

## User Guide

Master Files Print - Calculations  
V21.1.0200

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EFI PrintStream | V21.1.0200 Master Files Print – Calculations

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# Introduction

## Overview

This document provides user instruction for the Master Files Print – Calculations module of PrintStream.

## Contact Information

### EFI Support

<b>US Phone:</b>	855.334.4457 (first select option 3, then press option 8, then press option 1)
<b>US Fax:</b>	415.233.4157
<b>US E-mail:</b>	<a href="mailto:printstream.support@efi.com">printstream.support@efi.com</a>


Regular Service Desk hours are 8:00 AM to 7:00 PM Central Time, Monday – Friday. Outside of these hours, you may leave a voice mail message and an on-call support representative will be paged. Response time is based on the severity of the issue.

**Note** For problems involving infrastructure (i.e., computers, networks, operating systems, backup software, printers, third-party software, etc.), contact the appropriate vendor. EFI cannot support these types of issues.

### EFI Professional Services

<b>US Phone:</b>	651.365.5321
<b>US Fax:</b>	651.365.5334
<b>E-Mail:</b>	<a href="mailto:ProfessionalServicesOperations@efi.com">ProfessionalServicesOperations@efi.com</a>

EFI Professional Services can help you perform EFI software installations, upgrades, and updates. This group can also help you implement, customize, and optimize your EFI software plus offer a range of training options.



## Press Run Speed

PrintStream supports two choices for press speed calculations - the **Ladder** or **Stair** method and the **Curve** method. A system setting that can be changed by contacting your account manager will determine which method is used. PrintStream uses this switch to determine the calculation method for press run speeds and also for the speeds for section finishing processes.

### Calculation Formula

The first calculation is for the quantity of sheets to pass through the press to determine which quantity break to use. Next take the quantity of the section and divide by the number up on the press and subtract the total number of sheets used for job makeready and plate makeready. This number then represents the total number of sheets that have to pass through the press once the makeready is completed. (We assume this is the point at which the press will start winding up to run speed.)

### Important Points about Press Slow Down Factors

Please note, the initial press run speed is calculated from the above table first and then due to paper slow downs, or ink coverage slow downs, or number of colors or number of webs or special makereadies (modifiers), this base speed is reduced based on the additional factors. If the press speed that you see in the estimate does not correspond to the press speed table alone, consider the other criteria that may be weighing on the speed calculation.

The best way to test the Ladder vs. Curve calculation is to test on a job with no additional slowdowns:

1. Paper with no press speed reduction in the paper master file.
2. A Paper that has no paper type slow down in the press master file.
3. A Press that has no slowdown based on number of webs or colors in the press master file.
4. A Press that has not had any modifiers selected in the estimate that slow the press down.
5. An Ink Coverage type that has no press slowdown factors.

**Sample Data** - Assume the following data is the basis for the calculations below.

Quantity Break	Run Speed
1,000	5,000
3,000	6,000
5,000	7,000
10,000	8,000
20,000	9,000
999,999	10,000

**Ladder or Stair Method** (System ships with this set as the default)

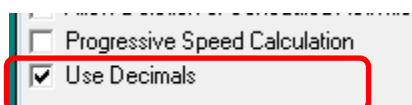
Using the above run speed table for a press run of 50,000 sheets, the system immediately jumps to the single quantity break that encompasses the run quantity. In this case the run is more than 20,000 so the last quantity break will be used – therefore a run speed of 10,000 per hour will be computed.

TOTAL RUN TIME = 5 Hours

AVERAGE RUN SPEED = 10,000 per hour

This run speed of 10,000 per hour will be displayed on the press calculation screen, and if the user presses the run speed button it will also show 10,000 as the run speed.

**Curve Method** (Also referred to as the Progressive Speed Calculation - Master Files Print > Miscellaneous > Estimating Parameters.)



