

OPERATING & MAINTENANCE MANUAL

MALAHIDE MODEL E4-W HOT STAMPING PRESS
With HFS 7000 Attachment

SERIAL NO. 1105

MANUFACTURED BY:

Malahide Design & Manufacturing Inc.
209 Griffith Rd.
Stratford, Ontario
N5A 6S4
Fax: (519) 273-1773
Phone Toll-Free: 1-800-667-2156
www.malahide.com

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1.0 GENERAL OPERATION

The HFS 7000 is a numbering, perforating, scoring, and slitting system. It operates at three speeds that is factory programmed to print 7000 sheets per hour, assuming 1 hit per page and a 15 millisecond solenoid pulse width. The operation of the machine is controlled by a microprocessor with an LED display and keypad interface.

The system allows for a maximum of two numbering heads, which can independently turn off or on for a maximum of 1 job with ten hits per head that, are stored and recalled for future use. Numbering can be done on single sheets (13# bond to 12 point card or 45 to 250 gsm paper) or multi-part carbonless forms (up to 10 parts) while simultaneously perforating, slitting and/or scoring. The unique friction feeder sends through one set at a time, even from the unglued side of a padded set. The pressure adjustable feed shaft ensures consistent registration. Perforations are done between the feed and main rollers producing a straight perforation, slit or score, avoiding tail whip. Perforating wheels are offered in a wide range of teeth configurations and can be quickly changed using the retaining ring pliers supplied. A photocell recognises the lead edge of the sheet and the microprocessor stops the sheet at the specific location(s) where numbers are required. The numbering heads are electrically operated. All this, in a compact design.

1.1 TECHNICAL DATA

Areas of use:

| | |
|----------------|------------------------------|
| Paper weight: | 12# - 12 point (45-250 gsm) |
| Paper formats: | max. 11" x 18" (45 x 45 cm) |
| | min. 3" x 5" (7.6 x 12.7 cm) |

Electrical configuration:

| | |
|------------|------------------------------|
| Voltage: | 90-135 VAC or 180-270 VAC |
| Frequency: | 60 Hz or 50 Hz |
| Fusing: | 115/230V, 3/5A |

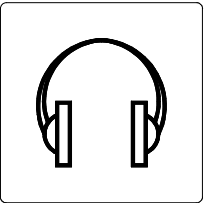
1.2 SAFETY REGULATIONS

- • **Before using the machine, you must read the operating instructions.**
- • **Professionals must only eliminate damage or extraordinary malfunctions.**
- • **Never insert your hand into the machine while it is running.**
- • **Do not wear loose fitting clothing when working with the machine.**
- • **Make sure that the machine stands on a level and well-ventilated positions.**

1.3 CAUTIONS CONCERNING MACHINE

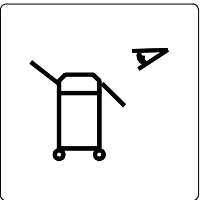
CAUTION – The solenoids may get hot during operation. Do not touch the solenoid case while the machine is running and until it has been given enough time to cool down.

CAUTION – The motor may get hot during normal operation use. Do not touch any vicinity near motor.



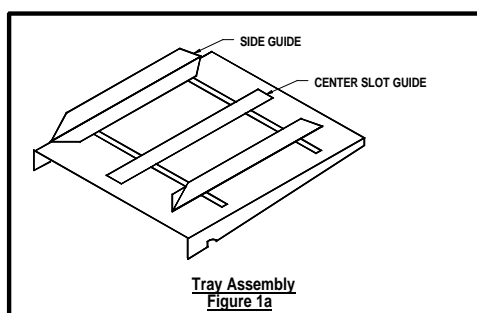
CAUTION – On Electric Solenoid machines the noise levels can be excessive and hearing protection may be required.

CAUTION – Machine should never be left unattended.



2.0 MACHINE ASSEMBLY

2.1 Feed and Exit Trays



The feed and exit tray assemblies are comprised of four components each: the tray, two tray side guides and a centre slot cover (see Figure 1a).

The trays sit in the machine on mounting pins inside the machine's side frames as shown in Figure 1b and 1c. The trays can be easily removed and stored elsewhere when not in use. Place the tray side guides, bottom flange towards the centre and the centre slot cover on the tray as shown in Figure 1a and screw on the nylon wing nuts to secure the pieces on the tray. The operator side tray guide of both the feed and exit tray should be pulled all the way over to the operator side before tightening its two wing nuts.

Note: It is critical that the operator side tray guide be moved all the way over to the operator side of the machine to ensure that the stock being processed through the machine passes directly underneath the photocell. If the stock does not pass directly underneath the photocell, the machines will not recognize sheets and the program being run will not be initiated.

Place a pile of the stock to be processed in the feed tray and use it to align the non-operator side tray guide to the pile. Allow a fraction of an inch so that the pile flows freely up and down the tray if released from the top. Set the exit tray in a similar manner, although the accuracy of the non-operator side guide position is not critical.

As a backstop to finished stock, there are two magnets included with the machine (unless equipped with the conveyor outfeed) that are set inside the side tray guides on the exit tray. Relative position of the magnets depends on the stock being processed, but the magnets should be set such that the stock does not slide down the exit tray too far, possibly causing sheets to get in uncollated order.

