LITHRONE G40

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KOMORI
Kando : Beyond Expectations

LITHRONE G40

40" OFFSET PRINTING PRESS

The high performance Lithrone designed for today's printing environment:

The Lithrone G40

Introduction

Embodying the world's premier press production system, the environmentally responsible Tsukuba Plant consistently exceeds the highest expectations of customers. Now the Tsukuba Plant has transformed the Lithrone S40 – the strategic partner of the printing business since its debut in 2002 – into the Lithrone G40.

The 'G' of the Lithrone G40 stands for 'green, ' symbolizing Komori's stance on the environment.

The Lithrone G40 combines the state-of-the-art technologies from the LSX40 with the award-winning features of the LS40 to deliver a best-in-class machine for today's printing marketplace. Designed with Komori's dedication to precision manufacturing, the G40 ensures high quality print with unsurpassed productivity. Manufactured with Komori's laser focus on the environment, the Lithrone G40 promotes green printing by reducing consumable and energy usage and lowering the carbon footprint of print. With Komori's revolutionary KHS-AI technology at its core and a maximum printing speed of 16,500 sheets per hour, the Lithrone G40 is nothing other than the ultimate high performance printing machine.

Photo: GL-640+C
* Model in photograph includes optional specifications.

Contents

Green: coexistence of the environment, people and nature

The concept championed by Komori.

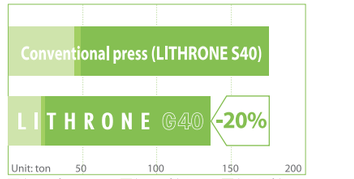
At Komori, 'green' symbolizes the coexistence of the environment, people and nature. A mutually beneficial balance among these three elements ensures a bright future – this is the thinking behind Komori's green concept. This concept was the genesis of the Lithrone G40's development – a high-performance machine created with consideration for the environment and ecology.
The 'G' of the Lithrone G40 stands for green – the 'Green Lithrone.'

The Three Pillars of the Green Concept.

The green concept has three pillars: clean (prevention of pollution), saving (conservation of resources) and safety. By implementing these three pillars, Komori has shaped the printing press of the future. Indeed, Komori has developed a printing press that reduces paper waste, saves energy, improves the work environment and reduces noise.
The Lithrone G40 is a green machine that protects the environment and is clearly worthy of being called the 'Green Lithrone.'

Clean: Preventing pollution	
For the printing process	Reduced use of consumables and lubricants
For the plant environment	Low VOC emissions
Saving: Resource conservation	
For energy	Reduced power consumption (reduced CO_2 emissions)
For printing waste	Reduced paper and ink consumption
Safety	
For pressroom workers	Ergonomic press design
Press preventive maintenance	Enhanced self diagnostic functions

Quantity of CO_2 emitted from the press



* Calculation based on 6,000 jobs with run length of 5,000 sheets for six-color press.
* Quantity of CO_2 based on simulation by Komori.

The Lithrone G40 was developed as a green printing press that is environmentally friendly.

Ninety-five percent of the environmental impact of a press takes place during the usage stage. During this critical stage, Komori presses achieve a minimal impact by saving energy and resources through shorter makeready time and minimal paper waste, by reducing harmful chemical substances such as volatile organic compounds (VOCs) released during printing and by reducing noise. Komori products also comply with the Restriction of Hazardous Substances Directive (RoHS) of the European Union.
The Lithrone G40 is an environmentally responsible press that is friendly to both the production environment and the global environment.

The Lithrone G40 is the total result of Komori's many environmental initiatives.

Not only are Komori presses designed to reduce environmental impact, they are produced in our green manufacturing environment. With a decades-long commitment to eco-initiatives, no effort is spared to ensure that the processes in the production environment are thoroughly green.

