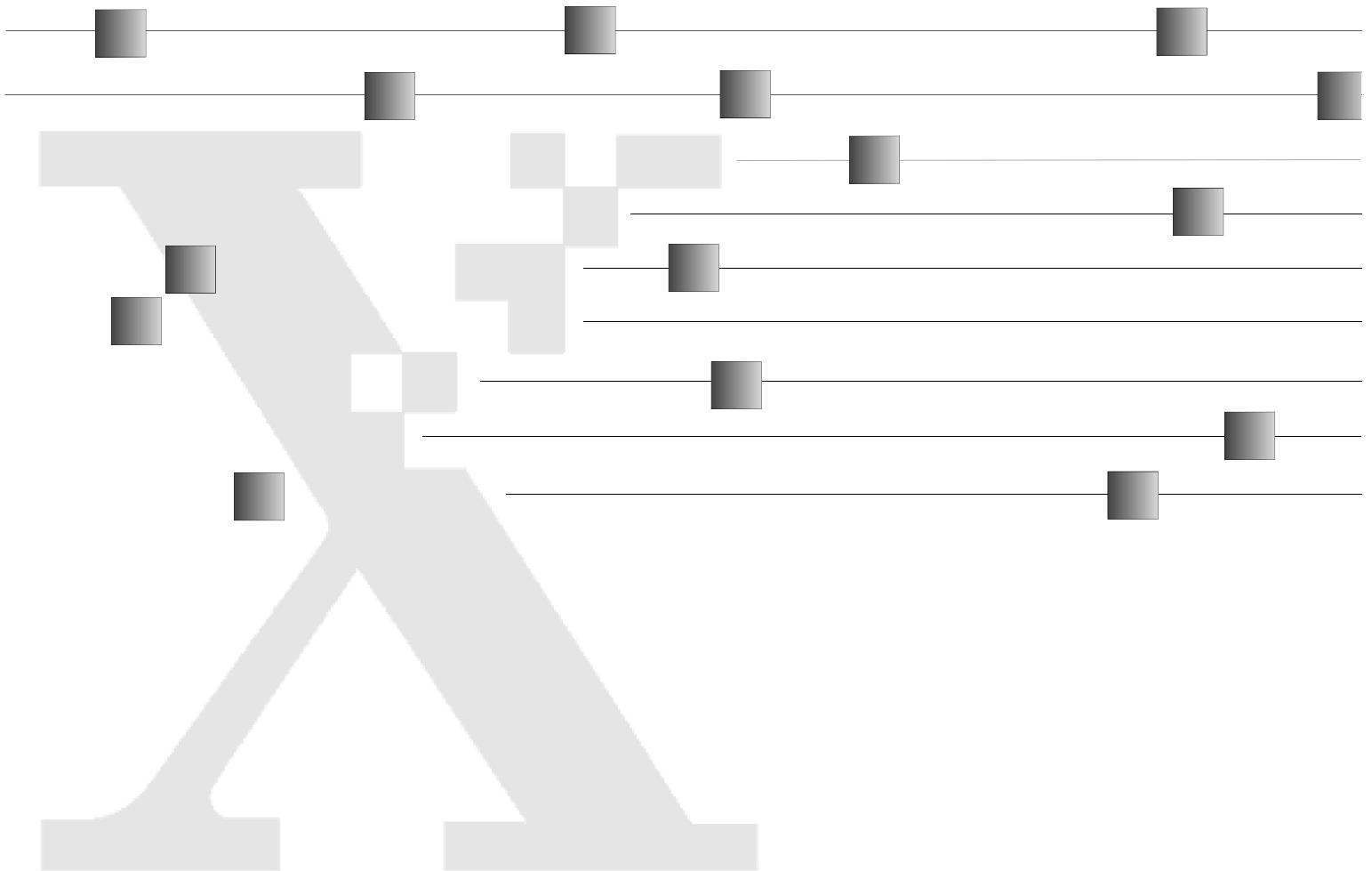


# Xerox Regal 5790 Digital Color Copier/Printer

## Materials Usage Guide



The Document Company  
XEROX

©1996 Xerox Corporation. All rights reserved.

Copyright protection claimed includes all forms and matters of copyrightable material and information now allowed by statutory or judicial law or hereinafter granted, including without limitation, material generated from the software programs which are displayed on the screen such as styles, templates, icons, screen displays, looks, etc.

Xerox®, The Document Company®, the digitized X, and all Xerox product names and product numbers mentioned in this publication are trademarks of Xerox Corporation®. Other company trademarks are also acknowledged.

Changes are periodically made to this document. Technical updates will be included in subsequent editions.

Printed in the United States of America.

---

---

# Table Of Contents

Introduction	1
Conventions	2
Recommended Materials	3
Not Recommended Materials	6
Applications	7
Usage Guidelines	8
Heavy-Weight Papers	8
Recycled Papers	10
Hole-Punched Papers	11
Pressure-Sensitive Labels	12
Coated Papers	13
Preprinted Papers	16
Single-Step Transfer Paper	17
Transparencies	19
Xerox Docupac Folders	21
Applications	23
Duplex Copies	23
Color Inserts	25
About Paper	27
Paper Weight	28
Grade	31
Moisture Content	32
Curl	33
Grain	35
Smoothness	36

Paper Storage	37
Stacking	38
Temperature and Humidity	38
Conditioning Paper	39

---

# Regal 5790 Materials Usage Guide

---

## Introduction

---

This guide provides the information and guidelines that should be used when selecting papers or other materials to be used in a 5790 Digital Color Copier/Printer. The feeding reliability and the performance characteristics that can be expected from the 5790 when using the specified paper stocks and other selected materials are also provided. In addition, techniques related to the use of these specific materials are given.

**The first section, Recommended Materials,** contains a chart which lists all materials that are recommended for use in the 5790. Following this chart, a **second section, Usage Guidelines,** includes guidelines for selecting and using various materials, such as transparencies, heavy-weight paper, and the transfer paper used for T-shirts.

**The third section, Applications,** provides step-by-step procedures to use when running certain types of jobs.

**The fourth section, About Paper,** gives you information about some of the properties of paper that are important to the operation of the 5790 and the quality of the copies produced.

**The last section, Paper Storage,** provides useful tips for the proper handling and storage of paper.

Xerox has an on-going materials testing program for the 5790. As new information, materials, or recommendations become available, they will be included in revisions to this guide. Your Xerox representative may also advise you of materials usage information before it can be included in a revision to this guide.

The materials with Xerox part numbers, listed in this guide, can be purchased by calling the Xerox Supply Net at 1-800-822-2200 (in U.S. and Canada).

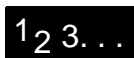
## Conventions

---

The following symbols are used in this guide to assist you in quickly locating information.



The **Key** symbol indicates information that is important to remember.



The **1, 2, 3** symbol directs you to specific guidelines that should be followed to obtain the best performance.



The **Checked** symbol indicates that a material has an unqualified recommendation for use in the 5790.



This **Book and Magnifying Glass** prompts you to look for the detailed information and usage guidelines provided for the specific material type.



A **WARNING** alerts you to an operating or maintenance procedure, practice, or condition, that, if not strictly observed, could result in injury or loss of life.



The **HOT AREA** symbol cautions you to be careful when working in areas with this symbol. These areas may be very hot and could cause personal injury.



A **CAUTION** alerts you to an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to equipment, destruction of equipment, or loss of data.

## Recommended Materials



This symbol is used to indicate materials that will provide optimum performance. The Regal 5790 was designed to provide optimum performance with 16 to 28 lb bond paper (60 to 105 gsm).

Other materials can be used with varying degrees of success. Some materials will run better if specific guidelines are followed.








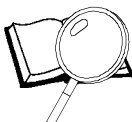
This symbol prompts you to refer to the Usage Guidelines later in this Guide for the type of material shown.

When using materials shown with this symbol, you should expect a higher jam rate than when using 16 to 28 lb (60 to 105 gsm) paper. Some of these materials will also cause image quality problems (i.e. mottle) with certain images.




