick way to lightly restore the C-Stick is to touch the tip of the tool to the adhesive part of the Transfer Sheet a few times.

Clean the C-Stick (CP-I Only)

IMPORTANT: DO NOT PERFORM THIS PROCESS ON VACUUM ENABLED CP-II C-STICKS.

The *C-Stick* tool tip on the CP-I will get dirty and wear over time, eventually requiring replacement. It is possible to extend the life of the *C-Stick Tip* by cleaning it with the following procedure:

1. Turn off power to the machine.
2. Remove the *C-Stick* from the *Carriage* using the reverse of the installation steps in the *Operation* chapter.
3. Dampen a lint-free cloth with isopropyl (pharmacy) alcohol and gently wipe the tip of the *C-Stick* in one direction 2-4 times with light pressure. Each successive wipe should produce a fading grey streak on the cloth. Stop wiping after four passes or when the grey streak is very light.
4. Re-install the *C-Stick* using the installation directions in the *Operation* chapter.

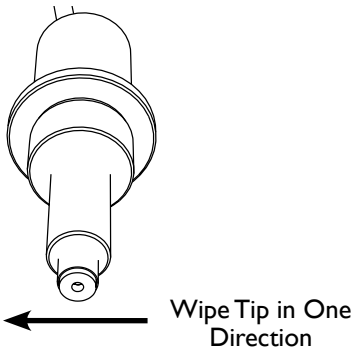


Figure 37. The *C-Stick* with tip shown for cleaning.

Clean the Sorter Wheels

The *Sorter Wheels* accumulate debris over time. Ioline recommends cleaning them after every 700 gross (100,000) stones are sorted (on the same schedule as the *Sorter Bowls*).

1. Follow the procedures outlined in the *Operation* chapter to remove the *Sorter Wheels* from the *Sorter Bowls*.
2. Used compressed air or a vacuum to remove debris from the holes in the alignment pits and bottom of the wheel. Every hole in the wheel has a purpose, usually for a sensor to detect if a stone is loaded or what kind of wheel it is. Make sure they are not blocked.
3. Dampen a lint-free cloth with isopropyl (pharmacy) alcohol and gently wipe the wheel(s) including the bottom side that faces the bottom of the bowl. Use a cotton swab to clean each of the alignment pits.

4. Hold the wheel up to the light to confirm that every hole is clear including the pockets where stones are sorted and the larger holes near the top of the wheel.
5. Repeat this process for every sorter wheel in your collection.
6. Re-install the desired *Sorter Wheels* in the *Sorter Bowls* using the installation directions in the *Operation* chapter.

Clean the Sorter Bowl

Like the *Sorter Wheels*, the *Sorter Bowl* will gather debris over time. Ioline recommends cleaning them after every 700 gross (100,000) stones are sorted (on the same schedule as the *Sorter Wheels*).

1. Follow the procedures outlined in the *Operation* chapter to remove the *Sorter Wheels* from the *Sorter Bowls*.
2. Used compressed air or a vacuum to remove debris from the base of the bowl. Make sure all dust, metal shavings, loose crystals, etc. are cleared. It is especially important to keep the optical sensor that is bolted to the bottom of the bowl clean.
3. Dampen a lint-free cloth with isopropyl (pharmacy) alcohol and gently wipe out the bowl cavity. Use a cotton swab to clean the small recesses.
4. Re-install the desired *Sorter Wheels* into the *Sorter Bowls* using the installation directions in the *Operation* chapter.

