Iconotech Optimizer Manual Feed Case/Bag Printer

January 2016

Operating Manual

Iconotech
Optimizer
Manual Feed Case/Bag Printer

Operating Manual

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Section 1

Installation

This section contains important installation instructions that must be followed to properly install and prepare the Case Printer for set-up and operation.

Pre-Installation of Case Printer with Restacker & Roller Conveyor System

Following are the site requirements and basic layout (see sketch at the end of this section):

Electric Power 230 V AC, 60 Hz, single phase, 20 Amp. protected. (When ordered as a unit, the restacker is equipped with a connection into press, and roller conveyor is connected to restacker with standard plugs.) Main connection point is on right side of printer control cabinet with a polarized, 4-prong push and twist connector.

Air System A clean source of dry shop air is required. Minimum 80 PSI at 20 CFM for press with air blow-off and restacker.
Air Line: Minimum 3/8" I.D. x 25" long.
Connections: 1/4" NPT T-fitting to printer filter-regulator-lubricator on right side of control cabinet. Bottom of the T-fitting is piped to junction box on outside of driven side. A quick-connect coupler is provided to plug in air hose from restacker. Restacker has it's own filter-regulator-lubricator.

Electric Power for Countries with 50 Hz
The printer, restacker, and conveyor are equipped with components capable of handling the local power: 240 V AC, 50 Hz, single phase, 20 Amp protection. Specific wiring requests and components must be included in order and quoted.

Before installing, check to ensure that the necessary supplies and accessories are enclosed. They should have been shipped with the printer, restacker, or conveyor.

CASE PRINTER

- User manual
- Electrical schematic diagram
- Print cylinder lift bar
- 4 Adjustable leveling pads
- 1 Ink pad
- 1 Ink jug with fittings
- 1 Ink in tubing
- 1 Ink out tubing
- 1 Thermal imager
- Iconotech printer drivers
- 1 Print layout creation software

RESTACKER and CONVEYOR

- Electrical schematic diagram
- 2 Caster wheels with V-grooves
- 2 Caster wheels, plain
- 1 Angle iron rail for restacker
- 1 Cable mast for conveyor
- 1 Power cable to conveyor electric motor with accessories

INSTALLATION OF THE CASE PRINTER SYSTEM WITH RESTACKER & CONVEYOR

Installation of a system should begin with locating restacker in proper position in designated area. Because restacker is fixed in place, moving on rail that is anchored to floor, it is of the utmost importance that rail be properly located. (See sketch at the end of this chapter.)

Installation of the Restacker

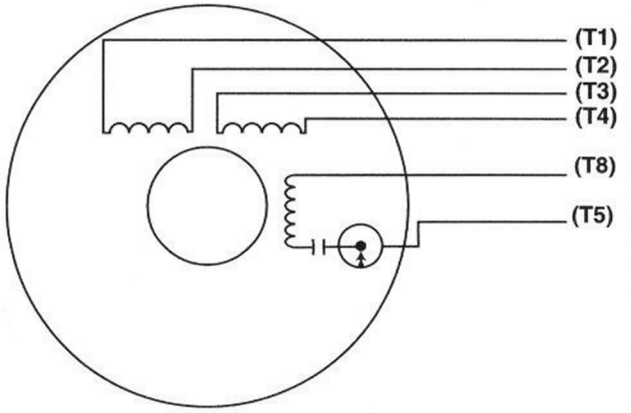
1. Unload restacker from crate and mount the 2 grooved casters on exit end of restacker and the 2 plain casters on entrance end.
2. Drop restacker down on angle iron rail with the two grooved casters riding on rail.
3. Move restacker back and forth on rail from resting notch, in operating position, to resting notch in service position, providing access to print cylinder. Restacker should roll freely and stay securely in both notch locations.
4. Carefully check whether restacker is level, both side-to-side and front-to-back. Although it is not sensitive to being absolutely level, it is somewhat dependent on floor level and care should be given to provide a level floor location. To level restacker, shims will have to be placed between caster mounting plate and bottom of restacker.
5. Anchor rail to floor in the appropriate place as both the conveyor and press will be aligned to the restacker.

Installation of Conveyor

1. Conveyor is shipped in two crates: 1.) 34" x 31" x 126" and 800 lbs. 2.) 52" x 31" x 108" and 1,000 lbs.
2. Uncrate and mount the legs as marked. Flip the sections over and mate them together, making sure that the sprocket halves for line shaft drive are lined up. Bolt sections together. Install the Deldrin chain couplings.
3. Move conveyor into location, allowing min. 3/4" space between restacker frame and conveyor frame, to allow restacker to roll back and forth.
4. Center of roller conveyor should be aligned with the "0" position on the measuring scale on restacker. Generally, the center support wheel on exit conveyor splined drive shaft is mounted in center position.
5. Make sure conveyor is properly located and properly elevated to the correct height, per sketch. Anchor both legs at ends of conveyor and all other legs in a staggered fashion. Make sure the single legs are anchored.
6. The conveyor is shipped in such a manor that the breather port on the gearbox is pointed up and thus retains the oil.
7. Drill for mast and install it at the starting end of the conveyor to allow the stacker to be moved back and forth.
8. Install the electrical cable by attaching the cable on the inside of the outside rail with cable ties. Wiring connections to the conveyor motor are as follows.

LINE	L1	L2	JOIN
MOTOR LEADS	T1	T4, T8	T2, T3, T5

CONVEYOR MOTOR



9. All controls for conveyor are located in control cabinet on restacker.
10. For proper operation, remove the o-ring drive belts on the first three rollers and the last four rollers of the conveyor.
11. Mount an "L" bracket (1 1/2" x 2 1/2" x 5 1/4" long) in the middle of the angle iron across the end of the conveyor, with the 2 1/2" side up. This will stop the cases from rolling off the end, as well as making it convenient to grab a stack.

Installation of the Printer

1. Uncrate printer and remove lag bolts in each corner that hold printer to skid.
2. Lift case printer off skid by using a forklift with long forks. Move forks in from driven side forward of midpoint. It might be necessary to lift driven side and block it up in order to get forks in. Put a board across fork ends underneath bottom pan, to distribute weight and protect paint.

WARNING
Keep hands and feet clear of machine base when lifting machine off skid. Do not work or place hands under machine base unless machine is securely supported at all four corners.

! NOTE !
Do not lift or attempt to maneuver the case printer into position using the control panel enclosure for support

3. With the printer lifted up, remove skid. Mount leveling feet at each Corner. Place printer in proper location allowing a 3" space between printer and restacker per layout print. Operator side is offset toward the operator 2 3/4" in relation to the side of the stacker. Using a long straight edge, check the alignment of the feeder side panel and the stacker side panel with both set at the same number on the measuring tape. Adjust the press side to side for correct line-up.
4. Make sure that machine leveling mounts are evenly adjusted. Level machine from side-to-side using low-end platform and the front cross shaft under Plexiglas cover as leveling surfaces. (Move O-rings out of the way.) It is of the utmost importance that printer be level for proper ink flow in print cylinder and for maintaining level printing on cases. Out of level can cause wrinkling of stencil and skewing of pad. Check level of print cylinder by aligning the level with one row of perforated holes. The print cylinder should be absolutely level.

5. With main power disconnect in off position (green field) connect the 230V, 60 Hz., single phase power to connecting twist plug.
6. Attach pneumatic supply line to inlet port of filter-lubricator-regulator assembly mounted on side of control panel enclosure. Air supply may be attached using appropriate quick-disconnect pneumatic fittings if desired. When quick-disconnect fittings are used, always install self-checking female fitting on air hose to prevent whipping of hose when air line is disconnected from FRL assembly. Set regulator gage to 70 PSI. Fill lubricator with 10 weight non-detergent oil. Set oil drip rate to minimum, per manufacturer's instructions.
7. Connect restacker air-electrical and signal wire to proper quick-connects in junction box on printer. Connect conveyor power plug to proper connector in the junction box on the inside lower exit corner of the stacker.

WARNING
READ USER'S MANUAL AND ALL SAFETY INSTRUCTIONS BEFORE ATTEMPTING TO START OR OPERATE CASE PRINTER.
Failure to read and follow all instructions may result in serious injury or damage to case printer

8. Perform visual checks of each of the following items before turning restacker, conveyor, and printer on for the first time, and correct items as required:

    - Drive chains are properly engaged with all sprockets.
    - Drive belts are properly seated on pulleys.
    - Pneumatic tubing fittings and connections are properly tightened and are leak-free.
    - Ink pump power cords are securely engaged.

9. READ ALL SAFETY INSTRUCTIONS AND USER'S MANUAL BEFORE PROCEEDING! All service personnel performing maintenance, adjustments, or repairs on the Case Printer must understand the operation of the machine before attempting to perform equipment service. After completing reading and review of these materials, return to Step #8 of the installation procedure.
10. Set filter-lubricator-regulator on Restacker to 60 PSI (located on driven side). With the main breaker on the press control cabinet in "ON" position, turn restacker selector switch to "ON" position. "ON" light should now be on and roller conveyor should be running.
11. Push "EJECT" button. Flipper arms should drop and return and eject conveyor should be running.
12. Turn power to Case Printer "ON" by turning main switch lever counterclockwise to "white" area on switch base.

    A. Set Speed to "10" by turning Speed selector knob dial.
    B. With no cases in magazine, start Case Printer by pressing "RUN" button on control panel. Press will run only three cycles and stop.
    C. Start press again and, immediately, press "E-STOP" (Emergency Stop) button on control panel. Machine must stop immediately. If machine continues to run, turn power off at main switch, and consult troubleshooting guide section of operating manual before proceeding.
    D. Pull "E-STOP" button back up, and restart case printer using "RUN" button. Go to the second "E-STOP" button on case in-feed side of machine, and press button. Machine must stop immediately. If machine continues to run, turn power off at main

switch, and consult troubleshooting guide section of operating manual before proceeding.

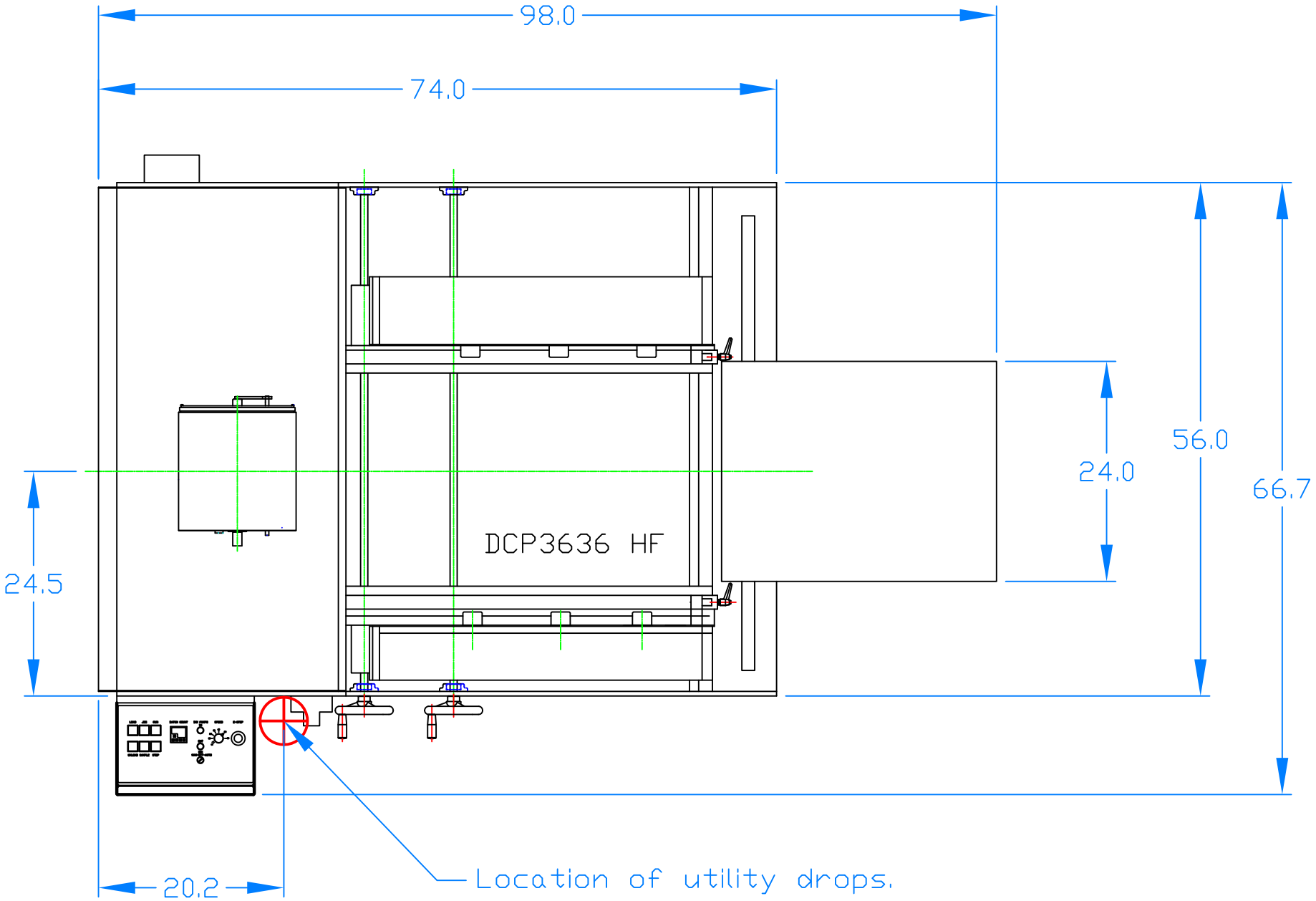
E. Turn pump selector switch to "MANUAL." Push "INK IN" button. The pump roller rotor should turn clockwise looking at it from the front of the pump. Turn selector switch to "OFF". Repeat for "INK OUT" pump.
F. Go to case out-feed side and, with machine running, lift Plexiglas cover up. Machine must stop immediately. If machine continues to run, turn power off at main switch, and consult troubleshooting guide section of operating manual before proceeding.
G. While holding down the "JOG" button and keeping the machine running, count the number of print cylinder revolutions per minute. Use the clamp area on the print cylinder as a reference point to count revolutions. Case Printer should run at speed set on speed selector knob. If Case Printer speed does not agree with Speed knob setting within a reasonable tolerance, consult troubleshooting guide. The frequency shown on the AC drive unit inside the cabinet should correspond to the RPM of the print cylinder.
H. Start the press and immediately press the "STOP" button. The print cylinder and feed chain should continue for 4 revolutions before stopping.
I. Press "Stop" button, and allow machine to come to a complete stop at "HOME" position.

13. Turn the Main Power Switch on the Control Panel to "OFF".
14. The Case Printer is now ready for mounting of the printing pad, inking, loading of print film, and running as described in the user's Manual.
15. Place the copy of the Electrical Wiring Diagram that was shipped with the machine in the control panel enclosure to help ensure availability in the event of a service call.
16. Do not attempt to make any adjustments. Modifying or altering control panel components will prevent the Case Printer from operating normally, and may lead to damage of other machine components, and unsafe operating conditions.
17. Do not attempt any repairs outside the scope of this operating manual. Doing so will void your warranty, and may lead to improper or unsafe operation, and damage to machine components.
18. Never attempt to use non-authorized or makeshift parts. Doing so will void your warranty, and may lead to improper or unsafe operation, and damage to other machine components.
19. For factory authorized service, contact Iconotech at 1-800-521-0194.

Check	Spec.	Tolerance	Procedure	Adjustment	Location
Drive Speed – Print Cylinder	10 RPM	±½ rpm	Count RPM	Call Service Technician	Call Service Technician
Drive Speed – Print Cylinder	60 RPM	± 1 rpm	Count RPM	Call Service Technician	Call Service Technician
Print Cylinder – Home Pos.	0° (12:00)	±1/8”	Observe Print Cylinder Lift Pin Position	Move “HOME” Proxy Switch	Electrical Cabinet
Fuse #110 – FNQ-R-10	10 Amps	N/A	Check FU110 Position	Replace	Electrical Cabinet
Fuse #111 – FNQ-R-10	10 Amps	N/A	Check FU111 Position	Replace	Electrical Cabinet
Fuse #125 – FNQ-R-3	3 Amps	N/A	Check FU125 Position	Replace	Electrical Cabinet
Fuse #201 – AGCI	1 Amp	N/A	Check FU201 Position	Replace	Electrical Cabinet
Drive Chains in Sync.	No Chattering	N/A	Listen for Unusual Noise/Chatter	Drive Side Sprocket Hub	Chain End Sprocket
Print Cylinder Up/Down Speed	No Banging	N/A	Raise/Lower Print Cylinder	Up/Down Flow Control	Left Air Solenoid Valve – Inside
Ink Pump Flow Rate – In	100 ml/minute	± 5 ml	Measure Output with Metric Measuring Cup	Check Pump Setup	Ink Pump – In
Ink Pump Flow Rate – Out	150 ml/minute	± 5 ml	Measure Output with Metric Measuring Cup	Check Pump Setup	Ink Pump – Out

Check	Spec.	Tolerance	Procedure	Adjustment	Location
Ink Out Pump Tube Walking	Stationary	N/A	Ink Out, 1 notch on fork If Necessary	Use Forks On Pump	Ink Pump – Out
Ink In Pump Tube Walking	Stationary	N/A	Set Blue Clamp Tight Enough to Stop Walking	Use Blue Clamp	Ink Pump – In
Drive Belts	¼" Deflection	±1/8"	Squeeze At Midpoint Between Pulleys	Adjust Idlers	Idler Pulleys
Main Drive Belt	½" Deflection	±1/8"	Squeeze At Midpoint Between Pulleys	Adjust Tension	Main Motor Gear Box Platform
Stencil Load Feed Friction	Smoothes Stencil	N/A	Check For Positive Stencil Feed with Some Tension	Adjust ¼" SHCS in, to increase friction, out to decrease. Lock nut.	Bearing housing above shaft nut.
Hold-Down Nylon Screw on Cylinder Shaft Pins	Locks Tight	N/A	Tighten Screw Firmly – Shaft pin assembly must be locked tightly	Tighten/Inspect	Print Cylinder Shaft Pin Housings (each end)
Ink Pump Rotation	Clockwise	N/A	Look At Pump From Front	Reverse Wires	Control Cabinet (Only by Electrician)
Overload Sensor	Trips as Required	.1 Sec.	Stops Drive Motor When Case Jams	Call Service Technician	Call Service Technician

Note: See Sections 8 & 9 – Adjustment Procedures and Troubleshooting, for complete instructions on all major adjust procedures.


98.0
74.0
24.0
56.0
66.7
24.5
DCP3636 HF
20.2
Location of utility drops.

Section 2

Safety Instructions

Operation/Service Safety

Machine Safety

OPERATION AND SERVICE SAFETY

The Iconotech Case Printer was designed with operator and service technician safety in mind. However, as with any type of powered machinery, it is absolutely essential that everyone that operates, adjusts, services, or works around the machine, read, understand, and obey all safety precautions.

Iconotech has placed specific safety instructions throughout this manual to alert you to situations that have the potential to cause personal injury.

In addition to the preceding safety alerts, which warn of the potential for personal injury, there are additional important instructions regarding machine installation, adjustment, and servicing procedures. These instructions provide information that, when followed correctly, will help prevent equipment damage that could be caused by the use of improper procedures.

General Safety

Safe operation, adjustment, and servicing of the Iconotech Case Printer is everyone's responsibility! Whether you are operating, servicing, or working around this machinery, always follow Iconotech's safety and operating instructions to protect yourself, the people around you, and the printer itself.

If you have a question regarding any of the precautions or procedures in this manual, or if you need to obtain service for a problem not covered in this operating manual, please call for factory authorized assistance at 800-521-0194.

MACHINE SAFETY INSTRUCTIONS

Iconotech has developed the following general safety instructions that apply to the Case Printer. These instructions are extremely important, and must always be followed to ensure your safety, as well as the safety of others working on or around the equipment.

1. ***Read the Operating Manual***

The operating and operating manuals contain specific operating and safety instructions concerning the installation, set-up, operation, adjustment, and repair of the Iconotech Case Printer.

Failure to follow these instructions may result in serious personal injury, as well as expensive damage to case printer components.

2. ***Never Operate Case Printer Unless All Guards Are In Place***

The guards on the case printer have been installed to prevent accidental contact with moving parts that could cause injury. Removing the guards will expose these moving parts, increasing the likelihood of accidental contact and injury to machine operators and service personnel.

3. ***Always Keep Hands And Clothing Away From Chains, Sprockets, Pulleys, And All Other Moving Parts***

While guards have been installed to the extent possible, some areas of the case printer must be left "open" to allow for case size adjustments as well as normal machine operation. Keep hands and clothing away from these areas while the machine is on or running. Contact with these areas while the machine is running may cause serious injury.

4. ***Never Alter, Modify, Or Tamper With Plexiglas Cover Interlock Switch***

The Plexiglas cover over the print cylinder area is interlocked with a switch that shuts the case printer off if the Plexiglas cover is opened while the machine is running. Altering the operation of this interlock switch in any way may result in serious injury to the machine operator and service personnel.

5. Always Disconnect Machine From Power Source Before Making Repairs Or Adjustments

Automatic machinery can start at any time unless power sources are disconnected. Working on the case printer while it is connected to an electrical power source may cause serious injury if the machine starts unexpectedly. Make sure the power cannot be inadvertently restored to the machine while it is being worked on. Use lockout devices on appropriate switches or power cords to prevent power from being restored accidentally.

6. ***Never Allow Untrained Personnel To Operate, Adjust, Or Service The Case Printer***

Only trained personnel will be able to operate, adjust, or service the case printer safely and correctly. Untrained personnel could be seriously injured, or could cause extensive damage to the case printer. All machine operators must read and understand the operating manual. All service personnel must read and understand both the operating manual.

7. ***Always Use Emergency Stop Buttons To Shut Machine Down Immediately In The Event Of An Accident Or Component Failure***

The case printer is equipped with two emergency stop buttons. One button is located on the operator control panel, and the other button is located on the feeder end of the machine where blank cases are loaded into the magazine. In the event of an accident or sudden component failure, use the emergency stop buttons immediately to shut the machine off.

8. ***Never Attempt To Use Unauthorized Replacement Parts When Servicing Equipment***

Using unauthorized service parts may affect the safe and reliable operation of the case printer, and will void the manufacturer's warranty on any components damaged by using these unauthorized parts. Only parts and components that have been specifically designed or approved for use with the case printer must be used.

9. ***Always Keep Work Area Around Case Printer Clear And Free Of Discarded Cases Or Other Debris***

Tripping, falling, or losing one's balance while around the machine may result in serious personal injury.

Section 3

Operating Instructions

Contents

The Iconotech Case Printer

The Iconotech Case Printer features the latest advances in direct printing technology for corrugated cases, providing easily produced, high resolution text, graphics, and bar codes that can be economically printed on a wide variety of cases.

Iconotech's advanced, yet easy-to-use design, combines the high quality of thermal transfer printing, the large message capability of Flexographic plate printing, and the economy of ink jet printing, into a single system with unparalleled flexibility.

Iconotech Printer Features

The Iconotech Case Printer has the following productivity-boosting features:

- Unified frame with a 15° inclined feed angle for comfortable loading height
- Variable speed single drive operates both print cylinder and case feeder
- Semi-automatic image film loading
- Dual chain feed conveyor with flights for precise indexing between print cylinder and case feeding system
- Adjustable feeder table for accurate manual feeding
- Totally self-contained ink system for maintaining correct ink level
- Removable and replaceable print cylinder and ink supply for easy color changeovers
- Simple electronic control panel with system overload protection

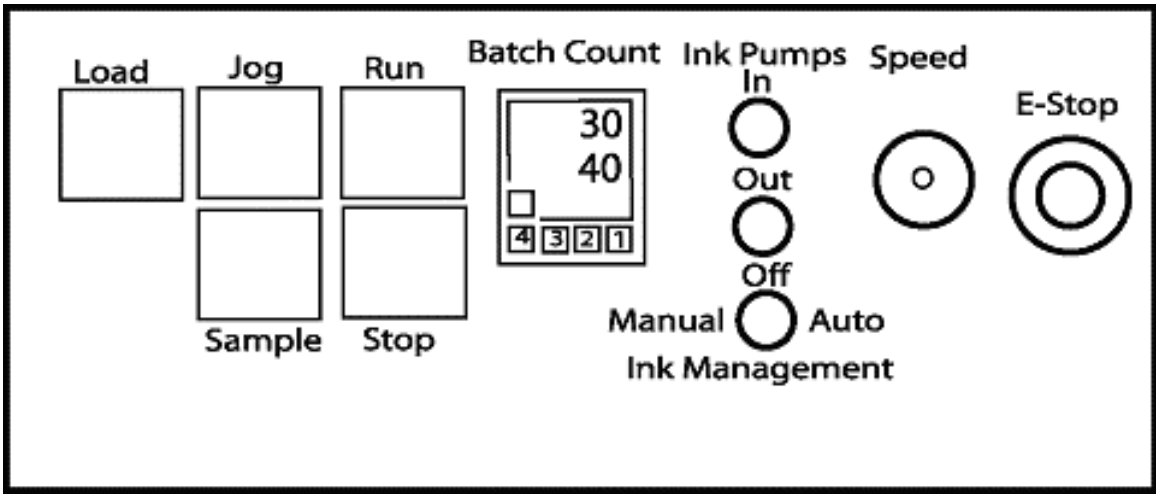
Model	DCP-3200-HF
Dimensions	65" (1650 mm) Wide by 110" (2794 mm) long by 50" (1270 mm) high
Feed Table Dimensions	36” (914 mm) Long by 28” (711 mm) Wide
Weight	1800 Lbs. (817 kg.)
Loading Height	30" (762 mm)
Exit Height	39" (991 mm)
Print Rate	Variable, up to 60 case per minute
Feed Direction	Operator side - right to left
Capacities	Maximum case size - 36" W x 39" L (915 mm x 991 mm) Minimum case size - 10" W x 10" L (254 mm x 254 mm)
Allowable Case Thickness	1/16" to 3/4" (1.5 mm to 20 mm)
Print Area	11" x 32" (280 mm x 812 mm)
Ink System	Continuous, with automatic level control
Pump Type	Dual peristaltic
Ink Container	2 Gallons
Pad	Custom made by Iconotech
Electrical	230 VAC, 60 Hz., Single Phase, 20 Amp protection required. (1 kW power use)
Overload	Electronically controlled overload protection
Air	Minimum 80 PSI clean, dry shop air, 20 CFM with Case Blow-off Device

Power On - Off Control

Power is delivered to the PRINTER through a lockable circuit breaker located on the front side of the control console. The power is on when the switch is turned counterclockwise to the WHITE field.

Control Panel Layout

The Control Panel features the following easy-to-operate controls:



OPERATOR CONTROL PANEL

Control Functions

1) ***LOAD BUTTON*:** Provides two different actions: 1) Starts image film loading sequence. Rotates cylinder to load position from home position and opens clamping fingers. 2) Completes image film load sequence. Fingers are activated and clamp film to cylinder. Cylinder rotates, loading film. Cylinder stops at home position. After any function except UNLOAD, action number 1 occurs. After UNLOAD, number 2 occurs.

2) ***JOG BUTTON*:** Activates drive motor and rotates only print cylinder and feed chain, not feeder mechanism. System runs at speed indicated on SPEED DIAL. Momentary contact button. With Plexiglas raised, the print cylinder can be moved in small increments by repeatedly pressing the JOG button.

3) ***RUN BUTTON*:** Starts print cylinder, feed chains, and feeder mechanism. Activates air cylinder lowering print cylinder to print position. RUN remains active until preset count is reached or until magazine runs out of cases.

4) ***INK PUMP*:** IN Starts the IN Ink Pump, which pumps ink into print cylinder. (See INK MANAGEMENT SELECTOR SWITCH.)

5) ***INK PUMP OUT*:** Starts the OUT Ink Pump, which pumps ink out of the print cylinder. (See INK MANAGEMENT SELECTOR SWITCH.)

6) ***SPEED DIAL***: Sets the speed of the case printer in cases per minute.

7) ***E-STOP*****:** EMERGENCY STOP BUTTON. This button stops the printer immediately. A second E-STOP button is located at the feeder end of the printer. The E-STOP button is used to stop the printer in case of emergencies.

8) ***INK MANAGEMENT SELECTOR SWITCH*****:** A selector switch with the following positions:
   - **Manual** - Ink pumps must be operated manually.
   - **Off** - Pumps off.
   - **Automatic** - Ink pumps start when RUN is pushed and stop when job is complete, STOP is pushed, or E-STOP is pushed. If IN pump is pushed while press is not running, IN pump runs for 7 minutes and then shuts off. If OUT pump is pushed while press is not running, OUT pump runs for 5 minutes and then shuts off.

9) ***CASE COUNTER*****:** This is a four-digit counter with a reset button. Set the number of cases to be printed in a print run, and it counts down as cases are fed into print cycle. Resets only when print run is finished or when RESET is pushed.

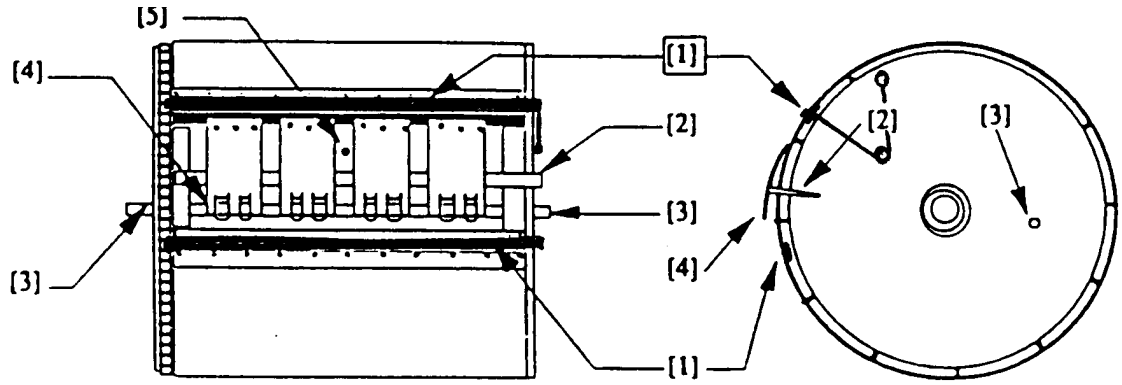
10) ***STOP BUTTON*****:** Stops the press when pushed. First, the feeding mechanism is stopped immediately so that no further cases are fed into the print system. Then, press continues to run until the last case fed into the system has exited the press. Counter retains its current number and will resume counting when RUN is pushed.

11) ***SAMPLE BUTTON*****:** Starts the printer at the preset speed and feeds one case from the magazine through the print system and stops the press. The counter is not activated by this cycle.

Print Cylinder

The print cylinder consists of endplates, an inner cylinder with holes in its surface, and an outer screen. The center shaft has ink lines though the center. When ink enters the cylinder, it passes through holes in the inner cylinder, to the screen, and onto the pad. During printing, the inner cylinder functions as an ink reservoir. Each end of the shaft inlet has a check-valve.