3.0 Operating Keyboard

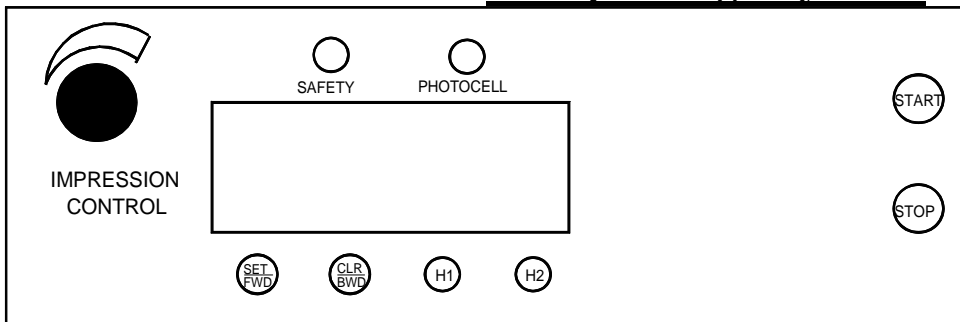


Figure 4: OPERATING KEYBOARD

The operating keyboard is comprised of six LED segments, various buttons and a Impression Control which consist of one potentiometer knobs that control the crash strength of the numbering heads, and can be adjusted to best suit the requirements of the job. For example, you may require stronger crash numbering for carbonless sets than for single sheet bond paper. This adjustment can be done while the machine is stopped or running (see [Figure 4](#)).

The four buttons under the LED display will perform whatever function is shown directly on them.

SET/FWD - Used to set up a numbering job and incrementing the motor in a forward direction.

CLR/BWD - Used to clear programs and increment the motor backwards.

H1 - Used to control head number one, which is the head closest to the operator.

H2 - Used to control head number two, which is the head furthest away from the operator.

START - Used to start the machine.

STOP - Used to stop the machine.

Once you have plugged the machine in, turn the on/off switch to the 'on' position. The LED display will be blank for a second the two lights for the safety lid and photocell will light up. The system will do a check on each LED line segment and then look like the above.

The HFS 7000 does systematic error checks, if it detects an error it will display a numeric value. A list of all possible error codes is listed on page 16.

3.1 Running a Job

The machine is capable of storing a maximum of 1 job with 10 hits for recall and future use. Ensure that there is paper in the feed tray first. Pressing the 'START' button will automatically begin the program that was previously programmed in the memory.

3.2 Stopping a Job

There are two methods of stopping the machine.

1. Once the program is running, pressing the 'STOP' button will cause the machine to finish the stock it is currently working on, move the next stock into the starting position and then stop the motor.
2. If you want to stop the machine while stock is still left in it, simply hold on to the stock in the feed tray. After about one second, the machine will automatically stop (since it is no longer seeing any new sheets). This is how it also stops when all of the stock in the feed tray is gone.

3.3 Clearing A Program

To completely clear a program from the memory insert a paper in the feed tray. Press the SET/FWD button. The paper will then feed through and stop at 75. Press the CLR button and hold it down, next press the H2 button and this will clear the memory.

3.4 Changing and Programming a Job

Whenever you wish to change or program a job, insert a piece of paper into the feed tray and press the SET/FWD button. The paper will go through the machine and stop in front of the photocell. The DIG 5 will have P indicating you are in the program mode, DP 5 will light up indicating the motor is on in the forward position, DIG 1-0 will have 75 and DP 0 will light up indicating that a hit exists in the program. To clear the memory completely press the CLR/BWD button, while holding it down press the H2 button, you will notice DP 0 will go off, this indicates that the memory and all hits have been cancelled.

As a guide, refer to the orientation of the LED digit segments (DIG 5-0) and the Decimal point functions (DP 5-0) in the picture.

DIG 5 – Displays “P” for Program Set-up.

DIG 4 – Displays “h” only if a hit has been programmed at the current position.

DIG 3 - DIG 0 – Current paper position in steps from the paper leading edge. In run mode they act as paper count.

DP 5 – Indicates the motor direction On = Forward

DP 4 – If it is on it indicates all 10 hit positions are used.

DP 3 – No function.

DP 2 – Solenoid 1 – On indicates Head 1 will be fired at the current position.

DP 1 – Solenoid 2 – On indicates Head 2 will be fired at the current position.

DP 0 – Indicates a hit exists in the program.

Changing the position of a hit can be done by scrolling (SET/FWD or CLR/BWD) to where the previous hit existed. Once there the head will fire and you will have an “h” displayed in DIG 4, the numbers indicate the stepper count position. You will also have either DP 1 and/or DP 0 lit depending on which numbering head was activated. Pressing Either H1 or H2 will toggle the lights off or on. When DP 1 or DP 0 is off, it indicates there is no longer a hit programmed at that position. Now by scrolling with the SET/FWD or CLR/BWD buttons you can reposition the number hit.

Once all is set, press START and "SAVE" will display in DIG 5-2 and the current sheet will eject. The machine will go into the idle mode. This will show DIG 4-0 as 0's. Any numbers on the display will be a paper count; pressing the CLR/BWD button will clear this back to zero.

To run the job, insert paper into the feed tray and press start.

3.5 SPEED CONTROL

The HFS 7000 is equipped with three speeds. High speed is the default when you first run the program. While the program is running press 'H1 and/or H2' will increase and/or decrease the speed, indicated by the horizontal lines you will notice on the far-left side of the display vertical lines. Three of these lines indicate high speed, two for medium and one for low speed.

4.0 Setting up a Job

To set up the machine for a specific job, a few items must be adjusted depending on the specific stock being run, the number of prints required. In order to keep it simple, adjustments required will be discussed from the feed end of the machine to the exit.

4.1 Aligning the Feed Tray Guides

As previously mentioned, the operator side tray guide should be seated all the way to the operator side. This will ensure that the stock passes directly underneath the photocell, allowing the program being run to initiate. With a pile of the stock placed in the tray, align the non-operator side tray guide with the pile. Allow a fraction of an inch so that the pile flows freely down the tray if released from the top.

Move the center slot cover so that it is in the middle of the two side tray guides and tighten the wing nuts.

