

Paper Machine Sample Report

Cumming, Georgia

No. 3 Paper Machine

DRYER SECTION INSTALLATION & MACHINE PROFILE

5/15-19/00

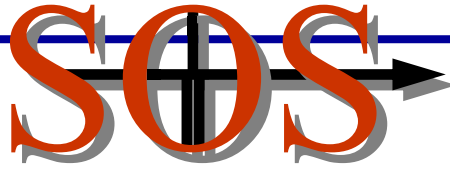
SOS# GA0020

PO# 123456

800-638-8936

212 Trexler Lane
Rock Hill, SC 29732

STRAIGHTLINE OPTICAL SERVICES INC.

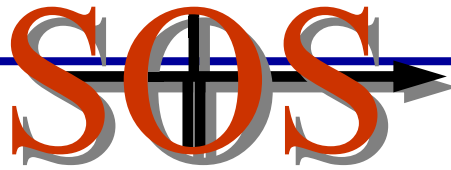


PAPER MACHINE SAMPLE REPORT

SOS#:	GA0020
PO#:	123456
SERVICE REQUESTED BY:	Gary Christopher
CONTACT PERSON:	Gary Christopher
MACHINE:	No. 3 Paper Machine
SECTION:	Dryer Installation and Machine Profile
DATE STARTED:	05/15/99
DATE FINISHED:	05/19/99
ESTIMATED TIME:	As Required
ACTUAL TIME:	As Needed
SOS TECHNICIANS:	Spencer Owens – Days Mike Bennett – Nights
MECHANICS PERFORMING WORK:	SOS

REASON FOR SERVICE:

SOS worked under the direction of Gary Christopher. The scope of the work was to assist the mill with the alignment and installation of two dryer sections. SOS was also asked to survey various components and the existing plugline of the machine, and work with the mill's mechanics to correct any problems found.

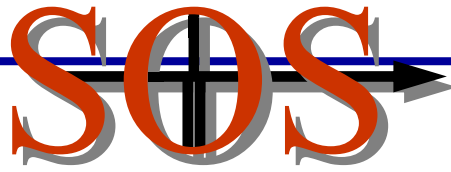


ALIGNMENT: 1 ST DRYER SECTION

- ◆ The datum for the inspection of all rolls was the offset machine plug line. The level reference was gravity level.
- ◆ SOS inspected the existing plug line at the 1st Dryer Section, and it was not a true representation of the overall machine centerline. SOS corrected this plug line, as well as the other offset plug lines on this machine. SOS verified the new line, and these results can be seen on drawings GA0020E and F. Specific details can be seen in the plugline verification and recommendation portion of this report.
- ◆ SOS inspected the sole plates after they had been set by Mr. Jones and Mr. Edwards. The plates were within the acceptable tolerances.
- ◆ SOS then aligned the templates used for drilling the sole plates. The tending side templates were aligned in the cross machine and machine direction using the plug line as the parallel reference. The machine direction was placed on a specific dimension from an existing dryer can. The drive side templates were then placed on the correct dimension from the dryer can and gauged to the tending side templates. The templates pre-marked holes were then transferred to the sole plates by using a properly sized drill bit.
- ◆ SOS inspected all dryer cans for level after installation. No dryer cans required any shim.
- ◆ SOS inspected one dryer can in the bottom run and one in the top run for parallel. SOS then instructed a SOS millwright on mechanically aligning the remaining cans for parallel. The gear mesh on each dryer was set, then the tending side moved until proper alignment was achieved. The device used for this uses a .001” indicator, so proper tolerances can be held. SOS verified the correctness of all dryer cans and gear mesh.
- ◆ SOS inspected and corrected all pocket felt rolls for parallel. After parallel correction, SOS inspected and corrected all rolls for level.
- ◆ SOS inspected and corrected all upper felt rolls for level and parallel. SOS also corrected the Tension Roll’s pivot pins. All final data can be viewed on drawings GA0020A and B.

RECOMMENDATIONS: 1ST DRYER SECTION

SOS recommends annual inspections of dryer section components. This detects potential problems before they cause unscheduled downtime, expensive repairs, and quality problems.

