25X1

PAR 215

29 Feb 64

SUBJECT: Roller Transport Processor (24 Inch)

TASK/PROBLEM

Design and fabricate a self-threading photographic processor capable of processing sheets up to twenty-four inches wide and continuous web materials up to twenty inches wide.

DISCUSSION

Approval to proceed with PAR 214 was received by message 0886 dated 10 Feb 64. Upon receipt of approval, specification number 204 was revised incorporating changes requested. The revised specification 204-A is attached for information purposes. A revised cost estimate has been completed and will be submitted to the contracting officier under separate cover for approval. Basic data preparatory to starting design layout has been collected.

PLANNED ACTIVITIES

Preliminary design and layout is scheduled to start on/or about 16 Mar 64. Target date for completion is on/or about 15 June 64. Detailed design of some machine parts should be underway by 15 May 64.

Attachment Spec No. 204-A

Spec No. 204-A

Date 29 Feb 64

SPECIFICATION FOR ROLLER TRANSPORT PROCESSOR (24 INCH)

TASK/PROBLEM

Design and fabricate a self-threading photographic processor capable of processing sheets up to twenty-four inches wide and continuous web material up to twenty inches wide. Provide a 20-inch take-up module to handle continuous web materials up to 250 feet long. Provide cassette and feed tunnel to permit daylight operation of equipment with continuous web material 20 inches wide by 250 feet long.

PROCESSING METHOD

Roller transport conveyance through deep tanks. Agitation accomplished by action of the conveying rollers.

MATERIAL CAPABILITIES

Film Size
Cut Sheet - Minimum - 4 x 5 inches
Maximum - 24 inches wide, up to 10 feet in length

Note: Cut sheet films must be packaged and s' ipped in cut sheet form, not cut from roll stock.

Continuous Strip - Minimum - 16mm
Maximum - 20 inches x 250 feet

Material - Certain types of black-and-white aerial and commercial films, black-and-white treated paper base material and black-and-white single and double weight standard paper base materials.

Note: It should be recognized that with roller transport equipment, some of the thinner base materials and all paper base materials may require a pilot tab at the leading edge in order to be self-threading.

Output Rates (Approximate)
Print Material - 8 ft/min.
Negative Material - 4 ft/min.

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PROCESS TIME

Dry to Dry - Print Material - 7 min.
Negative Material - 14 min.

PRODUCT QUALITY

Good commercial quality (approximately 5 years)

PROCESSING TEMPERATURE

70°F to 110°F

DRYING

High-velocity air impingement drying for all film base materials. Drum drying for paper base materials. Drum drier to be auxiliary equipment to operate in tandem with processor conveyance of material from processor to drier not to be self-threading.

OPERATION

Daylight operating capability for all continuous strip material up to 250 feet long. Darkroom feed for all cut sheet material.

PHYSICAL DIMENSIONS

Overall Dimensions (approximate)

Length - 11 feet 6 inches
Width - 40 inches
Height - 48 inches
Weight - 1,500 pounds

RACK HOIST

Light, hand-operated rack hoist required to remove processing racks from machine, furnished with equipment.

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SERVICE REQUIREMENTS

Power - 120/208 volt, 3 phase, 4 wire, 60 cycle a.c. can be converted to 230 volt, 3 phase, 3 wire or 230 volt single phase, 3 wire, 12 to 15 kilowatts.

Water - Hot (150°F) and cold (60° max.) service to operating area at 45 psi minimum. Total consumption 6 to 8 gallons per minute controlled to ±½°F. Operating range 70°F to 110°F.

Air - 25 psi instrument air.

Sewer - 4-inch Duriron service line.

DRAFT

Spec No. 204 Rev. A

Date 2/4/64

Specification
for
Roller Transport Processor (24-Inch)

Mission: Build a self-threading photographic processor capable of processing sheets up to twenty-four inches wide and continuous web material up to twenty inches wide. Provide a 20-inch take-up module to handle continuous web materials up to 250 feet long. Provide cassette and feed tunnel to permit daylight operation of equipment with continuous web materials 20-inches wide by 250 feet long.

Processing Method: Roller transport conveyance through deep tanks. Agitation accomplished by action of the conveying rollers.

Material Capabilities: Film Size

Cut Sheet - Minimum - 4 x 5 inches

Maximum - 24 inches wide, up to ~~10 ft.~~ 40" in length

Note: Cut sheet films must be packaged and shipped in cut sheet form.

Not cut from roll stock

Continuous Strip - Minimum - 16mm

Maximum - 20 inches

Material: Certain types of black and white aerial and commercial films, black and white treated paper base material and black and white single and double weight standard paper base materials.

It should be recognized that with roller transport equipment, some of the thinner base materials and all paper base materials may require a pilot tab at the leading edge in order to be self-threading.

Output Rates: (approximate)

Print Material - 8 ft/min.

Negative Material - 4 ft/min.

Process Time: Dry to Dry:

Print Material - 7 min.

Negative Material - 14 min.

Product Quality: Good commercial quality. (approximately 5 years keeping)

Processing Temperature: 70°F to 110°F

Drying: High velocity air impingement drying for all film base materials. Drum drying for paper base materials. Drum drier to be auxiliary equipment to operate in tandem with processor conveyance of material from processor to drier not to be self-threading.