It is very important that the stock enter the machine, square, to ensure that all prints are square and straight. To test for square feeding, place a piece of stock in the feed tray and align the lead edge with a straight edge within the machine (such as the straight edge of the feed platen, or the edge of the first shaft in the machine). Now, check that the operator side feed tray guide is parallel to the close edge of the paper for squareness.

4.2 Setting Feed Tire Pressure

The friction feed system used in automatic Graphic Whizard machines is unique. It utilizes three top feed tires to feed sheets through with a consistent pull along the full lead edge of the sheet, and a continuous width sheet retarder (the strip of fine sandpaper on the feed platen) to separate sheets and prevent double feeding.

Once the feed tray and side tray guides have been assembled according to the sheet width required, you may locate the feed tires along the feed shaft. For proper sheet feeding, the position of the three feed tires along the width of the sheet is also important. Loosen the setscrews of the feed tire hubs along the feed shaft, slide the feed tire hubs along the feed shaft, setting the two outer tires at about 1/2" in from the outside edges of the stock. The third, middle feed tire is simply centered. Keep the three setscrews of the feed tire hubs in line on the feed shaft. Tighten all setscrews (see [Figure 5](#)).

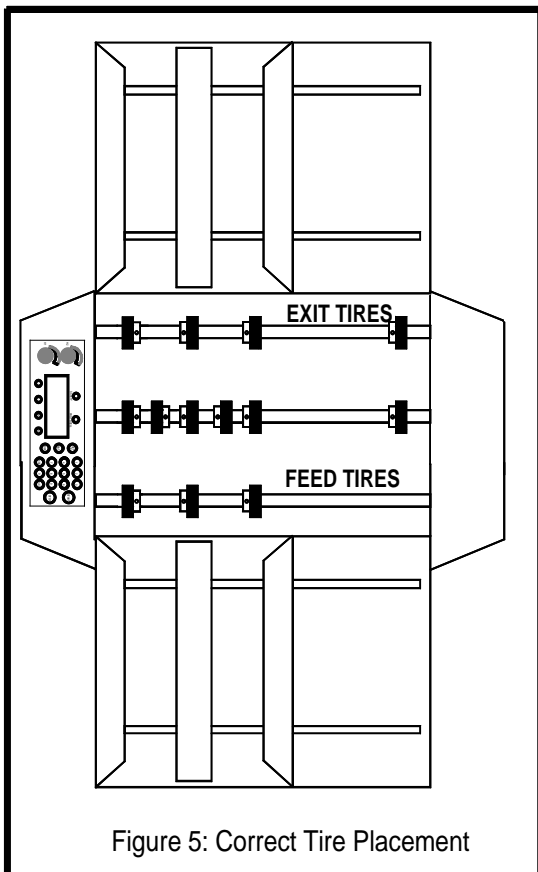
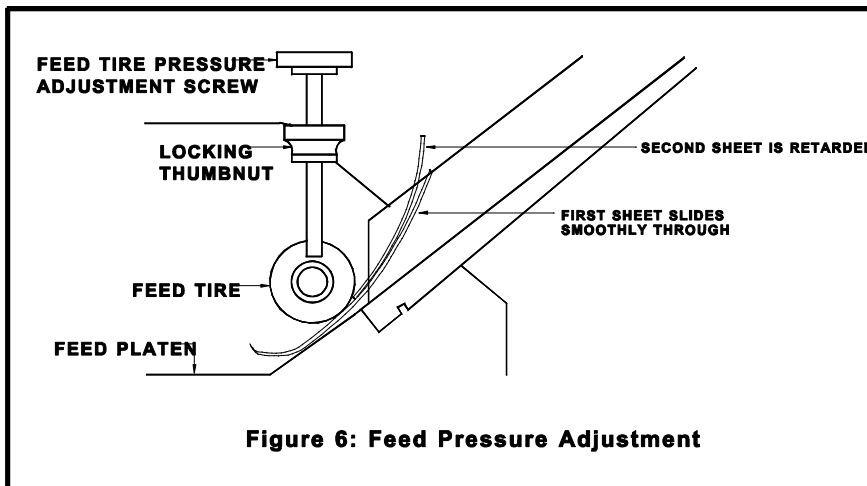


Figure 5: Correct Tire Placement

If a feed tire is set too close to the edge of the sheet, its feeding efficiency will be affected by variances in the stock such as sheet curl and inconsistent glue thickness on multiple padded forms. Improper setting of the feed tires can cause random skewing problems.

Warning: All feed and exit tires, and boss wheels use setscrews to secure their positions. When tightening setscrews, do not over-tighten them. This may scar the metal shafts and inhibit the free sliding movement of the feed tire hubs or perf/score/slit boss wheels.

To ensure consistent, trouble-free feeding, the feed tire pressures must be set as loose as possible. **The feed tires should never contact the retarder strip!** Our design allows for no double feeding with substantially reduced feed pressure than the typical friction feed system. The gap between the feed tires and the feed platen should be just less than the thickness of the stock being used. Remember that we are retarding the full lead edge of the next sheet or set. When setting the feed tire pressures, you should have the sense that the feed tires are just touching the paper. It is better to set the feed tire pressure to the minimum pressure required to prevent double feeding. The remedy to correct double feeding is to turn down the both feed tire pressure adjusting screws a cth turn until consistent feeding is achieved. If the feed tire pressure is too much, you will possibly mark or pull apart forms.



Adjustments for feed tire pressure are made with the feed tire pressure adjusting screws (see [Figure 6](#)). It is recommended to place two sheets of the stock in the feed tray with the feed tire pressure set loosely. Hold the two sheets in your hand with one sheet ahead of the other. Place the leading edge of the first sheet under the feed tires. Slowly tighten the feed tire pressure adjusting screws while jiggling the pages back and forth. The correct setting is achieved when the second page is no longer able to run under the feed tires.

