# LITHRONE GX40

KOMORI
Kando：Beyond Expectations

# LITHRONE GX40

## 40" OFFSET PRINTING PRESS

**The Print Quality and Flexibility to Create New Printing Business**

**Komori's Flagship Machine for Fulfilling the Most Demanding Requirements**

Photo: GLX-640+C (Six-color Print Quality Assessment System [PQA-S]-equipped 40-inch offset printing press with in-line coater and pile logistics)
*Model in photograph includes optional specifications.

# Introduction

Komori leads the world in printing technology. The legendary Lithrone S Series has evolved into the advanced Lithrone G Series. Now, Komori presents the cutting-edge Lithrone GX40 — the pinnacle of Komori technologies and expertise.

In addition to extremely stable printing at the 18,000 sheets per hour maximum printing speed, even with heavy stock, the Lithrone GX40 delivers both significantly improved print quality and enhanced agility for color changeovers. The power to cover not only high-end commercial and publishing printing but also package printing due to exceptional print quality and flexibility. Everything needed for a range of demands, including automatic nonstop operation and control systems to handle long runs at high speed, advanced automation, new washing/cleaning systems, and availability in special configurations for high added value work. In particular, new functions and systems have been added specifically for package printing. The energy-conserving and space-saving design, along with reduced heat emissions, provides genuine benefits for the environment. The Lithrone GX40. Komori's flagship machine for fulfilling the most demanding requirements.

### High Productivity on Long Runs with Heavy Stock at High Printing Speed

The powerful new Lithrone GX40. High speed, automatic nonstop operation to handle long runs and deliver world-class performance in deluxe package printing.

Offering a sheet thickness range of 0.06–1.0 mm, this press provides very stable operation at the 18,000 sph maximum printing speed thanks to new sheet feeding and delivery performance. Equipped with a new fully automatic nonstop operation system*, printing of long runs at the maximum printing speed is enabled through linkage with an optional stock transport logistics system. An array of sheet feeding and delivery sensors is linked to data input from the operation console, allowing automatic presets and addressing a range of needs for printing on heavy stock with stable, high-speed operation.

High-speed, long-run performance provides powerful backup for package printing on heavy stock, where demand is steadily increasing.

### Nonstop Operation System*

The automatic nonstop feeder and delivery enable pile changing without operator assistance. Linked to a logistics system that transports stock smoothly through the printing plant, resupply of the feeder and removal of printed sheets are automatically controlled so that the flow of paper to the press is uninterrupted and high-speed printing continues until the end of the run.

• Production at the maximum operating speed is maintained by not stopping the press during pile changing.
• Flexible resupply and removal of stock, according to the plant layout.
• Press monitors and controls both the separation and union of the stock loads.

* option

## Integrated Control Systems Offer Advantages in Package Printing

The Lithrone GX40 is equipped with many features that are effective in varied types of package printing and ensure high quality and high productivity. This performance is essential because package printing generally uses heavy stock, special substrates, special colors and various types of finishing to a greater extent than commercial printing.

