AMPT15 OFFSET TECHNOLOGY-I

UNIT-1 OFFSET PROCESS

1.1 Principle, advantages, and limitations. Various press configurations.

1.2 Sheet control unit. In feed unit-pile table, pile height, air blast nozzles, forwarding pick up sucker, rear pickup suckers, separator brushes & fingers.

1.3 Types of feed board sheet control devices-conveyor assemblies, conveyor tape, hold down rods. Sheet separation system-friction, pneumatic.

1.4 Forwarding system-successing sheet feeder. Front lay type of movements.

1.5 Side lay-push type lays, pull type lays, Side lay settings. Sheet detectors-mechanical types, electromechanical types, pneumatic types. No sheet detectors-early or fast detectors, twisted sheet detectors.

1.6 Double sheet detectors. Grippers –spring gripper, pin type gripper, sorung pad gripper, compression spring, tension spring.

1.7 Plate insertion system-tumbler gripper, rotary gripper, swing arm gripper. Sheet transfer section-chain transfer, single drum transfer, three drum transfer.

1.8 Delivery unit-skeleton wheels. Transfer drum. Sheet decurler. Sheet guiding device blow downs. Air cushion transfer drum. Slow down mechanisms.

1.9 Antiset-off spray equipments. Joggers. Extended deep pile delivery. Double delivery. Puff system. Metered powder supply. Electrostatic system. Introduction.

1.10 Theory of ink-film flow. Ink film thickness. Dwell time. Ductor shock. Ink duct. Ink fountain. Ink feed roller. Oscillating roller. Reciprocating rollers.

1.11 Drive rollers. Intermediate & plate inking rollers. Drum type inking system. Roller setting-Setting form roller to oscillator, setting form roller to plate, setting the duct roller.

1.12 Roller covering. Roller maintenance-roller removal, replacement, roller storage, roller hardness. System cleanliness. Ink agitators. Ink consumption counters. Air curtain.

UNIT-2 DAMPENING SYSTEM

2.1 Introduction. Fountain roller. Dampening feed roller. Dampening solution composition, Iso propanol alcohol-storage of alcohol, substitute of alcohol.

2.2 PH of dampening solution. Conductivity of dampening system. Damper setting, construction of plate dampening roller. Brush system for metering.

2.3 Flat system for meeting, air knife system for metering. Conventional dampening system-metering dampening on conventional dampening system.

2.4 Continues flow damp systems, roland –matic plate feed continuous flow damp system, miller-meter plate feed continuous flow damp system, miller-meter plate feed continuous flow dampening system.

2.5 Inker feed- Dahlgren inker feed system-Heidelberg alkdow, Epic delta. Critical metering nip, reverse slip nip.

2.6 Roller covers- molleton fabric cover, stockinette cover, paper damper cover, synthetic damper cover. Damper cleaning machine.

UNIT-3 GEARS

3.1 Introduction. Cylinder gears-spur gear, helical gear, bevel gear. Cylindrical design.
3.2 Plate cylinder driving cylinder body, cylinder gap, plate clamping, plate punching, bearer contact cylinder. Bearer contact cylinder, bearer gap cylinder. Plate mounting.
3.3 Preparing plate in cylinder – measuring height of a mounted plate.
3.4 Determining packing requirement. Types of blanket.
3.5 Blanket squaring Blanket punching. Under blankets. Shore durometer. Mounting the blanket.
3.6 Recovering from blanket smash. Use of slightly damaged blanket.
3.7 Care of blanket, blanket cleaning device. Impression cylinder. Transfer cylinder. Delivery cylinder.

UNIT-4 PRE MAKE READY

4.1 Make ready, inspection of press sheets, control of press function during press run maintaining the inking system, maintaining the dampening system, operating the feeder, operating the delivery, Colour sequence in two colour and multicolor operations.
4.2 Printability and urn ability. Wet – on-wet printing. Wet –on Dry printing.
4.3 Perfecting presses. Direct imaging presses, Schematic drawings of modern presses.
4.4 Quality control during the press run-Densitometry, colour control bars, press room lighting and standard viewing conditions,
4.5 Electronics in press room, remote control consoles, plate scanner, scanning densitometers, closed loop systems. Printing unit problems. Inking unit problems. Paper problems.
4.6 Blanket troubles. Proof press-requirements and advantages, progressive proof.
4.7 Waterless printing. Advantages and disadvantages, printing technique.
4.8 Types of wireless plates. Method of making waterless plates.

Reference Books:

1. Manual for Lithographic Press Operation- A S Porter
2. Lithographic Technology –Edwin A Dennis, Olusegan Odesina
3. Introduction to Printing Technology-Hugh M Speirs
4. Sheetfed Press Opertaion-GATF