■ Green production process

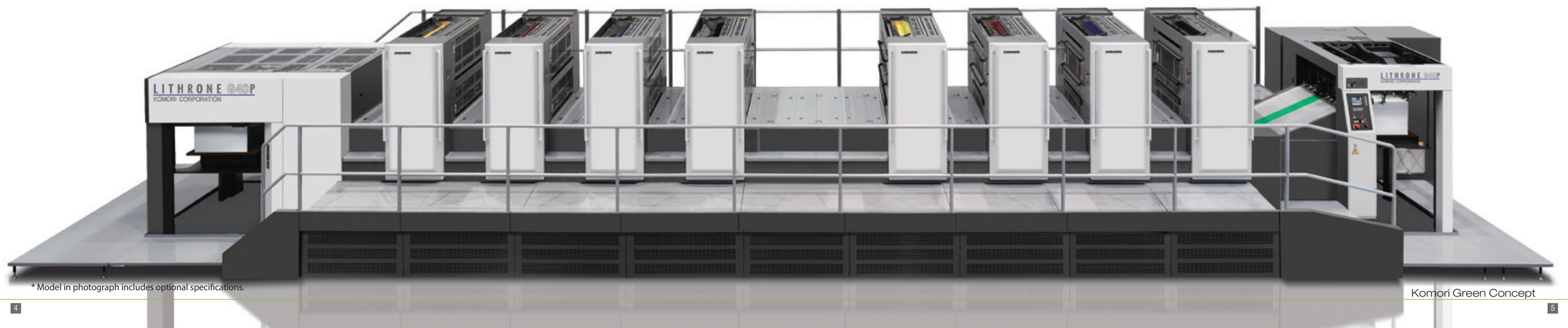
- Reduced manufacturing man-hours
- Reduced use of energy for handling
- Reduced use of secondary materials in manufacturing

■ Green production environment

- ISO 14001 certification for all production facilities
- Achievement of zero emissions of industrial waste and ordinary waste
- Lubricating oil recycling
- Use of wind and solar power
- Zero inventories production line adapted from Toyota Production System

■ Additional green initiatives

Proper management of hazardous substances, promotion of energy saving, reduction and recycling of waste, promotion of resource conservation, and promotion of green development of environmentally responsible products.



* Model in photograph includes optional specifications.

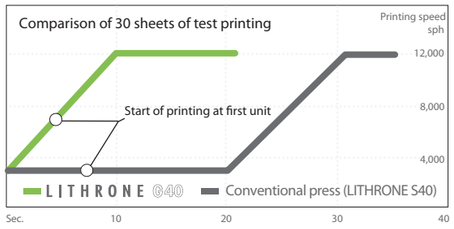
KHS-AI and H-UV in concert realize OffsetOnDemand: Perfor mance at the highest level

The development goals of the new Lithrone G40 Series of presses were high-speed stability, improved print quality, suitability for short-run work, equipment reliability, environmental fitness and improved production efficiency. Equipped with the highly evolved KHS-AI integrated control system, the Lithrone G40 meets the needs for short job cycle time, competence with short runs, capability of producing many different printed products, and cost reductions. In addition, the Lithrone G40 can be specified with the OffsetOnDemand system, which will be the solution to many of the issues currently facing printers. The press offers a maximum printing speed of 16,500 sheets per hour and delivers very stable high-speed operation with a user-specified sheet thickness range of either 0.04 ~ 0.8 mm or 0.06 ~ 1.0 mm. Incorporation of a new feeder and delivery ensures high-speed stability. The Lithrone G40 is capable of high-speed start-up printing at 12,000 sheets per hour. The benderless fully automatic plate changing (Full-APC)* and flat plate clamp significantly improve working efficiency, and greatly reduce preparation time. Equipped with the KHS-AI system, the PDC-SX Spectral Print Density Control-SX*, and the PQA-S Print Quality Assessment system* for sheetfed presses, the Lithrone G40 maintains high print quality with today's less experienced operators. The press has improved operability and maintenance thanks to the adoption of low operating-side steps, the underneath positioning of impression cylinder cleaning systems, and the new operating panel at the front of the delivery. Designed and engineered with the automation and standardization that will be required in the future, the Lithrone G40 affords truly great performance.

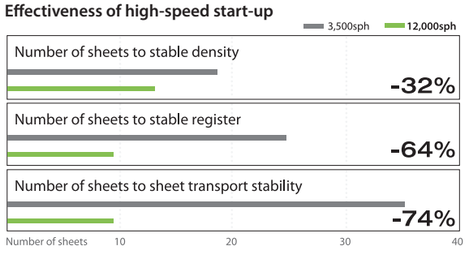
KHS-AI Integrated Control System: Evolving to support higher productivity and print quality

The landmark KHS productivity enhancement system was developed with the objective of reducing job changeover time and paper waste to virtually zero by receiving over the network job data and preset data from the PCC software linked to the CTP workflow. KHS was evolved into the KHS-AI system with self-learning function. Color matching is optimized by constant analysis and automatic compensation of the image area ratio and ink key openings. Such analysis and compensation is made with respect to the machine condition, the printing environment and changes in the printing materials. KHS-AI air and register adjustment preset functions* – corresponding to the paper size, thickness, grade and grain – ensure stable sheet feeding and delivery. In addition, KHS-AI manages the operating record, status history and maintenance data of the press. The system includes a self-diagnostic function for troubleshooting. Customer support also benefits from the ability to accommodate remote diagnostics in an emergency.