Inspect Equipment

It is a good idea to occasionally check that all parts of the **Crystal-Press** are in good working order. The following checklist highlights places to inspect. If ay item is questionable, contact Ioline Customer Service for assistance:

1. Check the **Carriage** drive belt to confirm that there is no unusual wear and that the teeth have a rectangular profile.
2. Examine the tool jaw and ensure that it returns all the way to the stop pin when the tool is not in use.
3. Carefully look at the black cable between the pick-and-place tool and the cable socket at the top of the carriage. Confirm that the insulation is not damaged.
4. Grasp each *Sorter Bowl,* one at a time, and gently attempt to move them checking that they are tight in the chassis.
5. With the power off, examine both *Drive Shaft* segments making sure that they still have good traction and there are no gouges, dents, or scratches in the bodies. Remove any debris that might adhere to the drive shaft surface with a plastic bristled brush (an old tooth brush works great) and gentle pressure.
6. Inspect the white plastic strip under where the pick-and-place tool places crystals. Look for tears and other damage that may keep crystals from making a smooth landing.

Updating Firmware

It is occasionally necessary to update the software that makes the machine run (usually called *Firmware*). This process requires a special program and a file from a Customer Service Technician. Check the Ioline **CrystalPress** support web site for information about firmware updates and call for assistance if an update is available.

Note

If the firmware file is a ZIP archive, make sure it is decompressed before sending it to the machine. You can download a ZIP decompression utility at ***http://www.winzip.com*** if necessary.

Note

The firmware filename usually looks like '**xxxxxx.s19**', where **xxxxxx** is the unique version number for your machine.

Prepare the machine for a Firmware Update

1. Power on the PC and machine.
2. Ensure that the serial or USB cable is connected between the PC and the machine.
3. Copy the firmware file to the Desktop or another folder or location that is easy to remember.

Check the Current Firmware Version

1. Start the **Control Center**, usually in *Programs>Ioline*.
2. The current firmware version is displayed in the upper left corner under *Main Board Firmware*. Confirm that the new firmware version is newer than the version installed in the machine.
3. If you do not see a firmware version displayed, please check connections between the PC and the machine.

Update the Firmware

1. Choose ***Options>Install New Firmware Version*** from the menu.
2. Use the file window that appears to browse to the location where the firmware file was saved (e.g. *Desktop*) then double click on the firmware file (usually ends in .s19).
3. Click on the *Install* button to begin installation. If the machine is connected by USB, you may press and hold the SHIFT key then press the *Install* button to use *Fast Install* which is roughly 70% faster than the normal installation process.
4. The machine will enter firmware update mode with a red flashing **Status** keypad light and a progress bar will appear in the firmware window.
5. The **Status** light on the machine will blink green during final installation after the download finishes. It will then reset itself and go through the normal start-up initialization process.
6. After installation finishes, a window in the **Control Center** appears asking to close the program. Press OK then restart the **Control Center**. Confirm the firmware version displayed in the upper left corner is correct then close the program.
7. Power off the machine, press and hold the '**Up**' keypad arrow then turn the machine ON to reset the configuration. Continue holding the **Up** button until the carriage moves. When the machine is finished, the **Status** light will turn green again.
8. The machine is ready for normal use. Perform a test print with the **CrystalStudio** to confirm normal operation.

Chapter 5

Troubleshooting

The **Troubleshooting** *chapter provides guidance and advice for resolving basic usability problems that may arise during normal operation. Advanced issues and service require help from trained technicians. Contact Ioline Customer Service for guidance in resolving issues not covered below.*

General Troubleshooting

If the machine is not working correctly the problem could arise from the computer, the cable, the design software or the machine.

Changes to the computer operating system or installation of new peripherals or software might cause conflicts. If the computer or the design software are causing a problem, consult your computer and/or software manuals, or call your manufacturer or dealer.

If the problem is with the machine, begin by making sure power is on and that the communication cable between the machine is connected correctly. Consult the information later in this chapter for more detailed troubleshooting techniques.

Motif Quality

Good motif quality is dependent upon a number of different factors. The type of materials, environmental conditions, and operator habits are only a few of the variables that can affect the finished product. It is important that the **CrystalPress** is loaded and maintained according to the guidelines in the *Operation* and *Routine Maintenance* chapters and that testing is used to find good settings for the job.