All three *feed tires* should be adjusted to the same pressure setting to minimize skewing. To check that all the *feed tires* are adjusted to the same pressure, tear a strip off the stock being run and pass it under each *feed tire* separately. You should sense the same amount of drag under each *feed tire*. A tighter *feed tire* pressure on one side of the sheet will cause faster feeding of that side of the sheet (the sheet will skew or twist towards the *feed tire* with tighter pressure). To prevent this skewing, reduce pressure on the side of the *feed tire shaft* where you encounter more drag with a counter-clockwise, cth of the *feed tire pressure adjusting screw* and increase pressure on the other side by a clockwise, cth of that *feed tire pressure adjusting screw*. These adjustments should cause a change in the overall balance of pressure from the three *feed tires* without affecting the total *feed tire* pressure.

When you have the *feed tire* pressure set properly, you can then tighten down the white nylon thumbnuts to ensure the setting will be maintained.

Note: The only time the feed is too loose is if double feeding occurs (which the machine will detect and the message "PAPER TOO LONG" will appear on the *LCD display*). If the feed is too tight, the *feed tires* will try to pull only the top sheet off a set. If this occurs, loosen the *feed tire* pressure a little on both *feed tire pressure adjusting screws* evenly until this no longer happens.

With the HFS 7000, carbonless sets feed best from a non-glued edge! Glue thickens the set and can cause waves on the edge, while the unglued edges tend to be more consistently flat.

Advisory: It may require several attempts to get used to this sheet-feed technique, and it is recommended that you practice a few printing jobs with scrap paper. However, some initial trial and error experimentation will allow you to develop long-term benefits in efficiency.

4.3 Main Rollers

The *main rollers* are comprised of a bottom solid roller with 6 and 4 adjustable rollers on top. The top rollers are mounted on a spring-loaded shaft, to maintain pressure down to the bottom solid roller. The adjustable top rollers must be distributed along the shaft so that there is a roller on each end of the shaft, with the remainder distributed along the shaft. To ensure proper transport, a majority of the rollers should be on the stock, but do not load all rollers to one end of the shaft where you may encounter stock skew.

4.4 Stripper Assemblies

Each machine is supplied with a minimum of 3 *stripper assemblies*. Their purpose is to keep the stock flat as it runs through the machine and to ensure that the stock does not catch on the *dies*. The stripper blocks are to be mounted on the keyed square shaft, pointing down. They should normally be located close to the dies but not underneath the *dies* (this will damage the *dies*) or close to where a perf/score/slit is being performed.

If you experience double images when numbering, it is possible that the *stripper* pressure is not enough to keep the stock flat for the crash and the stock is bouncing, allowing a second image to occur. If this occurs, simply bend the *strippers* down to create more pressure on the paper.

4.12 Exit Rollers

The exit rollers are comprised of a bottom roller and five adjustable rollers on top. The top rollers are mounted on a spring-loaded shaft to maintain pressure down on the bottom solid roller. The adjustable top rollers must be distributed along the shaft so that there is a roller on each end of the shaft, with the remainder distributed along the shaft. To ensure proper transport, at least 2 rollers should be on the stock, but do not load all rollers to one end of the shaft where you may encounter stock skew.

5.0 RUNNING A JOB

5.1 Fanning

- 1) Hold the paper as shown in *Figure 10*.
- 2) Lower your left hand while holding on to the pile firmly with your right hand.
- 3) Hold the pile tight with your left hand and loosely with the right.
- 4) Return the left hand to its original position.
- 5) Repeat steps 1 through 4 until adequate fanning is obtained.

Try fanning while holding the stack in a vertical, upright position, with the one edge resting on a table. This will maintain a flat, straight edge. When loading a fanned stack into the *feed tires*, hold the back end of the stack up high (at approximately a 30 degree angle, relative to the *feed tray*) so that the lead edge slips under the *feed tires* (see *Figure 11*). Then, gently lower the stack onto the *feed tray*. Before starting the machine, rotate the *handwheel* one half turn and watch that the first sheet of the stack advances correctly, while the second sheet beneath it should be retarded from feeding into the machine.

The efficiency of the feeding can be improved by increasing the spacing between the sheets of your fanned stack. Begin with small stacks (10 to 20 sheets) and build up to larger stacks as you become more confident with your fanning.

Once you have mastered the art of fanning, you can progress to back-feeding to provide continuous feeding and uninterrupted operation. To feed while the unit is operating, fan a stack and, while holding it in your right hand, carefully grasp the bottom set of the feeding stack with your left hand. Raise the back edge of this bottom set, thus slightly raising the back of the feeding stack, and slide the new stack under it. Release the new stack into the *feed tray*, letting it slide down under the feeding stack. Lower and release the back edge of the bottom set so that the stacks now sit together. This back-feeding procedure should be done while there is still sufficient stock in the *feed tray* to allow for the time needed to prepare and insert the new stack.

6.0 Maintenance

The HFS 7000 is designed to be trouble-free through years of use. Only minor maintenance operations are required to keep it running like new.

6.1 Machine Cleaning

After each job, or midway through a very large job, clean the *feed tires*. You can use warm water to clean off paper dust or drying powder, or blanket wash or alcohol if there is ink on the *feed tires*. Any type of rubber roller rejuvenator is also good to clean the *feed tires*, the rejuvenator will also soften the rubber. This will prevent glazing of the rubber. Brand new tires will require extra cleaning for the first job or two until the rubber beds in.

In addition, always watch that paper dust or dirt does not block the photocell sensor eyes. The “green” light on the control panel marked “PHOTOCELL” can verify correct photocell operation. If dirty, simply wipe the photocell sensor eyes but **do not use solvents**. Either use a cotton swab or blow clean with compressed air.