If you are uncertain of the ability of a specific material to perform well in your Regal 5790, consult with your Xerox representative and test the material before purchasing a large quantity.

Order Xerox materials from Xerox Supply Net, 1-800-822-2200 (in U.S. and Canada).

Regal 5790 Recommended Materials		
	Material Type	Description and order number
	<b>Standard Weight Papers:</b>	
	24 lb Bond (90 gsm)	<b>USA and Canada:</b> <ul style="list-style-type: none"> <li>Xerox 24 lb Image Series LX, 8.5 x 11", 3R3874</li> <li>Xerox 24 lb Image Series LX, 11 x 17", 3R3877</li> </ul>
	20 lb Bond (80 gsm)	<b>USA and Canada:</b> <ul style="list-style-type: none"> <li>Xerox 20 lb Image Series DP, 8.5 x 11", 3R2950</li> <li>Xerox 20 lb Image Series Smooth, 8.5 x 11", 3R54</li> </ul>
	28 lb Bond (105 gsm)	<b>USA and Canada:</b> <ul style="list-style-type: none"> <li>Xerox 28 lb 4024 DP, 8.5 x 11", 3R2353</li> <li>Xerox 28 lb 4024 DP, 11 x 17", 3R3873</li> </ul>

	<b>Regal 5790 Recommended Materials</b>	
	<b>Material Type</b>	<b>Description and order number</b>
 Pages 8-9	<b>Heavy-Weight Papers:</b>	
	32 lb Bond (120 gsm)	<b>USA and Canada:</b> <ul style="list-style-type: none"> <li>• Xerox 32 lb LXC, 8.5 x 11", 3R4811</li> <li>• Xerox 32 lb LXC, 11 x 17", 3R4813</li> </ul>
	90 lb Index (163 gsm)	<b>USA and Canada:</b> <ul style="list-style-type: none"> <li>• Xerox 90 lb Index, 8.5 x 11", 3R3004</li> <li>• Xerox 90 lb Index, 17 x 11", 3R5102</li> </ul>
	Other Heavy-Weight Papers	<ul style="list-style-type: none"> <li>• Hammermill 32 lb Laser Print, 8.5 x 11", 10464-6</li> <li>• Jupiter Thinplate 7 pt. (181 gsm) 8.5 x 11"</li> <li>• Jupiter Thinplate 7 pt. (181 gsm) 17 x 11", short grain</li> <li>• Canon 90 lb, 157 gsm</li> </ul>
 Page 10	<b>Recycled Papers:</b>	
	20 lb Bond	<ul style="list-style-type: none"> <li>• Xerox 20 lb Recycled, 8.5 x 11", 3R5130</li> <li>• Xerox 20 lb Recycled, 11 x 17", 3R5133</li> </ul>
 Pages 11-12	<b>Hole-Punched Paper</b>	<ul style="list-style-type: none"> <li>• Xerox 24 lb Image Series LX, 3 hole drilled, 8.5 x 11", 3R3875</li> <li>• Xerox 20 lb 4024DP, 3 hole drilled, 8.5 x 11", 3R2193</li> <li>• Xerox 20 lb Image Series DP, 3 hole drilled, 8.5 x 11", 3R3016</li> <li>• Xerox 20 lb Recycled, 3 hole drilled, 8.5 x 11", 3R5131</li> </ul>
 Pages 12-13	<b>Pressure Sensitive Labels</b>	Xerox Copier/Printer Labels 8.5 x 11": <ul style="list-style-type: none"> <li>• 1 up 3R4473</li> <li>• 8 up 3R4472</li> <li>• 24 up 3R4471</li> <li>• 30 up 3R4470</li> <li>• 33 up 3R4469</li> </ul>
 Pages 13-15	<b>Coated Papers</b>	<b>USA and Canada:</b> <ul style="list-style-type: none"> <li>• Xerox 32 lb Ultra Spec Series, 8.5 x 11", 3R5093</li> <li>• Xerox 32 lb Ultra Spec Series, 11 x 17", 3R5094</li> <li>• Xerox 60 lb Ultra Spec Series, 8.5 x 11", 3R5095</li> <li>• Xerox 60 lb Ultra Spec Series, 11 x 17", 3R5096</li> </ul>



	<b>Regal 5790 Recommended Materials</b>	
	<b>Material Type</b>	<b>Description and order number</b>
 Pages 17-18	<b>Single-Step Transfer Papers</b>	<b>USA:</b> <ul style="list-style-type: none"> <li>• Xerox Image Transfer Paper, 8.5 x 11", 3R5811</li> <li>• Xerox Image Transfer Paper, 11 x 17", 3R5812</li> </ul> <b>Canada:</b> <ul style="list-style-type: none"> <li>• Xerox Image Transfer Paper, 8.5 x 11", 3R5025</li> <li>• Xerox Image Transfer Paper, 11 x 17", 3R5026</li> </ul>
	<b>Other Single-Step Transfer Papers</b>	<ul style="list-style-type: none"> <li>• Air Waves Elite</li> <li>• Magic Touch Mirror Image SS 500</li> <li>• Paropy CL</li> </ul>
 Pages 19-20	<b>Transparencies</b>	<b>USA:</b> <ul style="list-style-type: none"> <li>• Xerox Good Quality Removable Stripe, 11", 3R3108</li> <li>• Xerox Good Quality Removable Stripe 17", 3R5821</li> <li>• Xerox Premium Quality Removable Stripe, 11", 3R5765</li> <li>• Xerox Good Quality Painted Stripe, 11", 3R5775</li> </ul> <b>Canada:</b> <ul style="list-style-type: none"> <li>• Xerox Good Quality Removable Stripe, 11", 3R3108</li> <li>• Xerox Good Quality Removable Stripe 17", 3R5821</li> <li>• Xerox Premium Quality Removable Stripe, 11", 3R5765</li> <li>• Xerox Good Quality Painted Stripe, 11", 3R4894</li> </ul>
 Pages 21-22	<b>Docupac Folders</b>	Xerox Docupac Folders <ul style="list-style-type: none"> <li>• White = 3R4885</li> <li>• Gray = 3R4927</li> <li>• Ivory = 3R4928</li> </ul>

## Not Recommended Materials



---

Testing of the following materials by Xerox engineers has shown unsatisfactory results:

Material Type	Test Results
Dry Gum Labels	Unacceptable jam rate
Paper Backed Transparencies	Unacceptable jam rate
Envelopes	Unacceptable jam rate & fuser damage
Papers heavier than 163 gsm	Unacceptable jam rate
65 lb Xerox Docupac Folders	Unacceptable jam rate
67 lb Vellum Bristol Cover	High jam rate and poor image quality
Xerox 3R2780 transparencies	Unacceptable jam rate

**Note:** There are thousands of other materials available today. Most of these have not been tested and good performance cannot be guaranteed. If you intend to run a material that has not been mentioned in this guide, consult with your Xerox Representative and test the material before purchasing a large quantity.

## Applications

	Application Type	Description & Expectations
 Pages 23-25	<b>Duplex Copies</b>	Duplex (two-sided) copying refers to imaging the second side of a copy already made on the 5790. Run the recommended 24 to 28 lb papers per the instructions in the usage guidelines. Feeding performance and image quality will be good, but may not equal the performance and quality of side 1. Duplexing of Heavy-Weight or Coated papers is not recommended due to the high likelihood of jams and poor image quality.
 Pages 25-26	<b>Color Inserts</b>	Color Inserts are copies made on the 5790 that are then merged with copies from another copier/printer. Color copies/prints made on the 5790 with the recommended 24 lb paper can be used as inserts in the Xerox Docutech Model 135 or the Xerox 5090 Duplicator. For optimum performance as inserts, 5790 copies/prints should be kept as flat as possible. See complete details in the Applications section of this Guide.

## Usage Guidelines

---

The following guidelines have been developed as a result of extensive testing of the materials shown. Use these procedures to obtain the best performance from materials indicated with the Book and Magnifying Glass symbol.