Specific factors that may affect the quality and life of motifs:

Rhinestone and crystal quality. This includes how clean the stones are, consistency of stone dimensions, and how well the adhesive bonds to materials. High variation in cleanliness and size makes the stones work poorly with the **CrystalPress** (and other automated solutions). Poor adhesive makes weak bonds to the material which can result in short product life and unhappy customers.

Design size and complexity. There are limits to how well crystals can represent design intent. Mixing too many stone sizes, putting stones very close together, and large motifs can make transferring the stones to the material unreliable. Heating evenly with the press is very difficult when designs are too complex. This leads to poor bonding and short product life.

Inconsistent methods or incomplete testing. Failing to test stones and materials with the heat press before a production job leads to surprises. Make sure to try embellishing the garment or accessory with the desired stones on the heat press to ensure good adhesive bonds and to verify settings. Make adjustments to increase quality before committing to multiple copies during production.

Transfer Sheet Issues

Potential issues with the *Transfer Sheet* include *Tracking* and *Tangling*. *Tracking* describes how straight the *Transfer Sheet* moves in the machine while the stones are placed. *Tangling* occurs when the *C-Stick* catches the edge of the *Transfer Sheet* when moving between the *Sorter Bowls* and the motif image.

CAUTION

The CrystalPress is only designed to work with *Transfer Sheets* available from Ioline. Other materials may not work with the pick-and-place cycle or could damage garments during the heat transfer process.

Tracking Problems

Correct stone placement relies on accurate movement (called *Tracking)* of the *Transfer Sheet*. If anything causes the sheet to lose traction with the *Drive Shaft*, motif quality is effected. Check the following to improve *Tracking* difficulties:

- **Install the *Transfer Sheet* straight.** The paper coated edges of the sheet must always ride under the *Pinch Wheels*. Test that everything is aligned properly by using the *Arrow* keys to move the sheet all the way through the machine and back (*Pause* mode). If the *Pinch Wheels* leave the paper strips, lift the *Pinch Wheels*, re-align the *Transfer Sheet* and repeat the test. See the *Operation* chapter for more details.
- **Make sure the *Pinch Wheels* are located over the *Drive Shaft* sections.** *Pinch Wheels* might get damaged and not ride on the *Drive Shaft* in the proper location. Ensure the wheels are aligned with the *Drive Shaft* and not touching the bearings.
- **The *Transfer Sheet* may slip when debris accumulates on the *Drive Shaft*.** Inspect and clean the *Drive Shaft*. Refer to the *Routine Maintenance* chapter for further information.
- **Damaged *Transfer Sheet* edges.** Damage can cause the edges of the *Transfer Sheet* to wrinkle. This can affect *Pinch Wheels* riding on the paper strip. Replace damaged *Transfer Sheets.*

Tangling Difficulties

The *C-Stick* travels close to the *Transfer Sheet* during operation and can catch a disturbed edge and get stuck causing a jam, misalign the sheet effecting motif quality, or further damage the sheet. Check the following items to improve *Tangling* difficulties:

- **Wrinkled edges of the *Transfer Sheet*.** Damage can cause wrinkled *Transfer Sheet* edges. Smooth out the rough edges and determine if the sheets are still usable. Discard damaged sheets.
- **Curled edges of the *Transfer Sheet*.** If the *Transfer Sheet* is stored in a tube or rolled, it can remain curved during use. Curled edges can entangle the *C-Stick*. Allow curled *Transfer Sheets* to sit flat for up to 24 hrs. before use and store sheets flat.

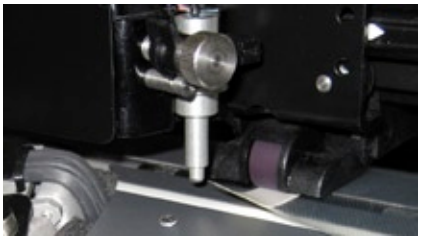


Figure 38. Curled edge of a *Transfer Sheet.*

Stone Placement Issues

Consistently moving stones from the *Sorter Bowls* to the *Transfer Sheet* depends on a few key factors. Quality of the crystals, *C-Stick* condition, and issues with the *Sorter Bowls* can degrade performance.