Comparison of high-speed start-up printing

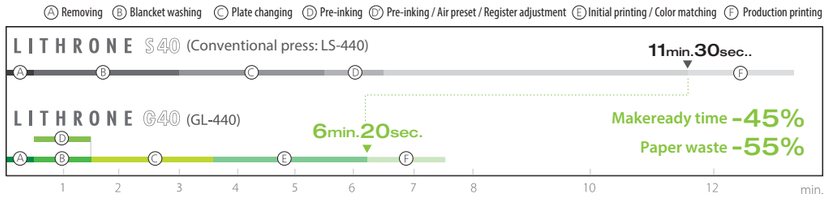


Effectiveness of high-speed start-up



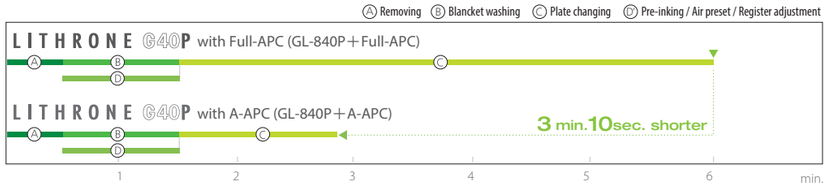
Shorter makeready time

Compared to the Lithrone S40 (equipped with conventional KHS), the Lithrone G40 offers a makeready time that is approximately 5 minutes shorter.



The graph shows a comparison of four-color presses.

Makeready time when equipped with Asynchronous Automatic Plate-Changing System (A-APC)*

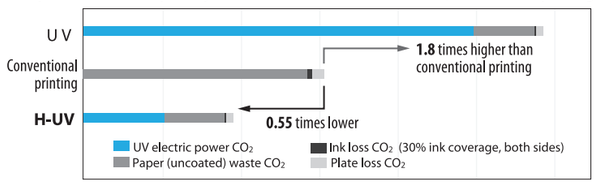


The graph shows a comparison of eight-color perfecting presses.

For ecology and economy: H-UV Innovative Curing System*

The H-UV Innovative Curing System is a revolutionary powderless drying system jointly developed by Komori, ink makers and lamp manufacturers that uses high-sensitivity ink and an ozone-less UV lamp. The lightning-quick drying ability of the system is the key to OffsetOnDemand. H-UV printing improves print quality because it is powderless, provides shorter job cycle times by cutting the total lead time, and offers tremendous versatility, including printing on heavy stock and special substrates. H-UV is a highly reliable drying system with advantages for both ecology and economy by reducing the operator's task load and lessening the environmental impact, improving productivity, and producing exceptionally high print quality.

Comparison of annual quantity of CO_2 emissions from conventional, UV and H-UV printing



Basic operating power excluded.

OffsetOnDemand: High productivity and high print quality through the fusion of KHS-AI and H-UV*

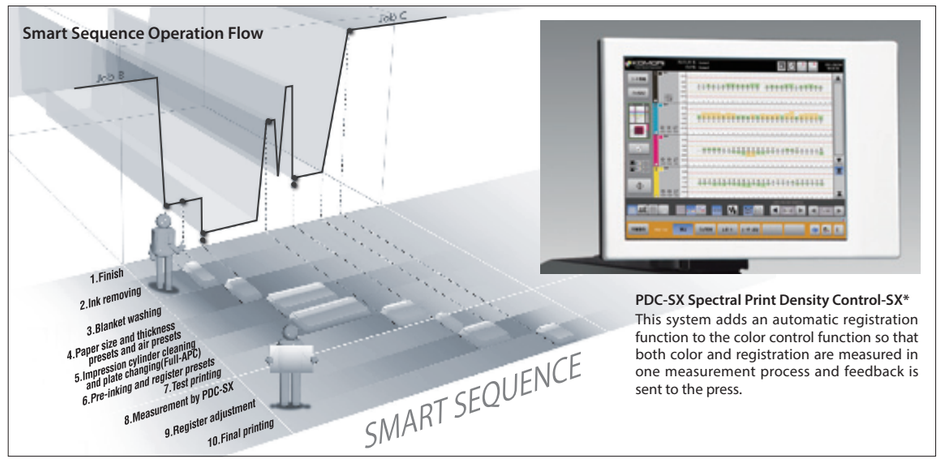
The core of Komori's revolutionary new OffsetOnDemand printing system is the fusion of the KHS-AI integrated control system and the H-UV* drying system. By shortening makeready time, cutting paper waste, and reducing printing time to the utmost while maintaining the high print quality and high productivity that are characteristic of offset printing, both short-run competence and short job cycle times are achieved. OffsetOnDemand is a new solution that is good for people, good for the environment and very profitable for the company. The Lithrone G40 is the ideal press for OffsetOnDemand printing.