PRINT CYLINDER

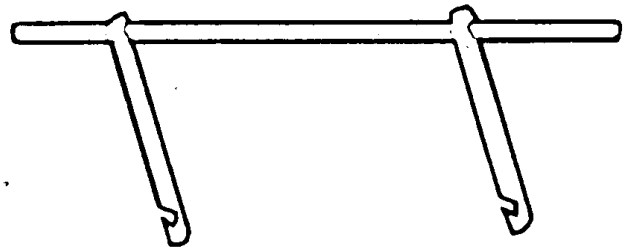


Print Cylinder - Top View

Print Cylinder - End View

Face of print cylinder contains 2 bars (1) for attaching the ink pad. The leading bar fits over two pins while the trailing bar is attached to two torsion springs to tension the pad. Parallel to these bars are several metal finger clamps (4) that hold image film in place. These fingers are opened and closed by a half shaft (2) operated by cams, activated by air cylinders. Print cylinder endplates contain dual-purpose pins. Driven side pin is used to rotate cylinder. They are also used for lifting cylinder when removing it from the printer (3). A lifting bar has been provided to lift cylinder from printer.

LIFTING BAR



The cylinder has a drain plug located between the central finger clamps (5).

Retractable shaft-pins hold the cylinder in printing position. These shafts also function as the ink in and out connections. They contain check valves that prevent ink leakage when the cylinder is removed from the printer. It is of the utmost importance that the shaft pins be pushed in all the way and that the nylon lock-screw be screwed into the countersunk holes on the shaft pin.

The print cylinder has two stationary positions:

HOME Location when the center of the ink well (5) is at 6 o'clock – the standard stopping position to prevent ink leakage. (Lift pin at 12 o'clock)

LOAD Location when the clamping fingers (4) are at 10 o'clock (the position for loading the imaging film)

Removing a Print Cylinder

To remove the print cylinder:

1) Close the Plexiglas lid.

2) Run the Shutdown sequence described later in this manual.

3) Prepare a storage area for the extracted cylinder.

4) The printer will stop with the cylinder in the home position. If not, use the JOG button to advance the cylinder until the lifting pins are in a 12 o'clock position. (Determine why the cylinder did not stop in the home position.)

5) Open the Plexiglas lid, remove the stencil loading device, and shut off power.

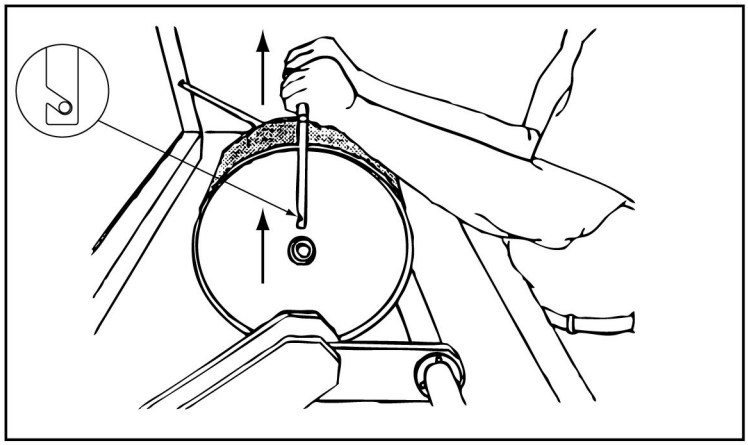
6) Unscrew nylon "hold down" screws out of recess in groove in shaft.

7) Pull retractable shafts out to end of groove at each end of cylinder.

8) Insert the lifting bar with the open slots facing the feeder end of the printer.

9) Engage the slots in the lifting pins and lift straight up.

10) Place the cylinder in your prepared storage area, or hang the cylinder in a rack that fits the lifting bar.



PRINT CYLINDER REMOVAL

Ink System

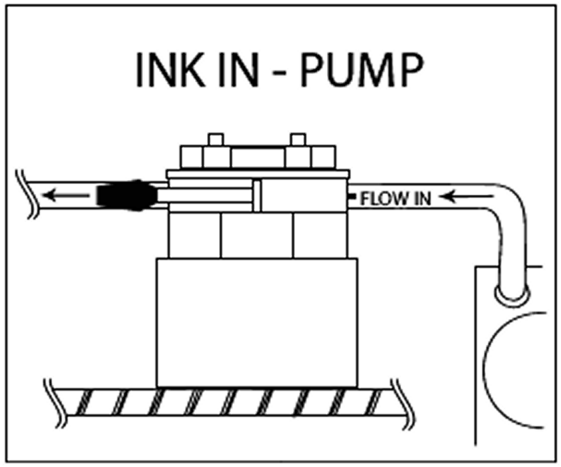
Inks are specially formulated for the Case Printer and are provided in one-gallon containers. Inspect all ink containers and follow all instructions carefully.

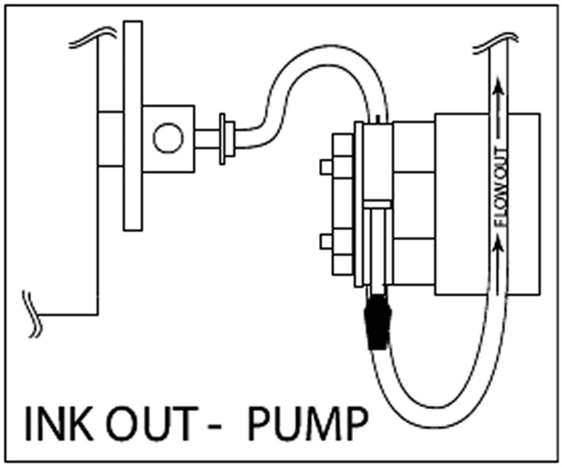
The ink delivery system employs two peristaltic ink pumps that supply and retrieve ink from the print cylinder. The pumps are identical with the exception of the tubing used. The ink in pump, located next to the ink supply container, is equipped with #15 special TYGON tubing. Ink is drawn from the supply container through a strainer, and is pumped up to the cylinder where it enters the cylinder through the drive side of the retractable shaft.

The ink out pump is located near the print cylinder on the operator side. It draws ink from the print cylinder through a tube attached to the central shaft and, through the shaft pin, and discharges it back into the ink supply container. This pump employs large diameter #24 special TYGON® tubing.

The two pumps work together to maintain the proper ink level. Once the cylinder and pad are completely inked, both pumps run at the same time to ensure an adequate ink level. No matter what print speed you choose, the appropriate level of ink is maintained in the print cylinder.

CAUTION
The ink pumps operate in one direction only, therefore it is critical to route the tubing in the proper direction through the pumps. Improper routing through the ink in pump will starve the print cylinder of ink producing light and eventually no print. Improper routing through the ink out pump will leave excess ink in the cylinder during printing and may cause ink leaks around the print pad. Note the proper routing per the diagrams below.





NOTE
If the printer's pumps are left on for an extended period in manual mode while not printing and the cylinder is in a HOME position, ink will be pumped out due to the 1/3 higher capacity of the ink out tubing as compared to the ink in tubing.

If the print cylinder is left for a period of time in an upside-down position, ink will come through the imaged area of the stencil, and also through the edges of the pad. Always return the cylinder to home position.

At the end of the day, release the clamping lever on the ink pumps to eliminate a "set" in the tubing.

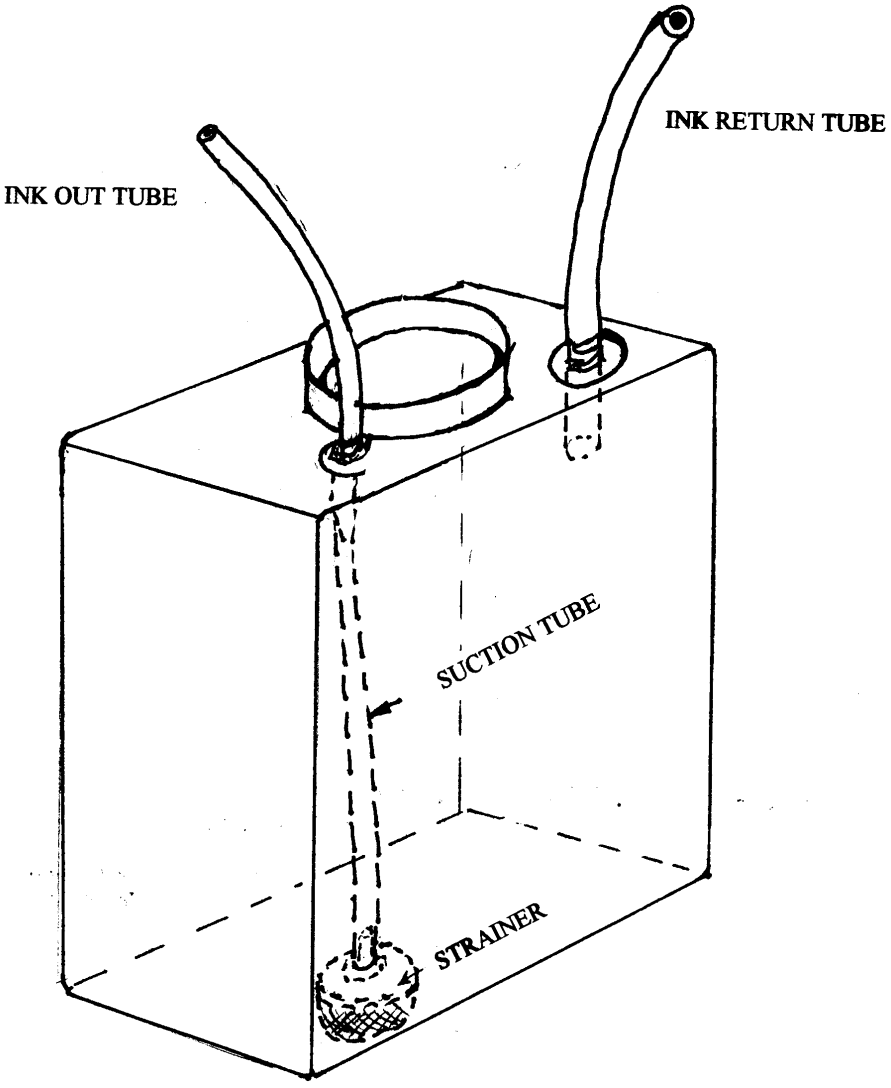
For each ink color change, replace all the following components with either new parts or parts used previously with the different color ink:

ITEM

- Print Cylinder
- Retractable Shaft-pins
- Ink Supply Container
- TYGON® Tubing for ink-in and ink-out

Ink Bottle with Strainer

In order to keep fibers from being drawn into the suction tube and into the print cylinder, there is a strainer at the end of the suction tube. Over a period of time, fibers could accumulate in the bottom of the ink bottle, and eventually reduce the flow of ink to the cylinder. We recommend the strainer be checked for fiber build up every two months. If substantial, the bottle should be emptied (when ink is at a low level) and wiped out or washed out. Also, the strainer should be cleaned before putting it back into service.



Iconotech Ink Pads

Ink pads for the Case Printer are made by Iconotech specifically for our ink and print cylinder design. They consist of two parts, a felt body and a silk screen top. Each pad has a sealed border that keeps the ink from leaking when held tightly against the print cylinder. There is a loop at each end to hold the tensioning bars.

Installing a New Pad on a Clean or New Cylinder

1) Bring the print cylinder to HOME position.

2) Fill the ink container with 1 gallon of ink.

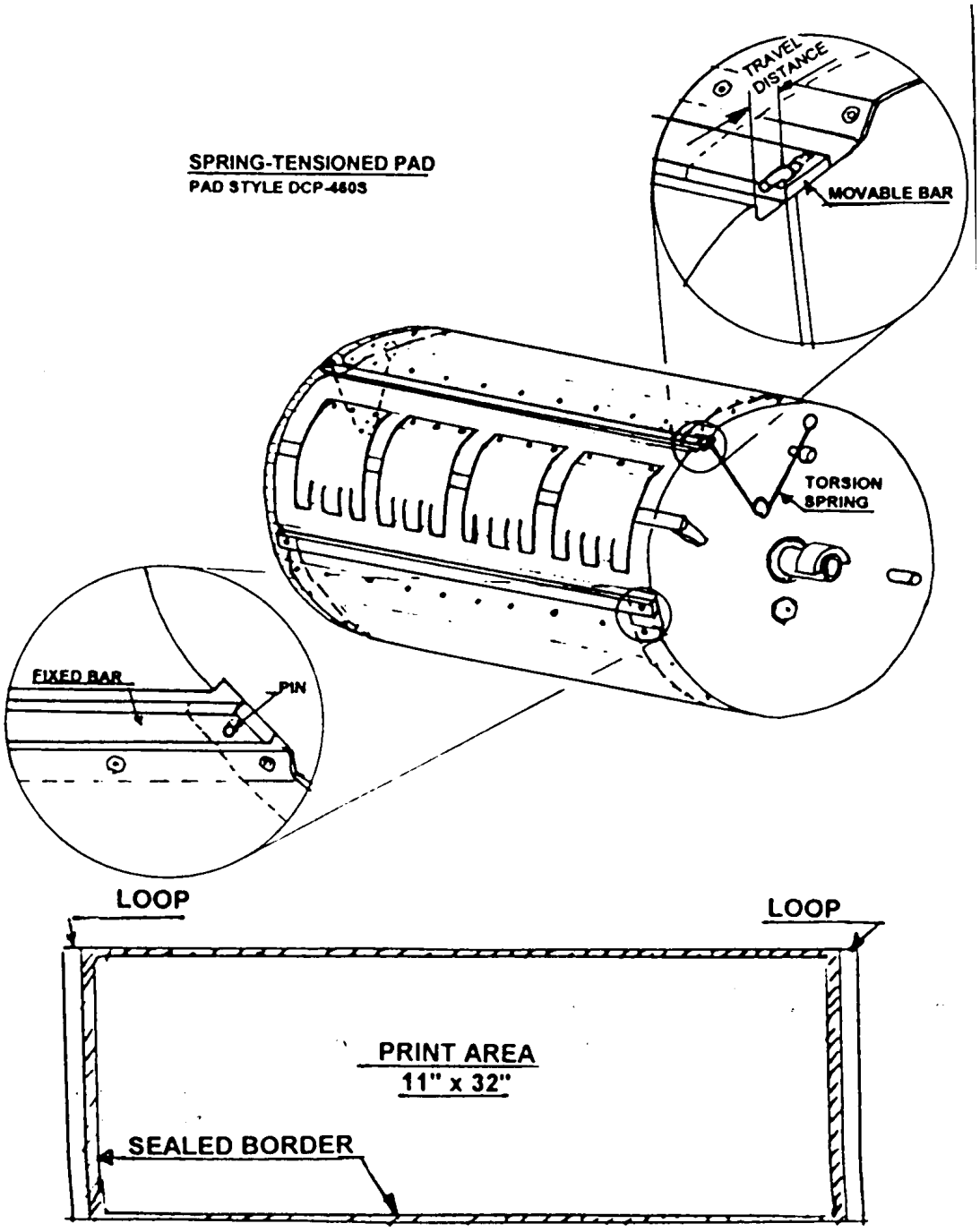
3) Remove the loading device.

4) Jog cylinder until the leading edge bar is at the 11 o'clock position.

5) Put the bar with round holes through the loop at one end of the pad. Center it and put the bar on the two pins. Rotate the cylinder while keeping tension on the pad, to keep the bar from falling off the pins, until the trailing loop is at the 11 o'clock position. Insert the bar with slotted holes through the loop. Center the pad. Tilt the bar to insert the spring hooks. With hooks inserted, make sure the bar lays flat. Lift the spring over the screw on both sides, giving tension to the pad. Make sure the bar is free to move and that the pad is straight and centered all around the cylinder.

6) Put on a new imaged film. (It will be necessary to tape the free trailing end to keep it in place.) Set the speed knob to 10, and hold the "JOG" button for 15 seconds or more, which will cause the print cylinder to rotate continuously until "STOP" is pushed. Set the "INK MANAGEMENT" switch to "MAN" and push the "INK IN" and "INK OUT" buttons. In general, allow 1/2 hour to fill the print cylinder with ink.

7) If an ink leak develops, make sure the spring loaded end of the pad is free to move, and that the bar has not reached the end of its possible travel.



Spring Tensioned Pad – Part # DCP - 460S (12" cylinder)

Removing a Used and Installing a New Ink Pad

1) With the print cylinder in HOME position, pump out all ink. (With the ink selector switch on MANUAL, push "ink out".)

2) Remove the loading device. Put old case under print cylinder to catch any drippings.

3) There are two ways of changing pads:
   a) Remove old pad, wipe off print cylinder, and install new pad following method for installing a pad on a new cylinder.

   b) Rotate the print cylinder 180 degrees from HOME position so the clamping area is up. Leave the stencil on the pad. Lift the springs off the tensioning screws. Remove the bar hooked on the two pins, and slip the bar out of the loop of the pad. Put the bar into the loop on the new pad. Hang the pad over the round shaft in front of the print cylinder and, with the pad on the bar with the round holes, put that bar onto the pins in front of the clamping fingers. Center the pad on the print cylinder and tension it by pulling down on the free end of the pad. With your other hand, start to roll up (inward with the stencil out) the old pad. Have someone assist in inching the print cylinder around. Make sure the pad goes on straight. When at trailing end, discard the rolled up old pad. While maintaining tension on the new pad, put the bar with the slotted holes through the loop at the end of the pad. Insert the spring hooks through the oblong holes in the bar and flatten the bar against the cylinder. Make sure the pad is centered before tensioning the spring by lifting the eyelet over the holding screw. Push the bar forward on both sides to give it maximum tension, and inspect the pad all around the cylinder. Wipe off edges and clamping fingers if necessary.

4) Put on a new stencil, ink up the cylinder Set the "INK MANAGEMENT" switch to the "MAN" position with the "INK IN" button depressed. Rotate the print cylinder at 10 RPM by holding the "JOG" button for 15 seconds or more. Allow 20 minutes to fill up the cylinder. Then, start the "INK OUT" pump and run both pumps for another 5 minutes. The printer should be ready to print.

Maintaining the Pad

Every so often, check the pad for cuts or tears. If you observe any, replace the pad. Check weekly that the pad is under sufficient tension and that the tensioning bar has not reached the end of its possible travel. The life of the pad is dependent on those two things.

Inking the New Pad

1) Place the core containing a new imaged film in the film loader and load it onto the print cylinder. Because there is no ink in the new pad for the film to adhere to, it will be necessary to tape the trailing end of the film to the finger clamping plate with cellophane tape. When the pad is inked, taping is not necessary. NOTE: always remove the tape before unloading film.

2) Turn INK MANAGEMENT SELECTOR SWITCH to MANUAL and start the ink IN pump.

3) Set the speed to 10 CPM. Push JOG button down and hold for 15 seconds. The printer will stay running without activating the feeder. Normal filling cycle and inking of a new pad requires approximately 30 minutes.

4) After 25 minutes, or when the new pad is inked up almost to its full width, start the ink OUT pump. Run both pumps for another 5 minutes, then push STOP to stop the cylinder rotation. Finally, turn off both ink pumps. Run SAMPLE cycle to bring the cylinder to HOME position.

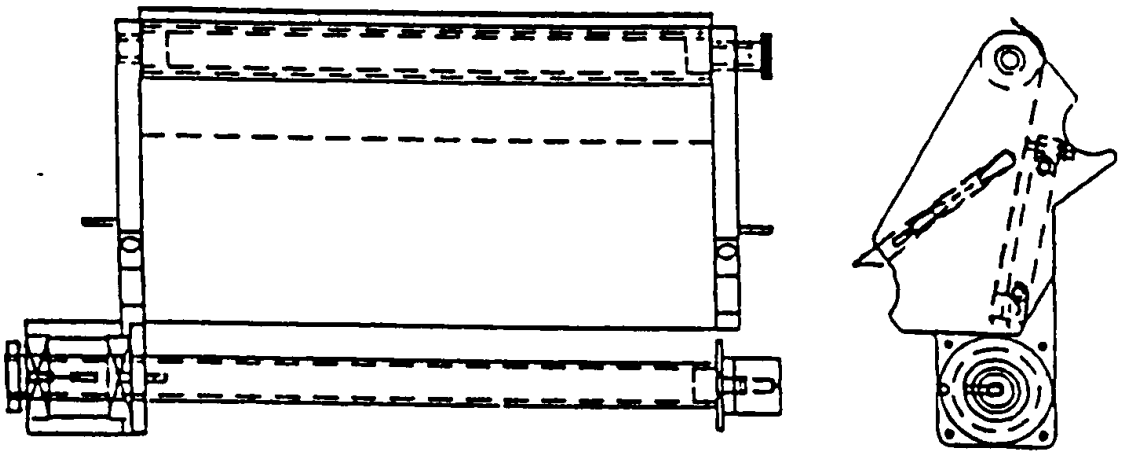
5) Use a sample case, preferably 36" long, and send it through the print cycle by pushing SAMPLE. This will help distribute the ink in the pad evenly and iron out the imaged film against the pad. Because the diameter of a newly applied pad is larger than a pad that has been used, wrinkles may appear on the film. By running a couple of sample cases, this condition will disappear and the film will be smooth and wrinkle free. The wrinkles can also be reduced by manually stretching the film.

6) The pad is now fully inked, and the printer is ready to start printing.

7) With the INK MANAGEMENT SELECTOR SWITCH on AUTO, both ink IN and ink OUT pumps will start when operation starts and stop at the end of a print run, or if the magazine runs out of cases. They also stop on E-STOP.

The Imaging Film Loading System

A semiautomatic image film loader is included as part of the system. It allows you to load film onto the print cylinder under proper tension with the Plexiglas cover in place. You can begin the loading process when you receive an image film rolled onto a paper core.



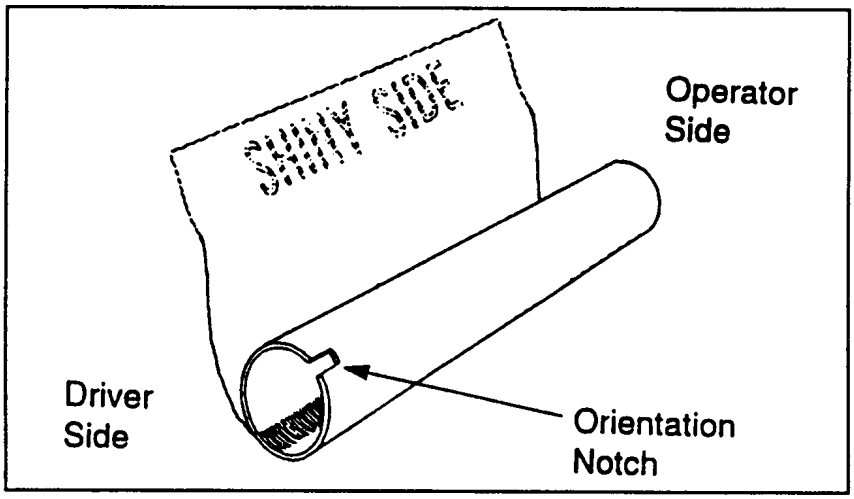
IMAGING FILM LOADER

Loading the Imaging Film

1) Push the UNLOAD button. The cylinder will rotate, automatically unload the old film, and stop in the LOAD position.

2) Open the Plexiglas top of the printer.

3) Unscrew the knob (A) with the end plate (Note: left-hand threads), and push the core and film onto the shaft. Make sure the groove in the end of the core is on the inside and fits onto the pin at the bearing end. The imaged film should be unrolled from the bottom of the core with the shiny side up. See illustration on following page.



IMAGING FILM POSITION

4) Screw the knob with the end plate back on. If the imaged film is uneven on the core, remove the core, tap it and film on a flat surface to align, and then return the core to the loading device.

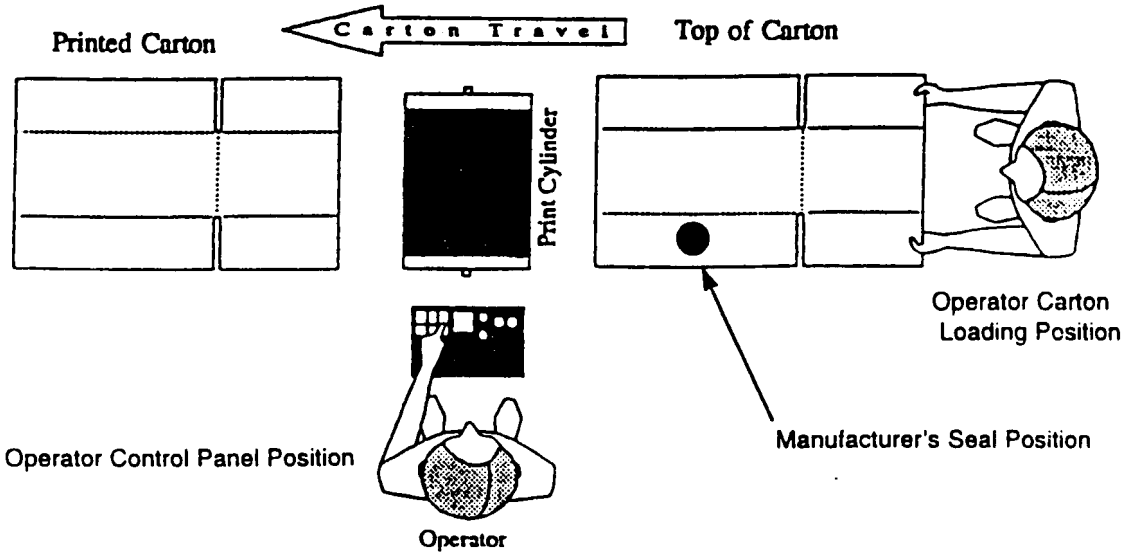
5) Remove the tape from the end of the image film.

6) Pull the film far enough for the leading edge to reach the rubber roller next to the print cylinder.

7) Advance the film using the knob on the rubber roller (B). Continue to advance the film with the roller until the leading end is under the clamping fingers of the print cylinder. Make sure the leading end advances to the crease in the fingers. If the film is unevenly inserted and shows wrinkles, hold the paper core end of the film and rotate roller to increase the tension on the film. This generally will iron out the unevenness in the film.

8) Close the Plexiglas cover and push LOAD button. The finger clamps will close on the film and the cylinder will rotate slowly. This will occur with the film under tension so that the film goes onto the cylinder smoothly with few wrinkles. A small amount of wrinkling is not unusual and will disappear as the film irons out during the print run.

9) Check the orientation of the image on the print cylinder before printing a case. The "top" of the image should be on the drive side, the image should read as a mirror image, and the leading edge of the image should make first contact with the case as it passes under the cylinder.



CASE ORIENTATION ILLUSTRATION

10) If you accidentally touch or smudge an imaged area, run a few discarded cases to clean the film before beginning the print job.

11) Even if your system has the air blow-off device, cases can still have a large amount of dust, causing the imaged area to become clogged. Using a soft paper towel, wipe the imaged area, then follow number 10 above.

12) Larger case particles, blocking a bar in a barcode can be simply removed with a Q-tip or cotton swab.

Unloading Imaging Film

The image film is unloaded manually. Bring the print cylinder around to the LOAD position. Do this either with the lid closed by pressing the LOAD button, or, with the cover open, using the JOG button. Remove the film from the hold-down fingers and jog the print cylinder around, holding onto the film, until it is completely removed. Dispose of safely.

If the pad shows excess ink, use a paper towel to remove it.

If the margins of the print cylinder have ink on them, use a paper towel to remove the ink. You can jog the print cylinder around to inspect the entire print cylinder.

Print Pressure Control

This control assembly will display a numerical value for your print pressure setting. These values will allow you to repeat previous pressure settings as you change the type or thickness of the print media.

Setting print pressure values

Why would you need to change or control your print pressure setting?
In addition to gaining the ability to accurately repeat pressure settings, it is important to know that the amount of print pressure applied to your print media will ultimately determine the quality of the print you can achieve. All corrugated materials will vary slightly in thickness even though they are the same flute size. These slight differences can affect the print quality if the pressure setting is left unchanged. It will change the amount of ink that is laid down, resulting in lost or faded print or conversely heavy filled in print. Running different flute sizes or changing from single to double wall materials are dramatic changes that will obviously require different pressure settings.

Additionally, the print pressure control is an important tool that will help you control the print process for longer and cleaner runs. Heavy pressure can force ink out the sides of the inkpad and cause ink containment loss during longer print runs. Heavy print pressure can also make the stencil material walk sideways or wrinkle, as the excessive pressure will accentuate any slight discrepancies in alignments of print cylinder and impression roller. Print pressure is the dimensional difference between the media thickness and the actual opening of the print nip.

Determining your print pressure settings
In order to find you ideal pressure settings the printer has to be running and the setting is changed on the fly. Turning the control knob clockwise, which increases the number value on the counter, will produce a larger print nip gap or less pressure. Conversely, counterclockwise will produce a smaller number and a smaller print nip gap or more pressure.

As the printer is running, slowly turn the knob clockwise one or two numbers for each printed case. Observe the print output for full black print. As soon as you see broken or missing print, turn the knob back a few numbers until you again see full black print. At this point you have reach your ideal pressure setting.

Setting adjustable stops

This new assembly has two adjustable stops.

Zero Point

The first stop that needs to be set is the “zero point”. This is the spline shaft screw with the digital counter mounted. The zero point is when the print nip gap is zero or has no gap. This would be when the stainless screen of the print cylinder is just touching the impression roller.

How to set: If the printer has the pneumatic system energized, turn it off by turning the dump valve on the filter/regulator unit. This will allow you to move the print cylinder up and down manually. If there is an inkpad already installed on the print cylinder you should cover it with a blank stencil to prevent the transfer of ink to the impression roller. Rotate or jog the print cylinder away from home position by about 90 degrees. Manually push the print cylinder down until the surface of the inkpad just touches the impression roller. Turn the knob on the digital indicator clockwise to make the

screw end meet or touch the pivot arm. Release the print cylinder and set the digital indictor to 0010 by rotating the black collar. Lock the collar of the indicator with the setscrew using a 2mm hex key.

Maximum Down

The second stop is the “maximum down” setting. This stop is intended to prevent the print cylinder from accidentally printing on the impression roller. The preventer is the setscrew just below the spline shaft screw.

How to set: If you are printing on RSC cases, the maximum down position is when the print cylinder and mounted inkpad have a gap of less than 1/8” against the impression roller. Turn the handle with the indicator to 0020 and manually move the print cylinder down again until the pivot arm hits the spline shaft screw. The print cylinder should now show a gap of less than 1/8”. The pivot arm is now in the maximum down position. Turn the setscrew forward so it touches the pivot arm; lock it in place with the jamb nut.

Remember to rotate the print cylinder back to the home position again.