Ensure that the trays and guides are clean.

6.2 Lubrication

The E4-W (Malahide component of machine) utilizes ten oil-impregnated bronze bushings to support all shafts. An occasional drop of light machine oil will maintain their lubricating qualities. Wipe off any excess oil to avoid spoiling a job.

6.3 Friction Feed

Over time, the rubber components of the *feed tires* may wear or harden. Use a rubber roller rejuvenator occasionally to soften the rubber. Other than the *feed tires*, another important element of the friction feed system is the full lead edge-retarding *strip*. The abrasive agent on the *retarding strip* prevents sheets from double feeding. As the abrasive agent wears, you will encounter more double feeds and when you see the green backing of the *retarding strip* you must replace it. To replace the *retarding strip* for the feed, adjust the *feed shaft* to its highest position. Using a scribe or sharp edge, etch into the *feed platen* where the *retarding strip* ends (you will use this scribed mark as a reference point when you apply the new *retarding strip*). Peel off the old *retarding strip* (you may need a knife or razor) and remove any old adhesive with alcohol. Replace with a new self-adhesive *retarding strip*. Make sure that there is some of the *retarding strip* surface under the *feed tires* to ensure proper operation.

7.0 TROUBLESHOOTING

SYMPTOM

SOLUTION

Friction Feeder

Double-Feeding

Adjust *feed tires* down by an **C** turn (feed is too loose); if the *retarding strip* is glazed or worn (you can see the green backing), replace *retarding strip* (see Section 6.4)

Creasing, marking,
or sets pulled apart

Adjust feed tires up by an **C** turn (feed is too tight)

Kicking, turning

Balance adjustment on *feed shaft* required (one side is too tight); adjust feed tray guides closer together to eliminate side to side play (see Section 4.1 & 4.2 for adjustment instructions).

Not feeding paper

Feed may be too loose in which case, multiple sheets are jammed under the *feed tires*, check adjustment; if *feed tires* are smooth or glazed, clean, rejuvenate or replace; open *feed tray guides* (set too tight to paper width and pinching stock)

Registration

Inconsistent Print
(poor print
registration)

Check that the photocell is clear of any obstacles (see location Section 6.2); if the number location seems to 'float', the *feed tray guides* may be too loose allowing sheets to skew as they feed (this will be seen more often with number locations closer to the non-operator side, furthest away from where the sheet passes the photocell; if numbers occur all over the place, the photocell may require readjustment (it is too sensitive, mis-registering the lead edge of the sheet)

Error Codes

| Group | Condition | Error |
|-----------------------|---------------|--|
| Paper Handling Errors | 01 | PAPER JAM |
| | 05 | MSTP PAPER ERROR REPORTED IS UNDEFINED |
| | 03 | PAPER TOO LONG |
| Solenoid Errors | 02-04, 06-09 | Reserved |
| | 10 | CH1 OPEN |
| | 11 | CH1 SHORT |
| | 12 | CH1 HOT |
| | 13 | CH2 OPEN |
| | 14 | CH2 SHORT |
| | 15 | CH2 HOT |
| | 16 | CH1 2 HEADS |
| | 17 | CH2 2 HEADS |
| | 18 | NO SOLENOID BOARD ATTACHED |
| | 19 | LOW VOLTAGE SOLENOID BOARD ATTACHED |
| | 20 | SOLENOID TIMEOUT |
| | 21 | SOLENOID BOARD TYPE INCONSISTENT (BETWEEN MSTP AND ICPU) |
| | 22 | SOLENOID ADC LIMITS ARE INCONSISTENT (BETWEEN MSTP AND ICPU) |
| | 23-28 | Reserved |
| | 29 | MSTP REPORTED UNKNOWN SOLENOID ERROR |
| | Motor Errors | 30 |
| 31 | | MOTOR TURN ON/OFF TIMEOUT |
| 32-39 | | Reserved |
| EEPROM Errors | 40 | UNABLE TO READ FROM EEPROM |
| | 41 | UNABLE TO WRITE TO EEPROM |
| | 42 | CRC INVALID FOR EEPROM PROGRAMMABLE PARAMETERS |
| | 43 | CHECKSUM INVALID FOR EEPROM SOLENOID PROGRAM |
| | 44 | TESTING FAILED DURING TEST/RE-FORMAT EEPROM |
| | 45 | EEPROM VERSION FORMAT ID# DOES NOT MATCH SOFTWARE |
| | 44-49 | Reserved |
| Memory Errors | 50 | RAM SELF-TEST READ/WRITE FAILURE |
| | 51 | CHECKSUM INVALID FOR RAM SOLENOID PROGRAM |
| | 52 | CRC INVALID FOR RAM PROGRAMMABLE PARAMETERS |
| | 53 | SETUP MODE SOLENOID PROGRAM HIT INDEX OUT OF RANGE |
| | 54 | SOLENOID PROGRAM NUMBER IS CORRUPT |
| | 55-59 | Reserved |
| Hardware Errors | 60 | AC LINE VOLTAGE OUT OF OPERATION RANGE |
| | 61 | MOTOR VOLTAGE OUT OF OPERATION RANGE |
| | 62-69 | Reserved |
| SCI Errors | 70 | ICPU SCI RECEIVE TIMEOUT ERROR |
| | 71 | ICPU SCI RECEIVE OVERFLOW ERROR |
| | 72 | ICPU SCI TRANSMIT TIMEOUT ERROR |
| | 73 | ICPU SCI INVALID ACK RECEIVED |
| | 74 | ICPU SCI CORRUPTED MESSAGE RECEIVED |
| | 75 | ICPU SCI TRANSMIT ABORTED |
| | 76 | ICPU SCI WAITING PERIOD FOR MSTP MESSAGE EXPIRED |
| | 77 | ICPU SCI INVALID MESSAGE TYPE RECEIVED |
| | 80 | MSTP SCI RECEIVE TIMEOUT ERROR |
| | 81 | MSTP SCI RECEIVE OVERFLOW ERROR |
| | 82 | MSTP SCI TRANSMIT TIMEOUT ERROR |
| | 83 | MSTP SCI INVALID ACK RECEIVED |
| | 84 | MSTP SCI INVALID COMMAND RECEIVED |
| | 85 | MSTP RECEIVE OVERRUN ERROR |
| | 86 | MSTP RECEIVE FRAMING ERROR |
| | 77-79, 87-88 | Reserved |
| | Miscellaneous | 89 |
| 90 | | MSTP ERROR REPORTED IS UNDEFINED |

