

Instruction Manual

**MODELS 178, 178H, 178T, 374D, 374H, 374HT, 475, 475S,
495, 495S, 674, 674S, 674M, 674A**

Congratulations! You have just purchased the finest heat press of its kind available. This press is designed to handle any type of transfer and fusing operation, from plastisol and ink transfers to sublimation and heat activated embroidery. Geo. Knight & Co. has called on their 110 years (Since 1885) of experience with fusing and molding equipment, to design and manufacture the highest quality machinery on the market.

Transfer Press Operation

Before plugging your unit into a 120v circuit, be certain that the line has a rating of a least 15 amps (Models 475, 475S, 674, 674S,M,or A) or 10 amps (Model 178, 178T, 374H, 374HT). Switch on the solid state circuit breaker and the press will begin to heat up. You will notice that a red heating light will engage indicating that the thermostat is calling for heat. There is also a green at heat light that will come on when the desired temperature setting is reached. We have factory set your thermostat to 350°f (390° for sublimation transfers). When the press reaches that temperature, the green at heat light will come on. The red and green lights will alternate throughout the day as the press is used. To set the dwell time on your press simply position the automatic timer dial to the desired setting. The timer is located on the universal console and can be set anywhere from 0-60 seconds. When the heater block is brought down and locked into place, a mercury timing element activates the automatic timer and the timer begins to count down internally. At the elapsed time a buzzer will sound indicating completion of the printing cycle. When the heater block is lifted back up to the fully open position, the timer is automatically reset and ready to count down again. The amount of pressure on the printing surface can be regulated by simply turning the pressure adjusting knob (screw) on top of the support arm. Turning the knob toward the "+" sign (counter-clockwise) will increase the pressure. Turning it toward the "-" sign (clockwise) will decrease the pressure. The unique linkage system designed by Geo. Knight & Co. reduces the amount of resistance felt in the handle as the press is locked into place, while at the same time providing sufficient pressure on the printing surface to ensure good transfer adhesion. There is no need to feel an undo amount of resistance when the closing the press. A few experimental printings will give you the feel of what pressure gives you the best results. Pivoting oilite bushings provide a self lubricating axis at the stress points of the linkage system for maintenance-free operation. Occasional cleaning of dust and lint is a good idea. The actual printing surface is a sheet of specially formed silicone rubber. This long lasting sponge is heat resistant and with proper maintenance (keeping it clean) will provide you a smooth, level surface for many transfer applications. The holes and lag bolts at the bottom of the base frame are provided to secure your press to a work bench or table.

For Models 178, 178T

The printing surface of these cap sealers is 4" x 7", which will enable printing of virtually the entire front panel of most caps. Interchangeable bottom forms are available for printing golf caps, euro-style caps, & painter's caps (3 x 6), visors (2½ x 7), and children's caps (3 x 5). The cap sealers feature a teflon transfer hold down band. This heat resistant, anti-static fabric will hold the transfer in place on the cap before the heater block presses and also during the printing process. This will keep the transfer from slipping or shifting when the press initially clamps down on the transfer and garment. As the heater is raised, the teflon hold down band will remain on the printed surface until the heater block is lifted past a 45° angle. When the cap is first placed on the bottom form, the bill of the cap should be facing upwards and toward the operator. If the cap has a sweat guard at the bottom of the panel and bill, flip the sweat guard out so that it is not resting on the bottom form. This will insure an even, flat printing surface for the transfer. The back strap of the cap should be fitted underneath the half-moon clamp under the bottom table. This cap hold down device (half moon clamp/bracket) holds the cap tight against the bottom form to insure a wrinkle free pressing. To adjust the height of the cap hold down bracket, loosen the wing nut and adjust the position for the type of cap being used, so that the back strap of the cap can be fitted under the bracket tightly. The cap should have no wrinkles on the printing surface and should be held down firmly to the bottom table by the half moon bracket (cap hold down device).