### Heavy-Weight Papers

---

#### Material Description & Expectations

Heavy-Weight Papers are those classified as greater than 28 lb bond (105 gsm). As compared to the primary 24 lb (90 gsm) papers, they offer increased stiffness but will generally have degraded image quality due to their rough surface and coarse formation. An increase in jams is also likely. Two-sided copying of heavy-weight papers is not recommended because of frequent jams and image quality problems.

---

#### Recommended Materials


**Xerox 32 lb LXC (120 gsm)** 8.5 x 11" = 3R4811, 11 x 17" = 3R4813  
**Xerox 90 lb Index (163 gsm)** 8.5 x 11" = 3R3004, 17 x 11" = 3R5102

The Xerox 17 x 11" 90 lb Index is a specially cut, short-grain paper.

**Hammermill 32lb Laser Print #10464-6**  
**Jupiter Thinplate 7 pt. (181 gsm)**  
**Canon 90 lb (157 gsm)**

1 2 3...

#### Steps for Success

- 1 Run all Heavy-Weight Papers from the Paper Tray Bypass.
- 2 Select Heavy Paper Mode.
- 3 Load all paper with curl down in the tray. 
- 4 All 11 x 17" Heavy-Weight Papers must be short grain.
- 5 All papers heavier than 32 lb (120 gsm) must be run with the grain parallel to the leading edge. For example:  
Run 8.5 x 11" long-grain with the 11" edge as the lead edge.  
Run 17 x 11" short-grain with the 11" edge as the lead edge.  
11 x 17 long-grain, heavy-weight papers cannot be run.
- 6 If jams occur, manually curl the lead edge down before loading to reduce jamming.
- 7 Improperly clearing heavy-weight jams can cause machine damage. When clearing jammed sheets (especially important with 11 x 17 inch sheets), first try clearing the jam from the Paper

Tray Bypass. Next, open the front door and turn knobs A, B and C in the direction shown by the arrows. Finally, pull the Transfer Drawer out carefully to clear the jam.



**CAUTION:** Forcing the Transfer Drawer open may cause machine damage resulting in a service call.



**CAUTION:** The use of paper weights greater than 90 lb Index (163 gsm) is likely to result in damage to the copier/printer that will require a service call. Do not exceed the maximum recommended paper weights, except where noted (Jupiter Thinplate 7 pt.).

---

### **Hints, Tips & Testing Results**

#### **Extensive Xerox testing has shown the following:**

- When the recommended materials are run as detailed above, with the correct tray, mode, orientation and curl, feeding performance is good, but will not equal 24 lb LX performance.
- Image quality on the recommended papers is good, but should not be expected to equal image quality on 24 lb LX paper. The rough formation of heavy papers increases the likelihood of image mottle (light patches) with some images. Mottle is more likely to occur on images with uniform halftone areas. As humidity increases, mottle usually increases.
- A small percentage of sheets may exhibit toner on the lead edge. Flipping the paper over or manually curling the lead edge down will minimize this condition.
- Two-sided copying of heavy-weight papers is not recommended. Paper curl created when running side 1 can cause a high jam rate with side 2. If this occurs, flipping the paper over for side 1 may improve curl and feeding performance. Manually curling the lead edge of the side 1 imaged sheets down before loading them for side 2 can also improve side 2 feeding reliability. Image quality on side 2 will also be reduced with certain images. Light image patches (mottle) and deletions are likely on side 2, especially in large halftone areas.
- Toner saturation on electronic originals should be limited to a total of 280% (70% for each Color). Higher toner saturation can result in poorly fused prints.
- Jupiter Thinplate 7 pt. (181 gsm) has been tested and has shown improved image quality. Due to its increased weight, more frequent jams should be expected. It is especially important to load Jupiter 7 pt. curl down. It may be necessary to allow the paper to acclimate to the environment before its natural curl can be determined. As with all 17" heavy-weight papers, only 17 x 11" short-grain Jupiter 7 pt. can be run. Jupiter 7 pt. is distributed by Kirk Paper Company in the USA (714) 978-1619.



## Recycled Papers

---

### **Material Description & Expectations**

Most recycled papers are made from a combination of new pulp, waste from the paper-making process, and paper that has been returned by consumers for recycling. Because the nature of paper returned for recycling is unpredictable, recycled papers are less uniform in content and quality than papers made from entirely new fiber. The recommended Xerox recycled papers offer the best feed performance and image quality available. The Xerox papers undergo exclusive screening procedures to minimize the amount of harmful inks and plastic particles in the final product. The recommended recycled papers will run well in the 5790 but the reduced smoothness, formation and brightness will result in degraded image quality as compared to the primary 24 lb Image Series LX paper.

---

### **Recommended Materials**

**Xerox 20 lb Recycled Business Paper** 8.5 x 11" = 3R5130

**Xerox 20 lb Recycled Business Paper** 11 x 17" = 3R5133

---

**1 2 3 . . .**

### **Steps for Success**

- 1 The recommended recycled papers should be run using the same procedures as standard paper.
  - 2 If running a recycled paper heavier than 28 lb bond (105 gsm) use the instructions for Heavy-Weight Papers.
- 

### **Hints, Tips & Testing Results**

**Xerox testing has shown the following:**

- Severe image quality problems are likely if non-recommended recycled papers are run. If you plan to use a recycled paper other than the Xerox brand, first try a small quantity to test its performance, then consult your local Xerox representative for agreement on its use.
- The wide variation in recycled paper fibers increases the tendency for these papers to curl, which may result in jams. If an obvious curl is detected, load that paper in the bypass paper tray with the curl down for best feeding performance.
- Two-sided copying with recycled papers is not recommended. The inherently poor image quality of recycled papers only becomes worse when the second side is run.
- To avoid making a marginal material worse, all recycled papers should be stored in sealed packages when not in use. Image quality on exposed papers will degrade even more as humidity increases.



## Hole-Punched Papers

### Material Description & Expectations

Hole-Punched Papers have two or more holes along one edge for use in ring binders and notebooks. This paper is often referred to as predrilled paper. Most hole-punched papers that fit into the standard paper size and weight ranges for the 5790 should run reliably. The recommended papers meet Xerox's high quality standards and will provide reliable feeding and good image quality.

### Recommended Materials

**Xerox 24 lb Image Series LX, 3 hole drilled** 8.5 x 11" = 3R3875

**Xerox 20 lb 4024 DP, 3 hole drilled** 8.5 x 11" = 3R2193

**Xerox 20 lb Image Series DP, 3 hole drilled** 8.5 x 11" = 3R3016

**Xerox 20 lb Recycled, 3 hole drilled** 8.5 x 11" = 3R5131

1 2 3...

### Steps for Success

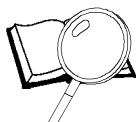
- 1 Load non-heavyweight, hole-punched papers in paper trays 1, 2, and 3 with the holes to the right.
- 2 Load all heavy-weight, hole-punched papers (greater than 28 lb bond, 105 gsm) in the Paper Tray Bypass with the holes to the left.
- 3 Do not attempt to copy an image onto the area of the holes. This will cause unwanted toner on the back of the copies/prints and may lead to machine damage.
- 4 When copying from a hole-punched original onto hole-punched paper, the holes on the original must be masked or edited away to prevent them from printing out on the copies/prints. (See complete instructions in the Hints & Tips section below.)

### Hints, Tips & Testing Results

**Xerox testing has shown the following:**

- When copying from a hole-punched original onto hole-punched paper, special actions must be taken to prevent the holes from printing out as dark spots on the copy/print. These spots can be eliminated by using the Image Shift, Edge Erase, or Delete Outside editing features of the 5790 to edit the holes away. Another option, without editing, is to cover the holes on the original by placing a clean white sheet behind the original before copying.
- If an image is copied over the area of the holes, toner will transfer through the holes and onto the Charge/Transfer roll film. This excess toner will be transferred onto the back of copies/prints when the next job is run. Permanent fuser damage can occur if this is done repeatedly.

- There are a wide variety of hole configurations available. Not all variations have been tested. Frequent jams are possible with some hole configurations. Pretesting a small quantity is recommended before making a large purchase.