Feed Table

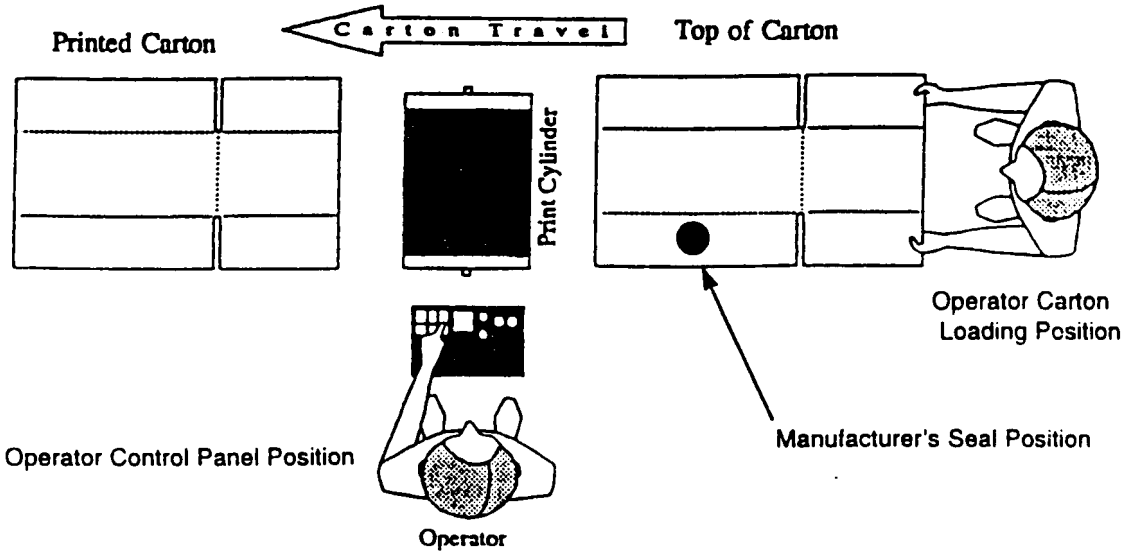
The Manual Feed Case Printer is equipped with a moveable feed table. The table has a stop on the drive side. You may choose to use the stop to locate and square stacks of cases or bags before feeding them into the printer. The feed table is best positioned so that one edge of the cases or bags is very close to that same edge of the magazine sideplate. This position will be the easiest from which to feed the cases or bags in proper alignment into the magazine.

Feeding Set-up

1) If the panel of the case or bag is less than 12" wide, center the case or bag on the print cylinder using the "0" mark on the rule index located on the guard. If it is more than 12" wide, set the case or bag so that the print falls where you want it.
2) Adjust the magazine sideplates until they easily hold a case or bag, with no more than 1/8" margin to each sideplate. More will result in poor registration and less might mean cases or bags will not feed if they are not uniformly manufactured.
3) Set the sideplates of the Restacker catch area to the same width plus about ¼" on each side.
4) Move the feed table until the drive side stop is roughly even with the drive side magazine sideplate.
5) Set the BOX/BAG switch appropriately to what you are printing.
6) Set the number of items to be printed into the counter.
7) Set the print speed. For best print results, choose a speed that the feeding will be able to position a box in the magazine for every print cycle. The amount of ink lay down will be optimal if the print cylinder can avoid cycles where it does not print.

Feeding Process

1) Load up to 25 cases or bags onto the feed table.
2) Orient them properly.
   a) Load cases with the manufacturer's seal on the operator side of the printer.



CASE ORIENTATION

b) Load bags so that the open end of the bag is toward the print cylinder and the bottom of the bag will be driven by the flights.

3) Align them so that the edge on the drive side of the printer is against the stop on the drive side of the feed table.
4) Press RUN.
5) Feed cases or bags one at a time, pushing from the rear and guiding it with your left hand. A portion of a case or bag may overlap the preceding one, up to about half of its length. It will ride on the flight's wheels and settle into the next available pair of flights. Be careful not to feed so quickly that 2 items end up in the same set of flights.
6) When you have fed the stack, obtain more cases or bags and continue feeding. The printer will continue running for 10 seconds. If you present an item before then, simply continue feeding. If it takes longer to reload the feed table, the printer will stop. Set the cases on the table and press RUN again.

NOTE!
The magazine is equipped with an electric eye sensor to detect each case being fed into the machine and also to signal the counter. If no cases are detected, the printer will shut off after 10 seconds.

7) Repeat this cycle until all cases have been printed.

NOTE!
The printer is equipped with electronic overload protection. In the event of a jam, overload protection shuts off the printer when a it occurs. Clear any items from the magazine and print cylinder area and press SAMPLE to return the feeder and cylinder to their correct positions. You are now ready to continue feeding and printing.

Printing On The Back Side Of Cases

It takes approximately three minutes for a printed case to arrive at the end of the return conveyor after it has been printed. This time is necessary for the ink to dry sufficiently so that the cases can be reprinted if necessary. Printing sooner might cause transfer of the ink to the impression roller and then, as a shadow, to the already printed side of the case. To print on both sides of a case, provided the case has the same image, front and back, proceed as follows:

1) Lift and flip the cases, fold over fold. Do not rotate them. This will ensure that the printing on the opposite sides of the case match in print orientation.
2) Place the cases on the feeder table unprinted side up and manufacturer's seal on the operator side of the printer.
3) Activate the feeder by pushing either the SAMPLE or RUN buttons.

NOTE!
When completely full, the conveyor and restacker will hold about 200 middle sized cases or eight bundles of 25 cases. For most efficient operation, that number of cases can be run continuously and then re-skidded when both sides have been printed. The operator begins another set of 200 cases as the first group is proceeding along the return conveyor. The number of cases in a group may have to be adjusted downward for the manual feeding operation.

Case Printer Start-Up

The following procedure should be followed every time the printer is started after having been shut down as described in the following section.

1. Start the printer by turning on power and the air supply. If the ink pad needs to be replaced, refer to the instructions for installing and inking the pad.

2. NOTE: If the printer has set idle for more than 3 to 4 days, lift the Plexiglas cover and wipe the ink pad with paper towels or lint free rags while rotating the cylinder by pressing the JOG button repeatedly. Wipe from end to end by holding the towel against the pad while it rotates. This will remove oil from the ink that might have accumulated while it was idle.

3. Move the ink tubing from its previous position in the ink pumps and close the clamps on it. Close the Plexiglas cover.

4. Push and hold the JOG button for 20 seconds with the speed set to 10 cpm.

5. With the INK MANAGEMENT switch set to AUTO, push the ink IN button. It will run for 7 minutes to replenish the ink that was drained out at previous shut down. Push the ink IN button again to repeat the cycle. When the ink filling has completed, push the STOP button to stop the cylinder rotation.

6. Load a new stencil onto the cylinder as explained in the Imaging Film section.

7. Adjust hand cranks on the operator side of the feeder for correct case size.

8. If necessary, adjust the pusher guide blocks as described in the Shuttle Feed section.

9. Air pressure holds the print cylinder against the case during printing. Pressure is set in the air pressure regulator to the right of the control cabinet. Generally a setting of 70 to 90 PSI gives the proper print. Never set it lower than 60 PSI. To set the pressure start at the lower end of the range and gradually increase until the cylinder maintains contact with the box during printing.

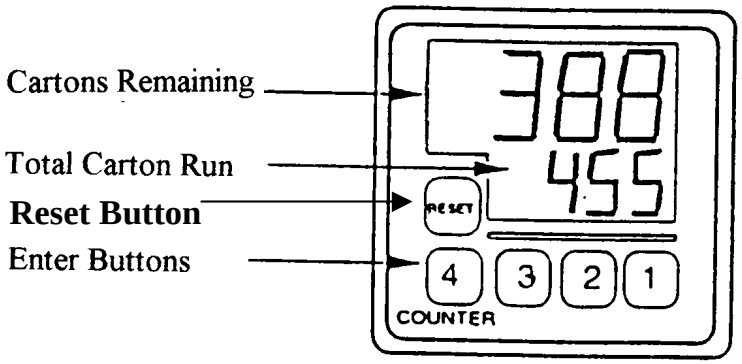
10. Set the print speed. Load cases into the feeder. The ink IN and ink OUT pumps will automatically start and stop when the printer starts and stops.

11. Run a sample case. Check for correct printing. If it is satisfactory, set the counter and run the desired number of cases. If not, make adjustments, run another sample to check the adjustments, and then proceed with the run.

12. While running the sample case, observe the upward deflection of the print cylinder when the case passes under it. The deflection or vertical movement of the print cylinder when rolling onto and off of a case should be no more than 1/8". The amount of deflection is controlled with the STOP ADJUSTMENT SCREW that is mounted on the exit end of the printer, close to the drive side plate. Adjust to have the smallest deflection while maintaining complete print. Having a large deflection will not improve printing. Turn the SCREW clockwise to reduce the amount of deflection or counter-clockwise to increase the deflection.

13. As a general rule, printing at higher speeds deposits less ink on the case. Running at 40 CPM and below will deposit more ink. The absorption rate of the case face sheet plays a role in the ink drying time. Set the running speed at the highest speed that provides full coverage for best printing results.

Setting The Counter



CASE COUNTER

1. Enter the total number of cases to be printed with the four pushbuttons at the bottom of the counter. Each time a button is pushed, it increments by one. Enter from right to left. For example, to set the count of 455 shown above, you would push button 1 five times, button 2 five times, and then button 3 four times.

2. To change case run counts or remedy input errors, reenter the correct count, and push the RESET button on the counter, to reset the total.

3. Sample runs do not affect the counter.

Case Printer Shut Down

Follow these procedures at the end of each day of printing:

1. Remove and discard the stencil as explained in the Imaging Film section.

2. After discarding the stencil, leave the cylinder with the trailing end of the ink pad at the 11 o'clock position and wipe away any excess ink at the trailing end of the pad.

3. Return the print cylinder to the HOME position.

4. With the INK MANAGEMENT SELECTOR SWITCH set to AUTO and the print cylinder in the HOME position, push the ink OUT button. The ink out pump will run for 5 minutes and stop automatically. Push the ink OUT button again to repeat the cycle.

5. Unclamp both ink pumps by lifting the levers to release pressure on the TYGON® tubing and close Plexiglas cover.

6. If the machine will be idle for more than 3 or 4 days, put an old case under the print cylinder to catch any dripping.

7. Turn off power and air.

Section 4

Electrical Information

ELECTRICAL SYSTEM

The electrical controls and control panel of the Iconotech Case Printer are designed for durability and ease of operation.

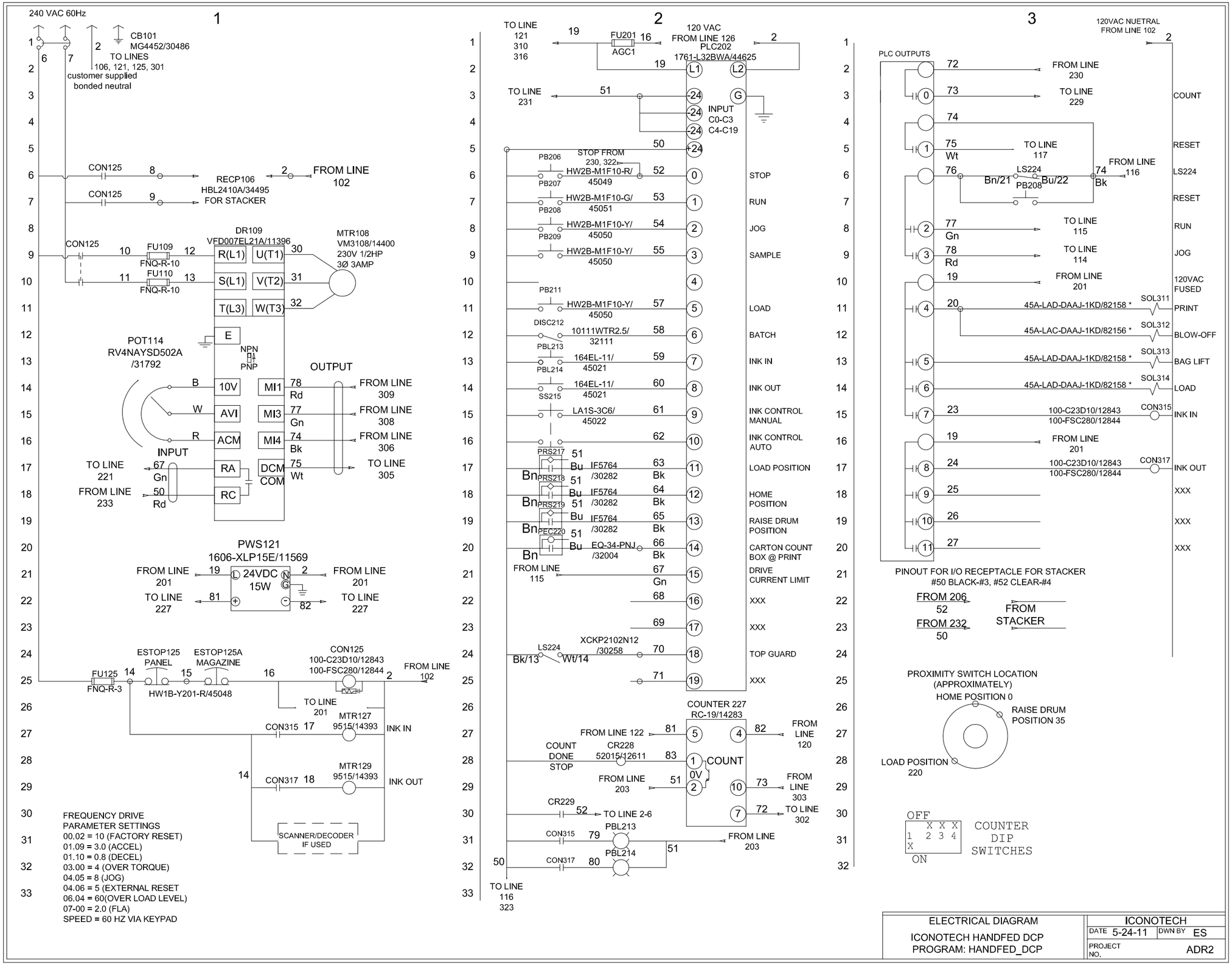
The operator control panel is conveniently located at the right front side (referred to in the manual as the "operator side") of the case printer, and contains all the controls necessary to operate the case printer.

The main electrical panel enclosure is located directly underneath the operator control panel, and contains the electrical components required to power and control the machine drive components.

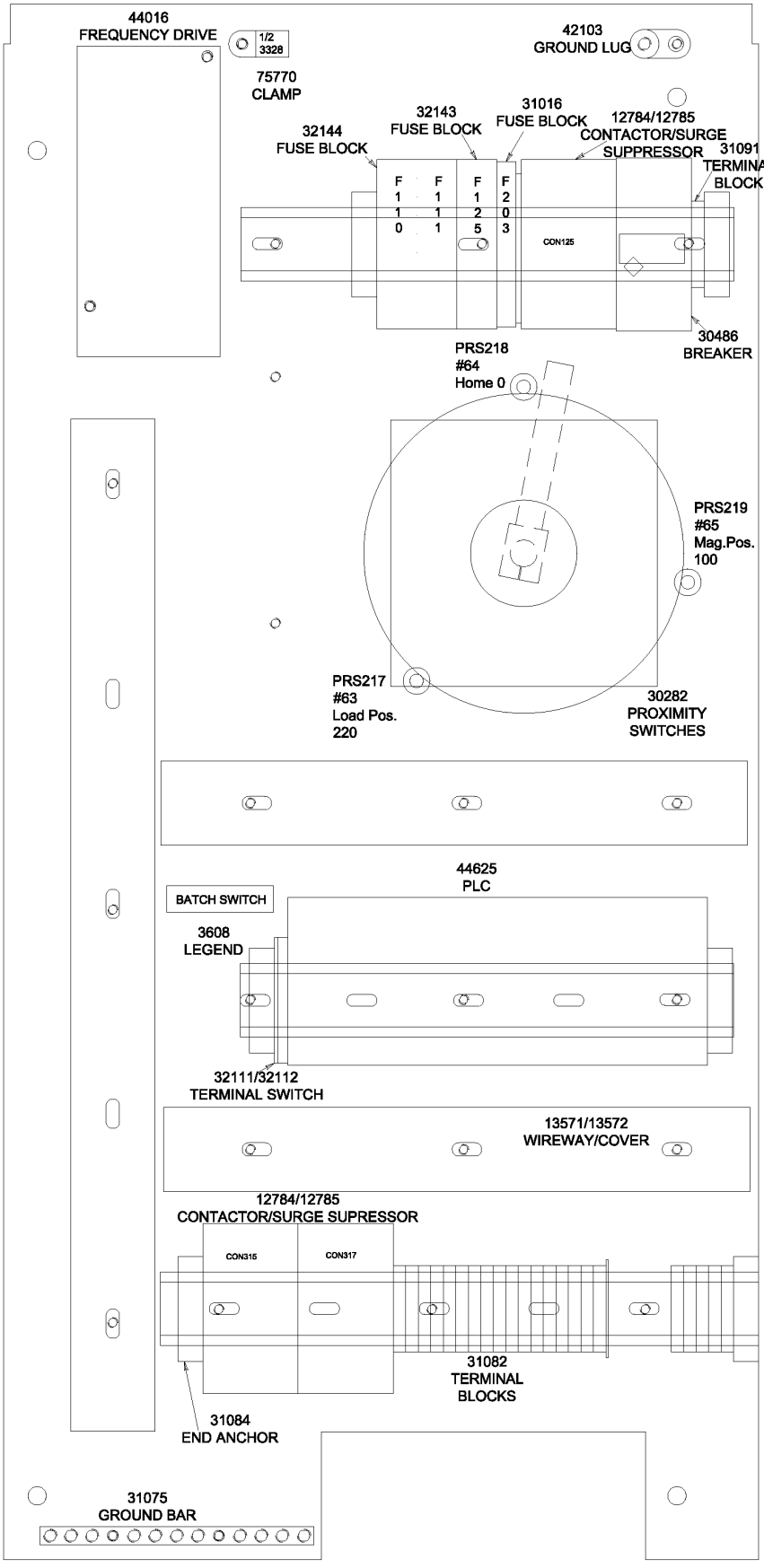
Included in the control panel enclosure is a programmable logic controller, which has been pre-programmed at the factory to operate the case printer in the correct sequence.

! NOTE !
Do not attempt to re-program or adjust the programmable controller unless you have been authorized by the factory to do so. Altering the PLC may prevent the case printer from operating normally, and could result in damage to other components!

! DANGER !
HIGH VOLTAGE! **AUTOMATIC EQUIPMENT CAN START** **AT ANY TIME!**
· Do not attempt to service the operator control panel unless you are a qualified electrician and have read and understand the operating manual. · Always disconnect the machine from power and use an appropriate lock-out device when performing service on the case printer.
Failure to follow these instructions may result in serious or fatal injury to yourself or others working on machine.



ELECTRICAL DIAGRAM	ICONOTECH
ICONOTECH HANDFED DCP	DATE 5-24-11 DWN BY ES
PROGRAM: HANDFED_DCP	PROJECT NO. ADR2



iconotech OPTIMIZER
Digital Case Printer
CONTROL PANEL LAYOUT

Section 5

Pneumatic Information

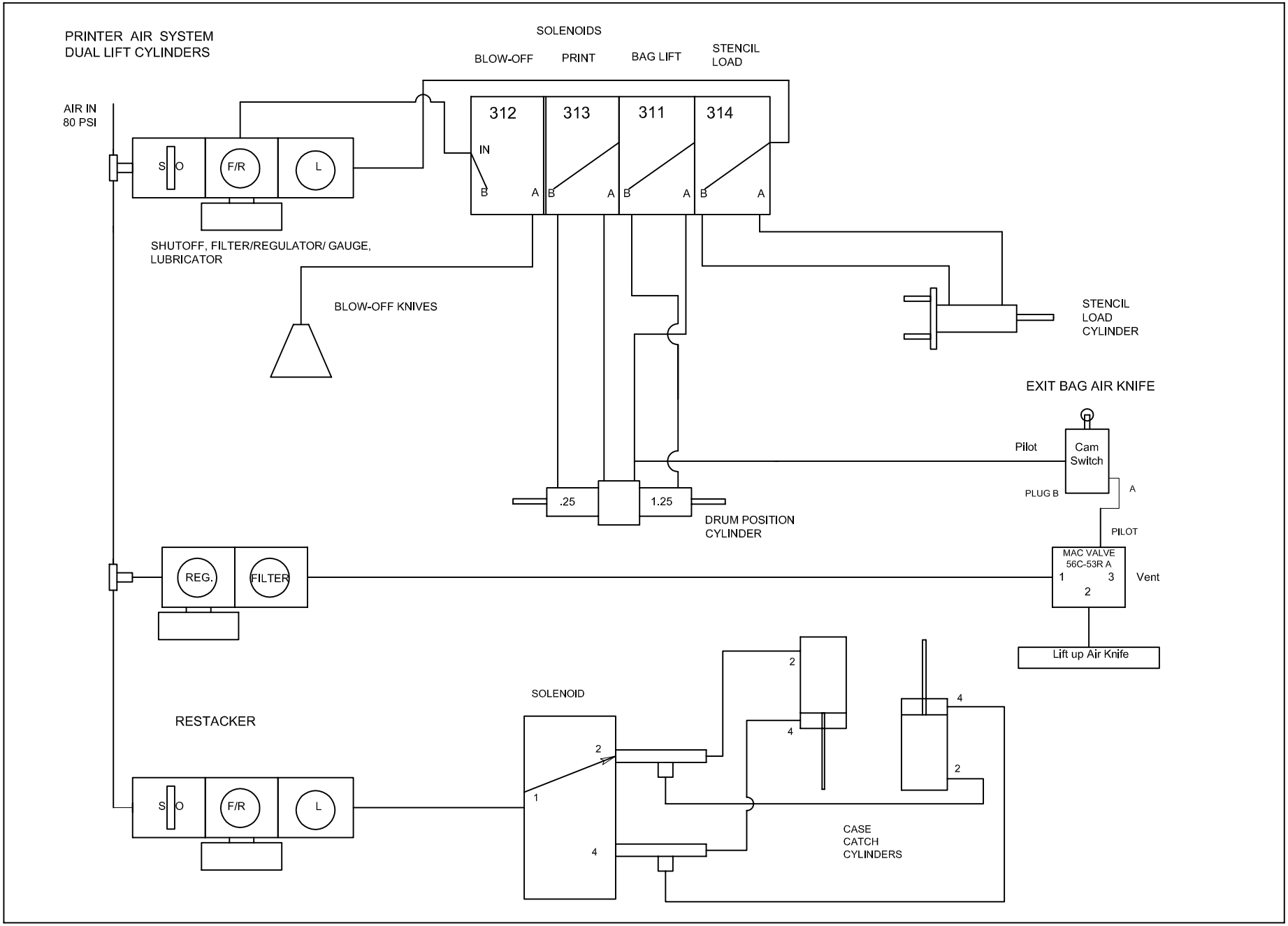
PNEUMATIC SYSTEM

The Iconotech Case Printer utilizes a series of compact pneumatic cylinders for certain aspects of machine operation. The Pneumatic schematic on the following page provides the necessary pneumatic circuit information required for troubleshooting or servicing the case printer

Before attempting to troubleshoot the pneumatic system, be sure to check the following items:

- Air supply to machine is turned on completely
- Air supply pressure gauge reading is 80 PSI - 120 PSI maximum
- Air supply hose is not kinked or otherwise restricted
- Air supply hose is properly connected to inlet port of FRL assembly
- Pressure gage of FRL mounted on machine is set to 70 PSI
- Pressure gage of FRL is working properly

! NOTE !
• Use only 10 weight non-detergent oil designed for use with pneumatic systems in lubricator. • Use of detergent oils can cause foaming of oil and may adversely affect the operation of pneumatic components.


PRINTER AIR SYSTEM
DUAL LIFT CYLINDERS
SOLENOIDS
BLOW-OFF
PRINT
BAG LIFT
STENCIL LOAD
AIR IN
80 PSI
312
313
311
314
IN
B
A
S
O
F/R
L
SHUTOFF, FILTER/REGULATOR/ GAUGE, LUBRICATOR
BLOW-OFF KNIVES
STENCIL LOAD CYLINDER
EXIT BAG AIR KNIFE
Pilot
Cam Switch
PLUG B
A
.25
1.25
DRUM POSITION CYLINDER
PILOT
REG.
FILTER
MAC VALVE 56C-53R A
1
3
2
Vent
Lift up Air Knife
RESTACKER
SOLENOID
2
4
CASE CATCH CYLINDERS

Section 6

Preventative Maintenance

PREVENTIVE MAINTENANCE

Iconotech suggests that regular preventive maintenance checks and procedures be performed to help extend the life of machine components and keep the case printer running at peak performance.

The following preventive maintenance procedures should be performed at the intervals indicated:

Weekly

Check pressure gauges on FRL assemblies (press and restacker) and adjust accordingly - setting should be 60 PSI on the restacker, 70 PSI on the press unless a different setting provides better print quality.

Check emergency stop buttons and Plexiglas lid interlock switch for operation. Tag machine if case printer does not stop immediately, and repair as required before using machine.

Check for noises that may indicate loose belts, or chattering caused by low chain tension. Adjust as required.

Ink in and out tubing for wear (move to new location)

Lubricate cam-follower tracks, lifting print cylinder, in side plates.

Monthly

Check oil level in FRL lubricant reservoir, and fill if necessary

Inspect belts for excess wear and replace as required.

Lubricate bearings -- each end -- on connecting rod (by the clutch)

Inspect and lubricate main chain drives

6 Months

Check lubricant level in gearbox

Lubricate sprocket bearings

Check hardware for tightness at non-adjustable mounting points and tighten as necessary.

Annually

Inspect sprockets and pulleys, and service as required.

Visually check major components for signs of excessive wear or impending failure, and replace or repair as required.

Check lubricant levels in the gearboxes on the restacker.

Check belts in conveyor.

! NOTE !
The following instructions must be followed to ensure that reassembly practices conform to the original machine assembly requirements.

1. Use Loctite "242" (removable) to secure all hardware.

2. Use "Neverseaze" compound on all metal-to-metal surfaces that may require disassembly. This includes shafts, bolts, and contact between dissimilar metals such as steel and aluminum.

3. All "Split Bearing Housings" are machined as single units, and are marked at one end with a letter on both the lower and upper halves. These housings must be reassembled with the letters on the same side.

4. Tighten all screws, bolts, and nuts securely. Excessive force may make later removal difficult or impossible, particularly if Allen sockets are stripped. Do not reuse hardware that is damaged or marginally acceptable.

General Maintenance

For best performance, keep the case printer clean. Use compressed air to blow corrugated particles and other debris out of machine at the end of each shift.

Keep the area around the case printer clean to prevent dangerous trip and fall accidents, and to keep debris away from machine components.

Section 7

Adjustments

Contents

SETTING RELATIONSHIP BETWEEN PRINT CYLINDER AND FLIGHTS

Purpose Of Adjustment

The purpose of the adjustment is to cause the print cylinder and the flights to have the proper relationship so that the images created on the computer will print in the correct location when that image is run on the press.

Adjustment Location

Flights on main drive chain, print cylinder, and drive side fiber gear, and small pulley

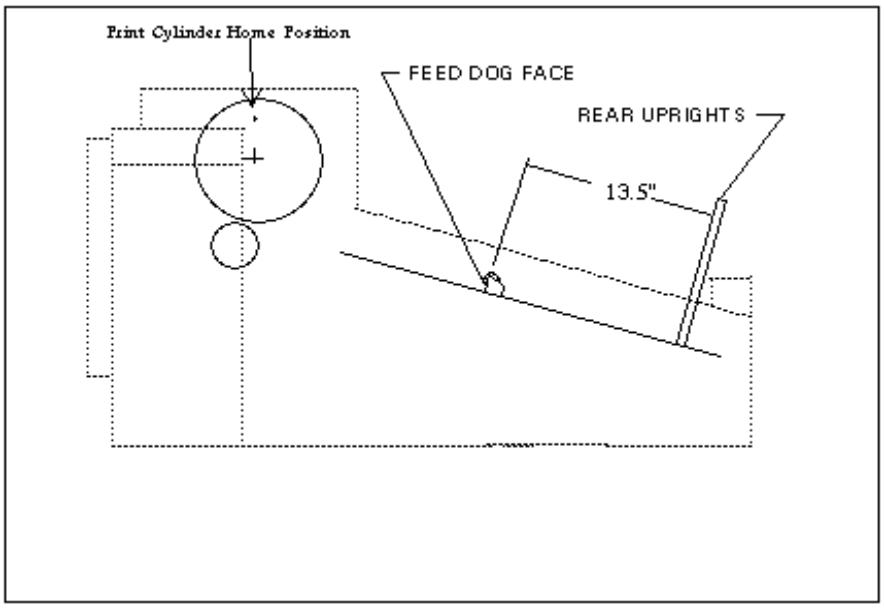


Figure 1

1. In Fig. 1, with print cylinder in "Home" position, lift pin at 12 o'clock, the distance from the front of the flight to the front of the uprights in the feeder magazine should be 13.5". This basic setting should result in the condition shown in Fig. 2. The print cylinder has a drill point mark on the operator side end plate, indicating the end of the perforations at the trailing end of the screen. This is also the end of the 32" printable area. The printer is set up in such a manner that a case being fed under the print cylinder will have the trailing edge of the case and the drill point mark coincide. This setup is necessary both for print registration and so that the case will force excess ink back into the print cylinder at all points where the screen is perforated.

   Example 1: If the drill point on the print cylinder coincides with the case 1/2" before the trailing end of the case, that difference will not be available for printing.

   Example 2: If the drill point on the print cylinder coincides with the case 1/2" after the trailing end of the case, the case will not roll over the final few perforations of the print cylinder. Ink will build up at the trailing end of the pad, possibly causing leakage. If differences exceed plus or minus 1/8", it should be corrected as described below.