Using the above run speed table for a press run of 50,000 sheets, the system progresses through each quantity break – running the appropriate number of sheets at that speed, until the next quantity break is reached. The formula for the example would be as follows:

- 1st 1,000 sheets run at 5,000 per hour – leaving a balance of 49,000 ( $1,000/5,000$ ) = 0.2 Hrs
- Next 2,000 sheets (3,000 qty break) run at 6,000 per hour – leaving 47,000 ( $2,000/6,000$ ) = 0.33 Hrs
- Next 2,000 sheets (5,000 qty break) run at 7,000 per hour – leaving of 45,000 ( $2,000/7,000$ ) = 0.285 Hrs
- Next 5,000 sheets (10,000 qty break) run at 8,000 per hour – leaving 40,000 ( $5,000/8,000$ ) = 0.625 Hrs
- Next 10,000 sheets (20,000 qty break) run at 9,000 per hour – leaving 30,000 ( $10,000/9,000$ ) = 1.111 Hrs
- Remaining 30,000 sheets (999,999 qty break) run at 10,000 per hour ( $30,000/10,000$ ) = 3 Hrs

TOTAL RUN TIME = 5.551 Hrs for running 50,000 sheets

AVERAGE RUN SPEED = ( $50,000/5.551$  Hrs) = 9,007 per hour

This run speed of 9,007 per hour will be displayed on the press calculation screen, however if the user presses the run speed button it will show 10,000 per hour as the run speed the press reached by the end of the run.

**Note** The Ladder or Stair method is probably the more accurate calculation – especially when quotes with small differences between estimated quantities fall either side of quantity breaks.

Additional example:

**Ladder (Stair) Method****Qty      Press Speed**

1000 3500

5000 4000

10000 4500

25000 5000

99999 6000

Using the press speed table above if my estimate quantity is 7500 the press speed for the entire run is 4500 impressions per hour. Total hours = 1.67

## Flexo Press Calculation

### 'Format' setting

Estimating Master File Setup for the Company : (01) Alaska Incomp - (0100) Mail & Print Plant

File New View Window Help

**Master File - Print**

Sanden 10 Clr 28/22/17

Number: 95 Delete

Press Name: Sanden 10 Clr 28/22/17 ☒ Active

Special M/Rs Ink Factors Job Cost Links

Basic Press Hourly Rates Platemaking Press Speed Run Waste Press M/R

**Configuration**

Max. Colors/Run: 10 Format: Continuous

Min. Paper Size: 4 1/2 x 17 Image Method: Flexo

Max. Paper Size: 35 x 28 # of Rolls: Label

Bleed Size: 0

Coater: 0 Combo: 0

**Settings**

Registration: Yes Paper Plates: No

Max Ink Coverage: 100.00% Metal Plates: Yes

Foiling: No

Charge Ft./Hr.: Yes

**Perfecting**

Perfecting: Yes Charge M/Rs: 2 sides

Colors 1st Side: 9 2nd: 5

Cylinder Sizes: 17 22 28 0

Scripts Clone Cancel Save

**Note** Flexo presses do not use the "Cutoff (Web)" setting in templates when calculating press sizes.

When setting up a Flexo press in Master Files > Print you should base the Min Paper Size and Max Paper Size on these rules.

**Min Paper Size** = Min Roll width x Min Cylinder size (circumference)

**Max Paper Size** = Max Roll width x Max Cylinder Size (circumference)

Use the following equation to **convert a "Per Foot" paper cost to a "Per 1000 sq in" paper cost:**

$(\text{Cost Per Foot} / (\text{roll width} * 12)) * 1000 = \text{Cost per 1000 sq in}$

#### Example:

Cost per foot = .053

Roll width = 6.5 inches

This is the equation

$(.053 / (6.5 * 12)) * 1000 = .6795$

The cost per 1000 sq inches is .6795



Use the following example and equation to calculate the amount of paper required and paper cost:

Information from "Print Override Screen"

Press Size: 5 x 3 1/4

Paper Size: 6 1/2

Section Qty: 1350

Replace the First dimension of the Press Size with Paper Size to determine the actual paper size used. 5 x 3 1/4 becomes 6 1/2 x 3 1/4

The equation is as follows:

(Actual Paper Size sq in) \* Section Qty / 1000 = Number of "1000 sq inch units"

$(6.5 * 3.25) * 1350 / 1000 = 28.51875$

The result is then rounded up to the next whole number.