Poor Stone Quality

Poor quality or mistreated stones will effect transfer consistency and, ultimately, throughput. These problems can cause transfer issues:

- **Contaminated stones.** Dirt on stones can clog the filter and cause drops. Use high quality stones and handle as little as possible. If stones get dirty, thoroughly clean or discard them.
- **Inconsistent stone dimensions.** Irregular stone sizes or stone dimensions that vary greatly among lots will not work well in the *Sorter Bowls*. High quality stones are consistent and work better in with the *Sorter Wheels* and make a better end product.

C-Stick Difficulties

The *C-Stick* will wear over time and eventually require replacement. The *Routine Maintenance* chapter describes how to increase useful life.

- **Stones are not sticking to the C-Stick.** The *C-Stick* must make a vacuum seal on the stone. A worn tip or clogged vacuum filter can cause dropped stones. Replace the C-Stick tip and carriage filter when this happens. A damaged vacuum pump or *Sorter Bowl* issues (see below) can also cause this.
- **Stones are not releasing from the C-Stick.** Poor quality stones can get stuck in a worn tip. Replacing the *C-Stick Tip* may help. Gently remove stones with tweezers or a fingernail.

Sorter Bowl Problems

The most common issues effecting *Sorter Bowls* are; over or under-filling, dirty *Sorter Wheels* and stones trapped under the *Sorter Wheel*.

- **Over or under-filling.** Follow guidelines in the *Operation* chapter to avoid wheel jams or missed placements from poor filling.
- **Dirty *Sorter Wheel*.** The *Routine Maintenance* chapter has directions for cleaning debris from the *Sorter Wheel* that can cause stones to miss the alignment pits and reduce throughput.
- **Misalignment.** Proper C-stick alignment with the *Sorter Bowl* is critical. Call Customer Service for help checking this.
- **Stone trapped under the *Sorter Wheel*.** Stones trapped under the *Sorter Wheel* will cause *C-Stick* misalignment and failed pick ups. Make sure the *Sorter Bowl* is completely clear of stones when changing the *Sorter Wheels*.

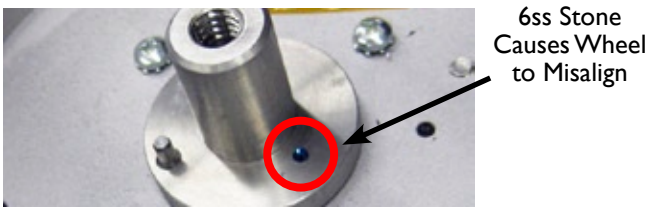


Figure 39. Stone trapped on *Sorter Bowl* shaft.

Blinking Light Error Codes

The Ioline **CrystalPress** has several built-in blinking light error codes that give hints to where a problem has occurred. The tables below give simple solutions to issues related to blinking light errors. If these suggestions do not work, contact Ioline Customer Service for assistance.

Flashing Green *Status* Light	
Causes	**Suggestions**
Drive Shaft Rotation Jammed	The *Drive Shaft* is not rotating freely. Turn off power and inspect the machine. Usually a piece of paper has stuck to the teeth of the *Drive Shaft* and lodged into the support channel. Remove the *Transfer Sheet* and rotate the *Drive Shaft* by hand checking for smooth motion. If it is difficult to turn, watch both segments of the *Drive Shaft* during rotation looking for debris stuck to it. If anything is trapped in the teeth, use a stiff bristled non-metal brush to remove it. If the cause is not obvious, contact Ioline Customer Service.