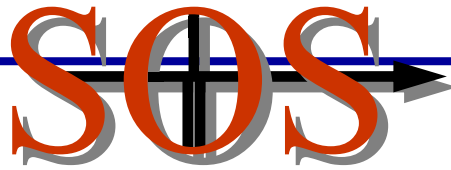


ALIGNMENT: 2ND DRYER SECTION

- ◆ The datum for the inspection of all rolls was the SOS corrected offset machine plug line. The level reference was gravity level.
- ◆ SOS inspected the sole plates after they had been set by the millwrights. The plates were within the acceptable tolerances.
- ◆ SOS then aligned the templates used for drilling the sole plates. The tending side templates were aligned in the cross machine and machine direction using the plug line as the parallel reference. The machine direction was placed on the center line of the pinion gear. The drive side templates were then placed on the correct dimension from the box shaft and gauged to the tending side templates. The templates pre-marked holes were then transferred to the sole plates by using a properly sized drill bit.
- ◆ SOS inspected all cans for level after installation and verified all corrections necessary.
- ◆ SOS inspected the two dryer cans on either side of the pinion gear. The drive side of each dryer was set to the proper dimension from the center line of the pinion shaft. The tending side of each dryer was then squared to the drive side. SOS then squared the dryer immediately above the pinion gear. SOS then instructed the millwrights on mechanically aligning the remaining cans for parallel. The gear mesh on each dryer was set, then the tending side moved until proper alignment was achieved. The device used for this uses a .001” indicator so proper tolerances can be held. SOS verified the correctness of all dryer cans and gear mesh.
- ◆ SOS inspected and corrected all pocket felt rolls for parallel. After parallel correction, SOS inspected and corrected all rolls for level.
- ◆ SOS inspected and corrected all upper felt rolls for level and parallel. SOS also corrected the Tension Roll’s pivot pins. All final data can be viewed on drawings GA0020C and D.

RECOMMENDATIONS: 2ND DRYER SECTION

SOS recommends annual inspections of dryer section components. This detects potential problems before they cause unscheduled downtime, expensive repairs, or quality problems.

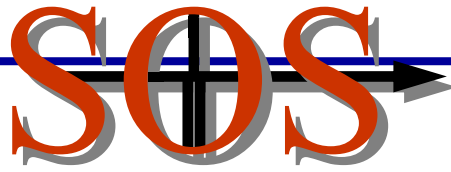


ALIGNMENT: SIZE PRESS

- ◆ The datum for the inspection of all rolls was the SOS corrected offset machine plug line. The level reference was the gravity level.
- ◆ SOS inspected all of the components in the Size Press area. SOS found the Tension Roll out of parallel, approximately one half inch. There was adequate room for movement in the frame, however the Size Press Lead-in Roll which is mounted to the same frame had to be shimmed out to compensate for this movement.
- ◆ SOS also corrected the Size Press Pivot Roll. This roll was out of level to the fixed roll and was causing a severe scissors in the nip.
- ◆ SOS worked with mill personnel on the correction of the scanner. Because of the severity of misalignment in the Tension Roll, the scanner could not be properly positioned. The web would not pass through the scanner at the proper position on the tending side and drive side.
- ◆ Complete details can be seen on drawing GA0020F.

RECOMMENDATIONS: SIZE PRESS

SOS recommends inspecting all sets of rolls that are part of a nip. All information can then be documented for each set, and when a roll change occurs proper alignment can be achieved. SOS recommends inspecting all components adjacent to re-wetting the sheet at least annually. This is one of the most critical alignment area in the machine. Severe runability and quality problems will result from misalignment in these areas.