28.51875 is rounded up to 29

Multiply this by the Paper Price to get the Paper Cost

$29 * 0.6795 = 19.71$  (Rounded to the penny)

## Section Finishing

### 'Calculate Method' settings

Estimating Master File Setup for the Company : (01) Alaska Incorp - (0100) Mail & Print Plant

File New View Window Help

### Master File - Print

- Art Processes
- Film Processes
- Pre-Press Process
- Pre-Press Step
- Paper
- Press
- Section Finishing
  - Die Cut Buyout 01
  - Distribution**
  - Drill Signatures
  - Final Trim 01
  - Laminating 01
  - MBO Fold 01
  - MBO Fold Long 01
  - Pre-Slit 01
  - Pre-Trim 01
  - Rollem Score/Perf OffLine
  - UDF FinalTrim
  - Waste-Section Finishing
- Binding Processes
- Bindery Finishing
- Ink
- Ink Coverage
- Miscellaneous

### Distribution

Process: Distribution

Quote Letter Desc: Distribution

Hide

Main | Run Speeds | Waste | Modifiers

Inhouse/Sub: Inhouse

Charge Type: Variable

Calc Method: Generic

Default # Up: No

Set Ending # Up: No

Click to set icon ->

Job Cost Code Links

M/R	94014	L	MATERIAL HANDLING	0100
Run	94014	L	MATERIAL HANDLING	0100
Material/Sub				

Scripts Clone Cancel Save

#### Generic (Based on Imps / Hour)

Setup Cost = (Setup MR Mins + (Section MR Mins \* Sections)) / 60 \* Hour Rate

Mat Qty = (Qty + Run Waste) \* Sections \* Number Up

Mat Cost = Mat Qty / 1000 \* Mat Price / Number Up

Run Qty = (Qty + Run Waste) \* Sections

Run Speed based on Run Rate for the Run Qty

Run Cost = (Run Qty / Run Speed) \* Hour Rate

Total Cost = Setup Cost + Material Cost + Run Cost

**Trim (Based on Imps / Hour)**

Setup Cost = (Setup MR Mins + (Section MR Mins \* Sections)) / 60 \* Hour Rate

(Material does not work on trimming – Simply gives the material/1000 cost for all quantities)

Run Speed based on Time Per Lift based on the Number Up \* Trim Factor

Total Lifts = (Qty + Run Waste) \* Sections / Sheets Per Lift

Run Cost = ((Total Lifts \* Run Speed / 60) \* dbl Hour Rate)

**Fold Long**

Setup Cost = (Setup MR Mins + (Section MR Mins \* Sections)) / 60 \* Hour Rate \* MR Percent

Mat Qty = (Qty + Run Waste) \* Sections \* Number Up

Mat Cost = Mat Qty / 1000 \* Mat Price / Number Up

If based on Imps / Hour

Run Qty = (Qty + Run Waste) \* Sections

If based on Feet/Hour

Build a layout based on the number out that is the squarest

Run Qty = number of feet based on the long dimension

Run Speed based on Run Rate for the Run Qty \* Run Percent

Run Cost = (Run Qty / Run Speed) \* Hour Rate

Total Cost = Setup Cost + Material Cost + Run Cost

**Fold Short**

Setup Cost = (Setup MR Mins + (Section MR Mins \* Sections)) / 60 \* Hour Rate \* MR Percent

Mat Qty = (Qty + Run Waste) \* Sections \* Number Up

Mat Cost = Mat Qty / 1000 \* Mat Price / Number Up

If based on Imps / Hour

Run Qty = (Qty + Run Waste) \* Sections

If based on Feet/Hour

Build a layout based on the number out that is the squarest

Run Qty = number of feet based on the short dimension

Run Speed based on Run Rate for the Run Qty \* Run Percent

Run Cost = (Run Qty / Run Speed) \* Hour Rate

Total Cost = Setup Cost + Material Cost + Run Cost

**Area**

Setup Cost = (Setup MR Mins + (Section MR Mins \* Sections)) / 60 \* Hour Rate

Mat Qty = (Qty + Run Waste) \* Sections \* Roll Width \* Sheet Short Dimension

Mat Cost = Mat Qty / 1000 / 144 \* Mat Price

If based on Imps / Hour

Run Qty = (Qty + Run Waste) \* Sections

If based on Feet/Hour

Build a layout based on the number out that is the squarest

Run Qty = number of feet based on the long dimension

Run Speed based on Run Rate for the Run Qty

Run Cost = (Run Qty / Run Speed) \* Hour Rate

Total Cost = Setup Cost + Material Cost + Run Cost

**Case Making**

Setup Cost = (Setup MR Mins + (Section MR Mins \* Sections)) / 60 \* Hour Rate

Mat Qty = (Qty + Run Waste) \* Sections \* Number Up

Mat Cost = Mat Qty / 1000 \* Mat Price / Number Up

Run Qty = (Qty + Run Waste) \* Sections

Run Speed based on Run Rate for the Run Qty \* the paper case making speed Adjustment