Technologies and system that support OffsetOnDemand

- **Automation:** Benderless fully automatic plate changing (Full-APC)* reduces the number of processes and shortens makeready time.
- **Standardization:** KHS-AI, the PDC-SX Spectral Print Density Control-SX*, and the PQA-S Print Quality Assessment system* improve print quality and productivity.
- **Innovation:** Innovative H-UV Curing System* and 20Matching (reaching density within 20 sheets of start-up printing) significantly shorten production time.

Smart Sequence

Smart Sequence, the ultimate short makeready system, is based on the concept that the main makeready processes from the end of one job to the start of the next job can be completed with the touch of 'just one finger.' By implementing makeready as a seamless flow that is nearly completely automatic, the load on the operator is lightened while print quality and productivity are improved.



PDC-SX Spectral Print Density Control-SX*

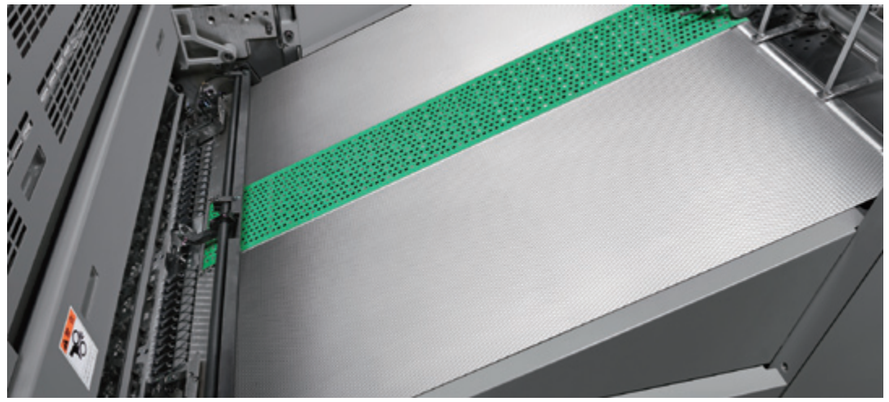
This system adds an automatic registration function to the color control function so that both color and registration are measured in one measurement process and feedback is sent to the press.

* Option

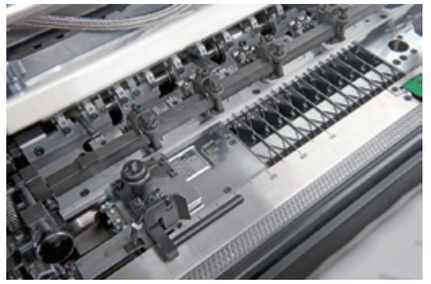
High-speed printing and stable operation

The Lithrone G40 was developed to be a high performance press that attains both high productivity and high print quality by means of stable operation. With stable operation as the principal theme, the all-important basic performance parameters were re-evaluated from the beginning and Komori's high-order technologies were concentrated on stable sheet feeding and delivery. The Lithrone G40 was developed to be the next-generation production machine. Specifically, the new feeder with the newly developed suckers, feeder board, register and front register provides unfailing support for operation with a wide range of sheet thicknesses – from ultrathin to thick sheets – enabling utterly reliable printing at the maximum speed of 16,500 sheets per hour. In addition, the extension of the high-speed follow-up control function to support higher speed operation and the air control presets (optional) managed by the standard KHS-AI with self-learning function enable very efficient paper changeover, which is crucial for work with many short-run orders for a variety of different printed products. These features support multiple jobs with differing printing conditions and ensure smooth operation. Very significant reductions in makeready times are assured by the combination of ideal sheet feeding and delivery corresponding to the paper size, thickness, grade and grain along with the register presets.
Because the Lithrone G40 can easily handle the increasingly frequent short turnaround jobs, the press is not only incredibly versatile but it also ensures exceptional productivity and high profitability. This press is packed with the high-order performance needed in a reliable long-term partner to flourish and triumph in the printing business of the future.

