شركة منتجات الأحبار المحدودة
INK PRODUCTS CO.LTD.
Coates Lorilleux

PACKAGING GRAVURE PRINTING

TROUBLE SHOOTING GUIDE

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Packaging Gravure Printing Problems and their Solutions

On the following pages, you will find the information on the most common packaging gravure pressroom problems, how to recognize them, their causes and how to correct them.

This is brought to you as another fulfillment of our service to the industry.

ink شركة منتجات الأحبار المحدودة INK PRODUCTS CO.LTD. Coates Lorilleux

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ABRASION

How recognized	Probable Causes	Suggested Remedy
Cylinder wears out at a faster rate than normal	1. Pigment not ground properly.	1. Disperse pigment better
	2. Inherent character of pigment used	2. Ink maker should select proper pigment.
	3. Fast solvent used.	3. Balance the solvent.
	4. Poor chrome coating of cylinder.	4. Re chrome the cylinder
	5. Cylinder design	5. Remake the design
	6. Doctor blade does not oscillate properly.	6. Adjust doctor blade.
	7. Excessive doctor blade pressure	7. Adjust doctor blade.
	8. Foreign material in ink.	8. Change to fresh ink.

SCUMMING

How Recognized	Probable Causes	Suggested Remedy
Faint ink appears on Non-image areas of the printed substrate	1. Surface of the chrome cylinder porous enough to hold a thin film of ink.	1. Polish the cylinder well
	2. Doctor blade not wiping the cylinder clean	2. Adjust doctor blade if possible or change to a new doctor blade.
	3. Different particle size pigments present in the ink/	3. Reformulate ink.

PICKING

How recognized	Probable Causes	Suggested Remedy
Imperfect printing with noticeable areas with no ink	1. Ink drying slow	1. Add faster solvents
	2. Heat applied is low	2. Adjust heaters and air velocity.
	3. Too heavy ink applied	3. Reduce viscosity of ink with extender varnish.

MISTING OR COBWEBS

How Recognized	Probable Causes	Suggested Remedy
Filmy, web-like build up on doctor blade, impression roll, engraving or press frame.	1. Applicator	1. Repair defect
	2.Air drafts at nip	2. Stop excess air movement
	3.Dried ink	3. Check oven for down draft on cylinder.
	4. Faster drying rate of ink	4. Check solvent mix
	5. Ink high viscosity	5. Reduce viscosity to normal level.

BLEEDING.

How Recognized	Probable Causes	Suggested Remedy
One colour into another or a tint or stain of the colour on the printed substrate	1. Ink dries too slow	1. Use right solvent
	2. Insufficient heating	2. Adjust oven temperature
	3. Insufficient air circulation	3. Increase air velocity
	4. In correct ink used	4. Use the right ink after consulting the ink maker.

HAZE

How Recognized	Probable Causes	Suggested Remedy
Appearance of slight opacity in clear film	1. Slight roughness in cylinder	1. Polish cylinder
Foggy appearance in ink film	2. Poor wipe	2. Check doctor blade
	3. Over pigmented ink	3. Add clear extender varnish
	4. Poor Chrome job	4. Remake the cylinder
	5. Humidity high in the press room	5. Install humidity control
	6. Poor solvent mix used	6. Use right solvent mix
	7. Improper stock tension	7. Adjust tension on stock.

DOT SKIP

How Recognized	Probable Causes	Suggested Remedy
Random, generally minute, spots of unprinted areas showing through a printed area. Engraving dots that have not printed.	1. Rough printing surface	1. Use primer coat if possible
	2. Lack of impression to the substrate	2. Check impression to the substrate
	3. Ink drying too fast	3. Use slower solvents
	4. Ink does not get applied to the cylinder	4. Check ink applicator
	5. Ink has high viscosity	5. Reduce viscosity to the required level.
	6. Poor ink flow to the duct	6. Check circulation pump.

MOTTLING

How Recognized	Probable Causes	Suggested Remedy
Poor lay of ink on the substrate	1. Ink does not wet the substrate evenly	1.Change blade angle, change solvent mix
	2. Ink too thin	2. Add fresh ink to increase viscosity.
	3. Incorrect Pigment used	3. Consult Ink Maker to re-formulate the ink
	4. Slow press speed	4. Increase press speed.
	5. Cylinder etching deep	5. Re-etch the cylinder
	6. Impression cylinder pressure too high	6. Use correct pressure

PIN HOLES

How Recognized	Probable Causes	Suggested Remedy
Appearance of small Holes in the printed area	1. Ink fails to form a complete film	1. Adjust vehicle to reduce viscosity, use active solvents
	2. Imperfection in stock	2. Adjust blade angle
	3. Wrong ink for the stock in use.	3. Change to correct ink
	4. Stock too rough	4. Electrostatic assist may help.

BLOCKING

How Recognized	Probable Causes	Suggested Remedy
Undesired adhesion Between the surfaces	1. Improper drying	1. Adjust solvent mix
	2. Trapped solvent	2. Use proper solvent balance
	3. Web rewound too warm	3. Use of chill rollers
	4. Excess pressure in rewind	4. Reduce rewind tension
	5. Ink has higher plasti-cizer content	5. Check ink formulation
	6. Low melting point resins used in the inks	6. Check ink formulations
	7. Insufficient heat applied for drying	7. Adjust oven temperatures

FOAMING

How Recognized	Probable Causes	Suggested Remedy
Small bubbles in ink (surface tension problem)	1. Internal friction	1. Use anti foam
	2. Ink pump too efficient	2. Reduce speed of ink pump
	3. Insufficient defoamer in the ink formulation	3. Add required amount of antifoam to the ink.