Run Cost = (Run Qty / Run Speed) \* Hour Rate

Total Cost = Setup Cost + Material Cost + Run Cost

**Foil Stamping**

Setup Cost = (Setup MR Mins + (Section MR Mins \* Sections)) / 60 \* Hour Rate

Mat Qty = (Qty + Run Waste) \* Sections \* Number Up \* Foil Size

Mat Cost = Mat Qty / 1000 \* Mat Price / Number Up

Run Qty = (Qty + Run Waste) \* Sections

Run Speed based on Run Rate for the Run Qty

Run Cost = (Run Qty / Run Speed) \* Hour Rate

Total Cost = Setup Cost + Material Cost + Run Cost

**Fold Custom**

Setup Cost = (Setup MR Mins + (Section MR Mins \* Sections)) / 60 \* Hour Rate \* MR Percent

Mat Qty = (Qty + Run Waste) \* Sections \* Number Up

Mat Cost = Mat Qty / 1000 \* Mat Price / Number Up

If based on Imps / Hour

Run Qty = (Qty + Run Waste) \* Sections

If based on Feet/Hour

Run Qty = number of feet based on the number of in-feed inches input by user

Run Speed based on Run Rate for the Run Qty \* Run Percent

Run Cost = (Run Qty / Run Speed) \* Hour Rate

Total Cost = Setup Cost + Material Cost + Run Cost

**Sheeting** (Not fully programmed)

**Pre-Trim** (Programmed for Book Estimating)

**Pre-Slit** (Programmed for Book Estimating)

**Board Slitting** (Programmed for Book Estimating)

**Cover Cloth** (Programmed for Book Estimating)

## Binding Processes/Bindery Finishing

### ‘Calculate As’ settings

Estimating Master File Setup for the Company : (01) Alaska Incorp - (0100) Mail & Print Plant

File New View Window Help

**Master File - Print**

- Art Processes
- Film Processes
- Pre-Press Process
- Pre-Press Step
- Paper
- Press
- Section Finishing
- Binding Processes
  - Book Trimming
  - Perfect Bind (B/O Waste)
  - Saddlestitch 01
- Bindery Finishing
  - Bindery Buyout 01
  - Carton Pack 01
  - Delivery Local 01
  - Freight 01
  - Shrinkwrap 01**
  - Truck Freight 01
- Ink
- Ink Coverage
- Miscellaneous

**Shrinkwrap 01**

Process: Shrinkwrap 01

Quote Letter Desc: Shrink Wrap

Base Run Speeds Binding Factors Waste Factors Makereadies

**Parameters**

Inhouse/Sub.: In house

Charge Method: Variable rates

Calculate As: Set OPF Type:

Supplier:

Measure: Click to set icon ->

**Job Cost Code Links**

Makeready	76010	L	SHRINK WRAP M/R	0100
Run	76015	L	SHRINK WRAP RUN	0100
Material/SubCont.	70000	M	BINDERY MATERIALS	0100

Scripts Clone Cancel Save

### Sets

MakeReady Mins = “Job M/R minutes” + “MakeReady Mins”

MakeReady Cost = MakeReady Mins / 60 \* “Hourly Rate”

Run Rate = “Units/Hour” based on “Run Quantity”

Run Qty = Qty / Number Up

Run Hours = Run Qty / Run Rate

Run Cost = Run Hours \* “Hourly Rate”

Extra Labor Cost = Run Hours \* “Helper Rate”

Material Cost = Qty / 1000 \* “Material/1000”

Total Cost = MakeReady Cost + Run Cost + Extra Labor Cost + Material Cost

**Sheet**

MakeReady Mins = "Job M/R minutes" + "MakeReady Mins"

MakeReady Cost = MakeReady Mins / 60 \* "Hourly Rate"

Number Of Sheets = Count all the Sheets in all sections

Run Rate = "Units/Hour" based on "Run Quantity"

Run Qty = Qty \* Number of Sheets / "Sheets Per Set"

Run Hours = Run Qty / Run Rate

Run Cost = Run Hours \* "Hourly Rate"