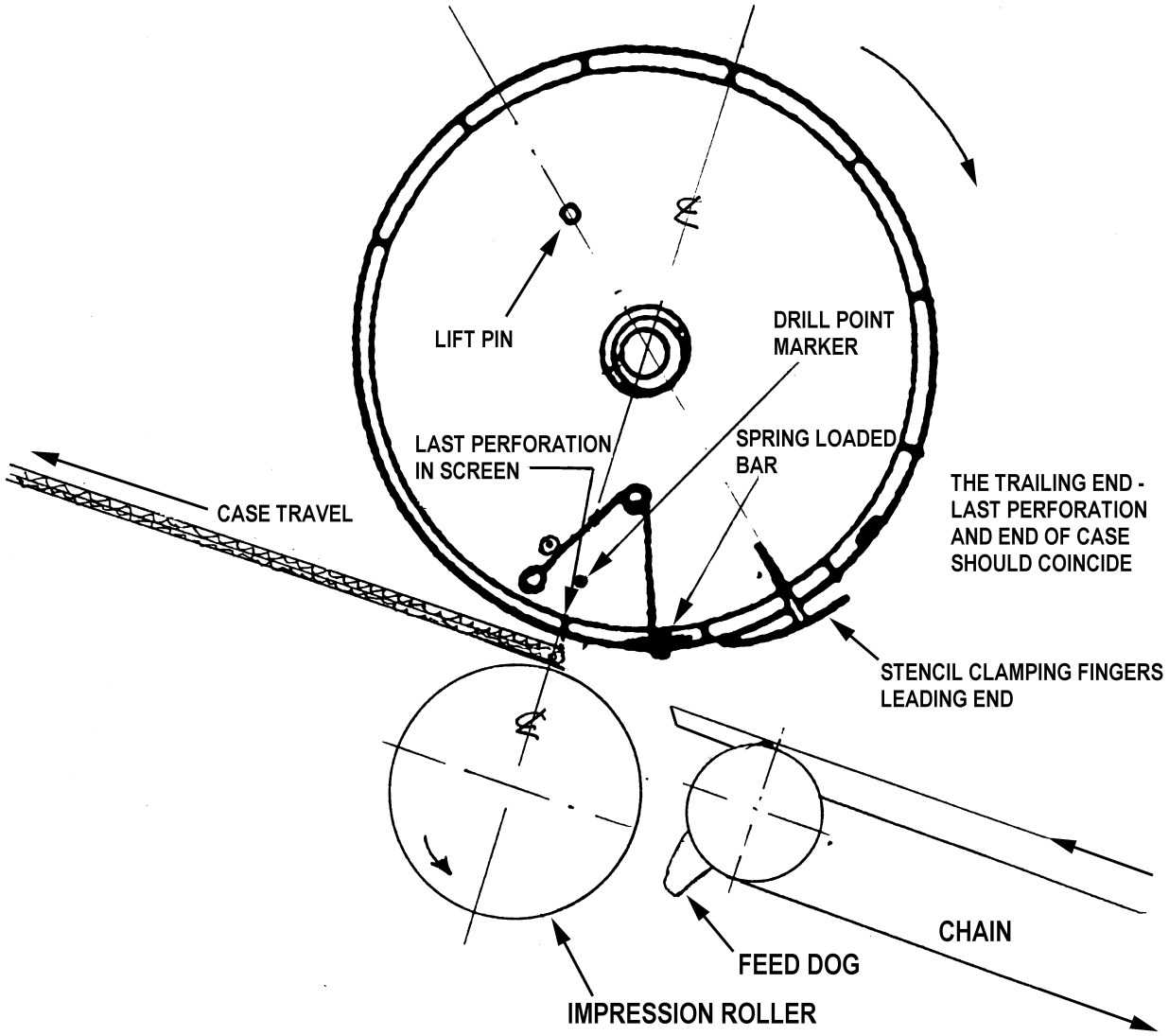


Figure 2

2. In order to align the drill point and the end of the case:
   a. Run Sample Cycle
   b. Shut off electrical interlock
   c. After checking the 13.5" distance from the flight to the upright, loosen belt tightener on timing belt inside of operator side plate. Mark locations on timing belt and pulleys.
   d. Remove large e-clip on shaft holding fiber gear and small drive pulley
   e. Pull out gear and pulley to clear the gear below, mounted on the main drive shaft.
   f. Rotate the print cylinder either forward or backward as required to make the correction.
   g. Slip the gear pulley assembly back in place, engaging the gear below.
   h. Put e-clip back on shaft.
   i. Carefully retighten the timing belt tightener, without rotating the print cylinder.
   j. Run a check to test the case location as shown in Fig.2. If still not correct, make further adjustments until the proper operating conditions obtain. If at any point in the machine's life a belt of chain must be replaced, this procedure will be necessary for setting the relationship between the flights and the print cylinder.

DRIVE CHAIN ADJUSTMENT & SYNCHRONIZATION

Purpose Of Adjustment

The purpose of this adjustment procedure is to ensure that the Drive Chains are synchronized with each other and that the flights are parallel. Drive Chains that are not synchronized cause chattering and may wear prematurely. Flights that are not parallel will feed the cases at an angle, depending on the amount of excess opening of the side plate in the feeder, with resulting angled print.

Adjustment Location

Drive Chains are synchronized by repositioning the driven side chain on the main drive shaft so that the links of opposing chains are aligned. The operator side chain drive is fixed. It also drives the clutch that activates the feed cycle.

Adjustment Procedure

1. Use a large square, placed against the face of the two flights. The other leg of the square should be aligned with the chain enclosure track, or adjustable side plate

2. Loosen the three screws on the main drive shaft sprocket, and rotate the chain and dogs until the dogs of the two chains are aligned. The lower end of the driven side chain drive is free wheeling.

3. Retighten the three screws on the main drive shaft sprocket.

4. Check both chains for proper tension. If uneven, adjust tensioners.

IMAGE FILM LOADING FEED FRICTION

Purpose Of Adjustment

The purpose of this adjustment procedure is to ensure that the proper amount of friction is applied to the stencil so that positive stencil feed occurs during manual stencil loading.

Adjustment Location

Stencil load in-feed friction is adjusted by setting the (5) #10-32 set screws on the bottom plate of the Stencil Loading Device so that there is light tension between the rubber loading roller and the stencil during stencil feed.

The friction brake is located on the bearing housing and consists of a 1/4” Socket Head Screw, a spring and plastic plunger, riding against a friction plate. Increasing the spring pressure by turning the screw clockwise, will increase the friction on shaft with stencil core.

Adjustment Procedure

1. Remove Image Film Loading Device from case printer.
2. Loosen the (5) #10-32 hex nuts that "lock" the (5) #10-32 screws in position on the Stencil Load Device bottom. (These screws control the curved bottom plate position relative to the roller, thereby increasing [adjust for less clearance] or decreasing [adjust for more clearance] the tension on the Image Film as it is fed through the roller.)
3. Adjust (2) outside screws to provide light tension between rubber loading roller and plate, using a strip of Image Film material to determine if tension is sufficient for positive film feed.
4. Adjust center screw and (2) outside screws to maintain even tension setting along length of rubber loading roller. (Use strip of Image Film to ensure correct tension has been set.) Adjust the two remaining screws snug against the plate.
5. Load test Image Film, and make sure film feeds forward without crinkling or curling.
6. Readjust screws if stencil does not feed forward, or if excessive tension causes film to pull out of feed fingers on print cylinder when film is loaded.
7. The final loading tension on the film is set with the brake adjustment screw on the bearing housing. A nylon plug asserts friction against the rotating flange on the core shaft. Turning the screw in, clockwise, increases friction and backing the screw out decreases the friction. The tension should be set so as not to cause the stencil to pull out of the clamping fingers during loading.

INK PUMP FLOW RATE – "OUT"

Purpose Of Adjustment

The purpose of this procedure is to verify sufficient ink outflow at the Print Cylinder.

Adjustment Location

The Ink Pump Flow Rate - Out check is performed at the out-feed end of the ink return tube that is connected to the ink supply bottle. The ink return tube is larger in diameter than the ink supply tube.

Adjustment Procedure

1. With the case printer and Ink Pumps turned off, disconnect ink return tube at supply bottle. Place the loose end of the ink delivery tube into a metric measuring cup calibrated to show milliliters, and hold the tubing in place to avoid spillage of ink when the "OUT" Ink Pump is turned on.

2. Turn the "OUT" Ink Pump on with selector switch in manual position by depressing the Ink Pump "OUT" Switch on the Operator Control Panel**.** The print cylinder must be in "Home" position and there must be the normal running amount of ink inside print cylinder.

3. Allow "OUT" Ink Pump to run for one minute.

4. Carefully remove tubing end from measuring cup, and reattach to ink supply bottle**.** Be sure to install tubing properly.

5. Check measuring cup to determine actual liquid flow during one-minute run time. Cup should contain 150 milliliters of ink, ±5 ml. (7.5 ounces ±1/16 ounce). (Could vary with temperature.) (Note: This test is based on new tubing. Normal wear of the tubing will result in reduced flow. When flow rate is reduced 50%, replace tubing.)

6. If ink flow rate is not within this flow specification, check troubleshooting guide for additional information.

7. Pour ink from measuring cup into ink supply bottle.

8. Change both in "IN" and "OUT" tubing at the same time.

INK PUMP FLOW RATE – "IN"

Purpose Of Adjustment

The purpose of this procedure is to verify that ink delivery to the Print Cylinder will be sufficient to allow consistent printing at all operating speeds.

Adjustment Location

The Ink Pump Flow Rate - In check is performed at the out-feed end of the ink delivery tube that is connected to the Print Cylinder ink input nipple on the shaft pin.

Adjustment Procedure

1. With the case printer and Ink Pumps turned off, disconnect the ink delivery tube at the Print Cylinder ink input nipple. Place the loose end of the ink delivery tube into a metric measuring cup calibrated to show milliliters, and hold the tubing in place to avoid spillage of ink when the "IN" Ink Pump is turned on.

2. Turn the "IN" Ink Pump on with selector switch in manual position by depressing the Ink Pump "IN" Switch on the Operator Control Panel.

3. Allow "IN" Ink Pump to run for one minute, then shut "IN" Ink Pump off.

4. Remove tubing end from measuring cup, and reattach to Print Cylinder ink input nipple. Be sure to push tubing on completely.

5. Check measuring cup to determine actual liquid flow during one-minute run time. Cup should contain 100 milliliters of ink, ±5 ml. (5 ounces ± 1/16 ounce). (Could vary with temperature) (Note: This test is based on new tubing. Normal wear of the tubing will result in reduced flow. When flow rate is reduced 50%, replace tubing.)

6. If ink flow rate is not within this flow specification, check troubleshooting guide for additional information.

7. Pour ink from measuring cup back into ink supply bottle.

INK PUMP STOP SETTINGS

Purpose Of Adjustment

The purpose of this adjustment is to prevent the ink tubing from "walking" through the pump and to prevent the ink flow from being restricted.

Adjustment Location

Ink Pump tubing stop settings are made by positioning the Ink Pump hold-down forks one notch on each side of pump. A blue ramp tubing clamp is provided on the INK-IN tube at the entrance to the INK IN PUMP.

Adjustment Procedure

1. The INK OUT tubing does not "walk" under normal circumstances. If it should "walk," advance the hold-down forks on the INK OUT PUMP one notch. The tubing should be moved under the pump rotors 3" every 40 to 50 runtime hours to avoid premature wear and to maintain integrity of ink delivery.

2. A blue ramp tubing clamp is supplied for use on the INK-IN tube. It is placed between the ink reservoir and the INK IN PUMP. Set tight enough to prevent "walking" but not so tight as to restrict the flow of ink. When relocating the INK IN tubing, the clamp must be moved the same distance (about 3").

PRINT CYLINDER GAP ADJUSTMENT

Purpose Of Adjustment

The purpose of this adjustment is to provide constant contact between the case and the print cylinder. Too small a gap causes excessive deflection of the print cylinder that can result in premature film and pad wear. Too large a gap can result in weak or no print. It is important for the print cylinder to maintain constant, uniform contact with the case as it is printed. The most desirable operation is for the deflection to be the minimum necessary to maintain that constant contact with the case. The deflection as the print cylinder rolls on and off the case should not exceed 1/8". Excessive deflection will not increase print pressure, nor will it improve print quality.

Adjustment Location

The location of this adjustment is at the exit end of the press on the drive side. The adjustment knob extends through the guard.

Adjustment Procedure

1. Adjust the knob when the cylinder is in the "up" position.

2. Turning the knob clockwise (when facing the knob) increases the gap between the print cylinder and the impression roller. Turning it counterclockwise decreases that distance.

3. Run a sample case. Start with a small deflection and decrease (turn counterclockwise) the gap until you have complete print. If the deflection exceeds 1/8" in order to get complete print, you most likely need to increase the air pressure.

4. When changing cases, particularly from "B" to "C" flute cases, or vice versa, the gap must be adjusted.

NOTE: Adjusting to a larger deflection than 1/8" will not increase print pressure. Only by adjusting the air pressure on the regulator will you increase the print pressure.

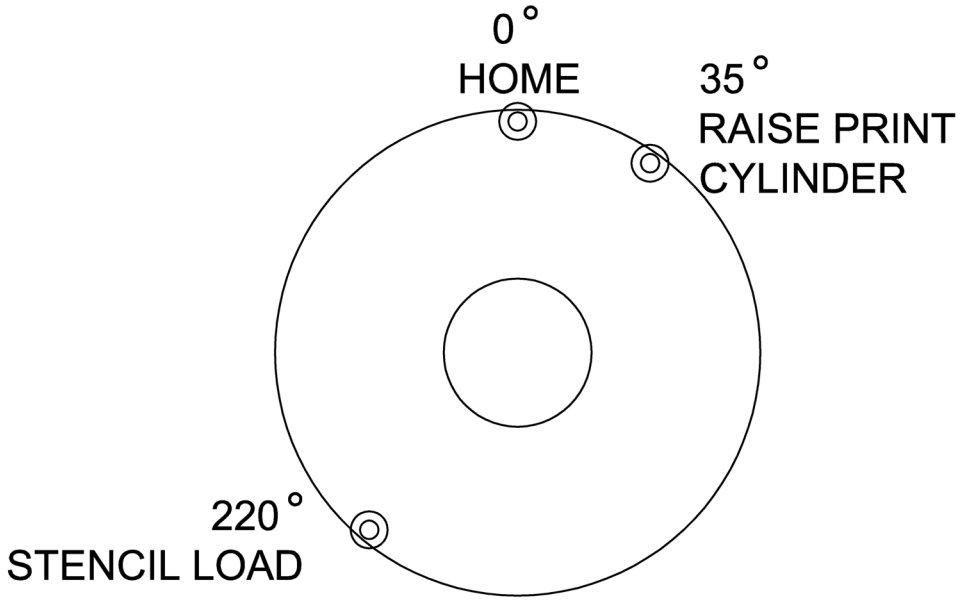
PRINT CYLINDER HOME POSITION

Purpose Of Adjustment

The Print Cylinder home position adjustment is performed to ensure that the Print Cylinder stops with the lift pins in the 12:00 position (0° rotation). This adjustment ensures proper 6 o'clock home position of the ink reservoir in the Print Cylinder, and helps facilitate Print Cylinder removal by orienting the lift pins in their uppermost position.

Adjustment Location

The Print Cylinder home position adjustment is made on the Round Sensor Plate located in the main Electrical Panel Enclosure. The Print Cylinder Home Position Proximity Sensor location is at 0°, 12 o'clock. Moving the sensor clockwise stops the print cylinder further forward and moving the sensor counterclockwise stops the print cylinder earlier. Check the stopping position, and make appropriate adjustment.



PROXIMITY SWITCH POSITIONS

SENSOR LOCATIONS

PRINT CYLINDER UP/DOWN SPEED

Purpose Of Adjustment

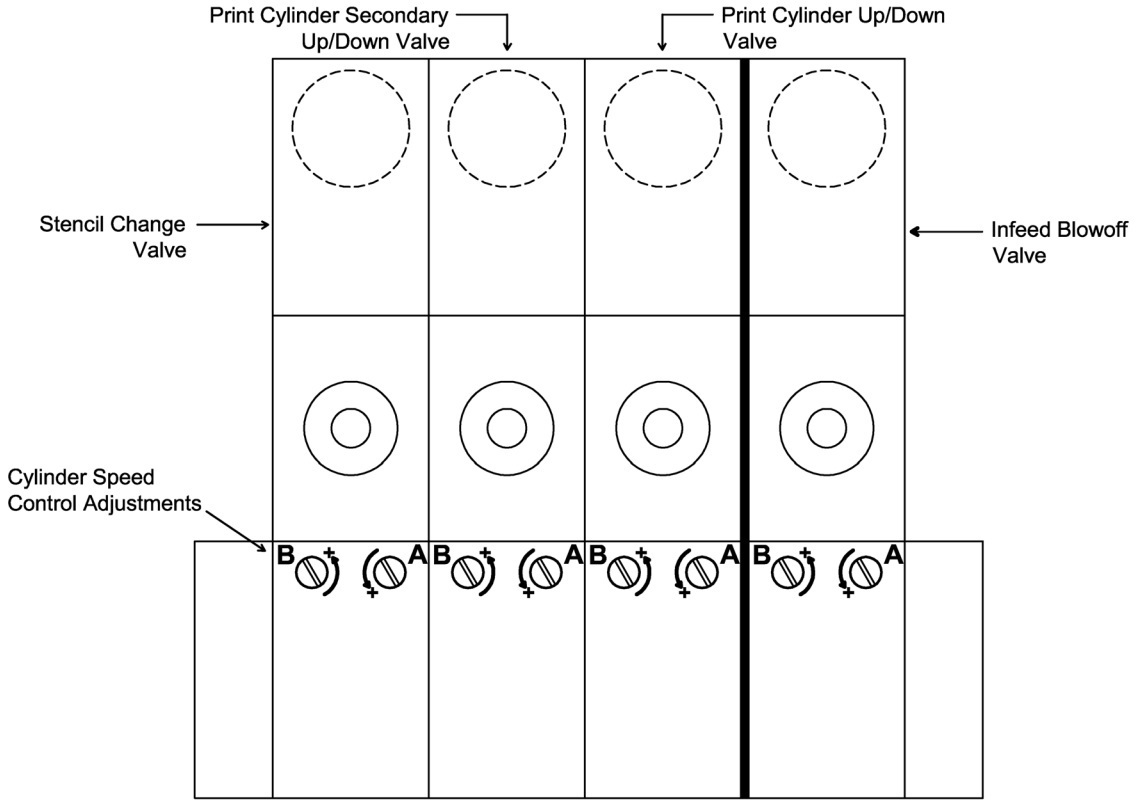
The purpose of this adjustment procedure is to ensure that the Print Cylinder moves into both its raised and lowered positions smoothly and without abrupt stopping or "banging". The adjustments are always made on "exhausting" air.

Adjustment Location

Print Cylinder Up/Down speed adjustments are made on the pneumatic flow control valve on the Print Cylinder Up/Down Valve, which is located inside the press behind the Electrical Panel Enclosure.

Adjustment Procedure

1. Turn off main Electrical Disconnect Switch on case printer, and locate Print Cylinder Up/Down Solenoid Valve. (See illustration below)



MAC Air Valves Top View
Located Inside Press On Wall
Behind Control Cabinet

2. To slow Print Cylinder positioning speed, adjust the flow control by turning it clockwise. Make adjustments in 1/8 turn increments until positioning speed is acceptable. Turn case printer on and check Print Cylinder positioning speed. Re-

adjust the flow control as required to achieve proper movement.

3. To increase Print Cylinder positioning speed, adjust the flow control by turning it counterclockwise. Make adjustments in 1/8 turn increments until positioning speed is acceptable. Print Cylinder must not "bang" into position. Turn case printer on and check Print Cylinder positioning speed. Re-adjust flow control as required to achieve proper movement.

4. If flow control adjustment does not restore Print Cylinder movement to acceptable speed, check pressure gage on air inlet port to ensure that available air pressure to the case printer FRL assembly is a minimum of 60 PSI

5. Also check the flow control screw on each end of the air cylinder, if so equipped. Again, counter-clockwise speeds up the motion, clockwise slows it down.

Section 8

Troubleshooting Guide

SYMPTOM	*PROBLEM*	*CORRECTIVE ACTION*
PRINT CYLINDER/INK DELIVERY PROBLEMS		
Poor Print	Ink bottle empty Ink-in hose blocked Ink-in tubing worn out Wrong type/size tubing Ink-in tubing installed wrong backwards in ink-in pump Ink delivery shaft pin not pushed completely into cylinder Wrong ink (non-Iconotech) being used	Fill ink bottle Check for obstructions and clear Replace tubing Replace tubing – use only Iconotech type tubing Check tubing installation per adjustment procedure Push shaft in all the way to open check valves, and lock nylon screw Discard and use only Iconotech ink. Clean cylinder and use new pad.
Excessive Ink	Ink-out hose blocked Ink-out tubing worn out Ink-out tubing cut or cracked Wrong type/size tubing Ink-out tubing installed backwards in ink-out pump Ink shaft pin not pushed in completely	Check for obstructions and clear Replace tubing Replace tubing Replace tubing – use only Iconotech type tubing Check tubing installation per adjustment procedure Push shaft in all the way to open check valves and lock nylon screw.
Ink flow through pad poor	Wrong ink (non-Iconotech) being used	Discard and use only Iconotech ink. Clean cylinder and use new pad. Use correct Iconotech pad
Excessive ink at trailing end of pad and film	Case not rolling over trailing end of pad	Adjust leader in printer driver to move image further towards trailing end. Adjust flights so end of cylinder perforations and end of case meet.
Ink leaking out at either end of pad	Loose pad Wrong ink (non-Iconotech) being used	Make sure the bar with spring loading is free to move and not at end of travel Discard and use only Iconotech ink. Clean cylinder and use new pad.

SYMPTOM	*PROBLEM*	*CORRECTIVE ACTION*
FILM LOAD PROBLEMS		
Image film pulls out of fingers during film loading	Loading device feed tension too high Fingers not gripping properly	Reduce friction on brake Replace feed fingers
CASE FEEDER PROBLEMS		
Cases flip up as they exit case printer	Hold-down rollers set too low	Adjust rollers higher
DRIVE SYSTEM PROBLEMS		
Drive chains make excessive noise	Drive chain not properly adjusted on drive side Drive chains not synchronized Drive chain tension too tight Feed end drive chain sprockets not aligned with chain track in feed rails	Adjust out-feed end sprocket per adjustment procedure Synchronize drive chains per adjustment procedure Reduce chain tension Align sprockets with chain track per procedure
Excessive gear noise at out-feed end of printer	Case printer not leveled	Level case printer by adjusting leveling pads
Case printer will not start	Plexiglas lid interlock switch malfunctioning Emergency stop switch contact open Fuse blown	Repair or replace switch Check switch contacts and repair or replace as required Replace fuse
Air cylinder hissing	Air leakage	Replace air cylinder
Print cylinder will not raise	Air pressure too low Sticking valve	Make sure air supply to case printer is 60 PSI minimum. If system pressure intermittently drops below 60 PSI, connect case printer to air system with minimum pressure setting of 80 PSI. Replace valve

For specific adjustment procedures regarding these troubleshooting tips, consult the “Adjustment Procedures” in Section 7.

Section 9

Restacker
&
Return Conveyor

RESTACKER FUNCTION AND OPERATION

In the installation of a case printing system, the restacker is the key part due to the fixed location of the rail on which the restacker rolls. (see sketch in Section I, Installation) The printer as well as the return roller conveyor is positioned based on the position of the restacker when parked in the operating indentation. The "0" position of the measuring tape on the restacker must correspond to the "0" position of the printer (the center of the print cylinder as well as the "0" mark on the tape measure). The center of the rollers on the return conveyor must be at this position as well.

Because the side guides of the printer magazine are adjusted to specific numbers on the printer's tape measure when operating, it is very important that the operator be able to rely on the exact positioning of the press and restacker so that the side plates of the restacker can be set at those same numbers plus 1/4" to 1/2" additional on each side. This extra space is to ensure that the cases touch nothing on their way into the restacker. If they make contact with the side plates of the restacker, the case will twist under the print cylinder. This will wrinkle the print film and can even cause the pad to shift sideways.

Set-Up Procedure

1. Set air pressure on filter-regulator-lubricator to 60 PSI, located on driven side.
2. Turn circuit breaker switch to "ON".
3. Turn selector switch to "ON".
4. Set stacking indicator to "5" (25 cases in stack)
5. Crank adjustment wheels to set side plates to same settings as printer + 1/2".
6. Set stop plate to same length as case, + 1/2".

Start printer and run sample case. Observe whether case enters restacker without interference. If necessary, adjust side plates. Run cases. As the cases enter the restacker, an electric eye senses them and accumulates 5 on the flipper arms. This group of 5 is then dropped onto the eject conveyor below. After 5 groups are dropped (25 cases), the eject conveyor will start up and drive the stack out onto the roller conveyor for return to the operator.

At the end of the roller conveyor is a stop plate to prevent stacks from rolling off the end. If stacks are not removed but are allowed to accumulate on the conveyor back to the end of the 180 degree curve, they will eventually walk off to the outside of the conveyor.

Shut-Down Procedure

1. Push "CLEAR". Any cases on the flipper arms will be dropped, and the stack ejected onto the conveyor.
2. Turn the selector switch to "OFF".

RESTACKER SPECIFICATIONS

General Specifications

Restacker Dimensions:	Width:	48" (1220 mm)
	Length:	42.5" (1080 mm)
	Height:	50" (1270 mm)
	Weight:	600 lbs. (275 kg) (est.)

Stacking Capacities

Maximum Case Size:	36" (915 mm) wide by 36" (915 mm) long
Minimum Case Size:	10" (250 mm) wide by 10" (250 mm) long
Maximum Stacking Height:	12.5" (317 mm)
Stacking Rate:	Up to 60 cases per minute
Exit Height of Restacker:	17" (430 mm)

Controls

Stacking Indicator:	Displays number of groups of 5 cases to be accumulated into a stack before ejection
Control Panel Buttons:	"On-Off" and "Clear"

Operating Requirements

Electrical:	230 Volt AC, 50-60 Hz., Single Phase. 20 amp protection through printer
Air Supply:	Minimum 80 PSI clean shop air

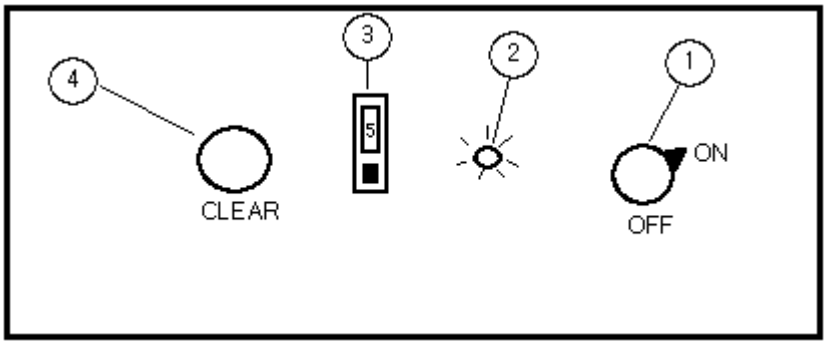
RESTACKER CONTROL PANEL

Power On-Off Control

Power for the restacker is supplied through the printer. On the driven side of the printer is a junction box with a plug-in for the power connection to the restacker and conveyor. There is also a screw connection for the signal from the restacker to stop the line. Also, the quick air connection is located in the same junction box.

The power is fed to a lockable circuit breaker on the stacker control cabinet. The power is on when the switch is turned clockwise.

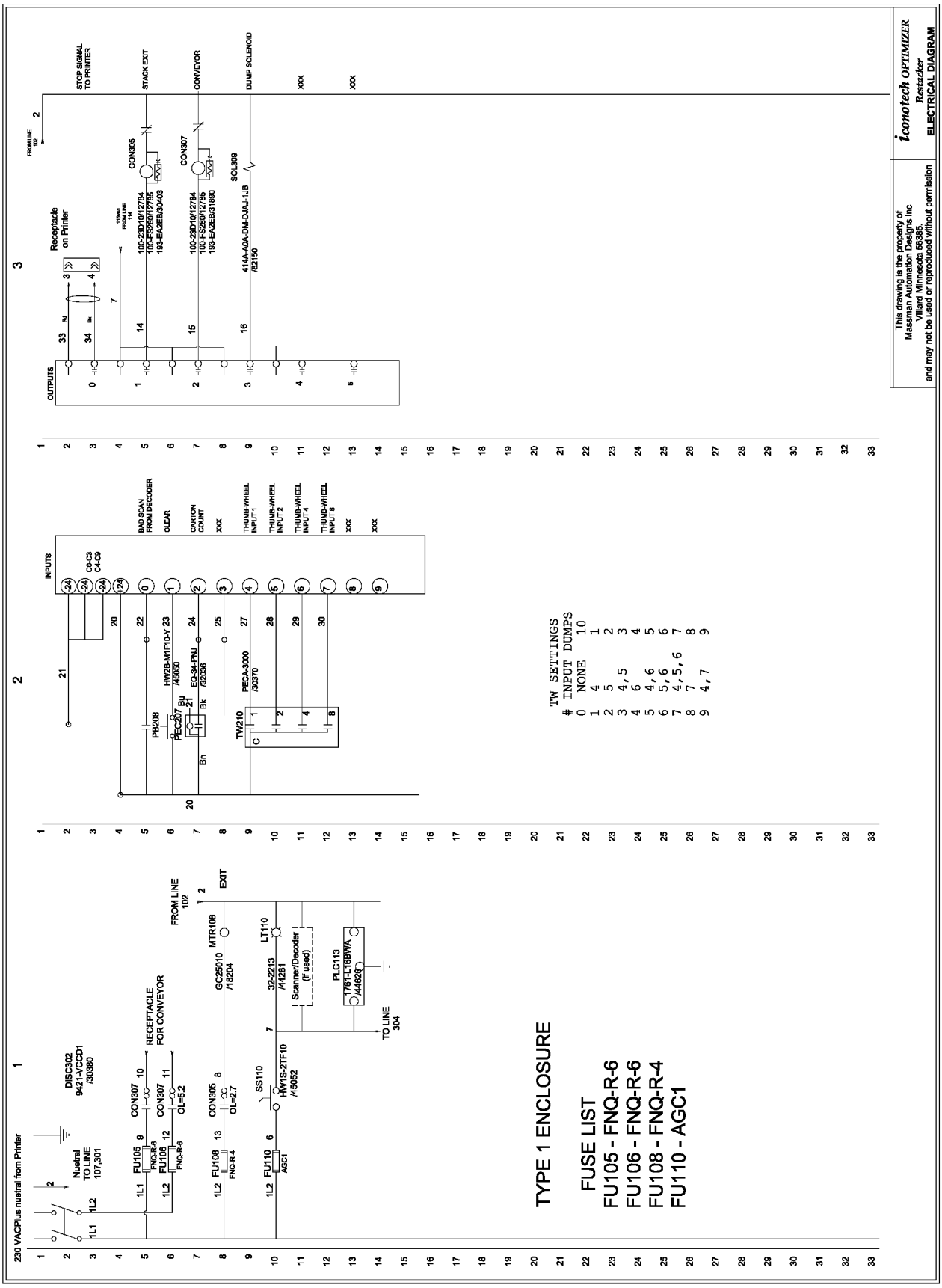
Control Panel Layout



Operator Control Panel

Key	***Name***	***Description***
1	ON-OFF	Powers up the restacker and starts the roller conveyor
2	Indicator Light	Shows power on or off
3	Stacking Indicator	Sets the number of groups of 5 cases to be dropped into the stack before ejecting. Maximum 9 groups, restricted by stop bar height. Minimum number must allow cases to proceed far enough on return conveyor to allow next bundle to completely exit the Restacker
4	Clear	Dump any cases remaining in upper chamber and ejects the stack onto the conveyor

Note: Circuit Breaker is on Front of Control Cabinet (not shown)