Requirements for brand owners are changing. Package design increasingly requires high added value printing and special effects,
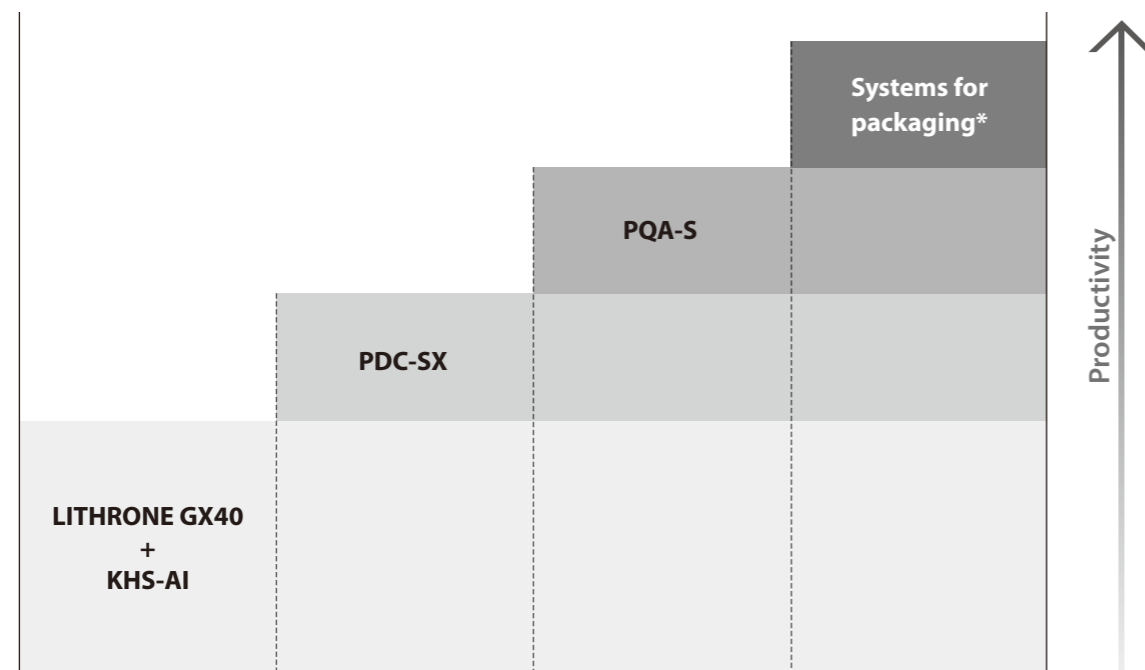
and the high productivity possible with nonstop operation is required for profitability. Above all, the cost of stock is high and the reduction of waste sheets is an urgent necessity in the packaging industry.

The core solution for addressing these varied printing demands is the Komori lineup of mechatronics products, starting with KHS-AI. This lineup of products has many new features that provide powerful support to package printing.

### KHS-AI: Integrated control system for improved productivity in package production

KHS-AI (Advanced Interface) is a productivity improvement system that optimizes various presets by self-learning according to changes in the machine, environment and printing materials and realizes high-precision print start-up. In addition, KHS-AI ensures very stable sheet feeding and delivery by means of air presets according to the sheet size, thickness, paper grade and paper grain direction. With Smart Sequence, a near fully automatic job sequence is realized. The system not only facilitates job control and management of operation records and maintenance data but is also equipped with a self-diagnostic function that helps prevent problems. These functions shorten changeover and makeready times, reduce paper waste, conserve resources and significantly slash press downtime.

**Productivity enhancement by combinations of systems based on Lithrone GX40**

Systems for packaging*

PQA-S

PDC-SX

LITHRONE GX40
+
KHS-AI

Productivity

*For details, see page 9.

## Printing Task Optimization with KHS-AI as the Core

Printing task optimization can be advanced and printing productivity can be greatly enhanced by combining KHS-AI with PDC-SX, for print quality digitization, and PQA-S, for high-level print quality control.

### PDC-SX* (Spectral Print Density Control - SX Model)
This system digitizes and automates control of colors that were previously adjusted and controlled by the operator. In addition, an automatic register function enables the simultaneous measurement of both colors and register. The system can also greatly shorten the time needed for color matching and minimize paper waste at print start-up by means of the KHS-AI-linked Smart Feedback function.

### PQA-S* (Print Quality Assessment System for Sheetfed)
Using a high-precision CCD camera and lens, the system ensures in-line, high-level print quality control by inspecting all sheets according to the same criteria. The system checks for smears, ink splashes, water drops, oil spots, hickeys and color irregularities and also prevents unacceptable sheets from continuing to be printed during the run and the mixing of unacceptable sheets with good sheets that are sent to postpress. In addition, a color control function along with quality inspection is also available.
Note) Color bar placement: leading edge or center of the sheet

### KID* (Komori Info-Service Display)
KID is an operation support system that provides information needed by the operator at just the right time in an easy-to-understand format. Supporting multifunctional, complex printing systems, KID enables high productivity by contributing to quick, accurate decisions by the operator.