Extra Labor Cost = Run Hours \* "Helper Rate"

Material Cost = Qty / 1000 \* "Material/1000"

Total Cost = MakeReady Cost + Run Cost + Extra Labor Cost + Material Cost

**Weight \$**

MakeReady Mins = "Job M/R minutes" + "MakeReady Mins"

MakeReady Cost = MakeReady Mins / 60 \* "Hourly Rate"

Total Weight = Calculated weight of all sections

Run Rate = "Units/Hour" / 1000 based on the Total Weight for the "Run Quantity"

Run Cost = Total Weight \* Run Rate

Total Cost = MakeReady Cost + Run Cost

**Per Pad** (Not fully programmed)**Case Binding**

MakeReady Mins = "Job M/R minutes" + "MakeReady Mins"

MakeReady Cost = MakeReady Mins / 60 \* "Hourly Rate"

Go through each section and calculate the total thickness of book block.

Speed Factor = 0

If Total thickness <= ¼ inch then Speed Factor is 25

If Total thickness > 1 inch then Speed Factor is 25

If Total thickness > 2 inches then Speed Factor is 35

If Book Size <= 4 x 5 ½ then add 25 to Speed Factor

If Book Size >= 9 x 13 then add 25 to Speed Factor

Run Rate = "Units/Hour" based on "Run Quantity"

Run Rate = Run Rate \* ((100 – Speed Factor) / 100)

Run Qty = Qty

Run Hours = Run Qty / Run Rate

Run Cost = Run Hours \* "Hourly Rate"

Extra Labor Cost = Run Hours \* "Helper Rate"

Material Cost = Qty / 1000 \* "Material/1000"

Total Cost = MakeReady Cost + Run Cost + Extra Labor Cost + Material Cost

### By Length

MakeReady Mins = "Job M/R minutes" + "MakeReady Mins"

MakeReady Cost = MakeReady Mins / 60 \* "Hourly Rate"

Run Rate = "Units/Hour" based on "Run Quantity"

Run Qty = Qty / Number Up

Run Hours = Run Qty / Run Rate

Run Cost = Run Hours \* "Hourly Rate"

Extra Labor Cost = Run Hours \* "Helper Rate"

Material Cost = Qty / 1000 \* "Material/1000"

Total Cost = MakeReady Cost + Run Cost + Extra Labor Cost + Material Cost

### Packing

MakeReady Mins = "Job M/R minutes" + "MakeReady Mins"

MakeReady Cost = MakeReady Mins / 60 \* "Hourly Rate"

Go through each section to determine the thickness of the job.

Determine how many items can be placed in the bottom of the box

Calculate the number of items that a box can hold (Items Per Box)

Number of Boxes = Qty / Items Per Box

If Number of Boxes has a decimal value then round up.

Box Cost = Number of Boxes \* Carton Cost

Total Weight = Calculated weight of all sections

Run Rate = "Units/Hour" based on the Total Weight for the "Run Quantity"

Run Cost = Total Weight \* Run Rate

Total Cost = MakeReady Cost + Run Cost + Box Cost



**Gen Binding** (Not fully programmed)

**Book Binding** (Binding Processes)

MakeReady Mins = ("Job M/R minutes" + "MakeReadies Orig(Mins)") \* "Binding Factors M/R%")

MakeReady Cost = MakeReady Mins / 60 \* "Hourly Rate"

Run Qty = Qty

Run Rate = "Units/Hour" based on "Run Quantity"

Run Rate = Run Rate \* MakeReadies "Reduce Speed by %"

Run Hours = Run Qty / Run Rate / "Binding Factors Speed %"

Run Cost = Run Hours \* "Hourly Rate"

Extra Labor Cost = Run Hours \* "Helper Rate" \* "Additional Workers"

Material Cost = Qty / 1000 \* "Material/1000"

Total Cost = MakeReady Cost + Run Cost + Extra Labor Cost + Material Cost

**Skid Storage** (Not fully programmed)

**Paper Storage** (Not fully programmed)

**News Stand Distribution** (Not fully programmed)

**Calc By Lifts** (Not fully programmed - "Max Bulk" value does not get saved)

### **Truck Freight**

"Weight to Ship" = Total weight of job

"Lbs/Truck" = "Weight/Box/Skid"

"No Trucks" = "Weight to Ship" / "Lbs/Truck"