230 VACPlus nuetral from Printer
Nuetral
TO LINE
107,301
DISC302
9421-VCCD1
/30380
FU105
FNQ-R-6
FU106
FNQ-R-6
FU108
FNQ-R-4
FU110
AGC1
CON307
CON307
CON305
RECEPTACLE
FOR CONVEYOR
OL=5.2
OL=2.7
SS110
HW1S-2TF10
/45052
FROM LINE
102
EXIT
GC25010
/18204
MTR108
LT110
32-2213
/44281
Scanner/Decoder
(if used)
PLC113
1761-L16BWA
/44628
TO LINE
304
TYPE 1 ENCLOSURE
FUSE LIST
FU105 - FNQ-R-6
FU106 - FNQ-R-6
FU108 - FNQ-R-4
FU110 - AGC1
INPUTS
C0-C3
C4-C9
BAD SCAN
FROM DECODER
CLEAR
CARTON
COUNT
XXX
THUMB-WHEEL
INPUT 1
THUMB-WHEEL
INPUT 2
THUMB-WHEEL
INPUT 4
THUMB-WHEEL
INPUT 8
XXX
XXX
PB208
HW2B-M1F10-Y
/45050
EQ-34-PNU
/32036
TW210
PECA-3000
/30370
TW SETTINGS
INPUT DUMPS
0 NONE 10
1 4 1
2 5 2
3 4,5 3
4 6 4
5 4,6 5
6 5,6 6
7 4,5,6 7
8 7,8
9 4,7 9
OUTPUTS
FROM LINE
102
Receptacle
on Printer
STOP SIGNAL
TO PRINTER
STACK EXIT
CONVEYOR
DUMP SOLENOID
CON305
CON307
SOL309
100-23D10/12784
100-FS260/12785
193-EA2EB/30403
100-23D10/12784
100-FS260/12785
193-EA2EB/31080
4114A-A0A-DM-DJAJ-1J1B
/82150
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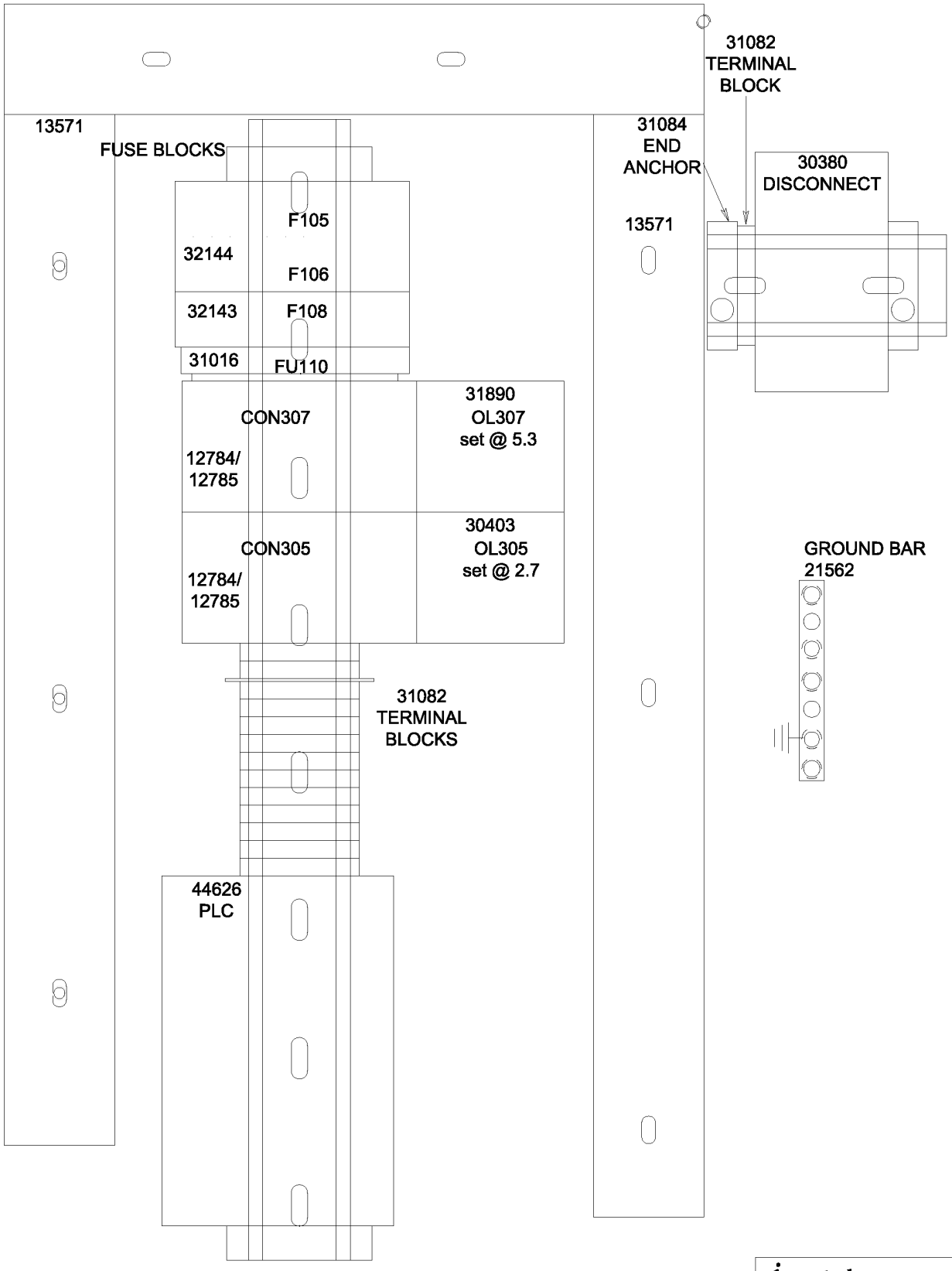
iconotech OPTIMIZER
Restacker
ELECTRICAL DIAGRAM

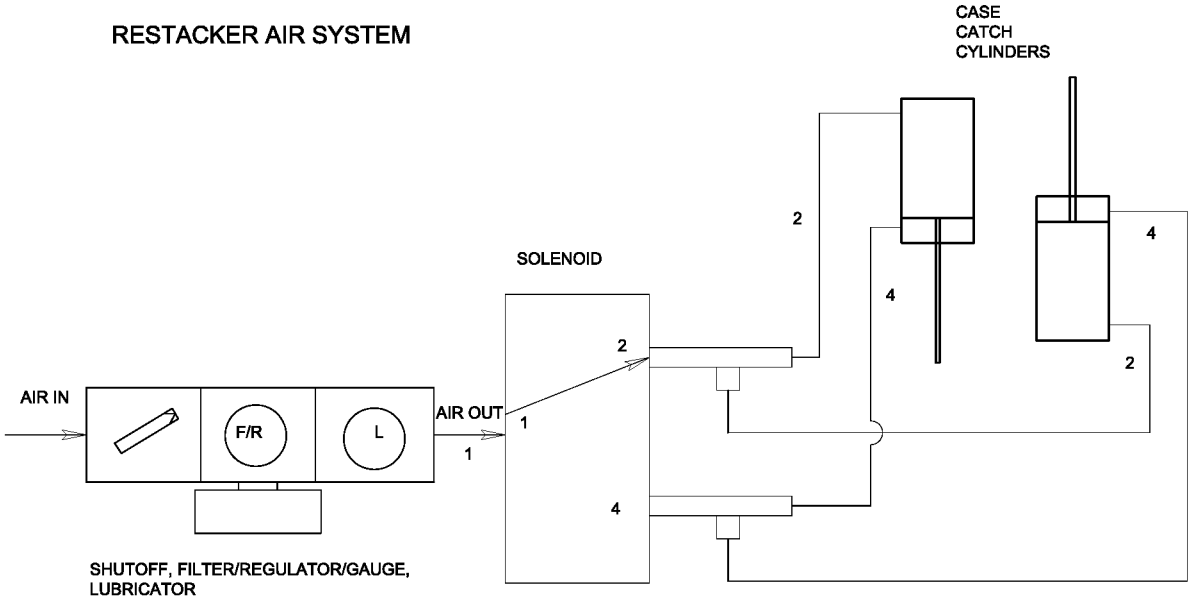


iconotech OPTIMIZER
Restacker
CONTROL PANEL LAYOUT

RESTACKER AIR CONTROL SYSTEM

The flipper arms in the restacker are operated by the air cylinders. They are controlled by a single, solenoid-operated air valve.

The air is controlled by a filter-regulator-lubricator on the driven side of the stacker. Air connection is made through a flexible tube and connected via a quick-disconnect coupling at the junction box on the driven side of the printer. (This is true when the restacker is installed with the printer. If the restacker is installed at a later date, air must be connected directly to its air filter-regulator-lubricator.)



RETURN ROLLER CONVEYOR

The unit has 24" wide rollers and an overall width of 28". It consists of 18" of straight section at the eject end of the restacker, a 180 degree curve, and a 10 foot straight section.

It has a line shaft drive with individual O-ring belts driving each roller. The drive motor gearbox is mounted at the end of the 10-foot section right after the 180 degree turn.

The conveyor elevation is 17" at the restacker end and increases to 34" at the opposite end.

The conveyor should be anchored to the floor.

All electrical controls are contained in the restacker electrical control enclosure. Connection from restacker to conveyor is on the driven side of the restacker with conventional twist plug for the 230 Volt, Single Phase, AC connection.

See instructions in the beginning of the manual under Installation.

Section 10

Parts Lists & Assembly Drawings

Contents

Parts Lists

Assembly Drawings

The following pages contain information concerning the components and assemblies that make up the Iconotech Case Printer. These pages may be consulted to identify the location, quantity, and part number of the various components used on the machine. In addition, each manufactured part is stamped with a part number

When placing an order for spare or replacement parts, be sure to note the serial number of the machine to help ensure that the correct parts are shipped.

If you encounter difficulties when attempting to install new parts on your case printer, call Iconotech before proceeding with any modifications to the parts or case printer.

We have identified four categories of spares parts as described below. Parts in the first two groups are based on normal wear and what we know will happen within certain maintenance intervals. The third group is parts that will not exhibit wear until they fail in a catastrophic manner. The last group is an exhaustive bill of material.

The first list titled IMPORTANT PARTS contains parts in the first three categories indicating which of the three they fall into. The EXTENDED PARTS list follows these more critical parts.

Consumable Parts
These parts are required or recommended to be changed every 6 months or about 1.5 million prints depending on productivity and operating conditions.

Wear Items
These are parts expected to be changed, due to normal wear and tear, over a 1-2 year period depending on productivity and operating conditions. These parts will not cause catastrophic failures but instead retard productivity due to the machinery slowly falling out of adjustment. These conditions will cause modified and time consuming operating procedures to ensure reasonable print quality and throughput.

Critical Up Time Parts
These are parts recommended to have on hand in order to assure maximum up time. A failure of any of these parts will be a catastrophic failure, rendering the machine unable to operate and preventing production until the part has been replaced.

Extended Parts List
A complete list or bill of material of the printer and restacker relevant to the extended lifetime of the equipment.

Part #	IMPORTANT PARTS Description	Qty	Type
PRINTER	**Printing and Ink Management**		
16840	SPRING, INK PAD TENSION	2	Critical
85329	TUBING, INK SUPPLY -15, 10FT	1	Consume
85328	TUBING, INK RETURN -24, 7FT	1	Consume
16006	CLAMP, INK TUBING	1	Wear
14391	INK PUMP	2	Critical
14393	MOTOR, INK PUMP	2	Critical
4976	SHAFT PIN ASSEMBLY, INK-IN	1	Wear
15743	O-RING, CHECK VALVE	2	Wear
15747	O-RING, SHAFT PIN SEAL	2	Wear
0200100	PRINT CYLINDER, 12 INCH	1	Critical
	Feeder		
3808S	FLIGHT W/ROLLER	6	Wear
	Electrical		
32036	PHOTO EYE, MAGAZINE	1	Critical
34089	REFLECTOR	1	Critical
30282	SWITCH, PROXIMITY IF5764	3	Critical
45021	INK PUMP SWITCHES	2	Critical
30278	INK PUMP BULB	2	Wear
45022	SWITCH, INK SELECTOR	1	Critical
45048	SWITCH, E-STOP PP RED	2	Critical
44625	PLC, PRINTER (UB6MAN)	1	Critical
11396	FREQUENCY DRIVE, VFD007EL21A	1	Critical
30974	FUSE, FNQ-R-3	1	Critical
30950	FUSE, FNQ-R-4	1	Critical
30946	FUSE, FNQ-R-6	2	Critical
30954	FUSE, FNQ-R-10	2	Critical
30817	FUSE, AGC1	2	Critical

Part #	IMPORTANT PARTS Description	Qty	Type
	Pneumatic		
82158	VALVE, SOLENOID, 45A-LAD-DAAJ-1KD	3	Critical
82156	VALVE, SOLENOID, 45A-LAC-DAAJ-1KD	1	Critical
83179	CYLINDER, AIR, FS-171.25	1	Critical
83175	CYLINDER, AIR, FS-170.25	1	Critical
83133	CYLINDER, AIR, C-041-DXDE	1	Critical
	Drive		
14400	MOTOR, MAIN AC 240 VAC 1/2 HP	1	Critical
14098	GEAR BOX	1	Critical
16160	BELT, MAIN DRIVE 480H100	1	Critical
16100	BELT, INTERMEDIATE 240H100	1	Critical
16052	BELT, PRINT CYL DRIVE 300H100	1	Critical
4946	DRIVE SHAFT ASSEMBLY, PRINT CYL	1	Wear
15052	BELTING, 1/4" PRINTER EXIT DRIVE	1	Wear
RESTACKER			
44626	PLC, RESTACKER (STACKER7)	1	Critical
32036	PHOTO EYE, RESTACKER	1	Critical
15054	BELTING, 1/2" RESTACKER EXIT	3	Wear
82150	VALVE, SOLENOID, 414A-AOA-DM-DJAJ-1JB	1	Wear
83136	CYLINDER, AIR, C-092-DXP	2	Wear
CONVEYOR			
090.255	BELT, STRAIGHT, SLAVE	2	Wear
090.256	BELT, STRAIGHT, DRIVE	50	Wear
090.2551	BELT, CURVE, SLAVE	32	Wear
090.2561	BELT, CURVE, DRIVE	8	Wear
030.7114	MOTOR, ½ HP, 230V, 1 PH, 60 HZ, TEFC	1	Critical
R-00153-40L	GEARBOX, 4AC-LH-40:1 RATIO	1	Critical

EXTENDED PARTS LIST			
PART #	**DESCRIPTION**	**QTY**	**SECTION**
4187	AIR SWITCH MOUNT	1	ELECTRIC
4188	AIR SWITCH	1	ELECTRIC
11396	DRIVE FREQUENCY 1HP	1	ELECTRIC
12843	CONTACTOR	3	ELECTRIC
12844	CONTACTOR SURGE SUPPRESSOR	3	ELECTRIC
14393	INK PUMP MOTOR 66 RPM 115V	2	ELECTRIC
14400	MOTOR AC 240 VAC 1/2 HP	1	ELECTRIC
14405	INK PUMP MOTOR FAN BLADE	2	ELECTRIC
14628	KNOB (SPEED POT)	1	ELECTRIC
14283	COUNTER RC-19	1	ELECTRIC
30189	INK PUMP LENS	2	ELECTRIC
30258	SWITCH LIMIT	1	ELECTRIC
30278	INK PUMP BULB	2	ELECTRIC
30282	SWITCH PROXIMITY	3	ELECTRIC
30483	BREAKER HANDLE (ROTARY)	1	ELECTRIC
30484	BREAKER HANDLE (FIXED W/SHAFT)	1	ELECTRIC
30486	BREAKER 2 POLE 20 AMP	1	ELECTRIC
30817	FUSE 1A	1	ELECTRIC
30954	FUSE 10A	2	ELECTRIC
30974	FUSE 3A	1	ELECTRIC
31792	POTENTIOMETER 5K	1	ELECTRIC
31795	RESISTOR 2.00 KX	1	ELECTRIC
32036	PHOTO EYE	1	ELECTRIC
34089	REFLECTOR	1	ELECTRIC
34378	HOLE SEAL 1/2"	1	ELECTRIC
35006	PHOTO EYE CORDSET 90DEG 5M	1	ELECTRIC
44625	PLC	1	ELECTRIC
45021	INK PUMP SWITCHES	2	ELECTRIC
45022	SWITCH SELECTOR	1	ELECTRIC
45048	SWITCH PP, RED	2	ELECTRIC
45049	SWITCH PB RED	1	ELECTRIC
45050	SWITCH PB YELLOW	4	ELECTRIC
45051	SWITCH PB GREEN	1	ELECTRIC
82158	VALVE, SOLENOID, 45A-LAD-DAAJ-1KD	3	ELECTRIC
82156	VALVE, SOLENOID, 45A-LAC-DAAJ-1KD	1	ELECTRIC
84912	FRL W/ SHUTOFF	1	ELECTRIC
1707	STENCIL LOAD NESTED SIDE PLATES	1	FILM LOAD
1708.1	STENCIL LOAD SIDE PLATES SPACER PLATES	1	FILM LOAD
1711.1	STENCIL LOAD SHEET SPRING SPACER	1	FILM LOAD
2105	STENCIL LOAD MOUNTING BRACKET LOCK PIN	2	FILM LOAD
2108	STENCIL LOAD SHEET SPRING	1	FILM LOAD
2116.1	STENCIL LOAD DRUM FEED ROLLER	1	FILM LOAD

EXTENDED PARTS LIST			
PART #	**DESCRIPTION**	**QTY**	**SECTION**
2126	STENCIL LOAD DRUM FEED ROLLER HANDKNOB	1	FILM LOAD
2283	STENCIL LOAD CORE MOUNT SHAFT KNOB	1	FILM LOAD
2284	STENCIL LOAD CAM	1	FILM LOAD
2286.1	STENCIL LOAD CORE MOUNTING SHAFT (CRS)	1	FILM LOAD
2287	STENCIL LOAD BEARING HOUSING	1	FILM LOAD
2289	STENCIL LOAD FRICTION DISC	1	FILM LOAD
2290	STENCIL LOAD FRICTION PIN	1	FILM LOAD
3356	NO5 BEARING LOCK NUT	1	FILM LOAD
11692	BEARING BRONZE FLANGE 3/8 X 5/8 X 1/2 X 7/8	2	FILM LOAD
12550	BEARING BALL	2	FILM LOAD
16711	SPRING COMPRESSION	1	FILM LOAD
16713	SPRING COMPRESSION	2	FILM LOAD
75483	COLLAR CLAMP 1-1/4 ID	2	FILM LOAD
83133	CYLINDER 3/4 Ø 1" STROKE	1	FILM LOAD
1880	LEAD SCREW MOUNT OPERATOR & DRIVE SIDE FRONT	1	MAGAZINE
1880	LEAD SCREW MOUNT OPERATOR SIDE	3	MAGAZINE
1891	LEAD SCREW ADJUSTMENT SPROCKETS 5/8 DIA	4	MAGAZINE
1893	5/8 DIA HANDWHEEL	2	MAGAZINE
2370	FLIGHT ROLLER	6	MAGAZINE
2371.2	FLIGHT WITH ROLLERS	6	MAGAZINE
2375	LEADSCREW HANDWHEEL SPACER 5/8 Ø	2	MAGAZINE
3387	FLIGHT CHAIN GUARD SPACER	2	MAGAZINE
3419	SLIDE BAR BOTTOM	1	MAGAZINE
3425	MAGAZINE UPRIGHT	1	MAGAZINE
3426	MAGAZINE SIDEPLATE OPERATOR SIDE	1	MAGAZINE
3427	MAGAZINE SIDEPLATE DRIVE SIDE	1	MAGAZINE
3428	SLIDE BAR BOTTOM	2	MAGAZINE
3429	MAGAZINE UPRIGHT	1	MAGAZINE
3596	DCP HAND FEED HOLE COVER	1	MAGAZINE
3597	FLOATER SPROCKET	2	MAGAZINE
3622	LEAD SCREW CHAIN GUARD	1	MAGAZINE
3623	LEAD SCREW CHAIN GUARD	1	MAGAZINE
3627.1	SLIDE BAR TOP OPERATOR SIDE BACK	1	MAGAZINE
3707	LEAD SCREW MOUNT OPERATOR SIDE FRONT	1	MAGAZINE
3708	LEAD SCREW BLOCK OPERATOR SIDE FRONT	1	MAGAZINE
3744	FLIGHT CHAIN GUARD OPERATOR SIDE	1	MAGAZINE
3745	FLIGHT CHAIN GUARD DRIVE SIDE	1	MAGAZINE
3795	SLIDE BAR BOTTOM	1	MAGAZINE
3796	SLIDE BAR TOP FRONT	1	MAGAZINE
3797	SLIDE BAR TOP FRONT	1	MAGAZINE
3798	SLIDE BAR TOP BACK	1	MAGAZINE
3799	SLIDE BAR TOP BACK	1	MAGAZINE

EXTENDED PARTS LIST			
PART #	**DESCRIPTION**	**QTY**	**SECTION**
3800	LEAD SCREW BACK	1	MAGAZINE
3801	LEAD SCREW OPERATOR	1	MAGAZINE
3802	MAGAZINE UPRIGHT	1	MAGAZINE
4159	FLIGHT CHAIN TAILSHAFT	1	MAGAZINE
4161	LEAD SCREW DRIVE FRONT	1	MAGAZINE
4163	HAND FEED DCP	2	MAGAZINE
4164	HAND FEED DCP	2	MAGAZINE
4165	HAND FEED MAGAZINE	2	MAGAZINE
4166	HAND FEED DCP MAGAZINE	1	MAGAZINE
4167	HAND FEED DCP MAGAZINE	1	MAGAZINE
4168	HAND FEED MAGAZINE	1	MAGAZINE
4169	HAND FEED MAGAZINE	1	MAGAZINE
4170	HAND FEED MAGAZINE T-RAIL	1	MAGAZINE
4171	HAND FEED MAGAZINE T-RAIL	2	MAGAZINE
4172	HAND FEED MAGAZINE T-RAIL	1	MAGAZINE
4173	HAND FEED MAGAZINE T-RAIL	1	MAGAZINE
4174	HAND FEED MAGAZINE T-RAIL	1	MAGAZINE
4175	HAND FEED MAGAZINE	1	MAGAZINE
4176	HAND FEED LOAD TRAY	1	MAGAZINE
4177	HAND FEED LOAD	2	MAGAZINE
4183.1	SINGLE REV SHAFT	1	MAGAZINE
4184.1	SINGLE REV	1	MAGAZINE
4189	LEAD SCREW BACK	1	MAGAZINE
4190	FLIGHT CHAIN GUARD DRIVE SIDE	1	MAGAZINE
4191	FLIGHT CHAIN GUARD OPERATOR SIDE	1	MAGAZINE
10383	SPROCKET	2	MAGAZINE
11704	BEARING BRONZE FLANGE 1/2 X 5/8 X 1/2	4	MAGAZINE
11756	BEARING BRONZE FLANGE 1 X 1-1/4 X 3/4	4	MAGAZINE
12002	BEARING FLANGE TWO BOLT	5	MAGAZINE
12004	BEARING FLANGE TWO BOLT	1	MAGAZINE
12272	BEARING BALL	1	MAGAZINE
12317	BEARING CARTRIDGE (1")	2	MAGAZINE
12901	CHAIN ROLLER	14'	MAGAZINE
13359	CHAIN OFFSET LINK	3	MAGAZINE
13373	CHAIN CONNECTOR LINK	3	MAGAZINE
14604	HANDLE ADJUST	3	MAGAZINE
15603	TAPE MYLAR 1/2" R TO L	1	MAGAZINE
15604	TAPE MYLAR 1/2" L TO R	1	MAGAZINE
28478	MAGAZINE E-STOP BOX	1	MAGAZINE
53701.1	FLIGHT CHAIN GUARD	1	MAGAZINE
75484	COLLAR RULAND (1-1/2)	2	MAGAZINE
79786	MAGAZINE HAND ADJUSTMENT CHAIN TIGHTENER	2	MAGAZINE

EXTENDED PARTS LIST			
PART #	**DESCRIPTION**	**QTY**	**SECTION**
80515	DRIVE BELT GUARD TOP	1	MAGAZINE
80516	DRIVE BELT GUARD BOTTOM	1	MAGAZINE
87244	BOX STOP	1	MAGAZINE
87245	LEAD SCREW CHAIN GUARD	1	MAGAZINE
102819	EYE MOUNT SUNEX	1	MAGAZINE
1638	ER-16 BEARING BLOCK	2	MAIN
1641.1	DISCHARGE ROLLER	1	MAIN
1648	FLIGHT CHAIN SUPPORT SHAFT	2	MAIN
1659.2	REDUCER MOUNT	1	MAIN
1664.1	MAGAZINE DRIVE SHAFT	1	MAIN
1672	SINGLE REVOLUTION SHAFT BEARING BLOCK	1	MAIN
1690	SINGLE REVOLUTION SHAFT SENSOR BRACKET BAR	1	MAIN
2123	FLIGHT CHAIN IDLER SPACER	4	MAIN
2218	CHAIN ROLLER #60 X 39.75" LG W/ R/L EACH END	6	MAIN
2227	FRONT ROLLER BELT PULLEY	1	MAIN
2291.2	INK PUMP MOTOR MOUNT	1	MAIN
2292.1	INK PUMP MOUNT	1	MAIN
2370	FLIGHT ROLLER	3	MAIN
2371.2	FLIGHT WITH ROLLERS	3	MAIN
2381.2	IMPRESSION ROLLER SHAFT	2	MAIN
2384.2	INK PUMP MOTOR COVER	1	MAIN
3081	ROLLER IDLER GEAR	1	MAIN
3082	IDLER GEAR AXLE	1	MAIN
3083.2	FLIGHT CHAIN GUIDE RAIL, DRIVE SIDE	1	MAIN
3085.2	FLIGHT CHAIN GUIDE RAIL, OPERATOR SIDE	1	MAIN
3105	SINGLE REVOLUTION SHAFT BEARING BLOCK	1	MAIN
3237	TAPER LOCK BUSHING	1	MAIN
3238	TAPER LOCK BUSHING	1	MAIN
3241	TAPER LOCK BUSHING	1	MAIN
3242	PULLEY TAPERLOCK GEAR BELT	1	MAIN
3243	PULLEY TAPERLOCK GEAR BELT	1	MAIN
3244	IDLER SPROCKET - #60	4	MAIN
3318	ENCLOSURE MOUNT STUDS	4	MAIN
3350	SINGLE REVOLUTION SHAFT SENSOR BRACKET	1	MAIN
3568	LEG ASSEMBLY	4	MAIN
3577	ER-16 BEARING BLOCK FRONT	2	MAIN
3578	ER-16 BEARING BLOCK BRACKET	2	MAIN
3580	ROLLER DRIVE GEAR	1	MAIN
3581	HEADSHAFT DRIVE GEAR	1	MAIN
3582	HEADSHAFT DRIVE GEAR SPACER	1	MAIN
3583	FLIGHT TAILSHAFT BEARING MOUNT	1	MAIN
3584	FLIGHT CHAIN TAILSHAFT FLOATER MOUNT	1	MAIN

EXTENDED PARTS LIST			
PART #	**DESCRIPTION**	**QTY**	**SECTION**
3588	FRONT END COVER	1	MAIN
3589	INK PUMP DRIP PAN	1	MAIN
3590	SINGLE REVOLUTION SHAFT	1	MAIN
3591	SINGLE REVOLUTION DRIVE SPROCKET	1	MAIN
3592	SINGLE REVOLUTION DRIVEN SPROCKET	1	MAIN
3593	SINGLE REVOLUTION DRV CHAIN TIGHTENER BRACKET	1	MAIN
3596	BACK END COVER	1	MAIN
3597	FLOATER SPROCKET	1	MAIN
3599	FLIGHT HEAD SHAFT BEARING MOUNT BRACKET	2	MAIN
3601	IDLER SPROCKET	1	MAIN
3604	FLIGHT CHAIN SUPPORT RAIL, DRIVE SIDE	1	MAIN
3605	FLIGHT CHAIN SUPPORT RAIL, OPERATOR SIDE	1	MAIN
3606	FLIGHT CHAIN IDLER TAKE-UP	2	MAIN
3610	SINGLE REVOLUTION SHAFT MOUNT	1	MAIN
3616.1	MAIN MACHINE SIDE PLATE DRIVE SIDE	1	MAIN
3617.1	MAIN MACHINE SIDE PLATE, OPERATOR SIDE	1	MAIN
3751	BELTING, 1/4" PRINTER EXIT DRIVE	1	MAIN
3774	ONE REV PROX ARM	1	MAIN
4225	IMPRESSION ROLLER, 40 DURO W/UNDERCUT	1	MAIN
11756	BEARING BRONZE FLANGE 1 X 1-1/4 X 3/4	2	MAIN
12009	BEARING FLANGE TWO BOLT	1	MAIN
12272	BEARING BALL	4	MAIN
12317	BEARING CARTRIDGE 1	7	MAIN
12326	BEARING CARTRIDGE 1-1/2	3	MAIN
12330	BEARING CARTRIDGE	2	MAIN
12593	BEARING PILLOW BLOCK 1-1/2	2	MAIN
12901	CHAIN ROLLER SINGLE WIDTH	3'	MAIN
12903	CHAIN ROLLER SINGLE WIDTH	5'	MAIN
13373	CHAIN CONNECTOR LINK	1	MAIN
13375	CHAIN CONNECTOR LINK	1	MAIN
13913	PROX MOUNT	3	MAIN
14098	GEAR BOX WORM REDUCER	1	MAIN
14391	INK PUMP	1	MAIN
14679	LATCH FOR ELECTRICAL ENCLOSURE	3	MAIN
16160	BELT MAIN DRIVE 480H100	1	MAIN
17818	CHAIN CONNECTOR LINK SPRING CLIP	6	MAIN
20482	MAGAZINE FRONT BLANK GUIDE	1	MAIN
25854.1	AIR TO STACKER SPACER	1	MAIN
28478	MAGAZINE E-STOP BOX	1	MAIN
35076.1	BOX JUNCTION TO STACKER	1	MAIN
38650	ONE REVOLUTION SHAFT SPACER	1	MAIN
38651	FLIGHT CHAIN TENSIONER IDLER BOLT	2	MAIN