**PDC-SX* (Spectral Print Density Control - SX Model)**     **PQA-S* (Print Quality Assessment System for Sheetfed)**

* option

## High Productivity and High-grade Quality Control Systems

The Lithrone GX40 assures outstanding productivity and high profitability and also meets a wide range of printing needs with both stable operation and high flexibility at maximum speed printing. Closely linking the KHS-AI-based systems and the automated devices of the press enables stable operation to be quickly attained and slashes paper waste.
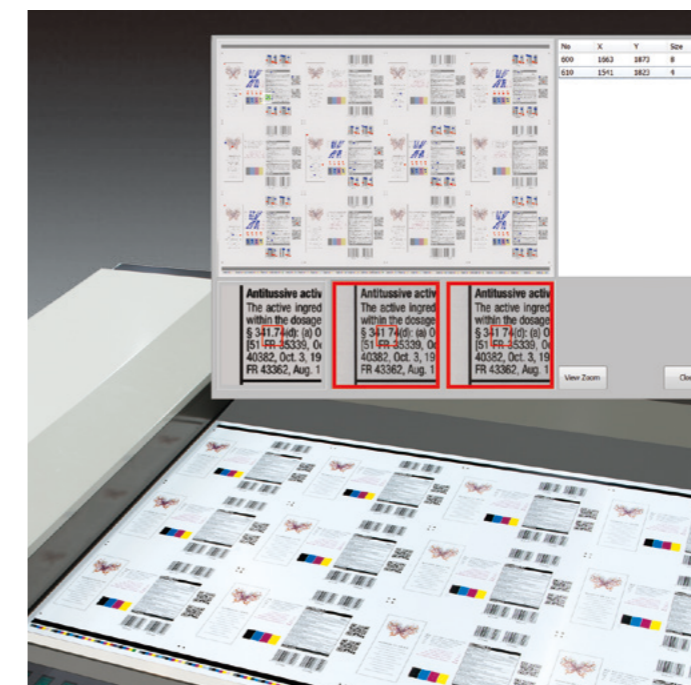
In addition, Komori has developed new control systems that are indispensable for maintaining and assuring the deluxe print quality of packaging.

### Main features of systems for packaging

- In addition to air and register presets, KHS-AI provides strengthened linkage with PDC-SX and PQA-S. Because repeat jobs are very common in the packaging industry, a function allows settings used in the past to be quickly searched and set. This improves operability and shortens makeready time.

- A new color correction function that enables accurate feedback of special colors by the use of Lab values has been developed and incorporated in PDC-SX. In addition, a new function of the Lithrone GX40 automatically positions the image on the sheet in the correct position for the die-cutting process. These functions provide greater print quality stability and higher productivity.

- A PDF comparator system* that uses sensors to read the printed image for comparison with the originating PDF file data has been developed and may be specified with PDC-SX. This allows the operator to check for missing or added characters in the initial printing stage, preventing production losses.

- The sheet numbering system* that numbers each sheet on the feeder board and a new system that accurately recognizes die-cutting data and facilitates quality control in units of blanks has been developed and may be specified with PQA-S. Also, PQA-S masking software* that automatically creates the inspection area in advance from the die-cutting data has been developed. This further strengthens print quality control for packaging.

- Information from the Komori Drying System (KDS) and the Komori Varnish Circulation System (KVC) is gathered and displayed on KID at just the right time in an easy-to-understand format. This facilitates quick, accurate decisions by the operator and enables higher productivity.

**A PDF Comparator System** (PDC-SX option)

**Sheet Numbering System** (PQA-S option)

* option

## Short Makeready for Flexible Use of Spot Colors

Komori's cutting-edge short makeready is highly prized by Lithrone users. Systems and devices ideally suited to package printing have been developed and incorporated in the Lithrone GX40. Numerous automated devices are employed throughout the press to meet the diversifying needs of printing with high-level print quality. The Komori Full-APC Fully Automatic Plate Changer changes plates on six units in less than three minutes. In addition, washing of the blanket and ink rollers and impression cylinder cleaning are simple operations executed fully automatically at the correct time.

A new automatic programmed ink roller washing system reliably washes out ink that has penetrated the pores of the rollers. This enables quick and accurate start-up of the next job even when changing from dark pigmented inks to light color pastel inks .
By pursuing the next-generation short makeready that is ideal for the packaging business, where deadlines demand strict observance, and seamlessly linking the full chain of automatic processes, Komori has made it possible to significantly shorten makeready time.