"Total Cost" = "No Trucks" \* "Rate/Truck"

### **Weight Per Hour**

MakeReady Mins = "Job M/R minutes" + "MakeReady Mins"

MakeReady Cost = MakeReady Mins / 60 \* "Hourly Rate"

Total Weight = Calculated weight of all sections

Run Rate = "Units/Hour" based on the Total Weight for the "Run Quantity"

Run Cost = Total Weight \* Run Rate

Total Cost = MakeReady Cost + Run Cost

**Shrinkwrap** (Programmed for Book Estimating)

**OPF** (Programmed for Book Estimating)

**Skidding** (Programmed for Book Estimating)

**Casemaking** (Programmed for Book Estimating)

**Foil Stamp** (Programmed for Book Estimating)

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## Ink Calculations

### Example 1 - Ink information from Master Files Print > Ink screen

#### Black Ink

Min Charge 0.00

Cost \$8.00 (Ink Cost per pound)

Coverage 0.25 (How much of a pound to cover 100,000 Square inches)

### Print Specifications

Quantity: 50,000

Pages: 8.5x11 letter 2up

Trim Size: 8.5 x 11

Press Size: 17 x 11

Paper Size: 17.5 x 22.5

Ink Colors: Black Ink on One Side

Ink Coverage: "Light Coverage" (Coverage 15%)

### Determine the ink cost for 100,000 sq. in. based on the coverage selected

Cost \* Coverage \* Estimate Coverage % = Ink Cost

\$8.00 \* 0.25 \* 15% = \$0.30

### Calculate the total number of square inches of paper to be run through the press

# of Press Sheets \* Sheet Length \* Sheet Depth = Total Square Inches

25,325 \* 17 \* 11 = 4,735,775

### Determine the number of 100,000 Square Inch Units (100M sq. in. units)

Total Square Inches / 100,000 = 100M sq. in. units

4,735,775 / 100,000 = 47.35775

### Calculate the Ink Cost

100M sq. in. units \* Ink Cost / # of Colors \* Paper Ink Factor = Ink Cost

47.35775 \* \$0.30 / 1 \* 1 = \$14.207325

Round Ink Cost = \$14.21 and add any Minimum Ink Charges.

**Example 2 - Ink information from Master Flies Print > Ink screen**

Black Ink

Min Charge	0.00	
Cost	\$8.00	(Ink Cost per pound)
Coverage	0.25	(How much of a pound to cover 100,000 Square inches)

PMS Ink

Min Charge	0.00	
Cost	\$12.00	(Ink Cost per pound)
Coverage	0.33	(How much of a pound to cover 100,000 square inches)

**Print Specifications**

Quantity: 50,000  
 Pages: 8.5x11 letter 2 up  
 Trim Size: 8.5 x 11  
 Press Size: 17 x 11  
 Paper Size: 17.5 x 22.5  
 Ink Colors: Black and PMS 1 on One Side  
 Ink Coverage: "Light Coverage" (Coverage 15%)

**Determine the Black ink cost for 100,000 sq. in. based on the coverage selected**

$$\text{Cost} * \text{Coverage} * \text{Estimate Coverage \%} = \text{Ink Cost1}$$

$$\$8.00 * 0.25 * 15\% = \$0.30$$

**Determine the PMS 1 ink cost for 100,000 sq. in. based on the coverage selected**

$$\text{Cost} * \text{Coverage} * \text{Estimate Coverage \%} = \text{Ink Cost2}$$

$$\$12.00 * 0.33 * 15\% = \$0.594$$

**Determine the combined ink cost by adding the ink costs together**

$$\text{Ink Cost1} + \text{Ink Cost2} = \text{Ink Cost}$$

$$\$0.30 + \$0.594 = \$0.894$$

**Calculate the total number of square inches of paper to be run through the press**

$$\# \text{ of Press Sheets} * \text{Sheet Length} * \text{Sheet Depth} = \text{Total Square Inches}$$

$$25,475 * 17 * 11 = 4,763,825$$

**Determine the number of 100,000 Square Inch Units (100M sq. in. units)**

Total Square Inches / 100,000 = 100M sq. in. units

$$4,763,825 / 100,000 = 47.63825$$

**Calculate the Ink Cost**

100M sq. in. units \* Ink Cost / # of Colors \* Paper Ink Factor = Ink Cost

$$47.63825 * \$0.894 / 2 * 1 = \$21.29429775$$

Round Ink Cost = \$21.29 and add any Minimum Charges

**Example 3 - Ink information from Master Flies Print > Ink screen**Black Ink

Min Charge 0.00

Cost \$8.00 (Ink Cost per pound)