EXTENDED PARTS LIST			
PART #	**DESCRIPTION**	**QTY**	**SECTION**
38652	FLIGHT CHAIN TENSIONER IDLER BOLT	2	MAIN
75481	RULLAND COLLAR	3	MAIN
75529	RULLAND COLLAR	4	MAIN
80071	FITTING	1	MAIN
80089	FITTING MALE CONNECTOR	1	MAIN
80092	FITTING ELBOW	1	MAIN
80143	FITTING	1	MAIN
80494	CONNECT, QUICK	1	MAIN
80507	FITTING	1	MAIN
82135	VALVE, SOLENOID, 45A-LAD-DAAJ-1KD	3	MAIN
85328	TUBING INK OUT	7'	MAIN
85329	TUBING INK IN	10'	MAIN
100670	FLIGHT CHAIN HEAD SHAFT	1	MAIN
100671	FLIGHT CHAIN HEAD SHAFT BEARING MOUNT	2	MAIN
100672	ADJUSTABLE HEX HUB SPROCKET	1	MAIN
100673	ADJUSTABLE HEX HUB	1	MAIN
1334	SPRING LIFTER	1	PRT CYL
1335.2	CLAMP/LIFT SPRING	4	PRT CYL
1364	DISCONNECT NEEDLE	2	PRT CYL
2277.2	VACUUM RELIEF HOUSING	1	PRT CYL
3314	MOVABLE PAD MOUNT BAR	1	PRT CYL
3315.1	FIXED PAD MOUNT BAR	1	PRT CYL
3346	DRUM GEAR	1	PRT CYL
3348	CLAMP DRUM SHAFT COLLAR KEYED	1	PRT CYL
15743	O-RING 7/16 ID 5/8 OD 3/32	2	PRT CYL
15760	O-RING NITRILE 11/16 X 7/8	2	PRT CYL
16706	SPRING COMPRESSION SS	2	PRT CYL
16840	12" PAD HOLD DOWN SPRING	2	PRT CYL
73202	SCREW FLAT HD CAP SS 5-40 X 3/8	20	PRT CYL
74067	SCREW BUTTON HD CAP SS 5-40 X 1/4	34	PRT CYL
75599	RETAINING E-RING EXTERNAL 1", X5133-98H	1	PRT CYL
75680	PIN DOWEL SS 3/8 X 2-1/2	1	PRT CYL
75683	PIN DOWEL SS 3/8 X 1-1/4	1	PRT CYL
75689	PIN SPRING SS 3/32 X 3/8	1	PRT CYL
75690	PIN ROLL SS 3/32 X 3/4	2	PRT CYL
76024	SCREW, SHOULDER BOLT 1/4 X 1/4	4	PRT CYL
80049	PLUG BRASS 3/8-18 NPT	1	PRT CYL
1364	DISCONNECT NEEDLE	2	TOP END
1365.2	DRUM MOUNT PIN	1	TOP END
1366.2	DRUM REST / PIN HOUSING	1	TOP END
1431.2	DRUM MOUNT PIN	1	TOP END
1432.2	DRIVE SHAFT	1	TOP END

EXTENDED PARTS LIST			
PART #	**DESCRIPTION**	**QTY**	**SECTION**
1433.1	PIN HOUSING	1	TOP END
1640	ER-20S BEARING BLOCK	2	TOP END
1698	DRUM MOUNT SPACER TUBE	1	TOP END
1699.1	SHAFT	1	TOP END
1703	DRUM DRIVE MOUNT SPACERS	2	TOP END
1704	PULLEY MODIFICATION	2	TOP END
1706	PULLEY MODIFICATION	1	TOP END
1710.1	DRUM LIFT HANDLE	1	TOP END
1714.1	DRUM LIFT SHAFT	1	TOP END
1716	OUTER PLATES SUPPORT ROD STENCIL LOAD MOUNT	1	TOP END
1718	DRUM PIVOT STOP	1	TOP END
1719	OUTER PLATES SUPPORT ROD	1	TOP END
2007	TRANSFER GEAR 20HB100 MODIFICATIONS	1	TOP END
2008	TRANSFER GEAR NFS1272A SPUR GEAR	1	TOP END
2009.1	TRANSFER GEAR AXLE	1	TOP END
2104	NIP ROLLER	2	TOP END
2109	DISCHARGE NIP ROLLER BRACKET SPACER	2	TOP END
2110	DISCHARGE NIP ROLLER BRACKET	2	TOP END
2111	PLAIN IDLER PULLEY	2	TOP END
2112	GEAR/PULLEY SPACER	1	TOP END
2113.2	FRONT GUARD	1	TOP END
2114.2	DISCHARGE GUARD	1	TOP END
2115.1	GUARD HINGE WITH BRACKETS	1	TOP END
2117	HINGED GUARD	1	TOP END
2119	DRUM LIFT SPRING SHOULDER BOLT	1	TOP END
2291.1	INK PUMP MOTOR MOUNT	1	TOP END
2292.1	INK PUMP MOUNT	1	TOP END
2384.2	INK PUMP MOTOR COVER	1	TOP END
3211	AIR KNIFE SUPPORT ROD	1	TOP END
3212	AIR KNIFE MOUNT SUPPORT	2	TOP END
3213.1	AIR KNIFE MOUNT	2	TOP END
3248	TAPER LOCK BUSHING	2	TOP END
3249	TAPER LOCK BUSHING	1	TOP END
3352	DISCHARGE NIP ROLLER SHAFT	1	TOP END
3496	PIE CAM, 60 DEGREE	2	TOP END
3534	EXIT AIR BLOW OFF MOUNT	2	TOP END
3555	DRUM DRIVE MOUNT	1	TOP END
3556	DRUM DRIVE MOUNT	1	TOP END
3557	DRUM DRIVE BELT TENSIONER	1	TOP END
3635	DRIVE SIDE PRINT SECTION SIDE PLATE	1	TOP END
3636.1	OPERATOR SIDE PRINT SECTION SIDE PLATE	1	TOP END
3637	PLATE NESTING LAYOUT FOR P/N'S 3088 & 2103	1	TOP END

EXTENDED PARTS LIST			
PART #	**DESCRIPTION**	**QTY**	**SECTION**
3638	GAS SPRING MOUNT MODIFICATIONS	2	TOP END
3665	CYLINDER MOUNTING PLATE	1	TOP END
3681	CYLINDER MOUNTING	1	TOP END
3705	DRUM MOUNT	1	TOP END
3713	DRUM HEIGHT SCREW	1	TOP END
3714	DRUM LEVEL ADJUSTMENT SPLINE	1	TOP END
3715	DRUM LEVEL BALL PLUNGER MOUNT	1	TOP END
3716.1	DRUM LEVEL SCREW BLOCK	1	TOP END
3897	PIE CAM, 160 DEGREE	2	TOP END
3919	DRUM LIFT ARM	1	TOP END
4105	DRUM DRIVE BELT TIGHTENER	1	TOP END
4140	DUAL AIR CYLINDER ANTI ROTATION	1	TOP END
4183.1	SINGLE REV SHAFT	1	TOP END
4184.1	SINGLE REV SHAFT BUSHING	1	TOP END
4185	AIR SWITCH SPACER	1	TOP END
4186	AIR SWITCH NUT BLOCK	1	TOP END
4187	AIR SWITCH MOUNT	1	TOP END
4188	AIR SWITCHMOUNT PLATE	1	TOP END
6135	MODIFIED CAM FOLLOWER	1	TOP END
6143	DRUM MOUNT PIN THUMB SCREW	2	TOP END
11087	ROD END	2	TOP END
11112	ROD END	1	TOP END
11764	BEARING BRONZE FLANGE 1-1/4 X 1-1/2 X 1/2 LG	2	TOP END
12278	BEARING BALL 3/4	4	TOP END
12283	BEARING BALL 1"	2	TOP END
12321	BEARING CARTRIDGE 1-1/4	7	TOP END
12516	BEARING 3/4 X 7/8 X 1" LG DX	2	TOP END
14391	INK PUMP	1	TOP END
14648	HANDLE 1/4-20 X .78	2	TOP END
15736	O-RING 5/32 ID X 9/32 OD	16	TOP END
15743	O-RING NITRILE 7/16 ID 5/8 OD 3/32	2	TOP END
15778	O-RING NITRILE 1-1/4 ED 1-1/2	4	TOP END
16052	BELT DRUM DRIVE 300H100	1	TOP END
16100	BELT INTERMEDIATE 240H100	1	TOP END
16702	SPRING EXTENSION	1	TOP END
16708	GAS SPRING	2	TOP END
59096	AIR KNIFE BAG GUIDE	1	TOP END
62852	EXAIR REGULATOR MOUNT	1	TOP END
74138	SPRING PLUNGER 3/8-16 X 5/8	1	TOP END
75471	BOLT TAP 3/8-16 NC X 1-3/4 LG FULL THD	1	TOP END
75549	COLLAR ALUMINUM CLAMP 3/4	4	TOP END
75580	RETAINING E-RING EXTERNAL 3/4, SHAFT	2	TOP END

EXTENDED PARTS LIST			
PART #	**DESCRIPTION**	**QTY**	**SECTION**
75581	RETAINING E-RING EXTERNAL 1", SHAFT	2	TOP END
75780	CLAMP HOSE	2	TOP END
77113	RETAINING RING EXTERNAL 1-1/4, SHAFT	2	TOP END
80091	FITTING TEE 1/4"	1	TOP END
80092	FITTING ELBOW	2	TOP END
80103	¼ NPT X 2” LONG PIPE NIPPLE	2	TOP END
80122	FITTINGS NYLON STRAIGHT	2	TOP END
80459	FITTING ¼ X 1/4 FEMALE	2	TOP END
80504	¼ NPT CAP	1	TOP END
81025	AIR BLOWER FAN NOZZLE	2	TOP END
82087	ROLLER AIR VALVE	1	TOP END
82183	BIG VALVE – AIR PILOT	1	TOP END
83179	CYLINDER, AIR FS-171.25	1	TOP END
83175	CYLINDER, AIR FS-170.25	1	TOP END
84923	EXAIR 2” KIT	1	TOP END

EXTENDED PARTS LIST		
PART #	**DESCRIPTION**	**QTY**
11110	ROD END 5/16 DIA FEMALE R.H.	2
11699	BUSHING, FLANGE	4
12317	BEARING, CARTRIDGE 1"	2
12621	BEARING PB 1-1/8	2
12784	CONTACTOR - 120V	2
12785	CONTACTOR SURGE SUPPRESSOR	2
12902	CHAIN	25'
13360	CHAIN OFFSET	2
13374	CHAIN, CONNECTOR LINKS	5
13535	CONTACTOR OVERLOAD 1.0-5.0A	1
13536	CONTACTOR OVERLOAD 3.2-16A	1
14604	HANDLE, ADJUSTABLE STUD TYPE	1
14643	WHEELS, V-GROOVED	2
14668	WHEELS, CASTER	2
14679	LATCH - ELECTRICAL ENCLOSURE	2
15603	TAPE, MYLAR R TO L	1
15604	TAPE, MYLAR L TO R	1
18204	GEARMOTOR	1
30370	SWITCH, THUMBWHEEL	1
30371	SWITCH, THUMBWHEEL END PLATE	1
30372	SWITCH, THUMBWHEEL END PLATE	1
30380	DISCONNECT	1
30817	FUSE 1A	1
30946	FUSE 6A	2
30950	FUSE 4A	1
32036	PHOTO EYE	1
34335	PLUG, DC CONTROL	1
34491	PLUG, POWER CORD 125/ 250 VAC 20 AMP	1
34492	RECEPTACLE 250VAC	1
34494	BOX COVER	1
34581	BACKSHELL CLAMP DC CONTROL	1
34627	PIN, DC CONTROL	2
35006	PHOTO EYE CORDSET	1
44281	INDICATOR, AMBER NEON	1
44626	PLC	1
45050	SWITCH PUSH BUTTON 1N.O.	1
45052	SWITCH SELECT 2 POSITION	1
80089	FITTING, AIR 1/4 X 1/8	2
80092	FITTING, AIR 1/4 X 1/8	2
80093	FITTING, AIR, ELBOW 3/8 X 1/4 169PLNS-6-4	1
80094	FITTING, AIR 1/4 X 1/8	2

EXTENDED PARTS LIST		
PART #	**DESCRIPTION**	**QTY**
80456	FITTING, AIR 3/8 X 1/8	1
80495	FITTING, AIR, ELBOW, SWIVEL 3/8 X 1/4 W169PL-6-4	1
82006	VALVE, BIMBA	4
82150	SOLENOID 414A-AOA-DM-DJAJ-1JB	1
83136	CYLINDER, AIR	2
84909	MUFFLER 1/8"	2
84912	FRL WITH SHUTOFF	1
12028.2	HANDWHEEL MOUNT SHAFT	1
12029.1	TAPPED FLANGE BEARING	1
12030	CHAIN TENSIONER	1
12031	CHAIN TENSIONER NUT BLOCK	1
12032.1	ADJUSTABLE SCREW SPACER	1
13043	CHAIN TENSIONER	2
13046	STACKER STOP	1
13052	WHEEL SHAFT	1
13294	SCREW BLOCK	1
13788	CHAIN TENSIONER DISK	1
17660	ADJUSTABLE STOP	1
17665	MAGAZINE FINGER	1
17666	CONVEYOR BELT SLIDES	1
17667	CONVEYOR BELT SLIDES	1
17668	TAIL SHAFT	1
17669	TAIL SHAFT	2
17864.1	AIR CYLINDER GUARD	1
17865.1	AIR CYLINDER GUARD	1
17866	MAGAZINE SIDE PLATE	2
17867	MAGAZINE SIDE PLATE	1
17868	MAGAZINE SIDE PLATE	1
17869	MAGAZINE SIDE PLATE	2
17871	DISCHARGE BELT	2
17872	HOLD UP WHEELS	2
18866	MAIN DRIVE MOTOR SPROCKET	2
20471	CHAIN TENSIONER PLATE	2
20472	CHAIN TENSIONER SPACER	7
20475	BOTTOM CROSSMEMBER	2
20476	CONVEYOR MOUNT TUBE	2
20481	CROSS SHAFT	4
20483	STACKER GUIDE TRACK	4
21562	GROUND BAR MODIFIED 31075	2
24179	CROSS BRACE	2
24194	MAIN DRIVE DRIVEN SPROCKET	9
24197	GUARD NUT BLOCK	2

EXTENDED PARTS LIST		
PART #	**DESCRIPTION**	**QTY**
24198	CHAIN GUARD	2
24615	CHAIN GUARD	3
24616.1	MOTOR MOUNT	1
24617.1	HAND WHEEL SPROCKETS 5/8 DIA	1
24618	CONVEYOR BELT SUPPORT RIGHT SIDE	2
24619	CONVEYOR BELT SUPPORT LEFT SIDE	2
25738	BOTTOM CROSSMEMBER	4
28464.1	EYE MOUNT	5
32483	MAGAZINE FINGERS AIR CYL MOUNT CLAMP PLATE	1
33675	TOP CROSSMEMBER	2
33677	MOUNT TAB	1
33678	TOP MOVABLE STOP MOUNT	1
3409	STACKER STOP	1
3505	STACKER STOP	1
3506	BELT ADJUST SCREW	1
3507	BELT ADJUST SCREW	1
3508	BELT ADJUST SCREW	1
3509	BELT ADJUST SCREW	1
3510.1	CONVEYOR HEADSHAFT PULLEY	1
3511.1	HEX SHAFT HEADSHAFT	1
3515	POINTER OPERATOR SIDE	2
3516	POINTER OPP. OPERATOR SIDE	4
3521	TRANSFER RAIL	1
3522	TOP CROSSMEMBER	2
3567	CORD HOLDER	2
3607	STACKER JUNCTION BOX TO CONVEYOR	1
3611	MAGAZINE FINGERS MOUNTING PLATE	2
3612	MAGAZINE FINGERS MOUNTING PLATE	1
3614	MAGAZINE SUPPORT FRONT	1
3717	MAIN SIDE PLATE RIGHT	1
3719.1	MAIN SIDE PLATE LEFT	1
3786	WHEEL MOUNT	1
3803	CONVEYOR MOUNT BAR	1
3804	CONVEYOR MOUNT BAR	1
3805	MAGAZINE SUPPORT FRONT	1
3806	BEARING MOUNT	1
3807	BEARING SPACER	2
9151.1	MAGAZINE FINGERS ROD END MOUNT	1
9152.2	MAGAZINE FINGERS AIR CYLINDER MOUNT	1
9389.1	LEAD SCREW SPROCKETS 5/8 DIA	1
9390.1	HANDWHEEL 6" WITH 5/8 DIA BORE	1
9586	CONVEYOR TAILSHAFT PULLEY	2

EXTENDED PARTS LIST		
PART #	**DESCRIPTION**	**QTY**
9603	CONVEYOR SLIDE MOUNTS	1
9605	CONVEYOR SLIDE BLOCK	2
9612.2	TOP SIDE PLATE SUPPORT	1

DRAWINGS

Optimizer Hand Feed

- Side View
- Top View
- Front View
- Rear View
- Top Assembly – Main View
- Top Assembly – Side View
- Top Cover
- Print Cylinder
- Print Cylinder – Ink In/Out
- Ink Pump Assy
- Stencil Loading Device