### Automatic Washing/Cleaning System
Efficient automatic washing/cleaning by means of an automatic control program. The new automatic ink roller washing system significantly improves color changing, which is a bottleneck in printing with special colors. Use of a pre-soaked cloth for blanket washing and impression cylinder cleaning contributes to reduced cloth usage and benefits for the environment. Automating all these linked functions dramatically reduces overall makeready time.
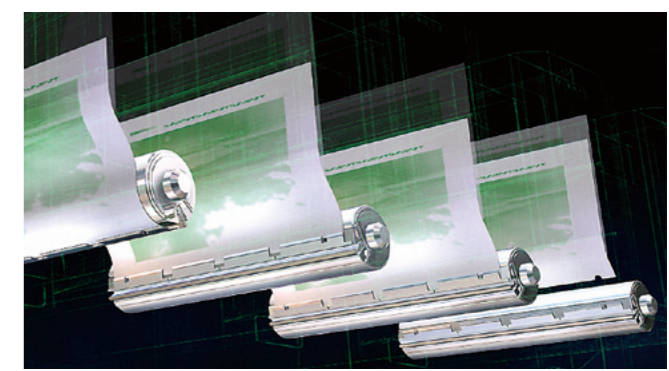
### Full-APC (Fully Automatic Plate Changer)
### A-APC* (Asynchronous Automatic Plate Changer)
The benderless clamp used on the Full-APC system makes plate preparation much more efficient since bending of the plate tail or the plate is not necessary.
 In addition, when the press is equipped with the A-APC* Asynchronous Automatic Plate Changer, all plates can be changed in 85 seconds regardless of the number of units.

▼ Automatic Blanket Washer with Pre-soaked Cloth

▼ A-APC (Asynchronous Automatic Plate Changer)

* option

## Print Quality that Shows Real Value in Deluxe Printing

Komori is unrelenting about quality to meet high-level quality demands. Komori solutions deliver value, with superb reproducibility, excellent inking and distribution, and high-precision printing with beautiful colors to accommodate increasingly diverse and deluxe printing needs.
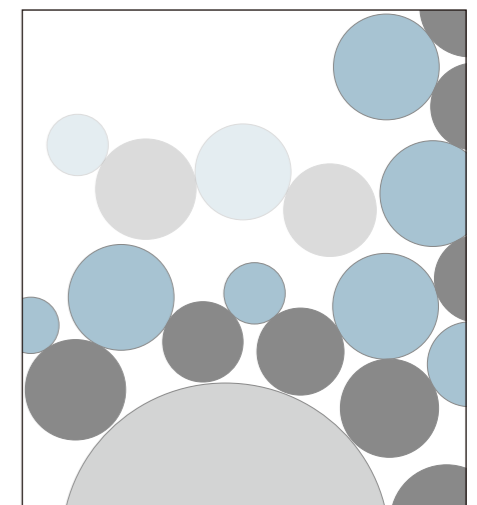
The press is equipped with new functions, such as the inker roller train changeover function and the start-up density stability function. And each unit, of course, is equipped with the Komorimatic dampening system working in perfect harmony with the high capacity ink train, incorporating the ideal array of ink and dampening rollers for high-grade printing. As the next-generation strategic partner in package printing, the Lithrone GX40 will accommodate diverse needs and lead to a range of new business opportunities that create value of a kind never before seen.
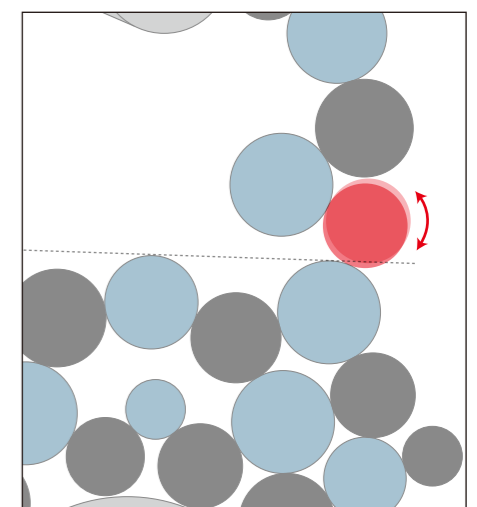
### Inker Roller Train Changeover Function (Short path)