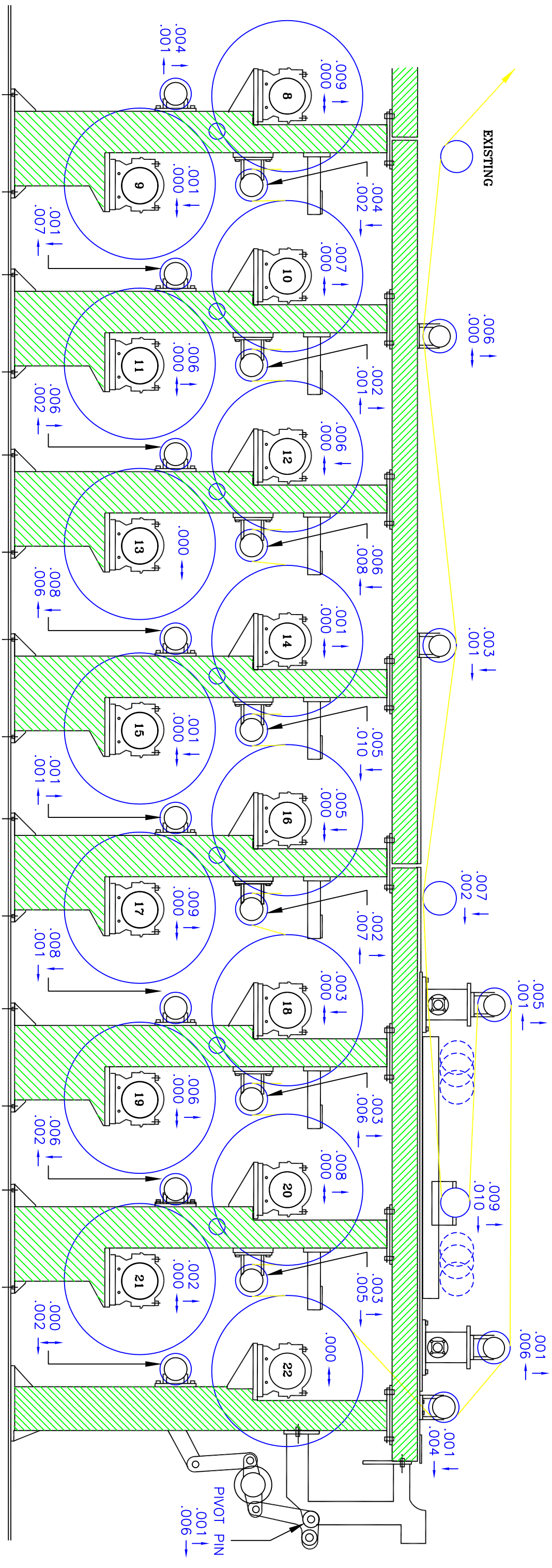


ALIGNMENT: PLUGLINE VERIFICATION AND MISC.

- ◆ SOS inspected the existing plug line and found it was not a true representation of the machine centerline. SOS then inspected several components of the machine. This was done to acquire the true representation of the machine centerline. After the correct line was established, SOS marked all existing plugs on the machine. These new marks, punches, were identified by scribing arrows to the correct mark on each plug. Special care should be taken to use the correct mark.
- ◆ SOS inspected several components which the mill suspected may have alignment problems. The results of all of these inspections can be seen on drawings GA0020E and F.

RECOMMENDATIONS: PLUG LINE VERIFICATION

- ◆ SOS recommends inspecting the plug line for straightness before each use. A more comprehensive line verification should be performed on an annual basis. Due to the conditions which were present during the current lines installation, this line should be checked before it's next use. Examples of these conditions are temperature change and both machines being down.
- ◆ SOS recommends re-inspecting the Coaters and all adjacent components. SOS was informed that some premature wear was being observed in the Coater Rolls. This wear could be caused by misalignment. Care should be taken to inspect and correct all components in these areas.
- ◆ SOS recommends inspecting the 4th Dryer Section, as time did not allow for an extensive inspection.
- ◆ SOS recommends inspecting all three wet presses. These should be inspected while loaded and scheduled into a time window of several hours.
- ◆ All rolls involved in nips should be inspected. This includes all spares, as they are installed in the machine. This allows for individual keys and shims to be made for each roll. This allows for correct alignment with all sets of rolls.