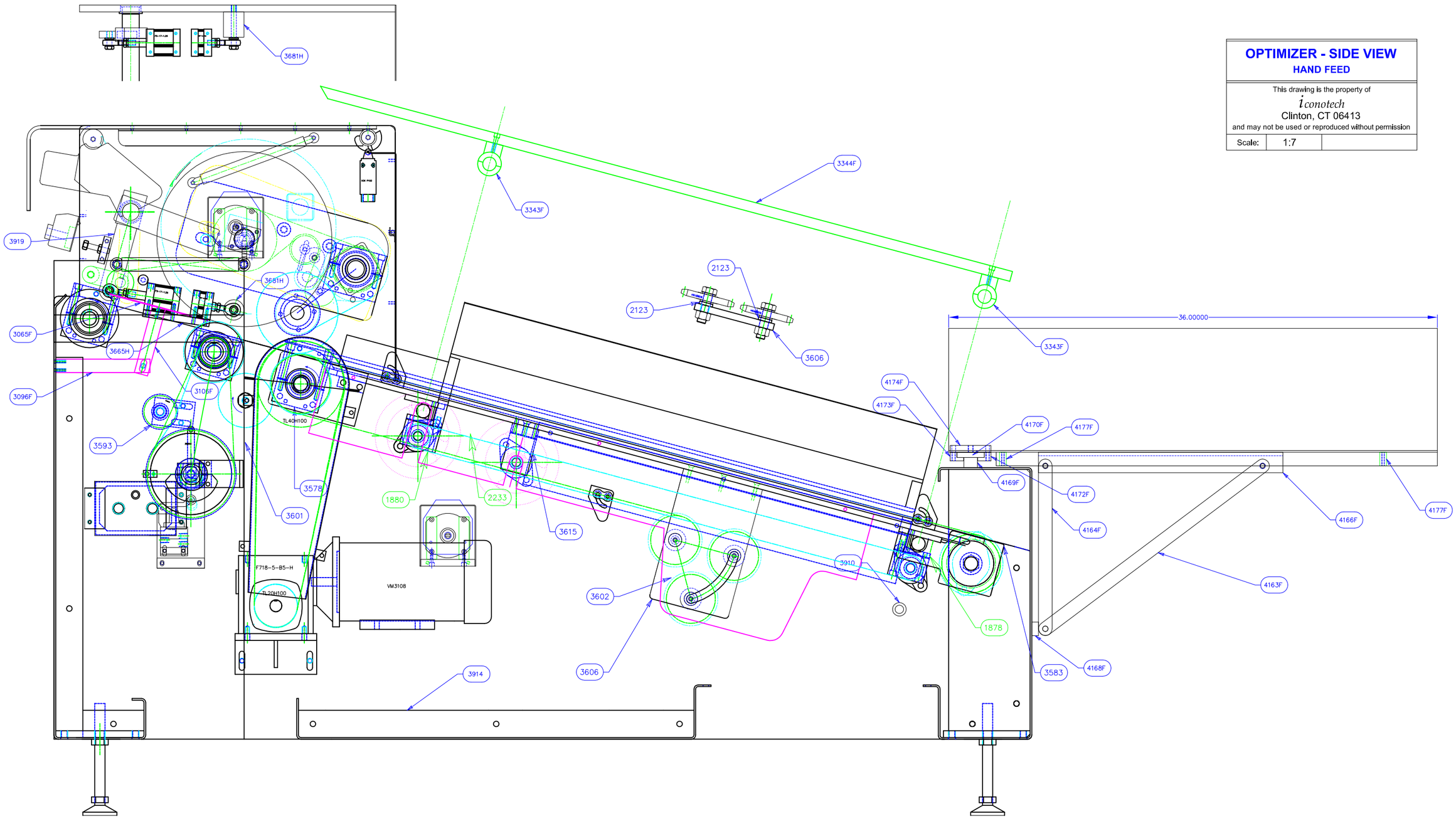
Restacker

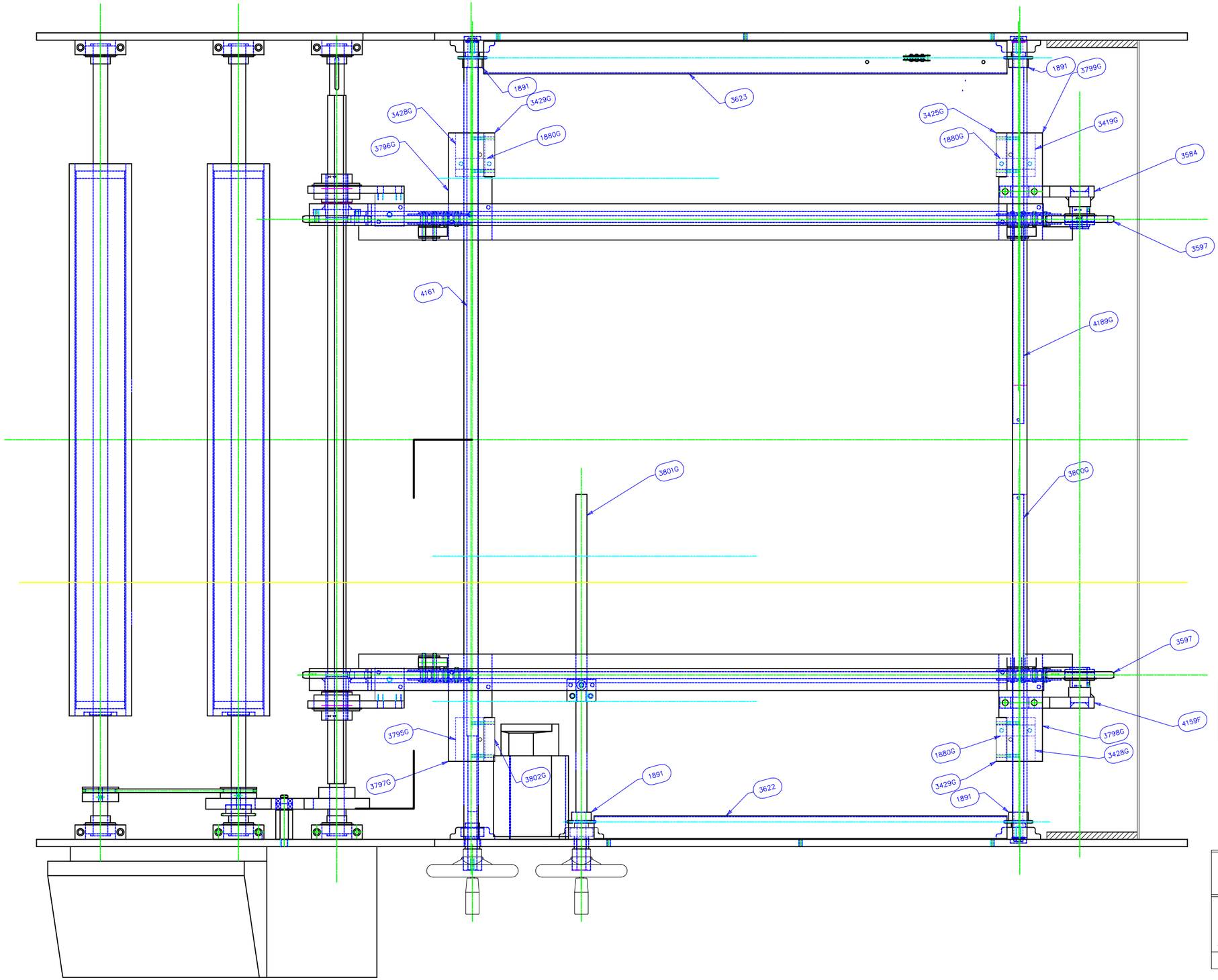
- Rear View
- Side View
- Top View

OPTIMIZER - SIDE VIEW

HAND FEED

Scale:	1:7	

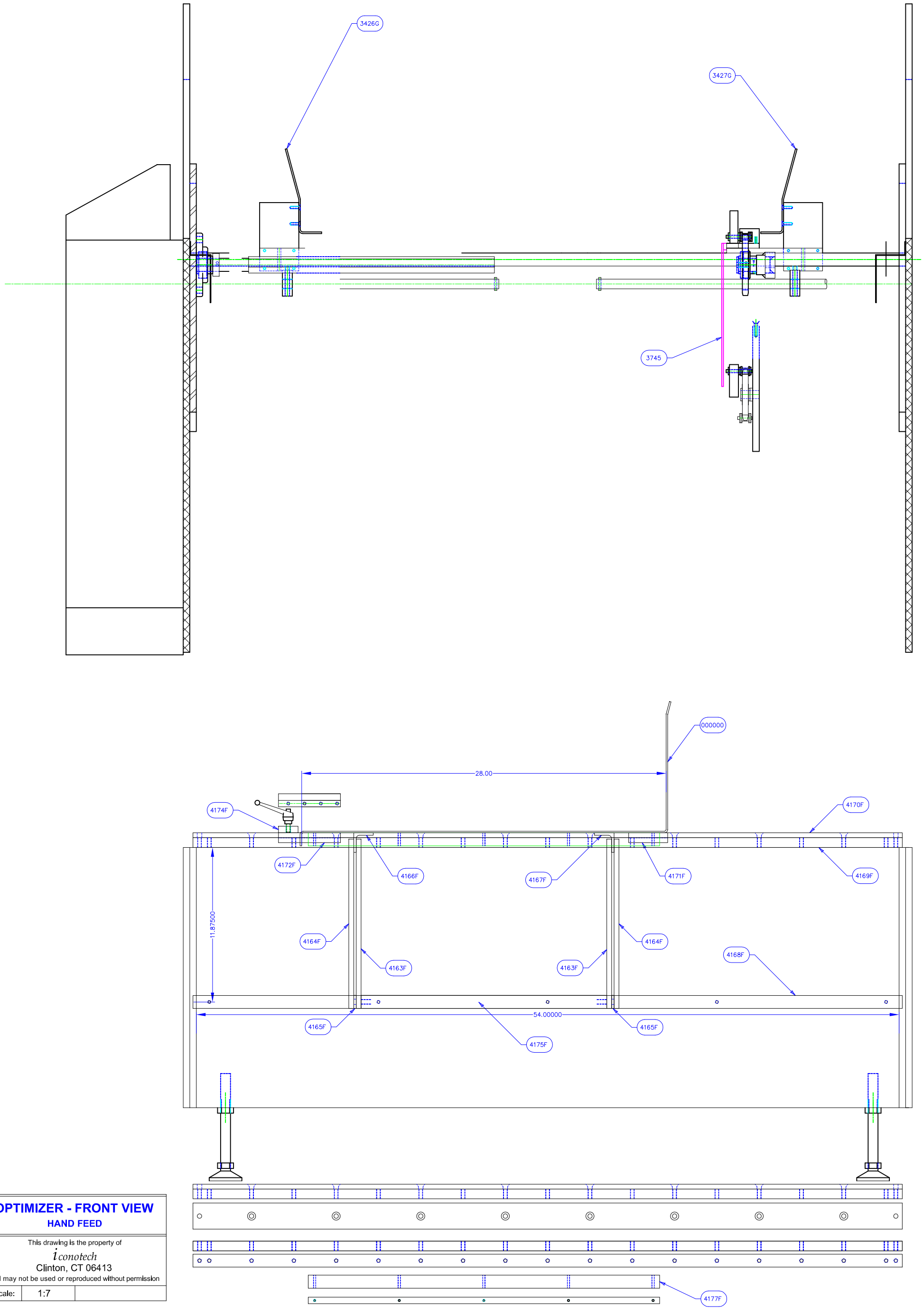




OPTIMIZER - TOP VIEW

HAND FEED

Scale:	1:7	



OPTIMIZER - FRONT VIEW

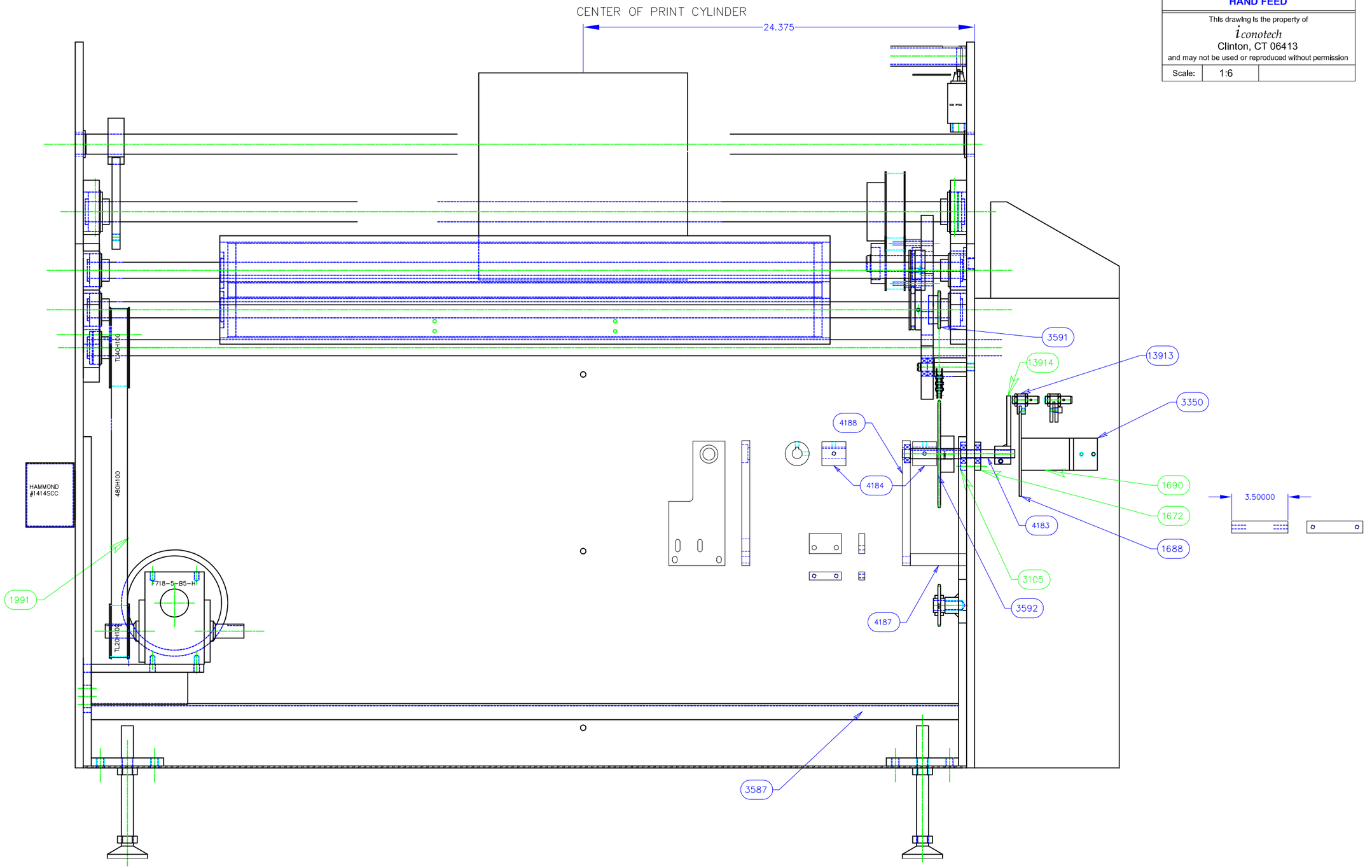
HAND FEED

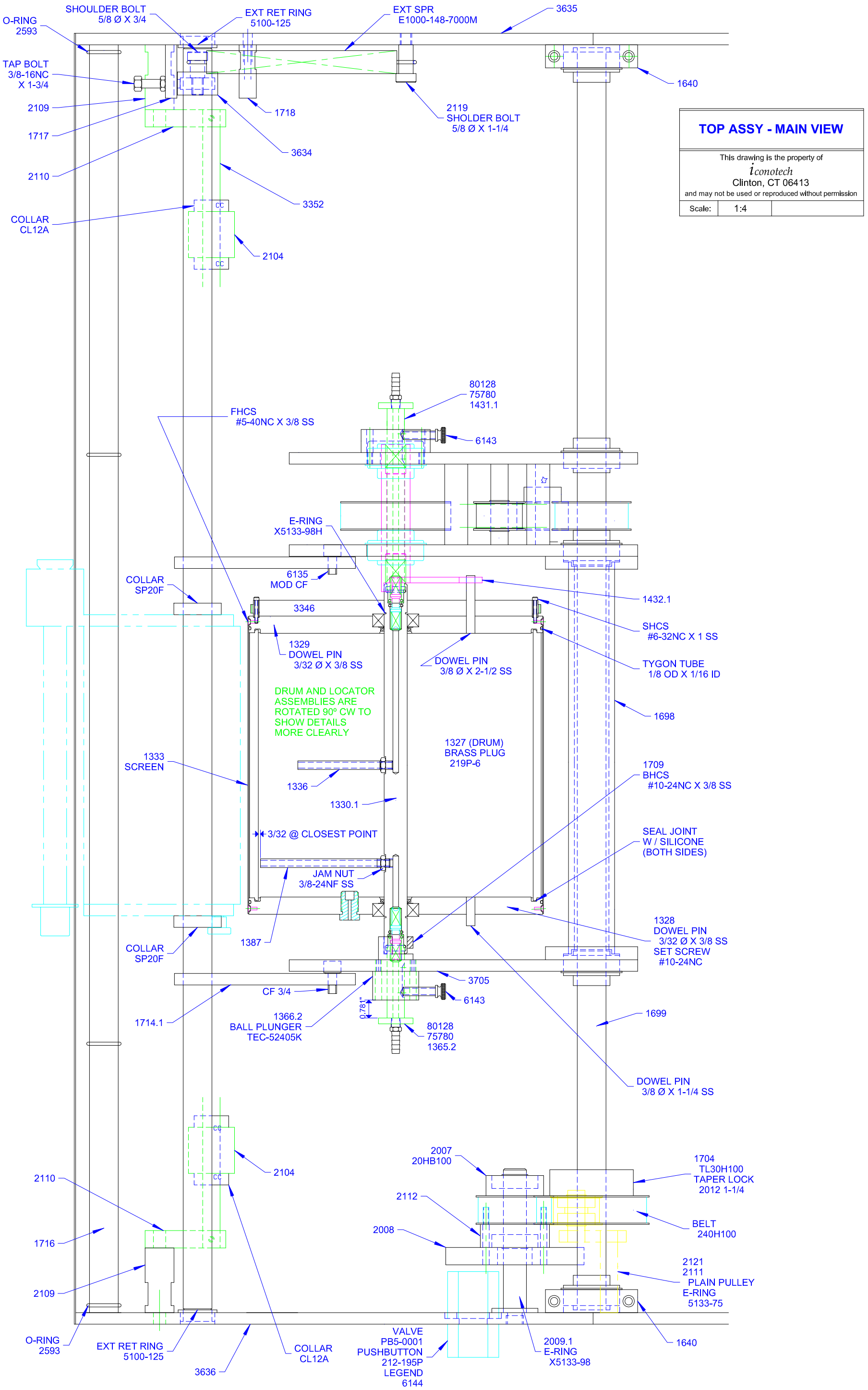
Scale:	1:7	

OPTIMIZER - REAR VIEW

HAND FEED

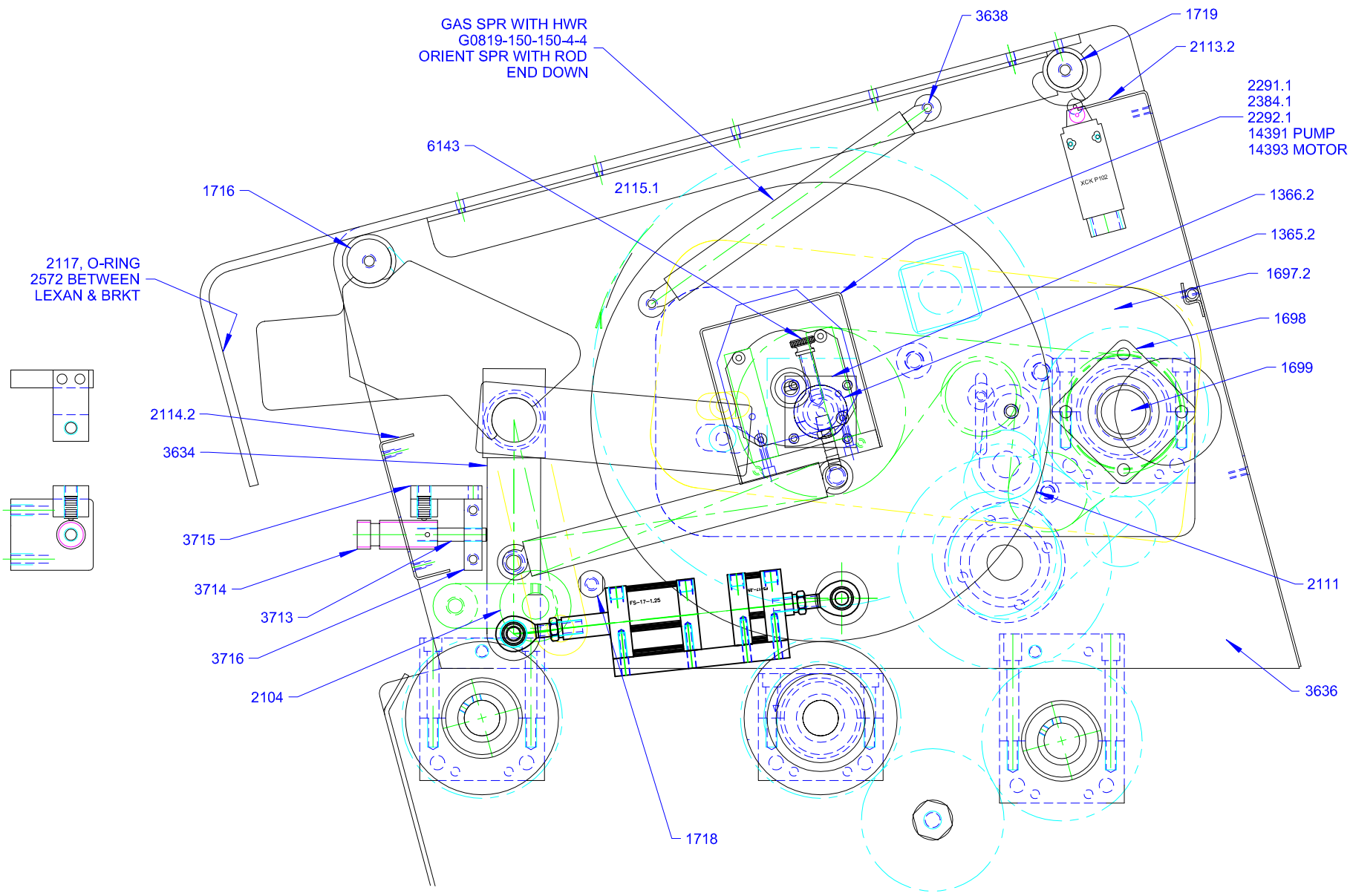
Scale:	1:6	

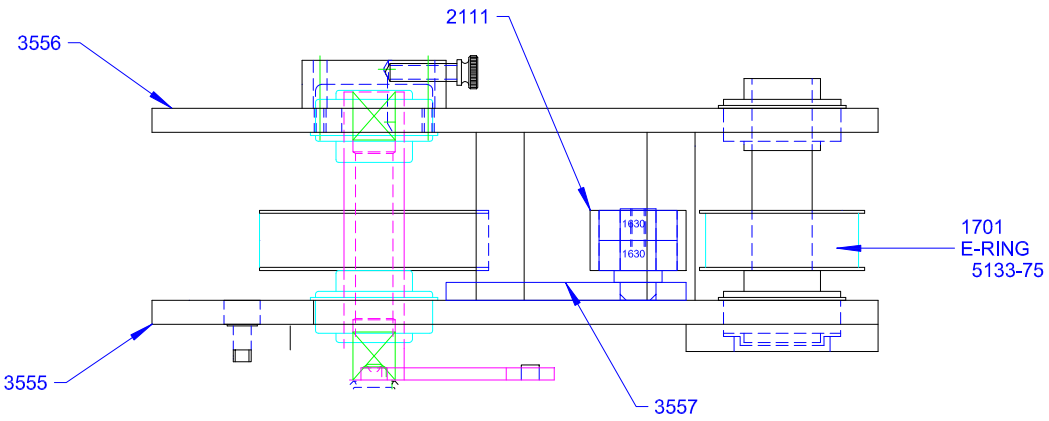


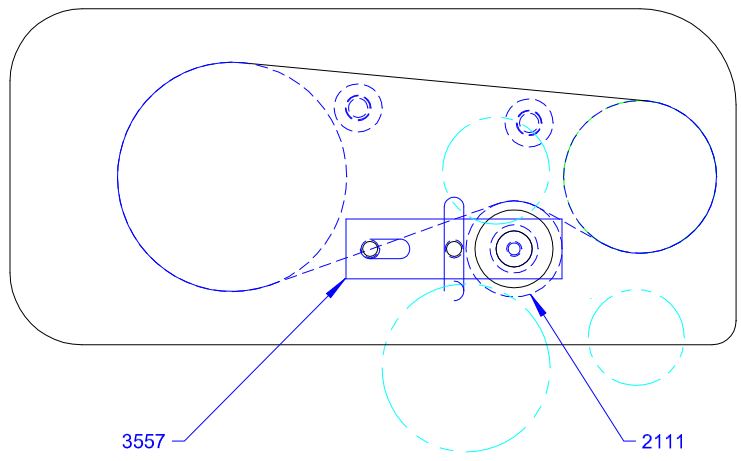


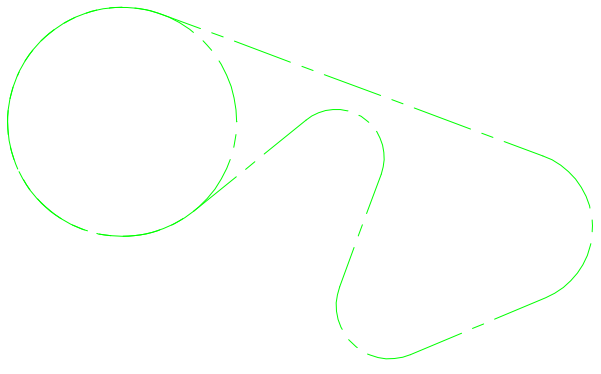
TOP ASSY - MAIN VIEW

Scale:	1:4	



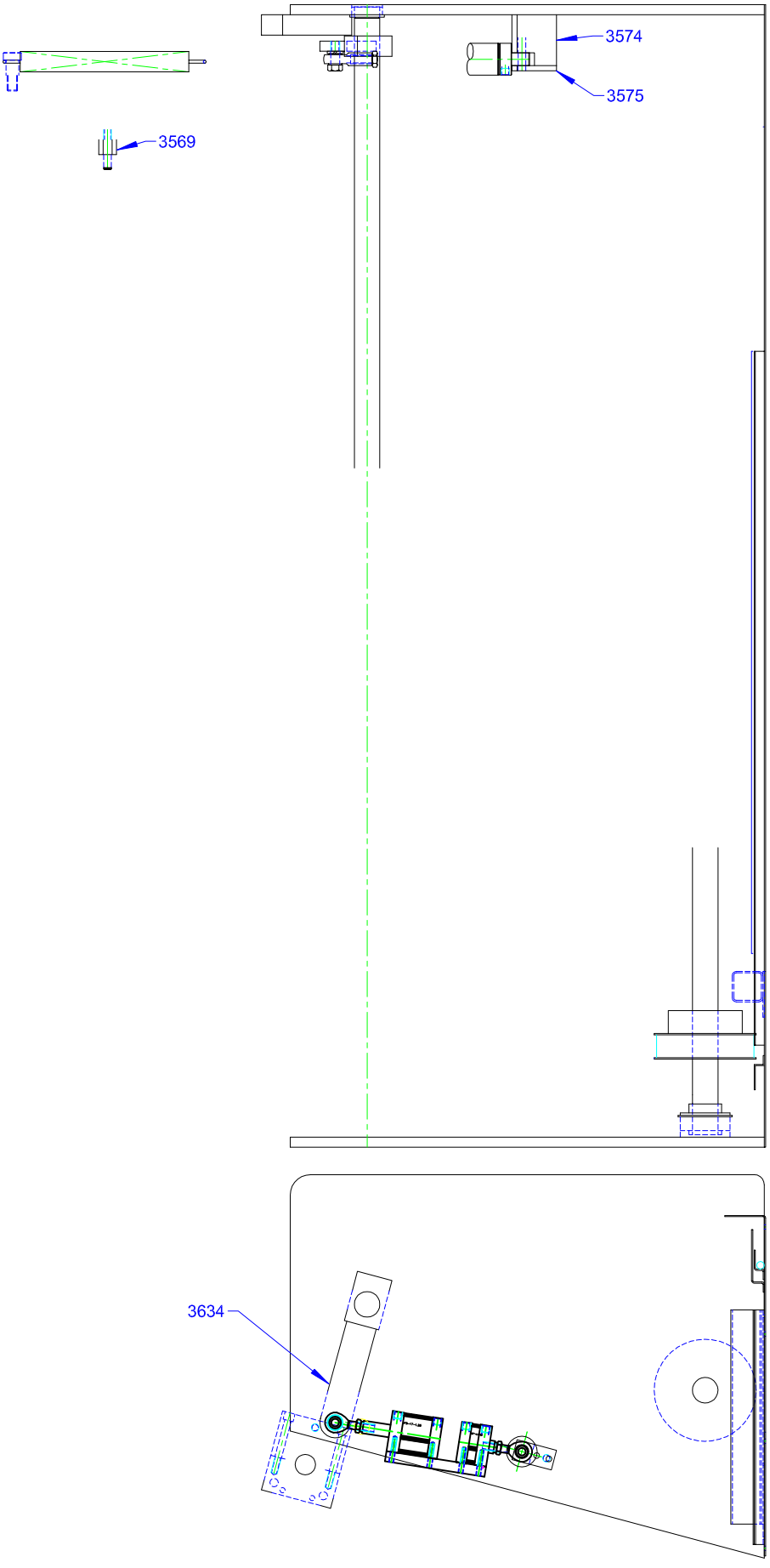






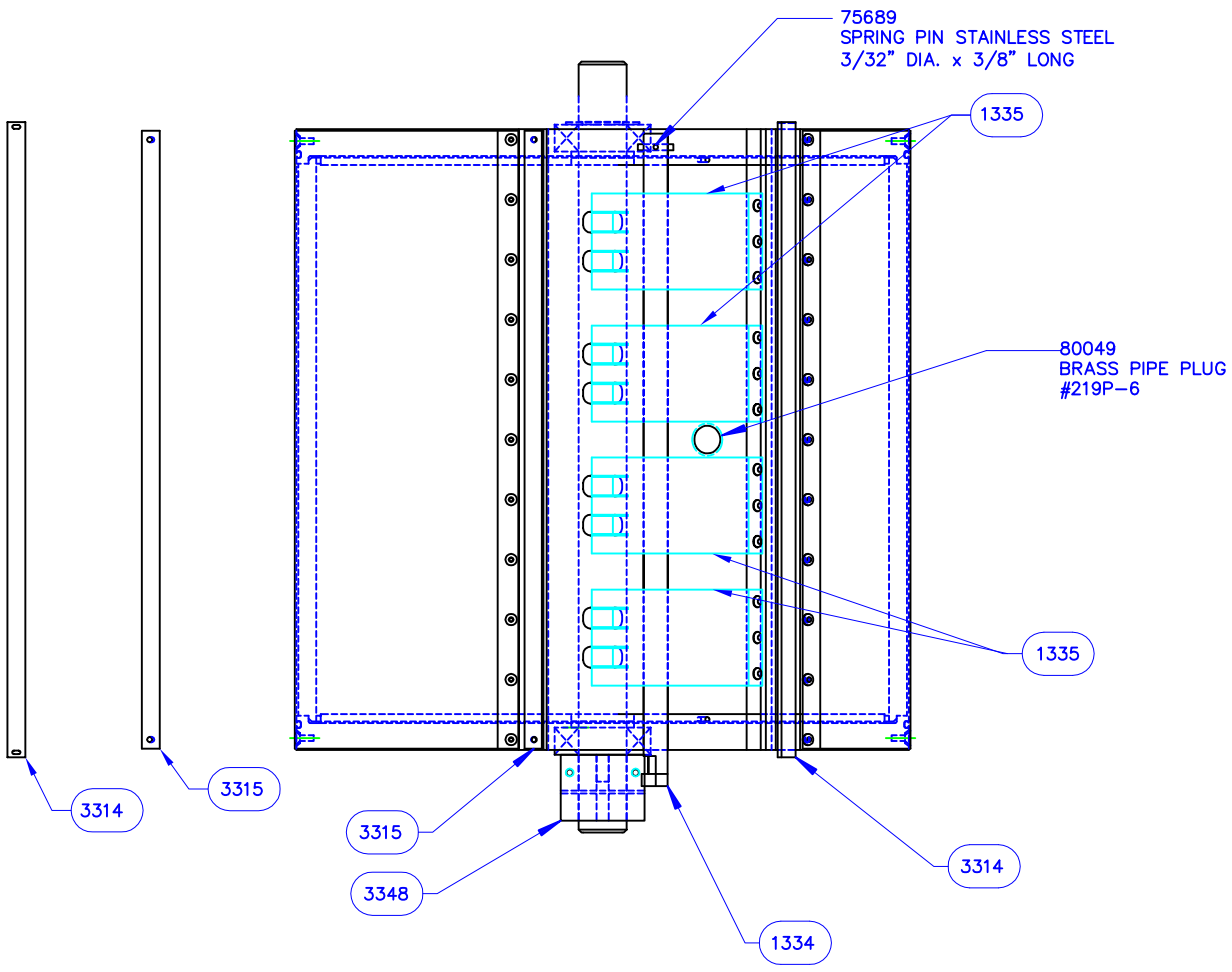
TOP ASSEMBLY - SIDE VIEW

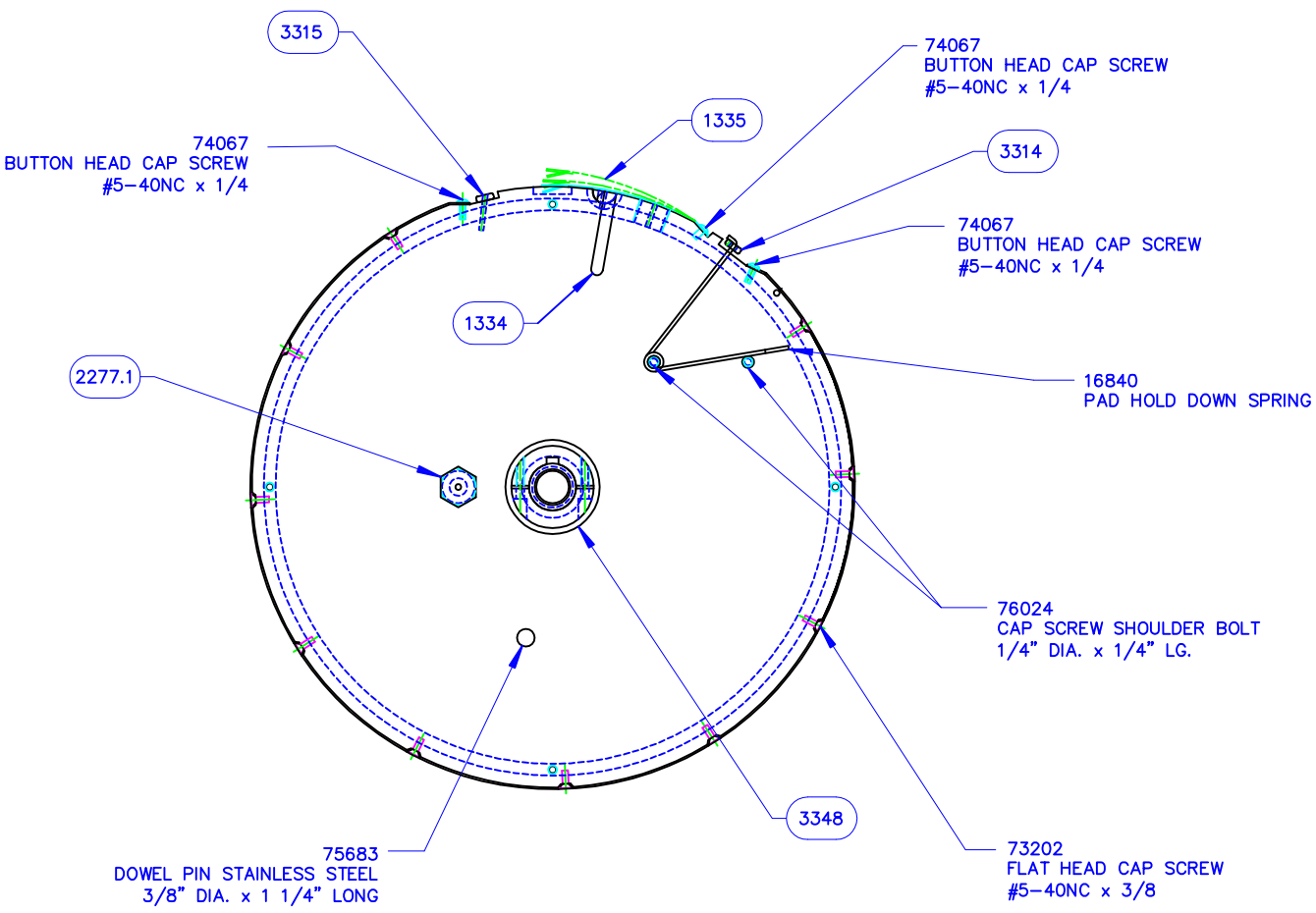
Scale:	1:4	

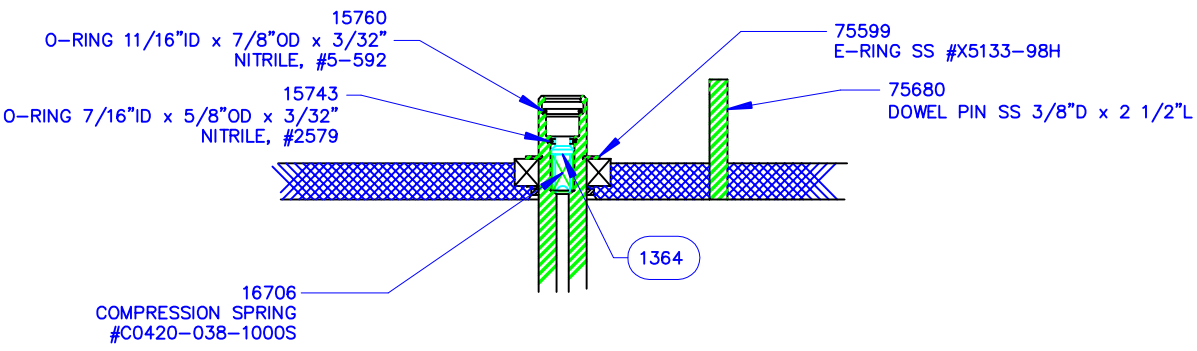


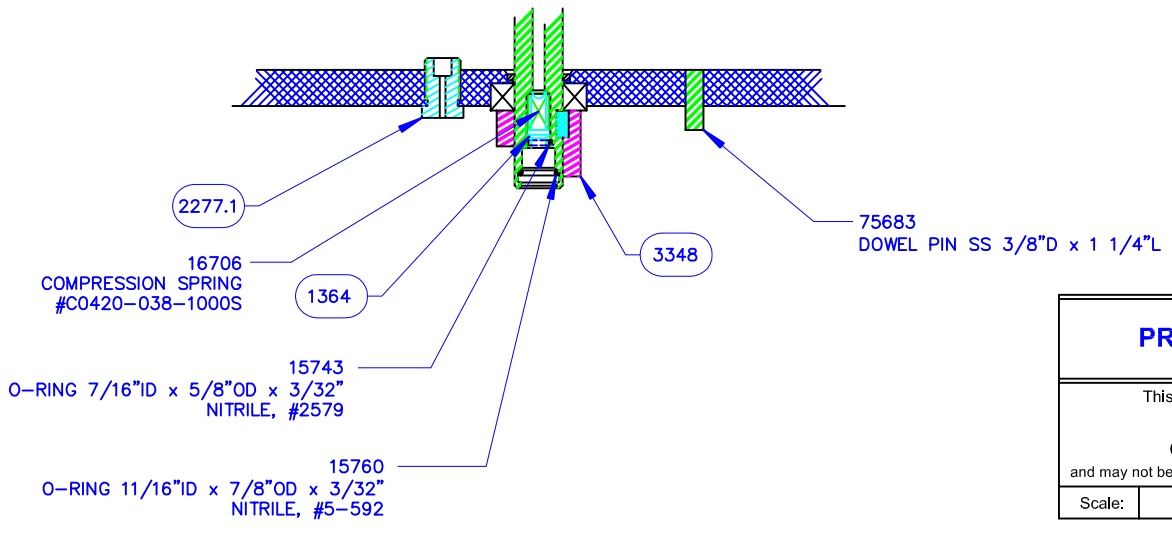
TOP COVER

Scale:	1:8	







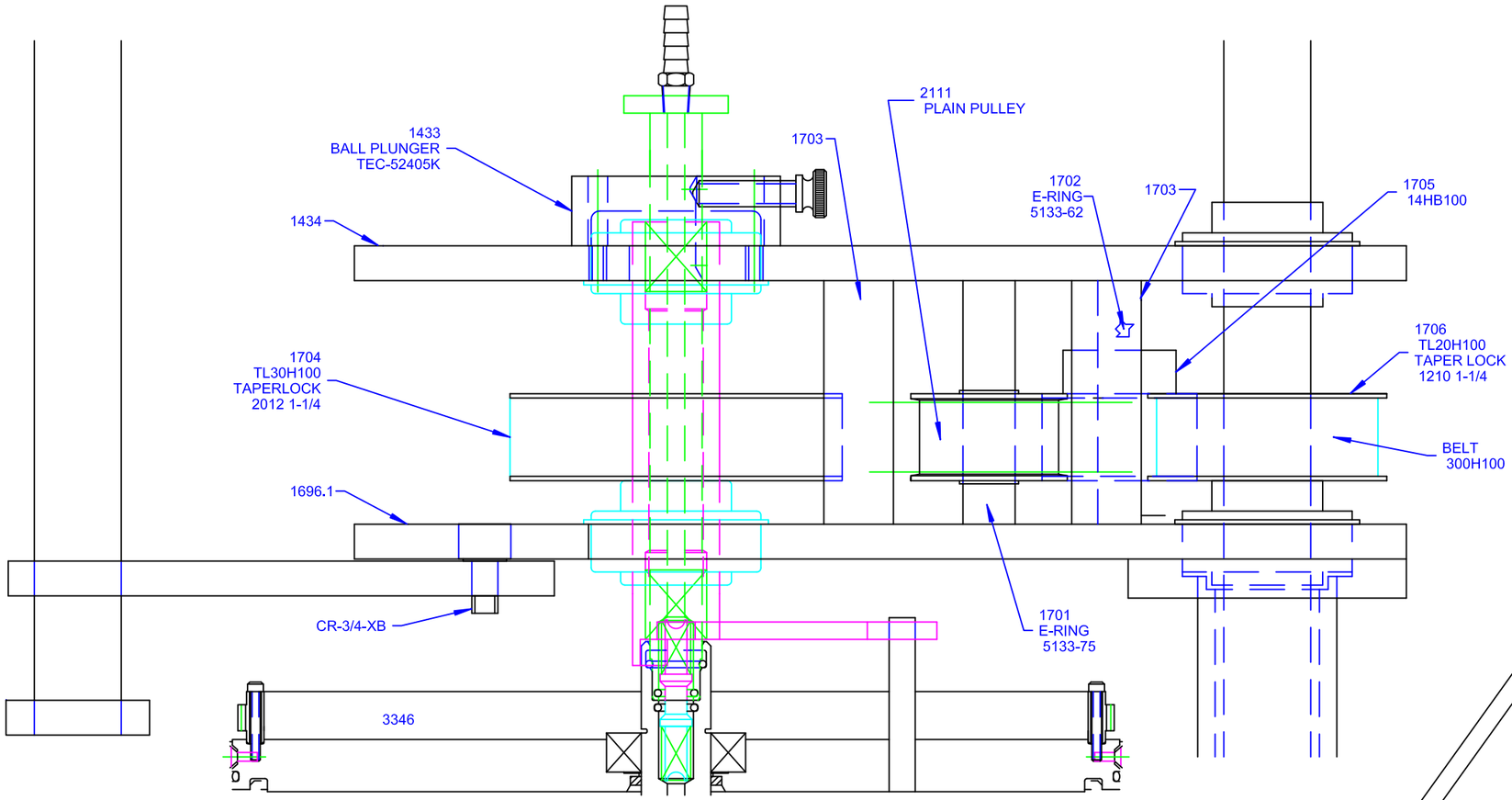


PRINT CYLINDER

Scale:	1:4	

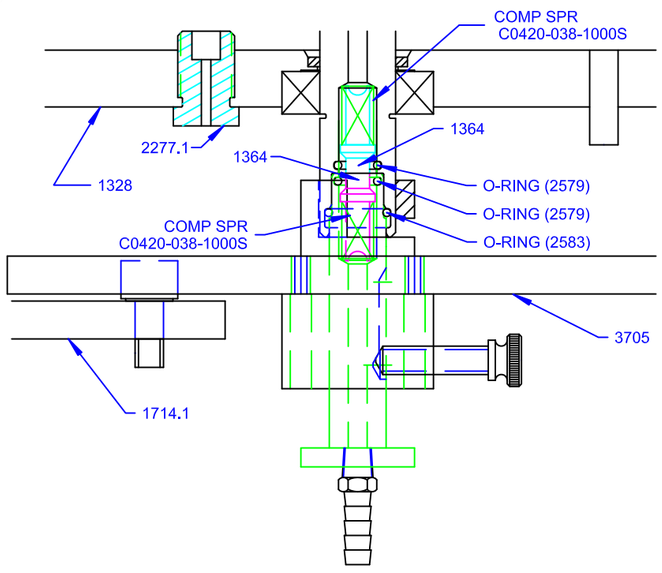
PRINT CYLINDER
INK IN/OUT CONNECTIONS

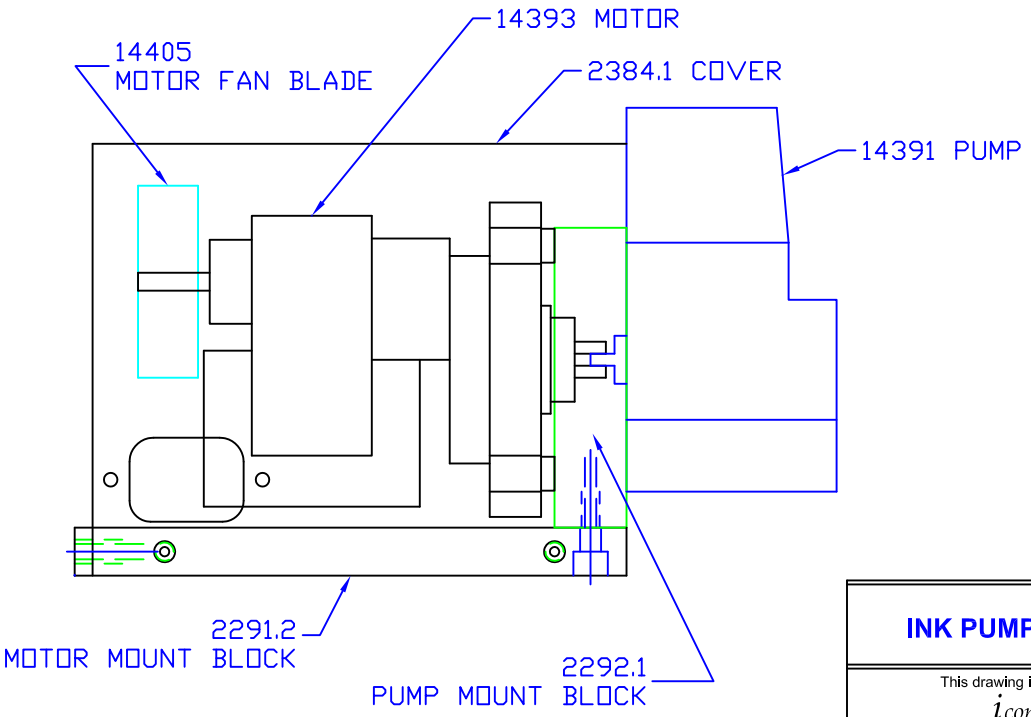
Scale:	1:2	



DRIVE SIDE

OPERATOR SIDE



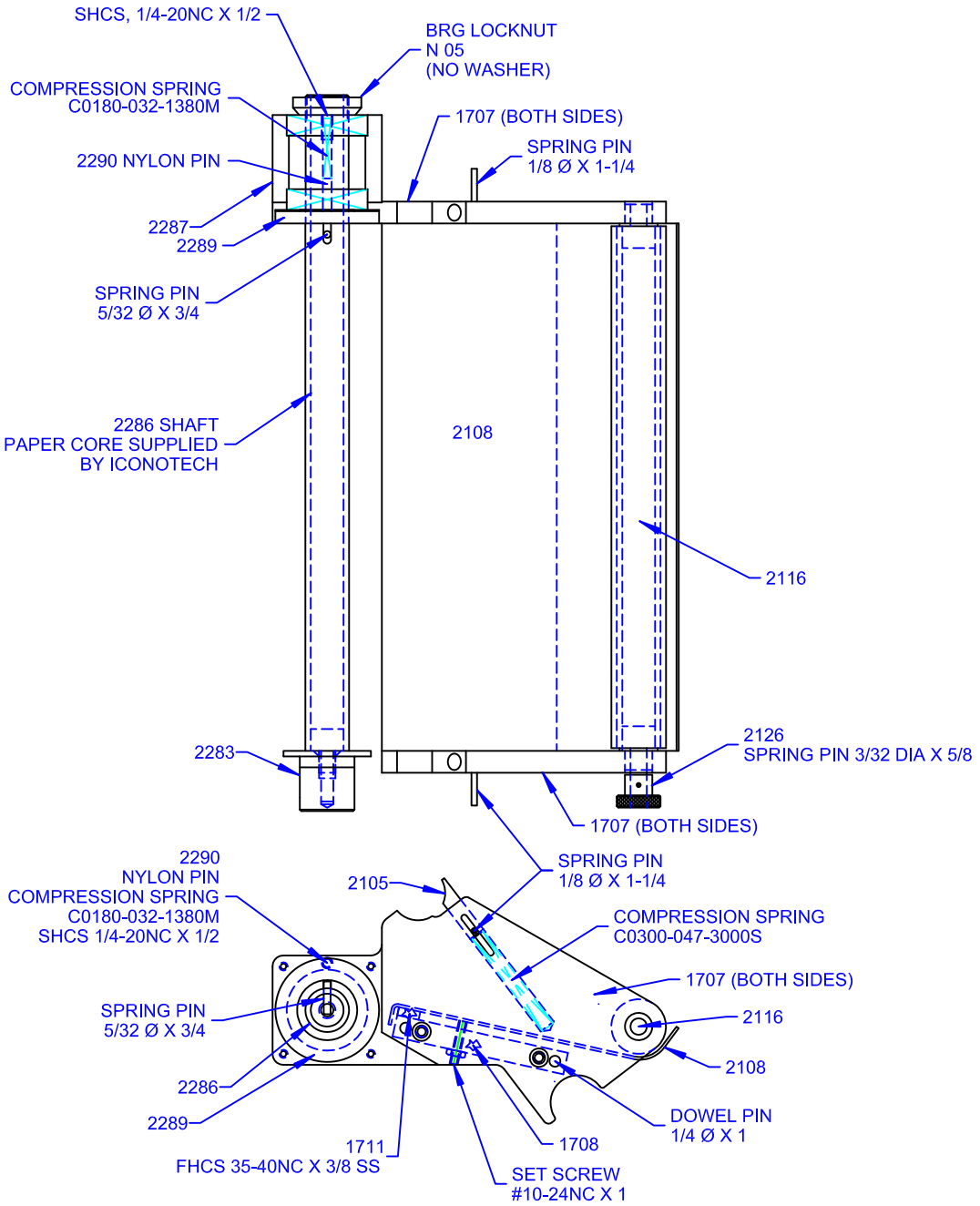


INK PUMP & MOTOR

Scale:	1:2	

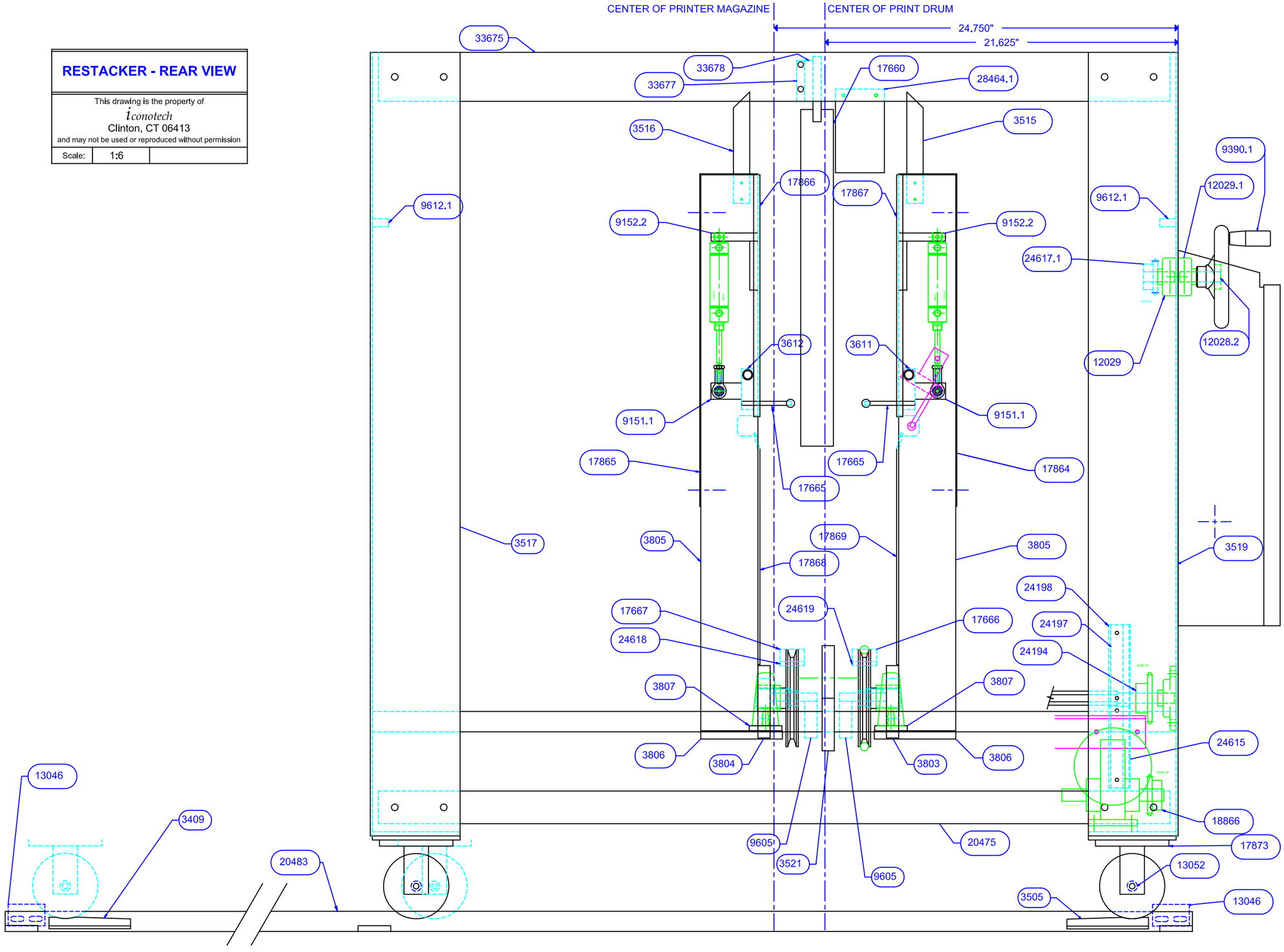
STENCIL LOADING ASSY

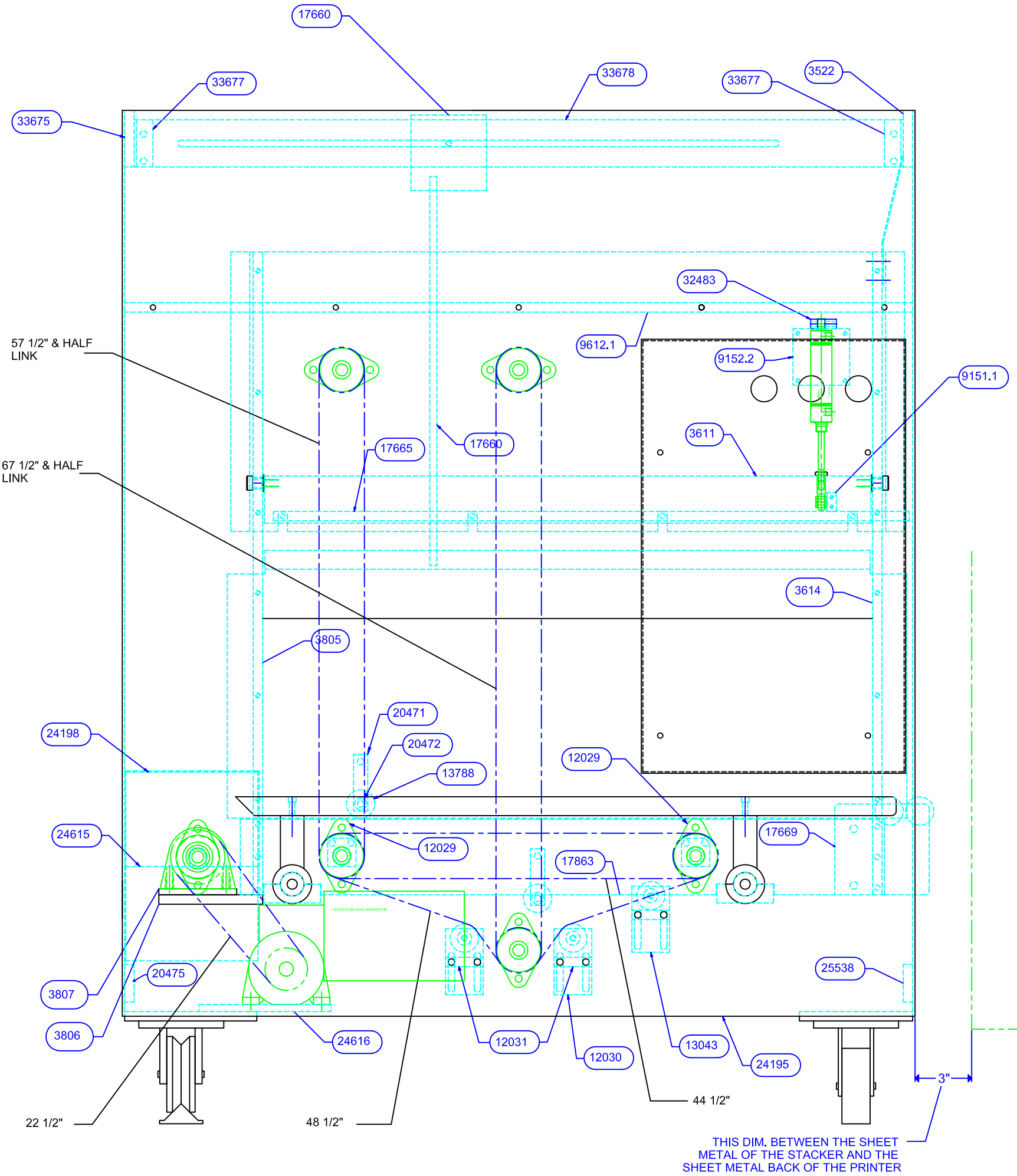
Scale:	1:4	



RESTACKER - REAR VIEW

Scale:	1:6	



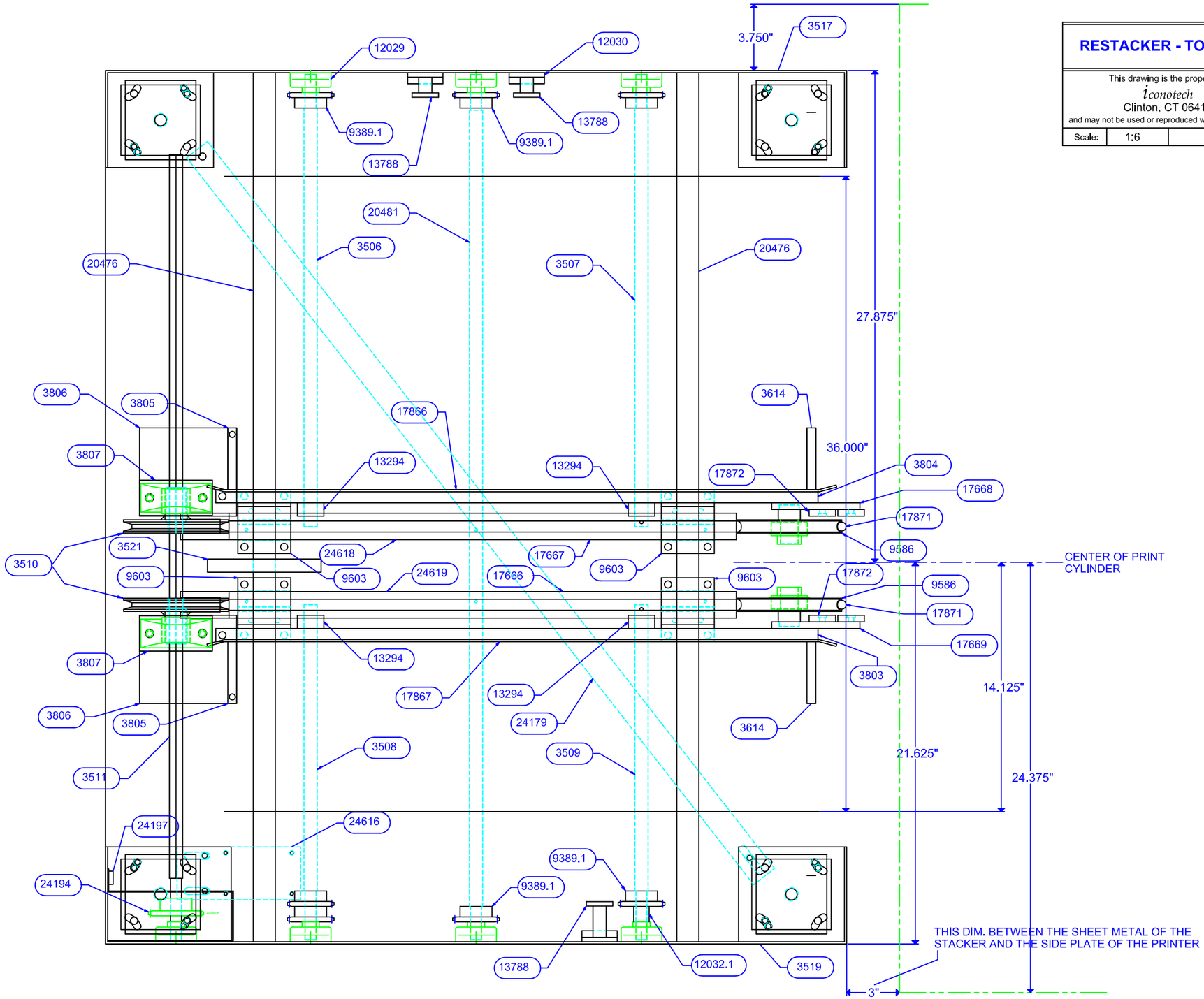


RESTACKER - SIDE VIEW

Scale:	1:6	

RESTACKER - TOP VIEW

Scale: 1:6



APPENDIX

CROSS REFERENCE – NEW P/N'S TO OLD P/N'S

We recently changed part numbers for the machined parts that go into our printers in order to fit our production management systems. Our assembly drawings still have the old part numbers for reference. Please use the following cross reference list to find the current part numbers when looking up a part referenced in the drawings.

CROSS REFERENCE - NEW P/N'S TO OLD P/N'S

PRINT MODULE, CORE- 0190000

PRINT CYLINDER

Qty	Old Part Nbr.	New Part Nbr.	Description
1	3345	0174666	*Print Cylinder Sub Assembly*
1	3314	0174672	Movable Mount Bar
1	3315.1	0174673	Fixed Mount Bar
4	1335.3	0174674	Clamp Lift Spring (Stencil Finger)
1	1334	0174675	Spring Lifter
1	2277.2	0174676	Vacuum Relief Housing
1	49458	0174677	Drive Pin Fix
1	3952	0174683	Print Cylinder Lift Handle

STENCIL LOAD TRAY

Qty	Old Part Nbr.	New Part Nbr.	Description
1	3327	0174684	*Load Tray Sub Assembly*
1	1707	0174685	Side Plate, D.S.
1	3351	0174686	Side Plate, O.S.
1	1708.1	0174687	Side Plate Spacer
1	2108	0174688	Stencil Load Sheet Spring
1	1711	0174689	Stencil Load Sheet Spring Spacer
1	2287	0174690	Bearing Housing
1	2289	0174691	Friction Disc
1	2290	0174692	Friction Pin
1	3356	0174693	Bearing Nut QPQ
1	2116.1	0174694	Feed Roller
1	2126	0174695	Feed roller Knob
1	2286.1	0174696	Paper Tube Mounting Shaft
1	2283	0174697	Knob
1	2105	0174698	Locking Pin

INK PUMP SUB ASSEMBLY

Qty	Old Part Nbr.	New Part Nbr.	Description
2	3335	0174699	*Ink Pump Sub Assembly*
2	2384.2	0174700	Pump Motor Cover
4	2292.1	0174701	Pump Mount
2	2291.2	0174702	Mounting Plate

UPPER FRAME SUB ASSEMBLY

Qty	Old Part Nbr.	New Part Nbr.	Description
1	4252	0187539	Upper Side Plate, O.S.
1	3635	0187538	Upper Side Plate, D.S.
1	1716	0174703	Support Rod, 1.25"
1	1719	0174704	Support Rod, 1"
1	2115.1	0174705	Guard Hinge
2	3638	0174706	Gas Spring Mount Modified
1	2117	0174707	Guard, Top Cover
1	4254	0174708	Drum Mount Plate, O.S.
1	4253	0174709	Drum Mount Plate, D.S.
1	3556	0174710	Drum Drive Mount Plate

CROSS REFERENCE - NEW P/N'S TO OLD P/N'S

2	1703	0174711	Drive Mount Spacer
1	1698	0174712	Spacer Tube
1	1699.1	0187537	Top Head Shaft
1	1714.2	0187540	Drum Lift Shaft
1	none	0187541	Drum Lift Shaft Arm- Drive Side
1	none	0187542	Drum Lift Shaft Arm- Operator Side
1	6135	0174734	Cam Follower, Modified
1	1706	0186087	Head Shaft Pulley
1	3249	0186088	Taperlock Bushing (Head Shaft Pulley 1706)
2	1704	0186089	Head Shaft & Drive Shaft Pulley
2	3248	0186090	Taperlock Bushing (Hd/Dr Shaft Pulley 1704)
2	2111	0174733	Idler Pulley
1	3557	0174732	Drive Belt Tensioner
1	4946	0174731	Drive Shaft Assembly
2	6143	0174723	Pin Thumb Screw
1	1433.1	0174721	Pin Housing, D.S.
1	4976	0174722	Ink Pin Assembly, D.S.
4	1364	0174716	Disconnect Needle
1	1366.2	0174719	Pin Housing, O.S.
1	4975	0174718	Ink Pin Assembly, O.S.
1	2284	0187543	Load Cam
1	3581	0186146	Modified Gear- Headshaft Drive- NSS1254
1	3582	0186147	Headshaft Drive Gear Spacer
2	3578	0186166	Bearing Block, ER-16 (Head Shaft)
1	100670	0186165	Flight Chain Headshaft- Spline
1	3242	0186153	Taperlock Pully- TL20H100
1	3241	0186154	Taperlock Bushing- 1210 X 7/8
1	3243	0186148	Taperlock Pully- TL40H100
1	3237	0186152	Taperlock Bushing- 2517 X 1
1	2009.1	0174724	Transfer Gear Axle
1	2112	0174725	Gear/Pulley Spacer
1	2007	0174727	Transfer Belt Pulley, Modified 20HB100
1	154705	0154705	Containment Washer for 3991
1	154706	0154706	Containment Washer for 3991
1	164473	0164473	Roller Idler Spur Gear, Modified NSF1248A Fiber
1	3082	0174728	Idler Gear Axle
1	4105	0174729	Timing Belt Tensioner
1	1718	0174753	Pivot Stop
1	2119	0174754	Lift Spring Shoulder Bolt, Modified
1	none	0174588	Drum Height Adjustment Knob
1	3716.1	0174713	Drum Level Screw Block
1	3714	0174587	Adjustment Spline
1	3713	0174714	Height Screw
1	3715	0174715	Ball Plunger Mount
1	none	0174589	Anti Rotate
2	1640	0186084	Bearing Block, ER-20S (Upper Head Shaft)