## Pressure-Sensitive Labels

---

### Material Description & Expectations

Pressure-sensitive label stock consists of three layers: the face sheet, the pressure-sensitive adhesive, and the backing or release sheet. There are many types of face sheets and label weights available. To avoid feeding and image quality problems, it is very important to run labels with the correct balance of properties. The recommended Xerox copier/printer labels have been specifically designed to give optimum performance in the 5790. They have low weight/low stiffness for improved feeding, and have a pattern-printed adhesive (no adhesive within 1/16 inch of the edges of the sheets) to reduce fuser contamination.

---

### Recommended Materials

**Xerox 1-up Copier Labels** 8.5 x 11" = 3R4473  
**Xerox 8-up Copier Labels** 8.5 x 11" = 3R4472  
**Xerox 24-up Copier Labels** 8.5 x 11" = 3R4471  
**Xerox 30-up Copier Labels** 8.5 x 11" = 3R4470  
**Xerox 33-up Copier Labels** 8.5 x 11" = 3R4469

These Xerox Copier Labels are specifically made for use in copiers/printers. Because of the wide variety of labels available, it is impossible to predict how other types will perform.

---

## 1 2 3...

### Steps for Success

- 1 Run all label materials from the Paper Tray Bypass with the face side up.
  - 2 Select Heavy Paper Mode.
  - 3 Run the recommended materials with the 11" edge as the lead edge.
  - 4 Fan the stacks before loading for optimum feeding.
  - 5 If a damaged or folded lead edge is found on jammed sheets, manually curl the lead edge down before loading to minimize jamming.
-



### Hints, Tips & Testing Results

#### **Xerox testing has shown the following:**

- When recommended materials are run as detailed above, with the correct tray, mode, and orientation, feeding performance and image quality is good, but will not equal 24 lb LX (90 gsm) performance.
- The Xerox 1-up (3R4473) and 8-up (3R4472) labels may experience more jams due to their higher stiffness.
- Toner saturation on electronic originals should be limited to a total of 280% (70% for each Color). Higher toner saturations can result in poorly fused prints.
- In general, successful labels will have a low-weight face and backing sheet, and should have a pattern-printed adhesive. Overall weight should be less than 163 gsm. They should also be run with the grain parallel to the leading edge.
- If attempting to use a label that has not been recommended, first try a small quantity to test its performance, then consult your local Xerox representative for agreement on its use.



**CAUTION:** Dry gum labels (those that require moistening before being applied) can cause severe machine contamination problems and should not be used.



## **Coated Papers**

### Material Description & Expectations

Coated papers have binders, adhesives and pigments applied to their surfaces on one or both sides. As compared to the primary 24lb (90 gsm) papers, they provide improved image gloss but will generally cause an increase in jams. Two-sided copying/printing of coated papers is not recommended because of frequent jams and likely image quality/gloss problems.

### Recommended Materials

**Xerox 32 lb Ultra Spec Series (120 gsm)** 8.5 x 11" = 3R5093

**Xerox 32 lb Ultra Spec Series (120 gsm)** 11 x 17" = 3R5094


**Xerox 60 lb Ultra Spec Series (162 gsm)** 8.5 x 11" = 3R5095

**Xerox 60 lb Ultra Spec Series (162 gsm)** 11 x 17" = 3R5096

These Xerox Coated papers are specifically made for use in copiers/printers. Because of wide variation in other coated papers, it is impossible to predict how they will perform.

**James River King James Cast Coat 8pt. (172 gsm)**

**1 2 3...****Steps for Success**

- 1 Run all coated papers from the Paper Tray Bypass, with the glossy side up.
- 2 Select Heavy Paper Mode for the recommended papers and all coated papers heavier than 105 gsm.
- 3 Load all paper with the curl down in the tray.  

- 4 Vigorously fan the stacks before loading to reduce multifeeds. If multifeeds occur, single sheet feeding may be required.
- 5 For best image quality keep unused paper stored in a closed package or resealable bag. Do not leave paper in the bypass tray when not being used.
- 6 If a damaged or folded lead edge is found on jammed sheets, manually curl the lead edge down before loading to minimize jamming.
- 7 Improperly clearing coated paper jams can cause machine damage. When clearing jammed sheets (especially important with 11 x 17 inch sheets), first try clearing the jam from the Paper Tray Bypass. Next, open the front door and turn knobs A, B and C in the direction shown by the arrows. Finally, pull the Transfer Drawer out carefully to clear the jam.



**CAUTION:** Forcing the Transfer Drawer open may cause machine damage resulting in a service call.



**CAUTION:** The use of coated paper weights greater than 60 lb cover (163 gsm) is likely to result in damage to the copier/printer requiring a service call. Do not exceed the maximum recommended paper weight with the exception of James River King James Cast Coat 8 pt. (172 gsm).

---

**Hints, Tips & Testing Results****Xerox testing has shown the following:**

- When the recommended materials are run as detailed above, with the correct tray, mode, orientation and curl, feeding performance is good, but will not equal 24 lb LX performance.
- Coated papers are very susceptible to humidity. Image Mottle (light patches in solid areas), or generally light image will occur if paper is left open in environments with more than 40% humidity. To avoid this, keep packages sealed; use sheets from the center of the ream; or store unused paper in a ziplock bag. Multifeeds are also much more likely with humidity greater than 40%.
- A small percentage of sheets may exhibit toner on the lead edge. Flipping the paper over or manually curling the lead edge

down will minimize this condition. Your Xerox Service Representative can also demonstrate cleaning procedures to minimize this condition.

- Two-sided copying of coated papers is not recommended. Paper curl created when running side 1 can cause a high jam rate with side 2. If this occurs, flipping the paper over for side 1 may improve curl and feeding performance. Manually curling the lead edge of the side 1 imaged sheets down before loading them for side 2 can also improve side 2 feeding. Image quality on side 2 will also be reduced with certain images. Light image patches (mottle) and deletions are likely on side 2 especially in large halftone areas. Areas of variable image gloss will also occur on side 1 during the 2nd pass. This will be most evident on large solid areas. Running the image with the lowest area coverage on side 1 will minimize this condition. Over time, this image gloss variation will improve if the oil on the copies is allowed to evaporate.
- Toner saturation on electronic originals should be limited to a total of 280% (70% for each Color). Higher toner saturation can result in poorly fused prints.
- James River King James Cast Coat 8pt. has a high gloss coating on one side and a large natural curl. The large curl allows this extra heavy (172 gsm) material to run reliably. This material must be run curl down from the bypass with the 8.5 inch edge as the leading edge.
- If using a coated paper that has not been mentioned, first try a small quantity to test its performance, then consult your local Xerox representative for agreement on its use.



## Preprinted Papers

---

### **Material Description & Expectations**

This category encompasses a wide variety of materials. Offset printed Letterhead papers and Xerographic Prints, within the recommended paper weight range, will feed reliably in the 5790. Copies produced on laser, ink jet, or dot matrix printers, carbonless paper, raised/engraved copies, and preprinted forms, using various inks (with and without MICR), have not been tested and should be considered in the not recommended category.

---

### **Recommended Materials**

**Offset printed Letterhead and Xerographic Prints** from 16 lb bond (60 gsm) to 90 lb index (163 gsm).

---

**1 2 3...**

### **Steps for Success**

- 1 Ensure paper is within the 5790's paper weight range.
  - 2 For best feeding performance, run all preprinted sheets from the Paper Tray Bypass. If paper is heavier than 28 lb bond (105 gsm), run it in the Heavy Paper Mode.
  - 3 Allow preprinted sheets to dry completely before loading them into the copier/printer.
  - 4 The preprinted ink should have a low conductivity and will have to withstand the high fuser temperature of the 5790 (155° C/310° F).
  - 5 Keep the preprinted sheets free from curl. Ensure that sheets are flat or have a slight lead edge downcurl when loaded into the bypass paper tray.
  - 6 To minimize jams, store preprinted sheets carefully. Avoid damaging the edges or corners of the paper and protect preprinted sheets from humid conditions that will lead to image quality problems.
- 

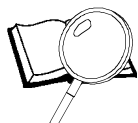
### **Hints, Tips & Testing Results**

**Xerox testing has shown the following:**

- Some inks from preprinted materials may cause deletions, offsetting or contamination. Select a surface-drying, laser-compatible ink designed for reproduction on color copier/printers. An example is TuffText by Vanson. Your offset printer representative may be able to specify an ink with similar characteristics.
- Two-sided copying/printing onto preprinted materials is not recommended. In many cases, deletions will occur if you attempt to copy an image onto an area on side 2 that is directly

opposite a preprinted area on side 1. The preprinted area can disrupt the transfer of toner onto side 2, causing a deleted area. This can be due to the conductivity of the ink itself or because the ink on side 1 caused a slight ripple in the paper.