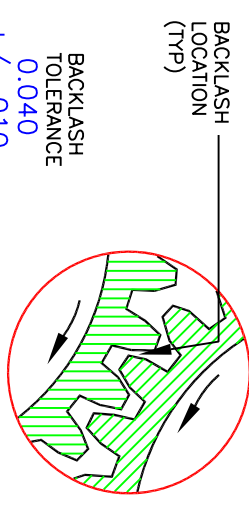


- (1) NO SCALE INTENDED.
- (2) DATA INDICATES THE COMPONENT'S TENDING SIDE POSITION RELATIVE TO ITS DRIVE SIDE. THE DRIVE SIDE IS CONSIDERED THE "ZERO" REFERENCE (.000 +)
- (3) DATA IN BLUE INDICATES THE COMPONENT'S POSITION AS INSPECTED.
- (4) DATA IN RED INDICATES THE COMPONENT'S POSITION AFTER ADJUSTMENTS.

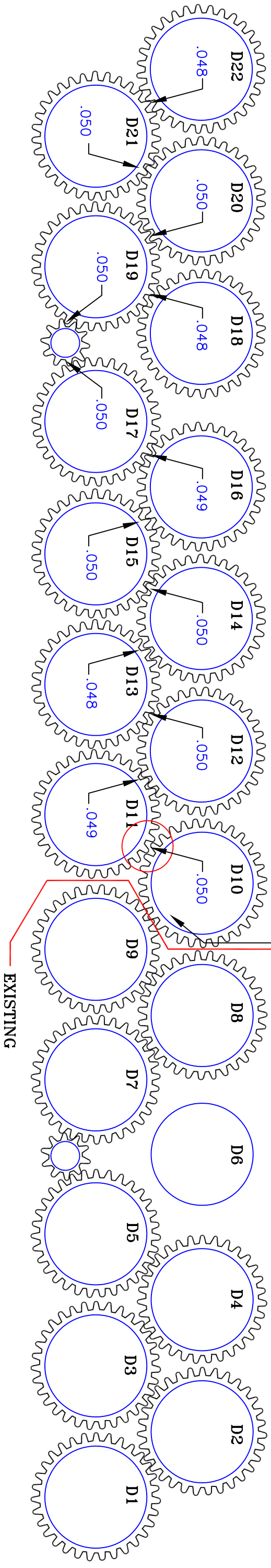
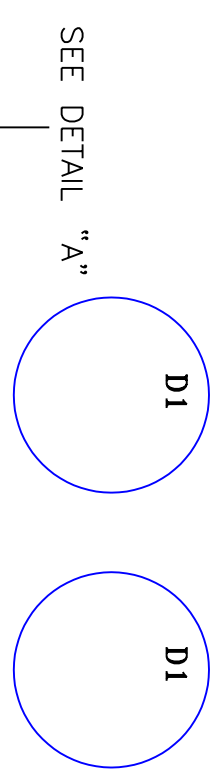
STRAIGHTHTLINE OPTICAL SERVICE

SOS FILE NO. GA0020A
 DATE: 5/19/00
 DRAWN BY: CCA

PAPER MACHINE SAMPLE REPORT
 CUMMING, GEORGIA
 NO. 3 PAPER MACHINE
 1ST SECTION



DETAIL "A"



- (1) NO SCALE INTENDED.
- (2) DATA INDICATES THE COMPONENT'S TENDING SIDE POSITION RELATIVE TO ITS DRIVE SIDE. THE "ZERO" REFERENCE (.000 +) POSITION IN BLUE INDICATES THE COMPONENT'S POSITION AS INSPECTED.
- (3) DATA IN BLUE INDICATES THE COMPONENT'S POSITION AFTER ADJUSTMENTS.
- (4) DATA IN RED INDICATES THE COMPONENT'S POSITION AFTER ADJUSTMENTS.

STRAIGHTLINE OPTICAL SERVICE

SOS FILE NO. GA0020B	PAPER MACHINE SAMPLE REPORT CUMMING, GEORGIA NO. 3 PAPER MACHINE 1ST SECTION / GEAR MESH
DATE: 5/19/00	
DRAWN BY: CCA	