2	1638	0186082	Bearing Block, ER-16 (Impression Roller Shaft)
2	3577	0186083	Bearing Block, ER-16 (Exit Roller Shaft)

CROSS REFERENCE - NEW P/N'S TO OLD P/N'S

1	2381.2	0186213	Roller Shaft (Discharge)
1	3580	0186081	Roller Drive Spur Gear, Mod NSS1254 (Impr)
1	3751	0174752	Discharge Roller Drive Belt, 1/4"Eagle
1	2227	0174751	Roller Belt Pulley
1	1641.1	0186080	Discharge Roller
2	2110	0174755	Discharge Nip Roller Bracket
2	2109	0174756	Discharge Nip Roller Bracket Spacer
1	3352	0174757	Discharge Nip Roller Shaft
2	2104	0174758	Nip Roller, Discharge
1	3211	0174759	Blow Off Support Rod
2	3212	0174760	Blow Off Mount Support
2	3213.1	0174761	Blow Off Mount
1	4256	0174798	Front Feeder Cover
1	2114.2	0174663	Discharge Guard

PRINT MODULE, BOX/BAG- 0190012			
Qty	**Old Part Nbr.**	**New Part Nbr.**	**Description**
1	4113.1	0186207	Impression Roller- SBR 40 Dur.
1	4115	0186211	Impression Roller Shaft, 40 Dur.
1	3095	0186210	Transfer Plate
1	3634	0186086	Lift Shaft Drive Arm- Box/Bag
2	3096	0186208	Transfer Plate Support
2	3106	0186209	Transfer Plate Mount
1	NEW	0186206	Spring Mount Standoff
1	3681	0186205	Air Cylinder Mounting Spacer, Dual
1	3665	0174629	Air Cylinder Mounting Plate, Dual
1	4140	0174790	Anti-Rotate Plate
1	59096	0174738	Air Knife Bag Guide
1	4183.1	0174780	Single Rev Shaft Box/Bag
1	4184.1	0174781	Single Rev Shaft Bushing
2	3897	0174782	Single Rev Pie Cam
1	4185	0174783	Air Switch Spacer
1	4186	0174784	Air Switch Nut Block
1	4187	0174785	Air Switch Mount
1	4188	0174786	Air Switch Mount Plate
2	3534	0174787	Exit Air Blow Off Mount
1	1672	0174763	Single Rev Shaft Bearing Block
1	3105	0174764	Single Rev Shaft Bearing Block
1	3774	0174766	Single Rev Prox Arm
1	38650	0174767	Single Rev Shaft Spacer
1	3350	0174768	Single Rev Shaft Sensor Bracket
1	1690	0174769	Single Rev Sensor Bracket

1	3610	0174770	Single Rev Disc
3	13913	0174771	Single Rev Prox Mount
1	3592	0174772	Single Rev Sporcket, Large
1	3593	0174773	Single Rev Tensioner Bracket
1	3591	0174774	Single Rev Sprocket, Small
1	3601	0174776	Tensioner Idler Sprocket

FEEDER MODULE, CORE- 0190001			
Qty	**Old Part Nbr.**	**New Part Nbr.**	**Description**
1	3596	0186168	Feeder End Cover
1	3588	0186167	Discharge End Cover
1	63821	0186170	Main Side Plate, O.S.
1	3616.1	0186169	Main Side Plate, D.S.
1	28478	0186141	E-Stop Box
1	35076.1	0186142	Stacker Junction Box
1	25854.1	0186143	Bushing, .75 Quick Connect
2	1648.1	0186155	Support Shaft
1	3589	0186164	Ink Pump Drip Pan
2	79675	0001893	Handwheel
2	79678	0186161	Digital Readout Spacer
4	1891	0186162	Lead Screw Adjustment Sprocket
1	63849	0186158	Front Lead Screw, D.S. Handwheel
1	63848	0186159	Front Lead Screw, O.S. Handwheel
2	63859	0186160	Lead Screw, D.S.
2	79786.1	0186163	Chain Tensioner
1	105732	0186156	Chain Guard, O.S.
1	105733	0186157	Chain Guard, D.S.
1	80515	0186150	Drive Belt Guard
1	80516	0186149	Drive Belt Guard Bottom
1	1659.2	0186151	Gearbox/Motor Mount

FEEDER MODULE, HANDFEED- 0190006			
Qty	**Old Part Nbr.**	**New Part Nbr.**	**Description**
1	3604	0186091	Hard Rail, D.S.
1	3605	0186092	Hard Rail, O.S.
1	3083.1	0186093	Chain Guide Rail, D.S.
1	3085.1	0186094	Chain Guide Rail, O./S.
6	2218	0186095	Flight Chain Set w/Double Links
3	1880	0186096	Lead Screw Threaded Block
1	3708	0186097	Lead Screw Threaded Block w/ Brace
1	3707	0186212	Lead Screw Block Brace
6	3808S	0174788	Flight, Bag w/Roller
6	2370	0174789	Roller, Flight
1	3744	0186099	Flight Chain Guard, O.S. (Inside)
1	3745	0186100	Flight Chain Guard, D.S. (Inside)
2	3387	0186101	Flight Chain Guard Spacer

2	3606	0186102	Tensioner Plate
4	2123	0186103	Idler Sprocket Spacer
4	3244	0186134	Idler Sprocket
2	38651	0186104	Tensioner Hex Bolt- Modified
2	38652	0186105	Tensioner Hex Bolt- Modified
2	100671	0186106	Bearing Plate (for ER-28)
2	3599	0186107	Bearing Plate Mount
1	100673	0186108	Spline Hub- Adjustable
1	100672	0186109	Spline Hub Sprocket- Adjustable
1	2226.1	0186110	Spline Hub- Fixed
1	3584	0186111	Tail Shaft Floater Sprocket Mount, D.S.
1	4159	0186112	Tail Shaft Floater Sprocket Mount, O.S.
2	3597	0186113	Floater Sprocket, Modified 60A18
1	3797	0186114	Slide Bar, Front O.S.
1	3798	0186115	Slide Bar, Back O.S.
1	3796	0186116	Slide Bar, Front D.S.
1	3799	0186117	Slide Bar, Back D.S.
2	3428	0186118	Bottom Slide Bar, Front D.S. & Back O.S.
1	3419	0186119	Bottom Slide Bar, Back D.S.
1	3795	0186120	Bottom Slide Bar, Front O.S.
2	3429	0186121	Magazine Upright
1	3425	0186122	Magazine Upright
1	3802	0186123	Magazine Upright
1	3426	0186124	Magazine Side Plate, O.S.
1	3427	0186125	Magazine Side Plate, D.S.
1	4190	0186126	Flight Chain Entry Guard, D.S
1	4191	0186127	Flight Chain Entry Guard, O.S.
1	53701	0186128	Flight Chain Guard, D.S.
1	53701.1	0186129	Flight Chain Guard, O.S.
1	3344.1	0186130	Center Hold Up Rail
2	3343	0186131	Center Hold Up Rail Mount
1	4061	0186132	Eye Mount
1	4091	0186133	Blank Backstop

FEEDER MODULE, HAND FEED TABLE- 0190013			
Qty	**Old Part Nbr.**	**New Part Nbr.**	**Description**
1	4169.1	0174740	Slide Rail Support
1	4170.1	0174741	Magazine T Rail
1	4168	0174742	Magazine Bottom Support Rail
1	4176	0174743	Load Tray
4	4171	0174744	T Rail Clamp Block
2	4166	0174745	Magazine Bottom Support Rail, O.S.
2	4177	0174746	Load Tray Stiffener

CROSS REFERENCE - NEW P/N'S TO OLD P/N'S

1	4175	0174747	Magazine Stabilizer Bar
2	4163	0174748	Magazine Support, Long
2	4164	0174749	Magazine Support, Short
2	4165	0174750	Support Spacer