Flashing Red *Status* Light	
Causes	**Suggestions**
Carriage Motion Jammed	Something is keeping the *Carriage* from moving at the speed that the machine is expecting. Turn off power and inspect the machine. Check that nothing is in the way of the *Carriage* like a damaged *Transfer Sheet*, shop rag or tools. Slowly move the *Carriage* by hand back-and-forth feeling for rough motion and watching the belt. If the motion is not smooth and the cause is not obvious, contact Ioline Customer Service.

Flashing Red/Green *Status* Light	
Causes	**Suggestions**
Syntax Error	This error means the machine doesn't understand the data coming from the PC. To clear the error; press the *Print/Pause* key, move the *Transfer Sheet* to a clear spot for a new motif, press the *Reset* key and check that the *Status* light is green. Send another file from the **CrystalStudio** software. If the problem persists, contact Ioline Customer Service.

Flashing Red Carriage Light	
Causes	**Suggestions**
Missing C-Stick	The *C-Stick* is not installed or loose or the *Cable* is not inserted all the way into the socket. Check that the *C-Stick* is tight in the *Carriage Jaw* and that the *Cable* is fully seated in the *Cable Clamp*.
Carriage Initialization Error	There is a rhinestone stuck to the *C-Stick*. Clear the stone by pressing down on the thumbscrew to touch the stone to the *Transfer Sheet*. The stone should remain on the *Transfer Sheet*. Press the *Print/Pause* key to clear the error.
Drop Error	The *C-Stick* dropped a Rhinestone while moving. Clear the stone that was dropped and press the *Print/Pause* key to clear the error and resume printing.
Placement Error	A Rhinestone is stuck to the tip of the *C-Stick*. Press down on the *Carriage Thumbscrew* to place the stone on the adhesive then press the *Print/Pause* key to resume printing.

Note

Keep the **CrystalPress** away from direct sunlight while in use. Many sensors use light and can get 'blinded' by intense sun. This can result in false error conditions.

Flashing Red Sorter Bowl Light	
Causes	**Suggestions**
Missing C-Stick	The *C-Stick* is not installed or loose or the *Cable* is not inserted all the way into the socket. Check that the *C-Stick* is tight in the *Carriage Jaw* and that the *Cable* is fully seated in the *Cable Clamp*.
C-Stick Load Error	The *C-Stick* couldn't pick up a stone from the *Sorter Bowl*. This error usually means there are not enough stones in the bowl. Add stones to the bowl. Open the *Wiper Arm Clamp* slightly then close it to clear the error. The *Operation* chapter of the *CrystalPress User Guide* has more info.
Pick Up Error	The *Sorter Wheel* jammed while it was turning. This is usually caused by too many stones in the bowl. Clear some stones from the bowl. Open the *Wiper Arm Clamp* slightly then close it to clear the error. The *Operation* chapter of the *CrystalPress User Guide* has more info.
Wiper Arm Clamp Error	The lock that holds the *Wiper Arm* in place is not fully engaged. Check that the *Wiper Arm Clamp* is rotated counter clockwise until it stops.

Note

The ***CrystalPress*** will try to pick up a stone 15 times in a row before it stops and displays the blinking light error.