Operation: Daylight operating capability for all continuous strip material up to 250 ft. long. Darkroom feed for all cut sheet material.

Physical Dimensions: Over-all Dimensions (approximate)

Length - 11 ft. 6 inches

Width - 40 inches

Height - 48 inches

Weight - 1,500 lb.

Rack Hoist: Light, hand operated rack hoist required to remove processing racks from machine, furnished with equipment.

Service Requirements:

Power: 120/208 volt, 3 phase, 4 wire, 60 cycle a.c. can be converted to 230 volt, 3 phase, 3 wire or 230 volt single phase, 3 wire, 12 to 15 kilowatts.

Water: Hot (150°F) and cold (60° max.) service to operating area at 45 psi minimum. Total consumption 6 to 8 gallons per minute controlled to ±½°F. Operating range 70°F to 110°F.

Air: 25 psi instrument air.

Sewer: 4-inch Duriron service line.

 6 Dec 63

DESIGN OBJECTIVE

Roller Transport Processor (24-Inch)

(PAR-215)

Problem

Briefing charts and other large prints are currently handled in essentially tray equipment. Such equipment is extremely wasteful of space, cumbersome and inefficient both in the use of operator effort and in the maintenance of quality.

Proposal

We propose to adapt the self-threading principle of the RT processors to a wide machine capable of handling sheets up to 24-inches wide in either film on treated paper base materials. Provision will also be made for the easy attachment of a take-up module to handle a continuous web up to 10 inches wide. In some cases a lead tab may be required to pilot the leading edge through the machine.

The characteristics of the proposed processor are covered in the attached Specification No. 204 which includes a typical layout for such a machine.

Modular design will be attempted so that conversion to other processing cycles may be achieved by adding the necessary modules.

Spec No. 204

Specification for Roller Transport Processor (24-inch)

Mission: Build a self-threading photographic processor capable of processing sheets up to twenty-four inches wide. Provide a 12-inch take-up module to handle continuous web materials.

Processing Method: Roller transport conveyance through deep tanks. Agitation accomplished by action of the conveying rollers.

Material Capabilities: Film Size

Cut Sheet - Minimum - 4 x 5 inches

Maximum - 24 inches wide, up to 10 ft. in length

Note: Cut sheet films must be packaged and shipped in cut sheet form

Not cut from roll stock.

Continuous Strip - Minimum - 16mm

Maximum - 10 inches

Material: Certain types of black and white aerial and commercial films. Black and white treated paper base material.

It should be recognized that with roller transport equipment, some of the thinner base materials may require a pilot tab at the leading edge in order to be self-threading.

Output Rates: (approximate)

Print Material - 8 Ft/min.
Negative Material - 4 Ft/min.

Process Time: Dry to Dry:

Print Material - 7 min.
Negative Material - 14 min.

Product Quality: Good commercial quality.

Physical Dimensions: Overall Dimensions (approximate)

Length - 11 ft. 6 inches

Width - 40 inches

Height - 48 inches

Weight - 1,500 lb.

Rack Hoist: Light, hand operated rack hoist required to remove processing racks from machine, furnished with equipment.

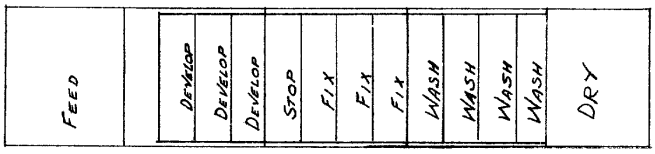
Service Requirements:

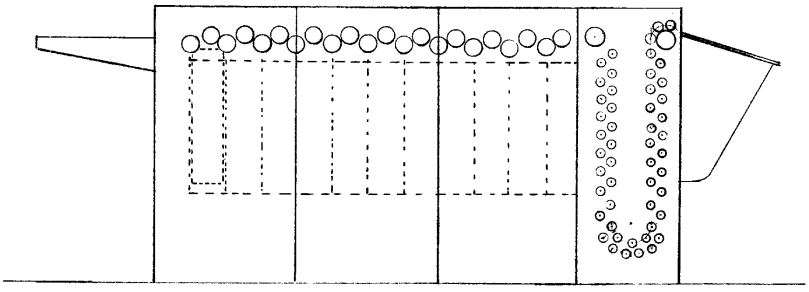
Power: 120/208 volt, 3 phase, 4 wire 60 cycle a. c. can be converted to 230 volt, 3 phase, 3 wire or 230 volt single phase, 3 wire, 12 to 15 kilowatts.

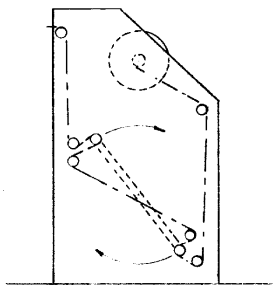
Water: Hot (150°F) and cold (60°F Max.) service to operating area at 45 psi minimum. Total consumption 6 to 8 gallons per minute controlled to $\pm\frac{1}{2}$°F. Operating range 70°F. to 110°F.

Air: 25 psi instrument air.

Sewer: 4-inch Duriron service line.







CUTTING, VIEWING & WINDING MODULE

FIG. 1

SPEC No 204

SECRET