- Always pretest a small amount of material to determine image quality and feeding performance before purchasing a large quantity.



## Single-Step Transfer Paper

### Material Description & Expectations

Single-Step Transfer Papers enable you to transfer full color images directly from copies or prints onto almost any fabric. A popular application is image transfer onto T- shirts. The recommended Xerox material has been extensively tested and has been selected to provide optimum performance. The other recommended materials have been selected from the large variety of brands that were tested. They will provide acceptable results but may require additional operator actions. See the hints and tips section for specifics.

### Recommended Materials

**Xerox Single Step** 8.5 x 11" = 3R5811

**Xerox Single Step** 11 x 17" = 3R5812

Air Waves Elite from Air Waves

Magic Touch Mirror Image SS 500 from Magic Touch USA

Paropy CL from Joto USA

## 1 2 3 . . .

### Steps for Success

- 1 Run all Single-Step materials from the Paper Tray Bypass with the side to be imaged up.
- 2 Fan the stacks before loading to minimize multifeed jams.
- 3 Run with the 11" edge as the lead edge.
- 4 Select Mirror Image setting from the Edit/Special Mode menu so that image will be right reading after transfer to fabric.
- 5 The Xerox materials can be run in Normal Paper Mode except when running very highly saturated images. Select Heavy Paper Mode in these cases.
- 6 The other recommended materials should be run in the Heavy Paper Mode to avoid poor fusing of the toner to the paper and fuser jams.
- 7 Store unused material in sealed packages to avoid humidity related feeding and image quality problems.

**Hints, Tips & Testing Results****Xerox testing has shown the following:**

- When the recommended Xerox material is run as detailed above, feeding performance will be good, but should not be expected to equal 24 lb LX performance.
- The recommended non-Xerox materials will provide good results, but may experience more variation in feeding performance and image quality than the Xerox brand.
- To avoid problems (jams & poor image quality) caused by both dry and humid environments, store the Xerox material in its resealable bag with desiccant pack. Other brands should also be stored in resealed packages when not in use.
- Multi-sheet feeding has been observed with some non-Xerox brands, usually occurring at the bottom of the stack. It may be necessary to feed single sheets to overcome this problem.
- Toner saturation on electronic originals should be limited to a total of 280% (70% for each Color). Higher toner saturations can result in poorly fused prints.
- For each brand, follow the manufacturer's specific recommendations for transferring and washing.
- The phone numbers to order the non-Xerox materials are:  
  
Air Waves Elite: 800-468-7335  
Magic Touch Mirror Image SS 500: 800-624-4210  
Paropy CL - Joto: 800-565-5686
- A 50/50 blend of polyester/cotton provides better image durability than shirts made of 100% cotton. Tight weave fabrics (heavy T-shirts) provide better results than loose knit fabrics (sweat shirts).



## Transparencies

### Material Description & Expectations

Transparency stock is used primarily to create images that can be projected onto a wall or screen. Transparencies are made of polyester film that is specially coated to make dry ink (toner) readily adhere to it. The base material and coating type are both very important in the final quality of the projected image. The recommended Xerox transparencies meet the critical parameters for friction, clarity and toner adhesion required for optimum feeding and color image quality. When run as described below, feeding performance will be good, but will not equal the reliability of 24 lb LX (90 gsm) paper.

### Recommended Materials

#### **U.S.:**

**Xerox Removable Stripe, Good Quality** 8.5 x 11" = 3R3108

**Xerox Removable Stripe, Good Quality** 11 x 17" = 3R5821

**Xerox Removable Stripe, Premium Quality** 8.5 x 11" = 3R5765

**Xerox Painted Stripe, Good Quality** 8.5 x 11" = 3R5775

#### **Canada:**

**Xerox Removable Stripe, Good Quality** 8.5 x 11" = 3R3108

**Xerox Removable Stripe, Good Quality** 11 x 17" = 3R5821

**Xerox Removable Stripe, Premium Quality** 8.5 x 11" = 3R5765

**Xerox Painted Stripe, Good Quality** 8.5 x 11" = 3R4894

### **1 2 3...**

### Steps for Success

- 1 Do not run Stripeless transparencies (those without a removable or painted lead edge white stripe), or Paper-Backed transparencies in the 5790. These will cause frequent jams and possible machine damage.
- 2 Remove all paper from the Paper Tray Bypass before loading transparencies.
- 3 Load all transparencies in the Paper Tray Bypass with the white stripe (removable or painted) at the leading edge.
- 4 All transparencies MUST be loaded with the removable or painted stripe side (dull side) DOWN in the tray. Immediate jams and machine damage are likely to occur if incorrectly loaded.
- 5 Fan the stacks before loading for optimum feeding performance.
- 6 From the Paper Tray (Bypass) screen, select Paper/Transparency mode for all 11" Removable Stripe Transparencies. For 11" Painted Stripe Transparencies, select Transparency Interleave mode to provide the best feeding reliability.
- 7 To run 11 x 17" transparencies, select the Opaque Film/17" Transp. mode from the Paper Tray (Bypass) screen. Remove each sheet as it exits the copier/printer to prevent curl from forming at the trailing edge.

- 8 11 x 17" Transparencies must be run one at a time. You cannot select more than 1 on the 5790 copier. When the 5790 is used as a printer, select a copy quantity of 1.
- 

### **Hints, Tips & Testing Results**

#### **Xerox testing has shown the following:**

- The Xerox Premium Transparencies US/Canada 3R5765 provide brighter/cleaner colors than the standard transparencies.
- Be careful when handling transparencies. Dry ink (toner) cannot penetrate into the surface of the transparency. Therefore, any damage to the surface of the transparency will affect the quality of the image.
- When running 11 x 17" transparencies, remove each transparency as it exits the machine. If left to sit for only a few seconds, a permanent upcurl will form in the last few inches of the sheet. Stacking problems will occur if multiple sheets are allowed to accumulate in the output tray.
- A light, oily residue may be present on the transparency after copying. This residue will eventually disappear, but it may be removed by gently wiping the surface with a cloth or tissue.
- Transparencies should be run in batches of no more than 25 at a time. To help clean the oil (that would normally absorb into paper) from the fuser and pressure rolls during a long run of transparencies, feed 5 sheets of blank paper through the copier/printer after each run of 25 transparencies. Place a blank sheet on the document glass and use the Black Mode for the paper copies.
- The recommended Xerox Transparencies are specifically made for use in color copiers/printers. Because of the wide variety of transparencies available, it is impossible to predict how other types will perform.
- If a jam occurs while using transparencies, look carefully to locate the jammed transparency and remove it before proceeding. If the jammed transparency cannot be located or removed, the Xerox service representative should be called.



**CAUTION:** If you cannot find or clear a jammed transparency, do not run another transparency or paper copy. Copier/Printer damage will occur if another sheet is run while a transparency is jammed in the fuser area (out of operator view).



**CAUTION:** Do not attempt to remove a transparency that is firmly jammed in the fuser. Only a Xerox service representative should attempt to remove this type of transparency jam.





## Xerox Docupac Folders

### **Material Description & Expectations**

Xerox Docupac Folders are designed for anyone who needs a small quantity of customized folders quickly and inexpensively. This two sheet system consists of a front that can be custom imaged on the 5790, and then manually attached to the back pocket portion of the folder. The finished folders measure 8 3/4" x 11 3/4" and can hold up to 25 sheets of 20 lb bond paper. A pocket is also included to display a business card. Docupac folders are available in White, Gray, or Ivory and are made from 90 lb Index Stock. Feeding and image quality performance will be similar to standard 8.5 x 11" 90 lb Index paper.