Coverage 0.25 (How much of a pound to cover 100,000 Square inches)

PMS Ink

Min Charge 0.00

Cost \$12.00 (Ink Cost per pound)

Coverage 0.33 (How much of a pound to cover 100,000 square inches)

**Print Specifications**

Quantity: 50,000

Pages: 8.5x11 letter 2 up

Trim Size: 8.5 x 11

Press Size: 17 x 11

Paper Size: 17.5 x 22.5

Ink Colors: Black and PMS 1 on One Side

Ink Coverage: "Light Coverage" (Coverage 15%) \*PMS 1 coverage set to 50%

**Determine the Black ink cost for 100,000 sq. in. based on the coverage selected**

Cost \* Coverage \* Estimate Coverage % = Ink Cost1

$$\$8.00 * 0.25 * 15\% = \$0.30$$

**Determine the PMS 1 ink cost for 100,000 sq. in. based on the coverage selected**

$$\text{Cost} * \text{Coverage} * \text{Estimate Coverage \%} = \text{Ink Cost2}$$

$$\$12.00 * 0.33 * 50\% = \$3.96$$
**Determine the combined ink cost by adding the ink costs together**

$$\text{Ink Cost1} + \text{Ink Cost2} = \text{Ink Cost}$$

$$\$0.30 + \$3.96 = \$4.26$$
**Calculate the total number of square inches of paper to be run through the press**

$$\# \text{ of Press Sheets} * \text{Sheet Length} * \text{Sheet Depth} = \text{Total Square Inches}$$

$$25,475 * 17 * 11 = 4,763,825$$
**Determine the number of 100,000 Square Inch Units (100M sq. in. units)**

$$\text{Total Square Inches} / 100,000 = 100\text{M sq. in. units}$$

$$4,763,825 / 100,000 = 47.63825$$
**Calculate the Ink Cost**

$$100\text{M sq. in. units} * \text{Ink Cost} / \# \text{ of Colors} * \text{Paper Ink Factor} = \text{Ink Cost}$$

$$47.63825 * \$4.26 / 2 * 1 = \$101.4694725$$

Round Ink Cost = \$101.47 and add any Minimum Charges

**Example 4 - Ink information from Master Files Print > Ink screen**Black Ink

Min Charge 0.00  
 Cost \$8.00 (Ink Cost per pound)  
 Coverage 0.25 (How much of a pound to cover 100,000 Square inches)

PMS Ink

Min Charge \$10.00  
 Cost \$12.00 (Ink Cost per pound)  
 Coverage 0.33 (How much of a pound to cover 100,000 square inches)

**Print Specifications**

Quantity: 50,000  
 Pages: 8.5x11 letter 2 up  
 Trim Size: 8.5 x 11  
 Press Size: 17 x 11  
 Paper Size: 17.5 x 22.5  
 Ink Colors: Black and PMS 1 on One Side  
 Ink Coverage: "Light Coverage" (Coverage 15%) \*PMS 1 coverage set to 50%

**Determine the Black ink cost for 100,000 sq. in. based on the coverage selected**

Cost \* Coverage \* Estimate Coverage % = Ink Cost1  
 \$8.00 \* 0.25 \* 15% = \$0.30

**Determine the PMS 1 ink cost for 100,000 sq. in. based on the coverage selected**

Cost \* Coverage \* Estimate Coverage % = Ink Cost2  
 \$12.00 \* 0.33 \* 50% = \$3.96