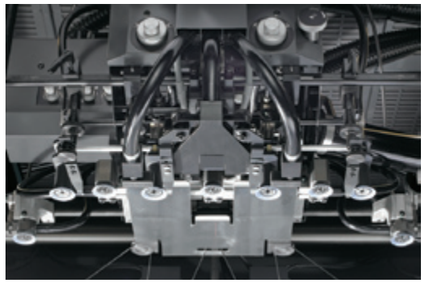
* Model in photograph includes optional specifications.



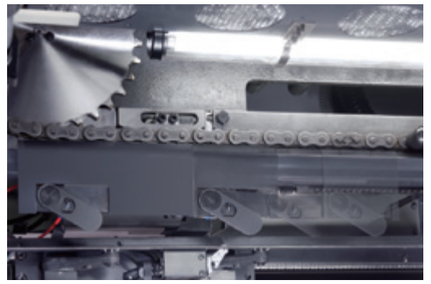
Suction Tape Feeder-type Feeder Board
The use of a new feeder board with one belt in the center and no brushes or rollers ensures stable, highly accurate sheet feeding regardless of paper grade or sheet size. Stabilization of sheet surface behavior, sheet travel, and accuracy as well as ease of operation are all improved. Since the Lithrone G40 easily accommodates thick sheets, the time required to prepare for changing the sheet size is shorter.



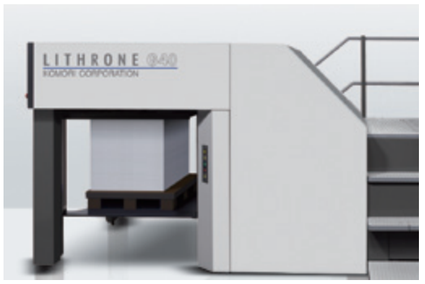
Air Side Lay and Front Lay
An air vacuum design is used for stable lay accuracy. This is also a solution to roller marking. In addition, adjustments to match the grade of the paper can be made easily during a run. Increased stabilization of the paper in the registering unit.



Sucker Box
The sucker box provides improved sheet separation and stable high speed feeding due to enlargement of the stroke of the pickup sucker and the arrangement of the suction cup line.



Side Jogger Linked to Sheet Size
Sheet delivery is improved by the addition of a side jogger expansion/contraction function. Through linkage to the sheet size preset, the side jogger expands/contracts not only laterally but also along the top/bottom axis, improving sheet alignment performance with a variety of sheet sizes.



Delivery
As a result of improvements to the chain track and changes to the air control system, sheet behavior is stabilized by shape optimization. The stabilization of sheet transport results in stable high-speed sheet delivery.

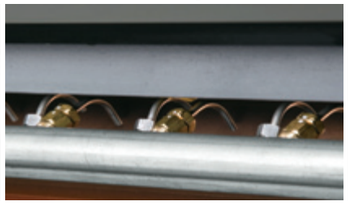
The short-makeready performance critical for success in the future.

The advanced technologies of the Lithrone S Series of presses, prized by users in every segment of the industry. That cutting-edge short makeready system with even more substantial quality has been infused throughout the Lithrone G40. A large number of automatic devices and systems are used to respond with high-level quality to the needs of the printing industry, which are growing increasingly diverse and complex. The benderless fully automatic plate-changing system (Full-APC) provides stunning speed: four plates are changed in roughly 2 minutes 20 seconds and job changeover is completed in about 7 minutes.* In addition, cleaning tasks for the blankets, impression cylinders and ink rollers are all extremely easy operations – just one touch by the operator – and are fully automatic. By mobilizing the Komori know-how and technologies that seamlessly link automation and processing, makeready times have been made much shorter. Komori's next-generation short makeready capabilities are unrivaled. As orders for short-run jobs and jobs with very tight deadlines increase, being able to accurately and efficiently work with all types of content is becoming the norm in the printing industry. The Lithrone G40 is a production machine offering world-class performance that can provide tremendous power to any printing company.