Common Issues and Solutions

No power when machine is turned on and the *Status* light stays dark.	
Cause: 1. The power cord is damaged or disconnected. 2. The machine is damaged and needs professional service.	**Solution:** 1. Check the power connection. 2. Contact Ioline Customer Service.
Nothing happens when a motif file is sent from CrystalStudio.	
Cause: 1. The machine is in *Pause* (red light) mode. 2. A communication problem has occurred.	**Solution:** 1. Position the *Transfer Sheet* where the motif should start then press the *Reset* key to put the machine in *Print* (green light) mode. 2. Check communication port connections.
A motif doesn't start at the correct point on the *Transfer Sheet*	
Cause: The starting point is not set in the correct location.	**Solution:** Put the machine in *Pause* mode by pressing the *Print/Pause* key then use the *Arrow* keys to position the *Transfer Sheet* on the *White Pounce Strip* where the motif should start. Press the *Reset* key to set the start point and enter *Print* mode.
The machine does not complete the motif.	
Cause: 1. Mechanical problem. 2. Electronic or software issue. 3. CrystalPress positioned in direct sunlight and the sensors are blinded.	**Solution:** 1. Check the exterior of the machine to determine if any obvious problems are evident. Check for blinking light errors and review all sections of the *Troubleshooting* chapter for hints. Contact Ioline Customer Service if the problem is not resolved. 2. Visit the Ioline **CrystalPress** Support web site to check for firmware updates or contact Ioline Customer Service. 3 Position the CrystalPress away from direct sunlight so the sensor detect light signals properly.
Large Rhinestones are tilted after placement.	
Cause: Placing small stones near larger stones can cause the C-Stick to touch the large stones causing them to tilt due to the difference in height.	**Solution:** Place stones in order of smallest to largest on the motif.

CHAPTER 6

End Notes

The **End Notes** *chapter contains product certifications and options for obtaining additional support including contacting Ioline Customer Service.*

Getting Help

Ioline is dedicated to providing the highest quality service and support to its customers. If you need assistance with an Ioline **CrystalPress** or **CrystalStudio s**oftware, a number of resources are available:

1. First, refer to this *User Guide* for answers to common operation, maintenance, and troubleshooting questions.
2. Consult the support section of the Ioline Web site: **www.ioline.com**. Support bulletins and updates are posted there for the **CrystalPress** and other Ioline products.
3. For additional assistance, contact Ioline Customer Service using one of the methods listed under the ***Customer Service*** section in this chapter.

Hint

Technical bulletins, software updates and other information is available to **CrystalPress** owners on the Ioline **CrystalPress** support web site at http://ioline.com/support/CP_s.html.

Customer Service

Ioline Corporation is committed to providing quality service and support to our customers. If you need assistance with an Ioline product, contact us:

Ioline Customer Service Department
Monday through Friday
7:00 A.M. - 5:00 P.M. U.S. Pacific Time
Voice: 1.425.398.8282
Fax: 1.425.398.8383
support@ioline.com
http://www.ioline.com/support/

Any warranty servicing of this product not specifically described in this manual must be authorized in writing by Ioline Customer Service. You may obtain service by calling or faxing Ioline Customer Service. The technicians will help determine the nature of the problem. If factory repair is necessary, you will receive a RMA (Return Material Authorization). Please gather the information indicated on the next page before contacting Ioline.

1. When returning a machine, carefully package the equipment in its original container or packaging equivalent. You may purchase shipping containers by contacting Ioline Customer Service. **Ioline is not responsible for any damage due to inadequate or improper packaging.**
2. Carefully wrap and secure all items in the shipping container to prevent damage. Seal the container and note the RMA number near the address block.
3. Ship the container using FED-EX or another approved carrier. COD shipments ARE NOT ACCEPTED. An Ioline representative will contact you prior to the start of work with an estimate of repair cost. All repairs are warranted for 90 days.

Send Your Comments

Ioline Corporation is interested in comments on our products, documentation and service. Please send corrections or suggestions to:

Ioline Corporation
14140 NE 200th Street
Woodinville, WA 98072 USA
Voice: 1.425.398.8282
Fax: 1.425.398.8383
info@ioline.com
http://www.ioline.com

Before Contacting Support…

Please gather the following information about your machine before contacting Ioline for support:

Name:	
Company Name:	
Phone Number:	
Fax:	
E-mail:	
Model:	
Serial Number *:	
Date of purchase:	
Type of stones used:	
Type of Computer:	
Type of design software:	
New software or peripherals:	
Service history:	

* The serial number is on the back of the right *End Cover*.

The FCC Wants You to Know...

This equipment was tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the problem by one or more of the following measures:

- Use only shielded interface cables.
- Reorient the receiving antenna.
- Relocate the host computer with respect to the receiver.
- Move the host computer away from the receiver.
- Plug the host computer into a different outlet so that the host computer and receiver are on different branch circuits.