### **Recommended Materials**

**Xerox Docupac Folders**(90 lb index)

White = 3R4885 Gray = 3R4927 Ivory = 3R4928

1 2 3...

### **Steps for Success**

- 1 Run the covers in Heavy Paper Mode from the Paper Tray Bypass.
- 2 Fan the stack before loading to minimize jams.
- 3 Load with the short (8 3/4 inch) edge as the lead edge. The scored "bump" should be placed towards the back of the tray. For a smooth fold, the "bump" should be facing down.
- 4 From the Paper Tray Bypass menu, select "size input" and enter 298 mm for the left to right value, with 222 mm for the front to back value. This will allow the auto center and auto magnification features to work correctly when the original is corner registered on the platen glass.
- 5 Clear jams carefully or machine damage may occur. Refer to the Heavy-Weight Paper section in this guide for specific jam-clearing instructions.

### **Hints, Tips & Testing Results**

**Xerox testing has shown the following:**

- These 90 lb Index Docupac Folders are specially made to be short grain. When run as detailed above, feeding performance should be good and will be similar to standard 8.5 x 11" 90 lb Index, but will not equal 24 lb Image Series LX feeding performance.
- Image quality will be good, but may experience the same shortfalls (mottle, deletions, etc.) that most heavy-weight papers display. See the Heavy-Weight Paper section in this guide for more details.

- Two-sided copying/printing with Xerox Docupac Folders is not recommended. More frequent jams and image quality defects will be encountered.
- If jams occur, manually curling the lead edge down will help to reduce jamming.



Do not confuse these Xerox Docupac Folders with the heavier Xerox Docupac Laser Folders. Xerox Docupac Laser Folders are made from 65 lb (176 gsm) recycled paper stock. This 65 lb stock has higher stiffness and a more coarse formation. These factors will cause frequent jams and poor image quality in the 5790. **Do not run Docupac Laser Folders in the 5790.**

## Applications

The sections that follow provide specific techniques which should be used for certain types of jobs in order to assure optimum feeding performance and image quality.

### Duplex Copies

#### Application Description & Expectations

Duplex (two-sided) copying refers to imaging on the second side of a copy already made on the 5790 copier/printer. When using the recommended 24 to 28 lb bond papers, feeding performance and image quality will be good, but may not equal the performance and quality of side 1.

#### Recommended Materials

**Xerox 24 lb Image Series LX** 8.5 x 11" = 3R3874

**Xerox 24 lb Image Series LX** 11 x 17" = 3R3877

**Xerox 28 lb 4024 DP**, 8.5 x 11" = 3R2353

**Xerox 28 lb 4024 DP**, 11 x 17" = 3R3873

**Hammermill 28 lb Color Copy Paper** 8.5 x 11" = 10246-7

#### 1 2 3 . . .

#### Steps for Success

- 1 For optimum image quality and copier/printer performance, use the **Special Side 1** and **Special Side 2** buttons. This selection improves the feeding performance, image quality (transfer), and fusing performance (gloss) of Duplex Copies.
- 2 Run the side that has the least image area (or the black and white side) first.
- 3 Load the paper for side 1 in the Paper Tray Bypass. Do not load more than 25 sheets of paper when using the **Special** buttons.
- 4 Select the **Special Side 1** button from the Paper Tray (Bypass) screen to run side 1.
- 5 After running side 1, select the **Special Side 2** button. (The **Special Side 2** button is not selectable until the document size has been entered using the **Size Input** button, or the **Special Side 1** button has been used.)
- 6 Load the side 1 imaged copies/prints into the Paper Tray Bypass with the imaged side down. The paper should be rotated 180 or 90 degrees from the side 1 position. (Example: Run the side 1 lead edge as the side 2 trail edge, or feed side 1 long-edge feed, then side 2 short-edge feed. The document on the Document Glass should also be rotated 90 degrees in the latter case.)
- 7 Run side 2 within 15 to 20 minutes of running side 1.

- 8 When running large jobs of more than 25 copies, split the job into multiple groups of 25 sheets maximum. That is, run 25 copies of side 1, then run 25 copies of side 2.
  - 9 Heavy-weight papers (greater than 28 lb bond (105 gsm), coated papers, and transparencies should not be used for two-sided copying. Frequent jams and image quality problems are likely with heavy-weight and coated papers. Duplexing of transparencies will cause damage to the copier/printer.
- 

### **Hints, Tips & Testing Results**

#### **Xerox testing has shown the following:**

- All color copiers/printers experience a higher jam rate when performing duplex copying. Paper jams can be caused by the curl created when running the side 1 image. This unpredictable side 1 curl is the main reason that heavy-weight and coated papers cannot be recommended for two-sided copying.
- Another cause of increased jams is the contamination of the feed rolls with fuser oil when running a large number of duplex copies. This contamination may require more frequent cleaning of the rollers. Your Xerox representative can give you information on performing these cleaning procedures (order number 700P98965). To help reduce this contamination problem, and improve feeding reliability, mix one-sided copying jobs with two-sided copying jobs when possible. During large Duplex jobs, periodically run 5 blank sheets from the Paper Tray Bypass in the Black Mode to help keep the feed rolls clean.
- Image quality on side 2 will usually be equal to the side 1 image, but is more likely to have image mottle/light area problems caused by slight waviness in the paper and variable toner transfer. Both of these factors are greatly influenced by the paper's quality. This is another reason that heavy-weight and coated papers are not recommended for duplexing.
- Most two-sided copying can be done using the **Standard Side 1 or 2** button on the Paper Type (Bypass) screen. To make Duplex copies with this method:

Copy the first side from any paper source using the basic procedures for normal copying.

Load the side 1 imaged sheets in the Paper Tray Bypass. (Use steps 6 through 9 from the Steps for Success section.)

Select the **Standard Side 1 or 2** button on the Paper Type (Bypass) screen, if it is not already selected as the default setting. Then run side 2.

If you experience a high jam rate or are not satisfied with the image quality, use the **Special** method of two-sided copying.

- The 4mm Lead Edge Deletion selection is not available for Special two-sided copying. The copier/printer automatically selects 8mm. The Book Mode, Poster, and Transparency Interleave features are not available for Special two-sided copying.
- If the Image Shift or Corner Shift feature is selected with two-sided copying, change the horizontal shift direction on side 2 to the opposite of the side 1 position.

Example: If you shift the side 1 image 0.5 inches (13mm) to the right, the side 2 image should be shifted 0.5 inches (13mm) to the left. Top and bottom image shift positions do not have to be changed, however if the original document is rotated 90 degrees on the Document Glass, then the side 2 image should be shifted to the vertically opposite direction.

- As mentioned above, heavy-weight and coated papers are not recommended for Duplex copying due to their variable curl on side 1, and image quality problems when running side 2. In many cases, however, good results have been seen with 32 lb paper and even 90 lb Index. The level of success depends largely on the exact paper being used, how it is loaded, the image being used, and the unique variables in each machine. If attempting to duplex these materials, refer to the Hints and Tips sections for Heavy-Weight and Coated papers for more specific directions. Results with these papers cannot be guaranteed and nothing can be done to improve performance if it is not satisfactory.

## Color Inserts

---

### **Application Description & Expectations**

Color Inserts refers to merging color copies made on the 5790 with black and white documents being printed on a Xerox DocuTech Model 135 or a Xerox 5090 Duplicator. If you want to use 5790 color copies in another model Xerox copier/printer, inform your Xerox service representative and try a few copies to determine the results before running a job.

---

### **Recommended Materials**

**Xerox 24 lb Image Series LX 8.5 x 11" = 3R3874**

**Xerox 24 lb Image Series LX 11 x 17" = 3R3877**

---

**1 2 3...****Steps for Success**

- 1 For optimum performance as inserts, 5790 copies/prints should be as flat as possible. To help reduce the amount of curl, try to use images with a moderate amount of area coverage (20% or less), or light colored background to minimize the amount of dry ink on the copy/print. Copies with dark images and a high area coverage require large amounts of dry ink and can result in copy curl toward the the image side. White, or very light image coverage, increases the curl away from the image side.
- 2 When storing the color copies, keep the stacks horizontal at all times. Stacking or placing weights on the copies can help reduce curl. Do not allow copies to shift or slide during handling to avoid damage to the edges of the paper.