Pivoting Heat Platen & Bottom Tables MODEL 674A ONLY

The 674A 16 x 20 heat transfer press has the unique feature of a rotating heat platen in order to accommodate a 20 inch dimension in either a left-to-right or front-to-back direction. The bottom table also is removable and rotatable. To change rotate platens:

- Lower handle of machine approximately half way down to the closed position.
- Lift up on spring loaded latch located on the back side of cross arm. The cross arm is the bar that the pressure adjustment screw is located on. Be sure to lift the latch completely out of the locating hole in the heater block cover.
- Pivot the heater block by holding onto the universal console.
- Align latch with secondary locating hole in the heater block cover.
- Release latch slowly into hole.

- To position the bottom table printing area, lift the handle of the press and raise heater block completely off the surface area to the up-right position.
- Take hold of the sides of the table (Left-to-Right) and lift up on the right hand side. The pin on the bottom of the table will lift out of the hole in the frame.
- Slide table to the left and lift entire table straight up and off of the table support. The screw head on the bottom of the table will slide into the slot of the frame and lift off of the table support.
- By aligning the table screw head and pins with the appropriate frame holes, the table can be positioned in relation to the heater block.

Transfer Press Overview

Heater Block Assembly

The heater block assembly is a permanent mold aluminum casting. This type of mold reduces imperfections in the casting which can cause air bubbles to form and pock marks to develop on the surface. The density of the casting coupled with a stress relieving process (600°F for 8 hours) bakes out any moisture in the casting, ensuring a warp free surface that is unaffected by transfer temperatures. The surface of the casting is then ground with a state of the art carbide platen milling machine to produce a perfectly flat heating area. A hard teflon coating seals the heater block and protects it from scratches, and also facilitates cleaning. A copper coated, steel tubular calrod (UL approved) is permanently cast within the aluminum heater block casting, to provide even heat distribution throughout the surface. This coil heat unit is controlled by a solid state thermostat which governs the heater to give you precise temperature regulation($\pm 5^\circ\text{F}$).

Heater Block Casting - Aluminum casting, platen milled and teflon coated with cast-in heat coil.

Thermostat - Temperature sensing device mounted to heat platen that controls heat demand from heat coil cast within the platen.

Thermometer - Measures heater block temperature on the surface of the platen.

Banana Pins - Male connector mounted on heater block cover to which universal console is mounted. A vital part of the machine - great care should be taken to protect these pins from being bent, loosened, or otherwise damaged

Wire Harness - High temperature teflon wiring that connects heat coil to thermostat and the universal console.

Pressure Block - Case hardened threaded nut, mounted on heat platen, that receives the pressure adjusting screw.

Insulation - Fiberglass insert to contain heat build-up within heater block cover.

Pressure Adjusting Screw - Case hardened threaded rod, that attaches entire heater block assembly to base.

Lifter Springs - Steel springs to assist operator in raising heater block assembly of printing area.

Guide Pin - Hardened steel pin to hold lifter springs in position.

Silicone Rubber Pad - High temperature sponge mounted on base frame.

Teflon Wrap - Heat resistant, custom cut fabric that provides a smooth surface as well as protecting rubber pad.
NOTE: Not available on all machines

Universal Console

The Universal Console is a unique electronic development designed by Geo. Knight & Co., Inc. The console houses all of the electronic components which are wired directly to a circuit board control panel. This entire assembly, encased in an attractive textured cabinet, is mounted onto the five (5) banana pins on the heater block cover with plug-in female receptacles. All components are located in an easily accessible position should

there be a need for servicing. The solid-state circuitry provides the latest in electronic advancement to prolong component life.

Circuit Breaker

On-off switch, protects board from current over-load, eliminates need of fuses, will shut off completely during power surge, automatic reset.

Automatic Timer

Provides hands free timer operation, activates timing cycle when press is locked into place, sounds buzzer upon completion of cycle, resets when heater block is removed from printing area.

Potentiometer

Device used to control dwell time on automatic timer.

Buzzer

Activated when timing cycle is completed.

Heating Light

Red light engages when press is turned on, indicates thermostat is calling for heat.

At Heat Light

Green light engages when thermostat setting has been reached or when the thermostat is not calling for heat. Light will also engage when machine is first turned on, red heating light will immediately follow: green light will alternate with red light as press is in use.