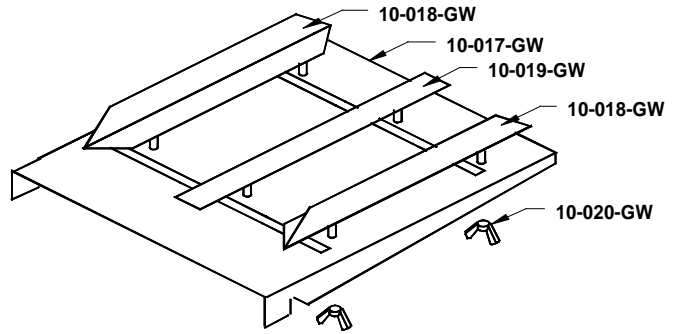
HFS 7000 PARTS LIST

| PART NO. | 6K | DESCRIPTION |
|-----------|----|---|
| 10-001-GW | X | Black, Pre-inked Pad w/holder |
| 10-002-GW | X | Black, Pre-inked Pad w/holder |
| 10-003-GW | X | Un-inked pad w/holder |
| 10-004-GW | X | Felt Insert |
| 10-005-GW | X | Red Ink, 4 oz. bottle |
| 10-006-GW | X | Black Ink, 4 oz. bottle |
| 10-007-GW | X | Changestick |
| 10-008-GW | X | 3/32" Hexdriver |
| 10-009-GW | X | 5/32" Hexdriver |
| 10-010-GW | X | Ring Pliers |
| 10-011-GW | X | 3/4" Snap Ring |
| 10-012-GW | X | Reverse Numbering Head (6 digits, 2 drop) |
| 10-013-GW | X | Forward Numbering Head (6 digits, 5 drop) |
| 10-014-GW | X | Condensed Reverse Numbering Head (8 digits, 4 drop) |
| 10-015-GW | X | Date Stamp Head (month/day/year) |
| 10-016-GW | X | 5/8" Wave Washer |
| 10-017-GW | X | Feed Tray |
| 10-018-GW | X | Feed Tray Side Guides |
| 10-019-GW | X | Feed Tray Slot Cover |
| 10-020-GW | X | Locking Wingnuts |
| 10-021-GW | X | Feed Platen Retarding Strip |
| 10-022-GW | X | Feed Shaft Adjust Screw |
| 10-023-GW | X | Locking Thumbnut |
| 10-024-GW | X | Roller Tire (feed/main/exit) |
| 10-025-GW | X | Roller Hub |
| 10-026-GW | X | Roller Shaft |
| 10-027-GW | X | 3/8 "Set Screw Collar |
| 10-028-GW | X | Shaft Bushing |
| 10-029-GW | X | Feed Shaft Bushing w/Spring |
| 10-030-GW | X | Shaft Bushing w/Spring |
| 10-031-GW | X | Solid Bottom Roller |
| 10-032-GW | X | Main Platen Crash Pad |
| 10-033-GW | X | Main Platen |
| 10-034-GW | X | Main Platen Grommets |
| 10-035-GW | X | Main Platen Mount Brackets |
| 10-040-GW | X | Hand Knob |
| 10-041-GW | X | 5/16" Disc Spring |
| 10-042-GW | X | 5/16" Flat Washer |
| 10-043-GW | X | Solenoid w/plunger |
| 10-044-GW | X | Solenoid plunger |
| 10-053-GW | X | Drive Unit Cover |
| 10-054-GW | X | Print Head Mount Block |
| 10-055-GW | X | Exit Tray |
| 10-056-GW | X | Magnetic Tray Side Guides |
| 10-057-GW | X | Magnets (2) |
| 10-058-GW | X | Handwheel |
| 10-059-GW | X | 120V Modular Line Cord |
| 10-066-GW | X | 5A, 250V Slow Blow Fuse |
| 10-068-GW | X | Impression Control Dial Knob |
| 10-071-GW | X | 1/2 "Cord Strain Relief |
| 10-084-GW | X | Accessory Holder w/12 TPI perf blade |
| 10-085-GW | X | Accessory Holder Adjust Screw |
| 10-086-GW | X | Blade Mount Hub w/bearing |
| 10-088-GW | X | Accessory Holder w/idler wheel |
| 10-089-GW | X | Idler Wheel Tire |
| 10-090-GW | X | Boss Wheel |
| 10-091-GW | X | 2 TPI Perf. Blade |
| 10-092-GW | X | 4 TPI Perf. Blade |
| 10-093-GW | X | 6 TPI Perf. Blade |
| 10-094-GW | X | 8 TPI Perf. Blade |
| 10-095-GW | X | 12 TPI Perf. Blade |