---

**Hints, Tips & Testing Results****Xerox testing has shown the following:**

- The control of humidity is a critical factor in the performance of color inserts. An air conditioned environment will provide the proper combination of temperature and humidity. Use the following guidelines for storing the 5790 color inserts in a non-air conditioned environment:

Minimum: 50° F (10° C) at 15% relative humidity

Maximum: 81° F (27° C) at 85% relative humidity

- For the best performance, the number of 5790 color copies used as inserts should be no more than 10% of the total number of pages in a job.
- Transparencies and Duplex copies should not be used as inserts.



**CAUTION:** Do not use 5790 color copies in the Xerox 5100 Copier/printer/Duplicator. The copies are incompatible with the 5100 fuser.

---

## About Paper

---

Paper is physically and chemically complex. For a paper to perform properly in a 5790, its properties must be within specified limits. Some of these limits can be determined, but others cannot be obtained easily. Therefore, you must rely on the paper supplier to deliver paper, or other material, that meets the specifications outlined in this guide and the *Xerox 5790 Digital Color Copier/Printer Operator Manual*.

It is important that you understand the relationship between the properties of materials used in the copier/printer and reliable performance of the copier/printer. Using materials that do not meet the specified requirements may result in increased paper jams, poor print quality, excessive service calls, and even damage to the copier/printer.

The quality and condition of the paper being used for copying will affect the performance of the 5790 and the quality of the output copy.



Excellent performance will be obtained by using Xerox Image Series LX 24 lb paper (8.5 x 11 inch= 3R3874 or 11 x 17 inch= 3R3877). This paper has high brightness, a smooth surface, and a very uniform paper fiber distribution (formation).

Many papers designed for use in laser printers have some or all of these recommended properties.

Poor formation, or a rough surface, significantly degrades copy quality. High brightness of the paper influences the appearance of the colors on the copy.

## Paper Weight

---

**gsm** Paper weight is generally expressed as grams per square meter (gsm), a measure that makes it easy to compare any two pieces of paper, even if the papers are of different types.

**Basis weight** Paper weight is also expressed in terms of *basis weight*, which is the weight of 500 sheets of paper of a particular size. Because each type of paper (bond, offset, cover, index, etc.) is expressed in terms of a different basis size, a 20 lb bond paper and a 20 lb offset paper are not the same weight in gsm.

**M value** The weight of some materials is described by the M value printed on the package (i.e. 21.64M). The M value is the weight in lbs of 1,000 sheets of the size of the paper in the package. To convert the M value to gsm for 8.5 x 11" paper, multiply the M value by 7.527. To convert the M value to gsm for 11 x 17" paper, multiply the M value by 3.763.

**Pt. value** Pt (point) value refers to the sheet thickness in mils (thousandths of an inch). For example, 10 pt. = 0.010", or 7 pt. = 0.007" thick paper. You cannot directly convert pt value to paper weight or stiffness. For most paper types, the maximum recommended paper weight of 163 gsm will be equivalent to 7 pt or 8 pt paper.



### Equivalent Weights of Recommended Paper Chart

Use the chart below to find the equivalent weight of a particular paper stock.

<b>Gram Weight</b>	<b>Basis Weight (in lbs for 500 sheets of the indicated size)</b>			
<b>(gsm)</b>	<b>Xerographic Bond (17x22")</b>	<b>Offset (25x38")</b>	<b>Cover (20x26")</b>	<b>Index (25.5x30.5")</b>
60	16	40	22	33
67				
75	20	50	28	42
80	22	55	30	45
90	24	60	33	50
105	28	70	39	58
120	32	80	45	67
125				
135				
146				
147				
150				
155				
163	43	110	60	90

Table 1: Paper weights and sizes for cut sheets

## Paper Weight Performance

Reliable feeding can be expected from the 5790 paper trays with most bond papers over 16 lb (60 gsm) to 28 lb (105 gsm).

Reliable feeding can be expected from the Paper Tray Bypass with most bond papers over 16 lb (60 gsm) to 90 lb Index (163 gsm).

Feed Source and Paper Size	Paper Weight				
	<16 lb bond (60 gsm)	16 to 24 lb bond (60 to 90 gsm)	28 lb bond (105 gsm)	>28 lb bond to 90 lb Index* (>105 to 163 gsm)	>90 lb Index (>163 gsm)
<b>All Paper Trays</b>  <b>Minimum size:</b> 7.2 x 7.2" bond (182 x 182mm)  <b>Maximum size:</b> 11 x 17" Short Edge Feed	NR	E	G	NR	MD
<b>Paper Tray Bypass</b>  <b>Minimum size:</b> 7.2 x 7.2" bond (182 x 182mm)  <b>Maximum size:</b> 11 x 17" Short Edge Feed	NR	E	E	G to E	MD

**Table 2: Paper weight performance**

**E** = Excellent - Reliable feeds may be expected

**G** = Good - Special handling may be required and less reliable feeds can be expected.

**NR** = Not Recommended - Copy quality degradation and more frequent jams will occur.

**MD** = Machine Damage may occur.

\* = The Heavy Weight Paper mode must be used for any paper heavier than 28 lb bond (105 gsm).

## Grade

---



Paper grade refers to the brightness of a sheet of paper. Brightness is a measure of the amount of light a sheet reflects. The more light it reflects, the higher the brightness and the grade.

Paper with high brightness enhances the contrast between the paper and the image and enables faithful color reproduction.

The Xerox Image Series LX 24 lb (8.5 x 11 inch = 3R3874 or 11 x 17 inch = 3R3877) paper has high brightness and provides excellent image quality.

Brightness should not be confused with *whiteness*, which is the shade of the paper rather than the amount of light it reflects.

## Moisture Content

---

Moisture content directly affects reliability and copy quality.

Too much moisture can cause excessive paper curl, paper jams, and copy quality problems. Moisture levels that are too low can cause static problems which can also result in paper jams.

Moisture content must be uniform within the ream. The ream should not be allowed to lose or absorb moisture during storage. Moisture-proof ream wrappers are essential to maintaining the correct moisture level. Xerox papers have a polyethylene laminate ream wrapper that resists the migration of moisture into and out of the package.



A moisture level range of 4.0 to 7.0% is recommended for paper used in a 5790.

## Curl

Excessive curl may cause paper jams. The selection of a low-curl paper with proper moisture content will make a significant difference in the performance of your copier/printer.

Xerox papers are manufactured with built-in curl control and work well when loaded into the paper trays in the correct curl direction.

### Determining curl using ream wrapper arrows



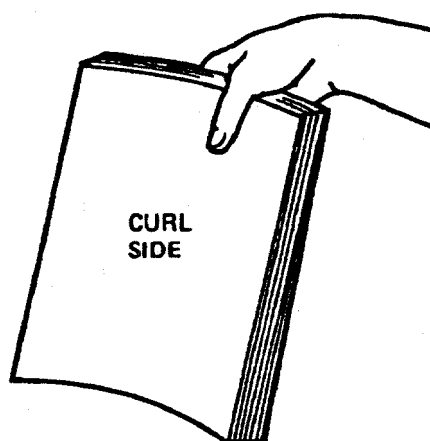
Xerox papers are packaged with an arrow printed on one end of the ream wrapper. The arrow points to the wire side of the paper. The curl side of the paper, also known as the felt side, is the opposite side.

Load the paper so the image will print on the wire side of the paper.

- Load the paper into Paper Trays 1, 2, and 3 with the wire side down (curl side up).
- Load the paper into the Paper Tray Bypass with the wire side up (curl side down). It is especially important to load heavy weight papers into the Paper Tray Bypass with the curl side down.

If more detailed information about loading paper is required, refer to section six of the *Xerox Regal 5790 Digital Color Copier/Printer Operator Manual*.

