FLEXO v/s GRAVURE

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History

• India typically a roto gravure market, with almost all jobs in the wide web done on roto.
• Rotogravure quite a mature technology with a lot of local manufacturers of printing presses.
• Cylinder making technology widely available
• Huge support from local ink suppliers.
Rotogravure - direct printing

Diagram:
- Rubber Impression Cylinder
- Gravure Image Cylinder
- Doctor Blade
- Web
Flexo – Indirect printing
Advantage gravure.

- Direct printing process gave the best print quality.
- Sturdy robust machines with excellent web path and drying giving a very stable and consistent print.
- Good manufacturing facilities for precision manufacturing, advanced electronics and controls for extremely good registration control.
- Fast changeover possibilities.
- Capability to handle a huge range of substrates.
- Easy availability of experienced manpower.
Why Flexo

- Substrates elastic in nature especially PE.
- Short runs (?)
- Pressure to reduce packaging costs.
- Reduced wastages.
- Great advancements in flexo technology leading to “Comparable Printing Quality” at economical cost of printing/ kg!
Comparable quality – how?

• High precision construction of the press.
• Monoblock frames with thicknesses up to 120 mm – solid and robust.
• High precision central impression drum: max TIR +/- 4 microns.
• Direct drives.
• Automatic registration control and pressure settings.
• A/C or servo drives
Comparable quality – how?

- Dynamically balanced rollers.
- Very efficient drying.
- Availability of good plate technology.
- Availability of anniloxes.
- Double guided decks for stability and rigidity.
So let's see how the two technologies are comparable..................
Typical roto machine
Typical flexo machine
Heavy duty construction - Roto
Heavy duty construction - flexo

Monoblock frames
Robustness - flexo

Upper and lower guides
Precision/Stability

- TIR +/- 4 microns
- Direct drive.
- No coupling between the motor and the drum – no play, no tolerances
Carbon fibre technology
Individual drives - roto
Individual drives - flexo
Drying chambers - roto

• Individual dryers per station with possibilities of extended dryers and double hood driers.
Drying chambers - Flexo

- Interdeck drying chambers + tunnel after the last station.
Drying chambers - flexo

• Advantage – heat consumption is lower in flexo
Job Changeovers - roto

- Make ready trolleys
Changeovers - flexo

- Make ready sleeves mounted with printing plates
Changeovers - flexo

- Online cleaning of stations – advantage flexo – fully or semiautomatic.
Changeovers - flexo

- Magnetic doctor blades – advantage flexo
Developments

- Registration and pressure settings from within the job itself.
- Demonstration of very high speeds of printing without loss of register.
- Demonstrations during the Drupa of getting the job in register right from the word “go”.
- Growing awareness of Opaltone.
- Flexo contribution to green printing - Ebeam
Cost variables

• Application oriented - thinner and thinner gauges of elastic materials.
• Capital investment.
• Interest / finance costs.
• Depreciation
• Utilities
• Manpower.
• Payback.
Cost variables

• Consummables
• Ink
• Solvent
• Plates
• Anniloxes
Cost / kg of print - PE

• Add excel file.
Advantage flexo

- Capability to handle thinner and thinner gauges of elastic material.
- Comparable print quality.
- Lesser ink consumption.
- Lesser power consumption.
- Lesser manpower requirement (as in the following example)
- Faster changeovers.
- Next job preparation while the first job is running!
World wide trends ......

• Increasing presence of flexo machines.
• Global trends indicate a y-o-y growth of 8%.
• Business getting more localised and therefore resulting in smaller and smaller runs.
Conclusion

• Flexo is here to stay, and inevitably will be a strong contender against the rotogravure technology as more and more concerns for thinner materials, print costs / kg as well as environmental concerns push the manufacturers to roll out more machines and also reduce costs by economies of scale.
THANKYOU