When printing an image with light ink coverage, changeover of the roller train to accommodate a small image allows highly efficient printing by means of the short path.
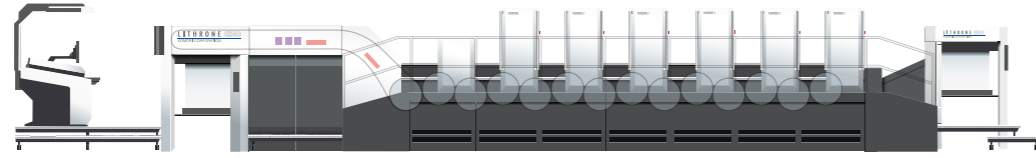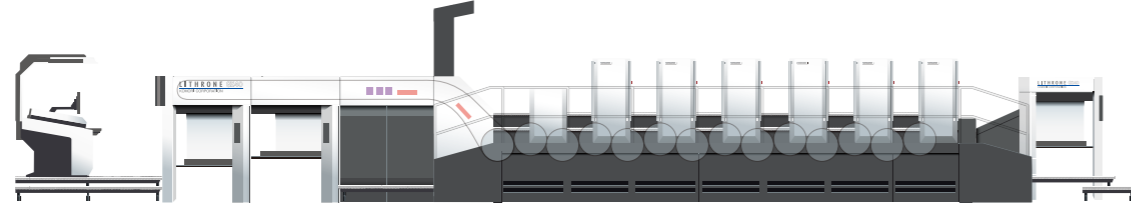
### Start-up Density Stability Function

The press is equipped with an inker roller on/off function that permits the ink train to strategically separate when the press is idling, eliminating the effects of roller oscillation. This ensures quick density acquisition and stability when the press is restarted and contributes to lower paper waste.
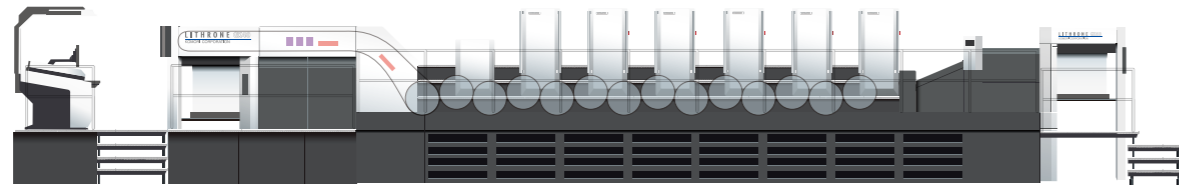
**Six-Color Plus Coater Specification with Plinth of 450 mm** (GLX-640 + C + Extended Delivery)
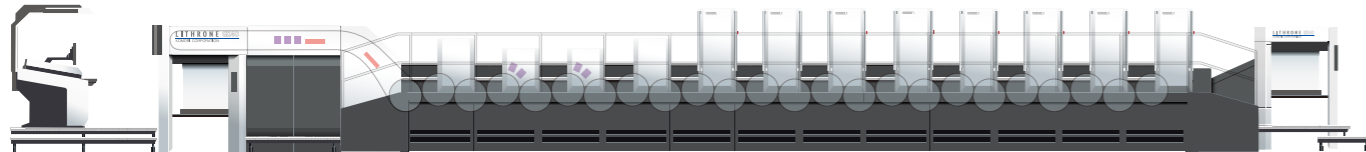
**Six-Color Plus Coater Specification with Plinth of 450 mm** (GLX-640 + C + PQA-S + Extended Double Pile Delivery)