### Determining curl without ream wrapper arrows



If the wrapper on a ream of paper is not marked with an arrow showing the wire (image) side of the paper, you can determine the curl side by holding a one-half inch stack of paper by one of the short edges.

Let the paper hang with the long edge parallel to your body. Either the lower edge or the two side edges will curl slightly toward the center. Observe which way the edge or edges curl. This is the curl side.

(continued on next page)

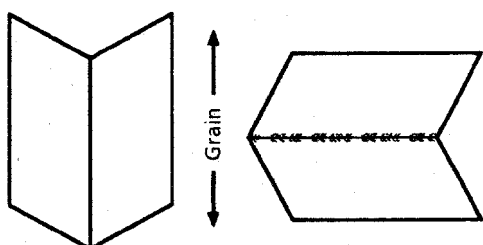
Paper handling and copy curl performance vary with room temperature, humidity, paper quality, and the image area on the copies. All of these variables interact, and, in some situations, the operator must experiment to determine which paper loading method provides the best performance.

**Paper feeding hints**

If persistent paper feeding problems occur, one of the following hints may help:

- Turn the paper over and make the copies again. This technique can be used for both the paper trays and the Paper Tray Bypass. If feeding performance is improved, continue to load the paper in this manner.
- Open a fresh ream of paper. Load the fresh paper and run the job again. If the paper jams cease, discard the paper that was causing the jams.
- Occasionally, the top sheets of a newly opened ream will curl the opposite of the remaining sheets in the ream, indicating that the paper is adjusting to the humidity level in the room. To obtain consistent curl for all sheets in the ream, allow the opened ream to remain in the room until all the sheets have acclimated to the environmental conditions.
- Change the paper feed orientation. For example, if feeding long-edge first (LEF), try feeding short-edge first (SEF).

## Grain

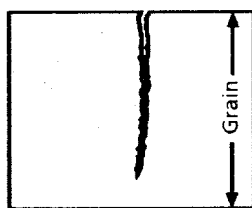


The grain of a paper is the direction in which most of the fibers lie. During the paper-making process, the majority of the paper fibers align parallel with one another. Depending on how the paper is cut to its finished size, it will be either grain-long (the grain is parallel to the longer dimension of the paper), or grain-short (the grain is parallel to the shorter dimension of the paper).

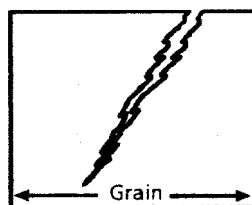
One method used to determine the grain is to fold a sheet of paper lengthwise, then make a crosswise fold. Compare the two folds. Paper folds smoothly with the grain. Cross-grain folds tend to be rough and cracked.

Another method you can use to determine the grain direction of a sheet of paper is to tear the sheet widthwise. Paper always tears straighter with the grain.

Grain direction is critical when running heavy-weight papers in the 5790. Heavy-weight papers must be loaded in the Paper Tray Bypass with the grain direction parallel to the leading edge of the sheet.



Grain-short



Grain-long

## Stiffness

Stiffness refers to the rigidity, or bending resistance, of paper. Thicker papers are usually stiffer. Papers are normally stiffer in the grain-short direction.

In general, paper that is less than 16 lb (60 gsm) is more likely to bunch up or wrinkle in the copier/printer, causing jams and misfeeds. Heavier weight papers, over 28 lb (105 gsm), may have runability problems as well as print quality defects (skips, blurs, deletions) due to their reduced ability to bend around the transfer drum.

Usually, reliable feeding rates can be obtained on the 5790 by feeding lightweight paper, 16 lb (60 gsm), with the grain direction the same as the feed direction. This will increase the stiffness. When feeding heavier weight paper, 32 lb bond to 90 lb Index (120 to 163 gsm), the grain direction should be the opposite of the feed direction to decrease stiffness.

### Buying tip

Because 11 x 17 inch paper must be fed short-edge first, purchase only grain-long lightweight papers, 16 lb (60 gsm). Heavy-weight 11 x 17 inch papers, 32 lb bond to 90 lb Index (120 to 163 gsm), should be purchased grain-short.

## Smoothness

---

The smoothness of paper has a significant impact on copy quality. If paper is too rough, copy quality degrades; with increasing roughness, expect a loss of copy quality in solids and halftones (grainy colors). Extremely rough paper does not properly accept fused toner, which rubs or flakes off.

Mottle (light patches in solid color areas) will occur on rough papers and on papers with poor or uneven formation. Paper smoothness and formation generally become worse as the paper weight increases.

Since surface irregularities may not be filled in with dry ink (toner), the image on rough papers may appear lighter. A higher density setting (use the Lighter/Darker setting) is required to achieve a density level equivalent to that on smoother papers.

Xerox has conducted extensive image quality testing on xerographic, bond, and offset papers. Xerographic papers are generally smoother than offset papers and most bond papers. The Xerox Image Series LX papers are smoother than the average xerographic papers.

The Xerox Image Series LX 24 lb papers provide excellent image quality.



---

## Paper Storage

---

Paper is normally shipped in fiberboard cartons. The number of reams in a carton depends on the size of the paper. If a large quantity of paper has been ordered, the cartons are stacked on wooden pallets.

Mishandled cartons (for example, dropped, thrown, or struck with a fork lift), may result in damaged paper, some of which may not be immediately obvious. The use of damaged paper increases the frequency of paper jams and other feeding problems.

Do not store the cartons directly on the floor; this increases the possibility of moisture absorption. Store the cartons on pallets, shelves, or in cabinets in an area protected from extremes of temperature and humidity.

Do not open the sealed reams of paper until the paper is to be loaded into the copier/printer. Leave the paper in the original ream wrapper, and leave the reams in the shipping carton. The ream wrapper contains an inner lining which protects the paper from moisture. Removing the ream wrapper eliminates the protective barrier, exposing the paper to moisture fluctuations which can result in excessive curl and other undesirable effects.



Paper from an unopened ream will provide excellent performance.

When paper from an opened ream will not be used for a period of time, such as overnight, the ream wrapper should be resealed with tape. For best results, loose paper should be stored in a resealable plastic bag, or in paper trays 1, 2, or 3 in the machine.

Do not store paper in the Paper Tray Bypass. Load only enough paper in the Paper Tray Bypass for the job being run.

If using paper from a ream that has been left open, take the sheets from the center of the ream.

### Stacking

---

If the cartons or individual reams are to be stacked, they should be placed carefully on top of one another to avoid crushing the edges or causing any other damage.

The cartons should be stacked no more than five cartons high. Pallets may be stacked three high.

### Temperature and Humidity

---

The temperature of the room where paper is stored can have a significant effect on how that paper performs in the 5790.

The control of humidity is one of the most important precautions that can be taken to assure proper paper handling in the 5790.

Paper should be stored within the following conditions:

- |                            |  |
|----------------------------|--|
| <b>Air conditioned</b>     | Most environments with air conditioning systems provide the proper combination of temperature and humidity for good paper performance.   |
| <b>Non-air conditioned</b> | Use the following guidelines for storing paper in non-air conditioned environments: <ul style="list-style-type: none"><li>• Minimum: 50° F (10° C) at 15% relative humidity</li><li>• Maximum: 81° F (27.2° C) at 85% relative humidity.</li></ul> |

---

## Conditioning Paper

---

If the paper is moved from a storage area to a location with a different temperature and humidity, the paper should be conditioned to the new location before it is used.



All materials used in the 5790 must be conditioned to the temperature/humidity of the room containing the copier/printer for optimum performance.

**Paper**

Put paper in the same room as the copier/printer the night before it is used in the copier/printer.

**Transparencies**

Leave transparencies in the same room as the copier/printer for 24 hours before they are used in the copier/printer.

**Label stock**

Condition label stock for 72 hours in the copier/printer area before it is used in the copier/printer.

The conditioning of materials can be accelerated by separating the cartons or reams of paper (or boxes of transparencies or labels) from each other. *Do not unseal the reams of paper until you are ready to load them into the machine.*

Prepared by:  
Xerox Corporation  
Multinational Customer and Service Education  
780 Salt Road  
Webster, New York 14580

**701P93592**