If necessary, consult the manufacturer or an experienced radio/television technician for additional suggestions. ***How To Identify and Resolve Radio-TV Interference Problems,*** a booklet published by the Federal Communications Commission, is a helpful reference. Please contact the U.S. Government Printing Office to request a copy:

U.S. Government Printing Office
Washington, D.C. 20402
Document stock number: 004-000-00345-4 GPO
Item Number: 0285-A
http://www.gpo.gov/

Canadian EMC Requirements

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Declaration of Conformity

EU/UE
Konformitätserklärung
Declaration of Conformity
Déclaration de Conformité

Wir
We
Nous

Ioline Corporation
14140 NE 200th St.
Woodinville, WA 98072
USA

erklären in alleiniger Verantwortung, dass das Produkt
declare under our sole responsibility that the product
déclarons sous notre seule responsabilité que le produit

Product Brand: Ioline
Product Model: Crystal Press

auf das sich diese Erklärung bezieht, mit der/den folgenden Norm(en) oder normativen Dokument(en) übereinstimmt:
to which this declaration relates is in conformity with the following Standard(s) or other normative document(s):
auquel se réfère cette déclaration est conforme à la (aux) Norme(s) ou autre(s) document(s) normatif(s):

SAFETY:
EN 60204-1:2006, EN ISO 12100-2:2003,
EN ISO 14121-1:2007

EMC:
EN 61000-3-3:1995 (Amended by A1:2001 and A2:2005), EN 61000-3-2:2006,
EN 55024:1998 (Amended by A1:2001 and A2:2003),
EN 55022: 2006 + A1:2007

Gemäss den Bestimmungen der Richtlinie(n);
following the provisions of Directive(s);
conformément aux dispositions de(s) Directive(s)

MACHINERY: 98/37/EC
EMC: 2004/108/EC

CE

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Glossary

Terms and Definitions

A

Acceleration – The rate that a machine changes the velocity of the *Carriage* or the *Transfer Sheet*. *Acceleration* is measured in units of g. 1 g = 9.8 m/s^2 (32.2 ft/s^2).

Arc – A segment of a circle, also called a curve.

Axis – A geometric guide used to place a *Coordinate*.

B

Bottom Cover – Metal housing that protects the underside of a *Machine*.

C

C-Stick - A customized pick-and-place tool configured for the Ioline **CrystalPress** to move *Crystal Elements* from *Sorter Bowls* to the *Transfer Sheet*.

Carriage – The component that holds the service tool. It travels along the *Y-Axis* on the *Traverse*.

Control Panel – See *Keypad*.

Coordinate – A point that is referenced by its position on the *X-* or *Y-Axes* of a machine. *Vector* or *Arc* segments connect coordinates to create printing paths.

Crystal (also **Crystal Element**) - A discrete glass or plastic faceted jewel. The **CrystalPress** uses flat backed *Crystals* coated with heat activated adhesive for application to garments and accessories with a *Heat Press*.

CrystalStudio - A software application published by Ioline Corporation that converts *Vector* based design files into *Motifs* compatible with the **CrystalPress**.

D

Design Software - A software application used to create *Vector* based designs. *Ioline Design*, *CorelDraw*® and *Adobe Illustrator*® are examples.

Drive Shaft – The motor driven shaft that moves material through a friction feed *Machine*. The *Machine Drive Shaft* has a rough surface that grips the material.

DXF - Drawing eXchange Format. A universally accepted *Vector* drawing format authored by the AutoCAD® corporation.

E

Element - See *Crystal*.

End Cover - An enclosure that protects the user from moving parts and other hazards on a *Machine*.

F

File Name Extensions – In DOS and Windows based programs, the three letters after the period in a file name. With graphics files the three letters denote a file type such as the *Vector* and bitmap based Encapsulated Postscript (EPS) and the *Vector* based Hewlett-Packard Graphics Language (PLT).