**Six-Color Plus Coater Specification with Plinth of 900 mm** (GLX-640 + C + Extended Delivery + Automatic Nonstop Feeder/Automatic Nonstop Delivery)
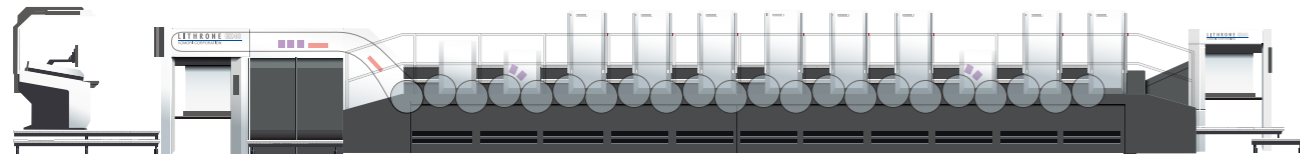
**Eight-Color Plus Double-Coater Specification with Plinth of 450 mm** (GLX-840 + C + DU + DU + C + Extended Delivery)
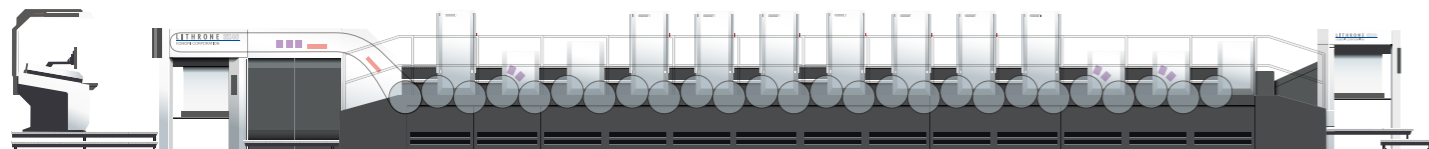
## Examples of Special Configurations

**Eight-Color Plus Coater Specification with Plinth of 450 mm** (GLX-840: 2C + DU + 6C + DU + C + Extended Delivery)

**Eight-Color Plus Double-Coater Specification with Plinth of 450 mm** (GLX-840: C + DU + DU + 7C + C + DU + 1C + Extended Delivery)

| LITHRONE GX40 Specifications (40-inch Offset Printing Press) | | | | | | |
|---|---|---|---|---|---|---|
| Model | | GLX-440 | GLX-540 | GLX-640 | GLX-740 | GLX-840 |
| Number of colors | | 4 | 5 | 6 | 7 | 8 |
| Max. printing speed | sph | 18,000 | | | | |
| Max. sheet size | mm (in.) | 750 × 1,050 (29$^{17}$/$_{32}$ x 41$^{11}$/$_{32}$) | | | | |
| Min. sheet size | mm (in.) | 360 × 520 (14$^{3}$/$_{16}$ x 20$^{15}$/$_{32}$) | | | | |
| Max. printing area | mm (in.) | 740 × 1,040 (29$^{1}$/$_{8}$ x 40$^{15}$/$_{16}$) | | | | |
| Sheet thickness range | mm (in.) | 0.06 ～ 1.0 (0.002 - 0.04) | | | | |
| Plate size | mm (in.) | 811 × 1,055 (31$^{15}$/$_{16}$ x 41$^{17}$/$_{32}$) | | | | |
| Blanket size | mm (in.) | 935 × 1,060 (36$^{13}$/$_{16}$ x 41$^{23}$/$_{32}$) [including aluminum bar] | | | | |
| Feeder pile height | mm (in.) | 1,600 (63) [ plinth: 450 (17$^{23}$/$_{32}$) ] | | | | |
| Delivery pile height | mm (in.) | 1,600 (63) [ plinth: 450 (17$^{23}$/$_{32}$) ] | | | | |
| Dimensions | Length (L)  mm (ft.) | 16,462 (54') | 17,640 (57'10") | 18,818 (61'9") | 19,996 (65'7") | 21,174 (69'6") |
| | Width (W)  mm (ft.) | 3,760 (12'4") | | | | |
| | Height (H)  mm (ft.) | 2,603 (8'6") [3,084 (10'1") with cover open] | | | | |

\* Maximum printing speed is subject to change depending on printing conditions.

\* Total length of Lithrone GX40 includes the feeder/delivery steps and the operation stand.

\* Lithrone GX40 dimensions include 450 mm plinth and Extended Delivery.

\* Performance and numbers may differ from specifications herein, and specifications may also be modified for product improvements.