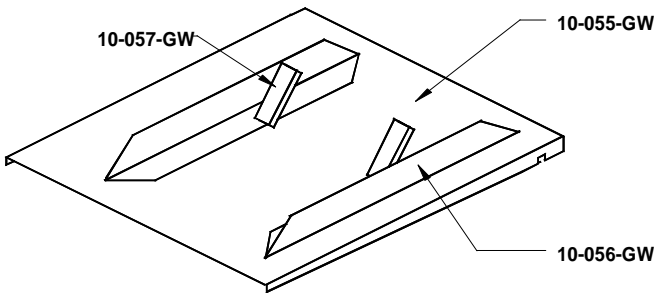
| | | |
|-------------|----|---|
| 10-096-GW | X | Microperf (42 TPI) Blade |
| 10-097-GW | X | Microperf (72 TPI) Blade |
| 10-098-GW | X | Slit Blade |
| 10-099-GW | X | Score Blade |
| 10-100-GW | X | Narrow Score Blade |
| 10-101-GW | X | Double Score (1/4 " separation) w/Holder & Boss |
| 15-005-GW | X | Red Quick Drying Ink, 2 oz. Bottle |
| 15-006-GW | X | Black Quick Drying Ink, 2 oz. Bottle |
| 15-036-GW | X | ¾ "Keyed Drive Unit Mount Shaft |
| 15-037-GW | X | Anti-Pitch Block |
| 15-038-GW | X | 5/16" Dogged Set Screws |
| 15-039-GW | X | Drive Unit Mount Block (left/right pitch control) |
| 15-052-GW | X | Solenoid Mount Angle w/tube (left/right pitch) |
| 15-072-GW | X | Complete Drive Unit |
| 15-073-GW | X | Complete Drive Unit w/ Reversing Head |
| 30-025-GW | X | Large Clutch Feed Pulley /12k |
| 30-037-GW | X | Rubber Foot |
| 40-003-GW | X | Timing Pulley- 18XL037X3/8 |
| 40-103-GW | X | Timing Pulley- 18XL037X1/2 |
| 50-007-GW | X | Main Structure Shaft |
| 50-008-GW | X | Feed Platen/8000 |
| 50-009-GW | X | Shaft Adjust Blocks |
| 50-011-GW | X | Drive Unit Mount Shaft Bracket |
| 50-014-GW | X | Boss Wheel Shaft |
| 50-019-GW | X | Cross Shaft |
| 50-020-GW | X | Exit Rollers Safety Shield |
| 50-021-GW | X | Timing Belt- 220XL037 |
| 50-022-GW | X | Belt Tensioner |
| 50-023-GW | X | 1 ¾ "Feed Pulley |
| 50-033-GW | X | Fan Guard |
| 50-035-GW | OP | Stand/8000 |
| 50-037-GW | OP | Regular Caster Wheel |
| 50-038-GW | OP | Locking Caster Wheel |
| 90-001-GW | X | Non-Operator Side Plate |
| 90-002-GW | X | Operator Side Plate |
| 90-003-GW | X | Non-Operator Side Cover w/guard |
| 90-004-GW | X | Operator Side Cover |
| 90-005-GW | X | Stepper Motor |
| 90-006-GW | X | Motor Ferrite Bead |
| 90-007-GW | X | Motor Guard |
| 90-009-GW | X | Metal Display Panel |
| 90-010-GW | X | Main Bottom Roller |
| 90-011-GW | X | Photocell Reflector |
| 90-012-GW | X | Accessory Holder Mount Shaft |
| 90-013-GW | X | Stripper Assembly |
| 90-015-GW | X | Safety Shield w/hinge & actuator /3/6/8k |
| 90-016-GW | X | Safety Switch w/harness /3/6/8k |
| 90-024-GW | X | O-Ring Feed Drive Belt/3/6/8k |
| 90-028-GW | X | HV Voltage Solenoid Board 3/6k |
| 90-028-GW-X | X | HV Voltage Solenoid Board 3/6k: Exchange |
| 90-031-GW | X | Low Profile Tie Mounts |
| 90-032-GW | X | 12V Cooling Fan |
| 90-054-GW | X | Print Head Mount Screws |
| 90-055-GW | X | Print Head Rotation Screw |
| 90-059-GW | X | 220V Line Cord |
| 90-060-GW | X | MSTP Board 120V Connector |
| 90-061-GW | X | MSTP Board 220V Connector |
| 90-062-GW | X | Modular Switch w/ fuseholder |
| 90-063-GW | X | Line Filter |
| 90-064-GW | X | Filter to MSTP Board Cable |
| 90-065-GW | X | Board Mount Stand-Off |
| 90-067-GW | X | Photocell Assembly |
| 90-069-GW | X | Solenoid Connection: Board to Female Terminal |
| 90-082-GW | X | Wire Transfer Tube |
| 90-083-GW | X | Drive Shaft Bearing |
| 90-084-GW | X | Drive Shaft Bearing w/Spring |
| 90-085-GW | X | Plastic Electrical Guard |
| 92-025-GW | X | MSTP Board |
| 92-025-GW-X | X | MSTP Board: Exchange |

| | | |
|-------------|---|-------------------------------------|
| 92-026-GW | X | MSTP Chip |
| 92-027-GW | X | ICPU EPROM |
| 92-028-GW | X | HV Voltage Solenoid Board |
| 92-028-GW-X | X | HV Voltage Solenoid Board: Exchange |
| 92-029-GW | X | ICPU Display Board |
| 92-029-GW-X | X | ICPU Display Board: Exchange |
| 92-030-GW | X | Red Screen Cover |
| 92-034-GW | X | Display Board Label/6k |
| 94-003-GW | X | Non-Operator Side Cover w/guard |