Printed Circuit Board

Removable electronic control panel, all components wired directly to board.

Electro Mechanical Relay

(With Models 674, 674S, 674M, & 674A ONLY) Along with thermostat, the relay controls temperature on the surface of the heat platen, and will prolong the life of the thermostat by eliminating arcing as the thermostat engages and releases.

Base Assembly

The base assembly design of all Geo. Knight & Co. presses are crafted with solid aluminum castings and steel supports for durability and balance. The clam shell opening allows you to raise the heater block assembly completely above & away from the printing area, to provide safe and total access to the garment for easy transfer or letter placement. Our unique linkage system provides pressure onto the table, ensuring equal pressure distribution throughout the surface. Self-lubricating bushings at the stress points of the linkage system provide maintenance free operation. Pressure adjustments are made by the simple turn of a pressure adjustment knob behind the console. A lifter spring mechanism assists in raising the heater block off of the printing area.

Handle, Clamp, Pressure Arm and Linkage Assembly

Kinomatically designed system that creates pressure over the printing surface of the machine.

Service Instruction

For any electrical component replacement:

- Unplug machine from wall outlet

- Lower handle of press until heater block is almost in contact with printing surface (or silicone pad)
 - Increase the pressure setting by loosening pressure adjusting knob toward "+" until unit completely detaches from base assembly
 - Remove screw holding cord clip to base (not applicable on all models)
 - Locate entire heater block assembly on a table or bench away from main frame
 - Remove universal console from heater block cover by gently pulling the console straight upward off the (5) banana pins
- *** Any electrical replacement can be performed from this point ***

Heater Block Disassembly

- Remove thermostat knob by loosening set screw on the side of the knob and pull off of the stem
- Remove four (4) screws holding down heater block cover
- Lift cover over thermostat stem and position cover off to the side. Wire leads are long enough to access thermostat and thermometer without disconnecting all of the wires

Thermostat Replacement

- Follow heater block disassembly instructions
- Remove screws and wire leads (there are two) from the thermostat. Notice location of the wire leads
- Remove (2) screws that hold thermostat to casting
- Install new thermostat and attach wires to the same outlets as in original thermostat
- Follow heater block assembly instructions

Thermometer Replacement

- Follow heater block disassembly instructions
- Lift yellow block insulations away from top of thermometer
- Using a 1/16" allen wrench loosen set screw from tapped hole directly above thermometer - it is not necessary to remove this screw, only loosen enough to free thermometer stem
- Slide entire thermometer out of hole
- Slide new thermometer into hole and tighten set screw. Use only slight tension with set screw as damage to thermometer can occur with excessive pressure from screw

Heater Block Assembly

- Replace cover over thermostat stem - be sure wires are in an unobstructed position
- Attach cover screws (4) and replace thermostat knob and tighten its set screw
- Re-align heater block assembly on base table of machine with pressure adjusting screw and set proper pressure
- Re-attach universal console to banana pins **See universal console assembly**

Universal Console Disassembly

- Remove universal console from heater block cover by gently pulling console straight upward off the (5) banana pins
- Lay console face down on table

- Remove back cover (4screws) and lift forward off of main console body **Wire leads are long enough to position cover for access to printed circuit board**
- Loosen and remove (5) nuts holding female receptacles to printed circuit board and console bottom
- Gently lift printed circuit board out of console body

Buzzer Replacement

- It is not necessary to remove printed circuit board
- Detach (2) wire leads connecting buzzer to printed circuit board - they are fully insulated female connectors over a male terminal on the printed circuit board. Take notice of location of wires.
- Remove outer screw holding buzzer to side of console
- Locate new buzzer and attach to side of console with screw
- Connect wire leads to printed circuit board

Potentiometer Replacement

- It is not necessary to remove printed circuit board
- Remove timer knob by loosening set screw on side of knob
- Remove nut holding timer face plate and pull potentiometer out from the back of console
- Disconnect (2) wire leads to printed circuit board. They are insulated female connectors over a male terminal on printed circuit board. Take notice of wire location
- Locate and attach new potentiometer
- Attach face plate and nut
- Recalibrate timer and attach timer knob