Foot - Mechanical part that supports a *Machine.*

Friction Feed – Process where the material is fed through a machine by placing it between a motor-driven *Drive Shaft* and tensioned *Pinch Wheels*.

H

Heat Press - A device that warms two flat surfaces and squeezes them together in a parallel arrangement with adjustable pressure under operator control. Used to heat adhesive backed materials for bonding to soft goods like clothing and bags.

HPGL – Hewlett-Packard Graphics Language. Instruction set used to send *Vector* information to a machine that can represent data as an image. HPGL 7475 is the most common plot language used for communication between a printing *Machine* and design software and uses a lower-left origin for all coordinate measure.

K

Keypad – Panel on the right side of the *Machine* where the user controls simple functions. *Transfer Sheet* motion is accessible from here during *Pause* mode. Also called the *Control Panel*.

M

Machine – In the context of this manual, a *Machine* is a device that uses image data to produce output, usually as a *Motif* of *Crystal Elements* on an adhesive *Transfer Sheet*.

Mil – Thousandths of an inch or milli-inches. For example; 75 mils is the same as .075 inches. 1 mil is equal to .025-mm.

Motif - A design with a repeating pattern of discrete elements. On the **CrystalPress**, a *Motif* is a pattern of *Crystal Elements* arranged on a collection of *Vectors*.

O

Origin – Point marking the zero (0) coordinate on the *X-* and *Y-Axes*. Used as a starting reference by the *Machine*. On an Ioline **CrystalPress**, the origin is set with the *Reset* key on the *Keypad*.

P

Pause Mode – *Status* light on the *Keypad* is red. Machine is paused and offline (e.g. not ready to print).

Pinch Wheel – Roller wheels that push the *Transfer Sheet* against the *Drive Shaft* when lowered.

Pinch Wheel Lever – Lever connected to the *Pinch Wheels* that raises and lowers them.

Platen – Curved surface that houses the *Drive Shaft* and supports the *Transfer Sheet* during printing.

Print Mode – *Status* light on the *Keypad* is green. Machine is online and ready to print.

R

Resolution – The smallest distance that a *Machine* can move the *Transfer Sheet* or *Carriage*. *Machine* resolution affects the accuracy of design reproduction as a *Motif*.

Rhinestone - See *Crystal*.

S

Serial Communications – Method of sending information from a computer to a *Machine* by sending 1 bit at a time through a cable. The serial communications port on a PC is a male (9- or 25-pin) connector. RS-232 is the most common peripheral serial protocol used on a PC.

Sorter Bowl - A mechanism that turns a *Sorter Wheel* to align *Crystal Elements* in manner that allows a *C-Stick* tool to retrieve them and place them on a *Transfer Sheet*.

Sorter Wheel - Integral component of the *Sorter Bowl* that is designed to orient flat-backed *Crystals* with the flat side facing up. Every size of *Crystal* requires a *Sorter Wheel* with specific alignment pit diameters.

Stone - See *Crystal*.

T

Throughput – The speed at which a *Machine* completes a job. Represents the ability to process information and produce an image.

Transfer Sheet - A stiff flat rectangular substrate coated with adhesive that is compatible with a *Heat Press*.

Traverse – Structure that supports and guides the *Carriage* and holds the *Pinch Wheel* assemblies.

U

USB – Universal Serial Bus. High speed method for transferring information from a PC to a peripheral.

V

Vector – A line segment between two *Coordinates*.

W

White Pounce Strip - Cushion tape positioned under the area where the *C-Stick* places *Crystals*.

X

X-Axis – Theoretical horizontal line providing a length reference point for the *Machine*. Associated with *Transfer Sheet* movement over the **CrystalPress** *Platen*.

Y

Y–Axis – Theoretical vertical line providing a width reference point for the *Machine*. Associated with *Carriage* movement across the **CrystalPress** *Traverse*.

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