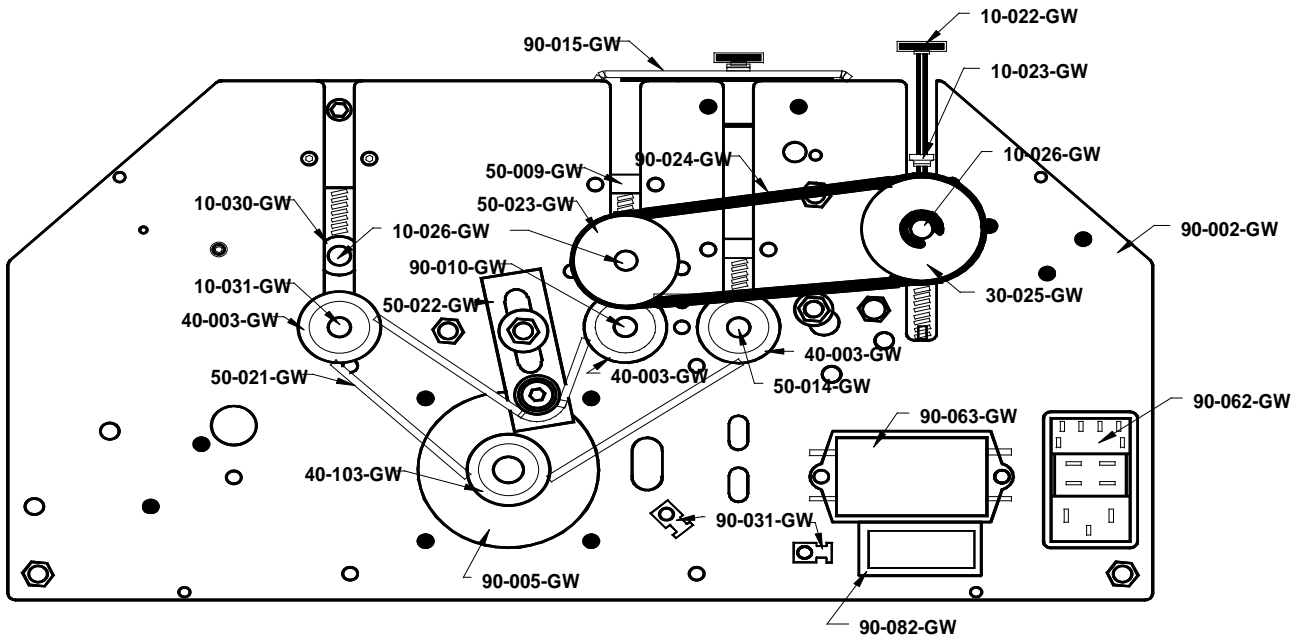
HFS 7000 PARTS DIAGRAM



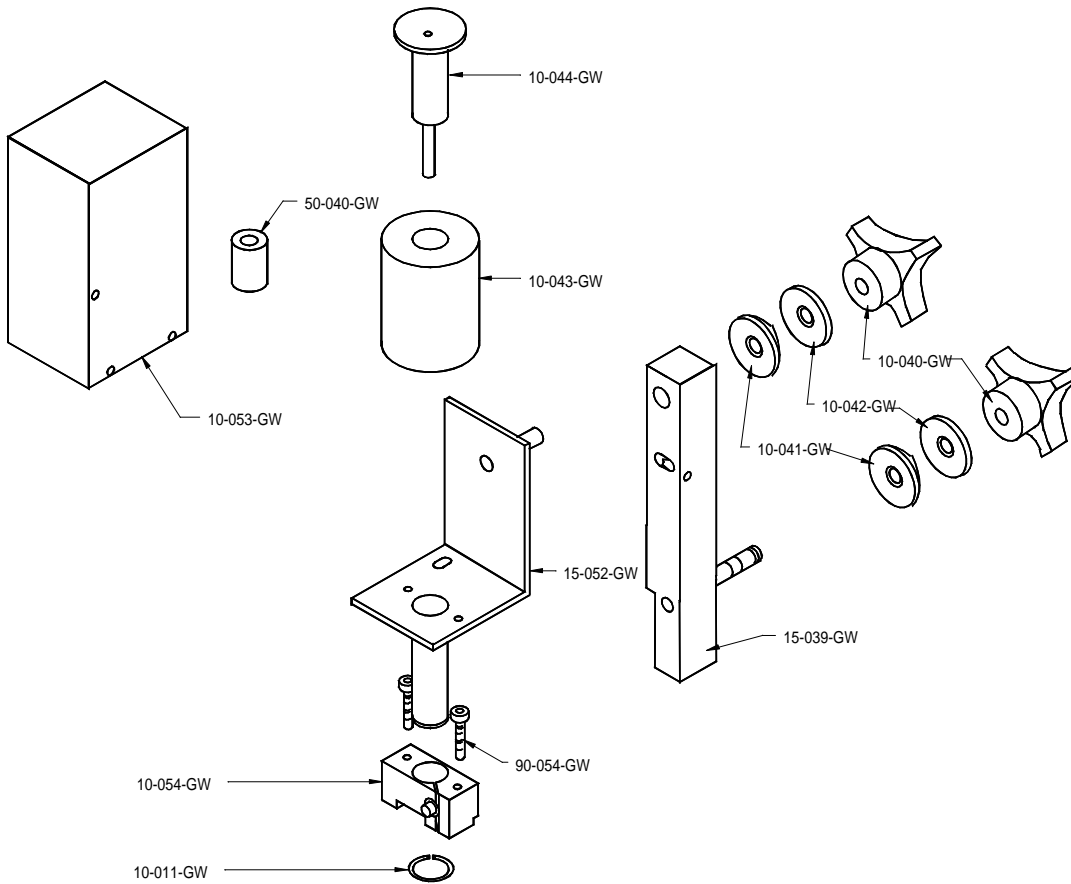
FEED TRAY ASSEMBLY



EXIT TRAY ASSEMBLY



GW 6000 OPERATOR SIDE



ELECTRIC SOLENOID DRIVE UNIT (15-072-GW)

Blade Placement on the Boss Wheel