Circuit Breaker Replacement

- It is not necessary to remove printed circuit board
- Disconnect (2) wires to circuit breaker. Take notice of wire location
- Remove circuit breaker from slot in console by squeezing lock tabs on circuit breaker, & then pushing the circuit breaker out of slot
- Install new circuit breaker and reconnect wires to terminals

Pilot Light (red or green) Replacement

- It is not necessary to remove printed circuit board
- Disconnect (2) wires from circuit board. Take notice of wire location
- Push light through slot in console by squeezing lock tabs on light, then pushing
- Install new lights and reconnect wires to terminals

Universal Console Assembly

- Reposition back cover on to main body of console and reattach screws (4)
- Realign console with female receptacles on to banana pins on heater block cover

Transfer Application

Pre-heat machine to the temperature indicated on the chart below for fabric to be printed. Once you turn the machine on (green light will come on followed immediately by red heating light) it will take approximately 15 minutes to warm up. There is a visual thermometer and a manual temperature adjustment knob - thermostat.

The knob is marked at 350°f (390°f for sublimation transfers) and can be adjusted up or down by turning the knob. Once the proper temperature is reached the green at heat light will come on. You need not adjust this knob unless you are working with a fabric requiring a different setting. Simply turn the machine on in the morning, leave it on all day, and turn it off in the evening.

- ** Center the item to be printed on the rubber pad being sure to smooth out all wrinkles
- ** Lay the transfer or letters ink surface down against the item being imprinted. Be sure the transfer design or letters are centered as you wish it to appear on the garment. Avoid all seams and folds.
- ** Position timer and pressure to desired settings
- ** Lower handle of machine slowly and lock it into place
- ** After the appropriate number of seconds the buzzer will sound
- ** Raise handle and heater block to the full up-right position
- ** For hot split transfers, remove the paper immediately after raising the platen and allow the garment to cool while setting up the next material
- ** For cold split transfers, let printed work cool for 20-30 seconds before removing transfer paper. It is desirable to take a cloth and rub over the transfer paper for 5 seconds while it is cooling. This assists the release of the ink from the paper and cures it into the fabric.
- ** Lift the transfer paper off and the item is ready for delivery to your customer. If you find that the ink tends to lift up with the transfer when you peel off the paper, simply lay it back down on the garment and repeat the process.

Note: Using a clean cloth or chalk board eraser, wipe the face of the heater block after several printing operations and before doing another set of garments.

Temperature and Time Chart

Material	Temperature	Time (seconds)
Cotton	350°	8 to 12
Cotton/Polyester	350°	8 to 12
100% Polyester	375°	8 to 12
Cotton Twill	375°	12 to 15
*Nylon	Consult with transfer manufacturing company for settings	

- * Adhesion to nylon fibers cannot be guaranteed
- ** NOTE: These are basic guidelines only. Not all types of transfers work with the same parameters! Check the transfer suppliers recommended settings for temperature, time, and pressure before attempting to heat transfer onto materials.

LIMITED WARRANTY

Geo Knight & Co warrants that its heat transfer machines are free from defects in both material and workmanship from the date of invoice to the buyer. If any parts or workmanship are found to be defective in manufacture, Geo Knight & Co will repair or replace the defective parts or workmanship. This limited one (1) year warranty covers all parts and labor to repair the defects, except when damage results from accident, alteration, misuse or abuse, or when machine has been improperly installed, or modified in any way.

If a machine becomes defective during the limited warranty period of one year, Geo Knight & Co reserves the right to recall the defective machine to the factory for repairs. A RETURN AUTHORIZATION must be granted by Geo Knight & Co prior to its return.

If a machine covered by the one year limited warranty must be returned to the factory for repairs, Geo Knight & Co shall make every effort to repair buyer's machine. However, Geo Knight & Co reserves the exclusive right to determine whether to repair or replace a defective machine. If Geo Knight & Co authorizes a replacement machine, the warranty of the replacement machine shall expire on the anniversary date of the original machine's invoice to the buyer.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. SELLER DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND BUYER AGREES THAT THE GOODS ARE SOLD "AS IS".

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