**Determine the combined ink cost by adding the ink costs together**

Ink Cost1 + Ink Cost2 = Ink Cost  
 \$0.30 + \$3.96 = \$4.26

**Calculate the total number of square inches of paper to be run through the press**

# of Press Sheets \* Sheet Length \* Sheet Depth = Total Square Inches  
 25,475 \* 17 \* 11 = 4,763,825

**Determine the number of 100,000 Square Inch Units (100M sq. in. units)**

Total Square Inches / 100,000 = 100M sq. in. units

$$4,763,825 / 100,000 = 47.63825$$

**Calculate the Ink Cost**

100M sq. in. units \* Ink Cost / # of Colors \* Paper Ink Factor = Ink Cost = Round Ink Cost

$$47.63825 * \$4.26 / 2 * 1 = \$101.4694725 = \$101.47$$

Ink Cost + Minimum Charge for PMS 1 = Total Ink Cost

$$\$101.47 + \$10.00 = \$111.47$$



## Additional Ink Information

### Calculation for Ink Costs

- Use Ink Mileage (Coverage) from Master Files Print > Ink screen: **'0.25'** (1/4 lb. of ink to cover 100,000 sq. in. solid).
- Use the Ink Coverage selected in the Ink screen in Estimating: **'15%'**.
- Use the Press Sheet size: **'23 x 35'** (for web presses: web width x cutoff) and convert the sheet size to square inches: **'805'**.
- Multiply the Ink Coverage: **'15%'** by the Press Sheet size square inches: **'805'** = **120.75** sq. in.
- Multiply **'120.75'** sq. in. by the number of impressions: **'50,000'** = **6,037,500** sq. in.
- Divide **'6,037,500'** sq. in. by **'100,000'** = **60.375** units of 100,000 sq. in.
- Use the Ink Cost from Master Files - Print > Ink screen: **'\$8.00'** per lbs.
- Multiply Ink Cost per lbs. by the Ink Mileage: **'\$8.00' \* '0.25'** = **\$2.00** per 100,000 sq. in.
- Multiply **'\$2.00'** by **'60.375'** units of 100,000 sq. in. = **\$120.75** ink costs.
- If an ink has a minimum charge it will add that cost to the front side ink.

### Calculation for Ink Pounds

- Ink Lbs. = ink units of 100,000 sq. in. **'60.375'** multiplied by ink mileage **'0.25'** = **15** lbs.

**Estimating Master File Setup**

File New View Window Help

**Master File**

- Art Process
  - Film Process
  - Paper
  - Press
  - Section Fin
  - Binding Pro
  - Binding Fini
  - Ink
    - SF Aqu
    - SF Bla
    - SF Cye
    - SF Ma
    - SF PM
    - SF Yell
    - Web B
    - Web C
    - Web M
    - Web P

**SF Black**

Description: SF Black

Type: Litho

Min. Charge: \$0.00

Foil Size: inches wide by

Cost: \$8.00

Coverage: 0.25

Charge Washups: No

Links: 4000010 M Ink

**Ink Specifications - Example Calculations**

Example for Ink Cost  
Quantity 50,000  
8.5 x 11 Letter 2 up, Black Ink on One Side, Coverage "Light Coverage" (15%)  
Trim Size 8.5 x 11, Press Sheet Size 17 x 11

**Black Ink**  
Min Charge \$0.00  
Cost \$8.00  
Coverage 0.25 (How much of a pound to cover 100,000 Square inches) (Mileage)

Determine the Ink Cost for 100,000 Sq In based on the mileage selected  
Ink Cost/Lbs. \* Ink Mileage = Ink Cost/100M Sq In  
\$8.00 \* 0.25 = \$2.00

Calculate the Sheet Ink Coverage  
Sheet Length \* Sheet Width \* Ink Coverage % = Sheet Ink Coverage  
17 \* 11 \* 15% = 28.05

Calculate the Total Ink Square Inches  
Sheet Ink Coverage \* # of Press Sheets = Total Ink Sq. In. Sq. In./100M  
28.05 \* 25,325 = 710366.25 7.1036625

Determine Total Ink Cost  
Sq. In./100M \* Ink Cost/100M Sq In = Total Ink Cost  
7.1036625 \* \$2.00 = \$14.207325

Round Total Ink Cost = \$14.21 and add any Minimum Charges

**Calculation for Ink Pounds**

Ink Lbs. = Sq. In./100M ( 7.1036625) multiplied by Ink Mileage (.25) = 1.7759 lbs.  
Round Total Ink Lbs. = 1.8 Lbs.

**Coverage (LBS/100,000 sq. inches) – Mileage for ink** (see vendor or trade magazines). How many lbs. does it take to cover 100,000 sq. inches solid on uncoated stock?

(Sample: Black = .25, PMS or Process color = .33, Metallic = .30) We recommend basing the solid ink coverage on uncoated stock and adjust the 'Factor' down in each 'Paper – Master File' screen for all coated stocks or you are free to do the opposite.