STATIC

How Recognized	Probable Causes	Suggested Remedy
Fuzz hairs.	1. In the web	1. Put a piece of aluminum Foil to the web
	2. Low moisture	2. Increase humidity
	3. Low viscosity ink	3. Add fresh ink to increase viscosity.
		4. Use polar solvents if possible
		5. Add steam vapor to web

POOR ADHESION

How to Recognize	Probable Cause	Suggested Remedy
Ink fails to adhere to Material,	1. Incorrect ink used	1. Use the right ink for substrate used.
Fails tape test,	2. Ink reduced too much, binder Percentage becomes low	2. Add fresh ink to increase, binder % and viscosity.
Fails crinkle test, press	3. Poor Drying systems at the press.	3. Correct drying system in the press room
	4. Substrate not properly treated	4. Check treatment level
	5.Surface of the substrate contaminated	5. Check with the stock supplier and consider applying a wash coat.

INK DRYING FAST

How to recognize	Probable Causes	Suggested Remedy.
Ink drying on plates and/or roller and failing to transfer to substrates	1. Improper use of solvents.	1. Use proper solvents
	2. Uncontrolled or unrestricted movement of air in the vicinity of plates and rollers	2. Control air movements so that it does not affect ink drying.
	3. Failure to use fountain covers	3. Use fountain covers
	4. Dried ink on plate from start-up	4. Clean the plate well before full run.

INK DRYING SLOW

How to Recognize	Probable Causes	Suggested Remedy.
One color bleeding into another(improper trapping)	1. Use of improper solvents.	1. Use proper solvents
Ink pick-off or transfer to press rollers and/or plates.	2. Ink viscosity too high	2. Use correct ink Viscosity and also check viscosity
Ink set off or blocking	.	frequently.
Tacky surface	3. Inadequate or unbalanced drying system	3. Adjust drying to suit press speed.
	4. Lack of wax compound	4. Add wax compd.

DRYING IN

How Recognized	Probable Causes	Suggested Remedy
Weak Print	1. High viscosity ink	1. Reduce viscosity
	2. Short body ink	2. Add clear varnish
	3. Air drafts at nip	3. Check oven and fountain.
	4. Ink drying fast	4. Adjust ink drying by adding slow solvent
	5. Wiping too much	5. Adjust doctor blade
	6. Impression pressure high	6. Adjust impression pressure
	7. Press speed	7. Adjust press speed.

SCREENING

How Recognized	Probable Causes	Suggested Remedy
Improper print showing a screen pattern	1. High viscosity ink	1. Reduce viscosity
	2. Ink drying fast	2. Add slower solvents
	3. Too sharp blade angle	3. Flatten wipe of blade

GRAINY PRINT

How Recognized	Probable Causes	Suggested Remedy
Print not smooth	1. High viscosity ink	1. Reduce ink viscosity
	2. Press speed too slow	2. Increase press speed
	3. Stock too dry	3. Introduce moisture or humid air
		4. Vary temperatures of stock and fountain ink

SLUR or DRAG-OUT

How Recognized	Probable Causes	Suggested Remedy
A bead of excessive ink that appears at trailing edge of print	1. Ink too thin	1. Increase viscosity of ink
	2. Wavy doctor blade	2. Align doctor blade proper
	3. Blade angle not right	3. Adjust and clean blade
	4. Poor tension control	4. Adjust tension to the correct level
	5. Ink drying too slow	5. Speed up ink drying by adding faster drying solvents

FISH EYE

How Recognized	Probable Causes	Suggested Remedy
Prints consists only circumference of screen dots	1. Ink drying fast	1. Add slow drying solvents
	2. Improper solvent balance	2. Balance the solvent mix

STREAKING

How Recognized	Probable Causes	Suggested Remedy
Ink deposited in shape of comets and darts	1. Cylinder problem	1. Polish cylinder
	2. Foreign substance under doctor blade	2. Filter the ink
	3. Poor chrome job	3. Check for loose or flaky chrome , check engravers proof and re chrome if necessary.

SET OFF or OFFSET

How Recognized	Probable Causes	Suggested Remedy
Transfer of the printed matter to the reverse side of sheet or web	1. Wet or tacky ink film	1. Use correct solvent mix for effective drying.
	2. Insufficient heat and air applied to the substrate	2. Adjust oven and air circulation
	3. Rewind tension high	3. Reduce rewind tension
	4. Slow drying ink used	4. Speed up drying of ink

LINES or RAILROADS

How Recognized	Probable Causes	Suggested Remedy
Continuous lines showing in the un-printed areas	1. Scratches on cylinder	1. Polish or remake cylinder
	2. Damaged doctor blade	2. Replace doctor blade
	3. Particles logged under the doctor blade	3. Filter the ink
	4. Cylinder not uniform or chrome deposits uneven	4. Remove burr and polish cylinder

BRITTLENESS

How Recognized	Probable Causes	Suggested Remedy
Substrate breaks on Flexing	1. Excess heat in the drying system	1. Control Web temperature
	2. Loss of moisture in substrate	2. Introduce moisture
	3. Ink does not have enough plasticizer	3. Add plasticizer or request for reformulated ink

PICKING IN MULTICOLOUR WORK

How Recognized	Probable Causes	Suggested Remedy
Previous ink picks off Sheet or on roller	1. 1st down ink drying too slow	1. Increase drying speed of first down colour.
	2. 2nd down ink highly viscous	2. Reduce viscosity of 2nd down ink.