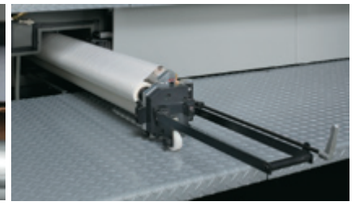
* When equipped with A-APC, plate-changing time for four plates is approximately 1 minute 25 seconds.

Automatic Blanket Washing*

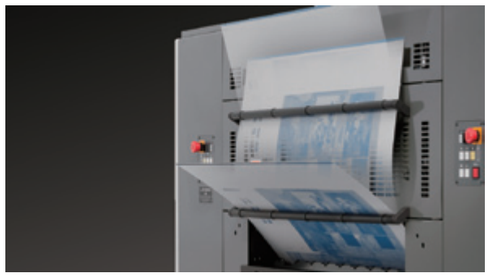
Automatic Ink Roller Cleaning*



Automatic Impression Cylinder Cleaning*



Automatic Cleaning Systems
Efficient and automatic cleaning is delivered thanks to an automatic control program. The quickest automatic blanket washing system in the industry is further enhanced with the use of pre-soaked cloth for blanket washing and impression cylinder cleaning. This shortens the cleaning time and also protects the environment by reducing cloth consumption. Komori automation links all of these processes to dramatically shorten overall makeready time. In addition, the underneath positioning of impression cylinder cleaning systems (easily pulled out from the operating side) facilitates easy changing of the cloth and improves ease of maintenance.



Benderless Full-APC*
Not only is the new Full-APC faster than previous systems, a benderless clamp is used, eliminating the need to bend the plates and making plate discharge and feeding more efficient. The flat plate clamping also improves plate registration accuracy and reduces preparation time.

A-APC*
When equipped with the Asynchronous Automatic Plate Changing System (A-APC), makeready time on the Lithrone G40 is vastly shortened – to just 1 minute 25 seconds.

* Option

Photo: GL-440
* Model in photograph includes optional specifications.

LITHRONE G40P

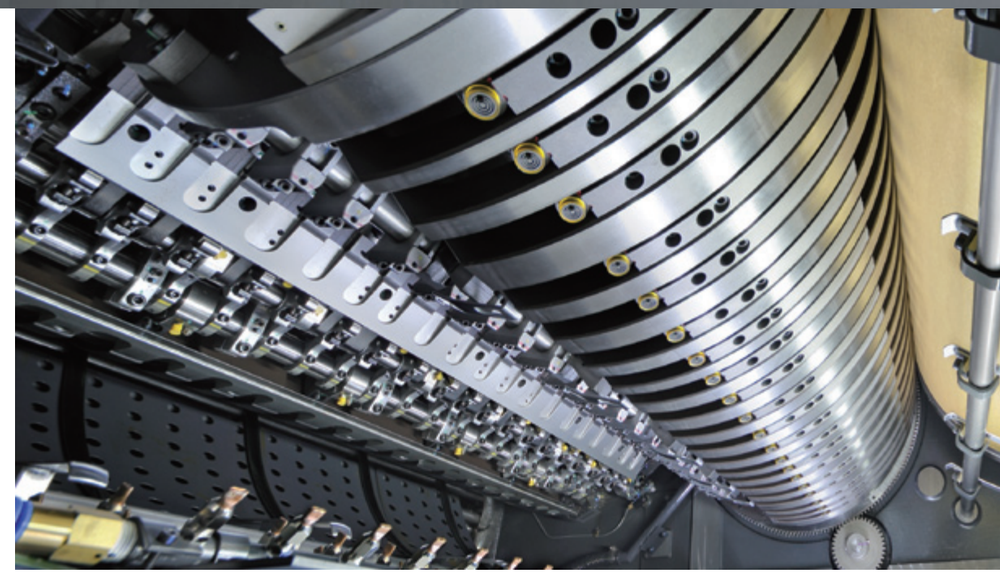
40" Convertible Perfecting Offset Printing Press

Photo: GL-840P
* Model in photograph includes optional specifications.

High production efficiency and high rate of return of one-pass printing

The Lithrone G40P enables high-quality two-sided printing in one pass and straight multicolor printing in one machine. Equipped with Komori's own high-performance perfecting mechanism configured by three double-size cylinders — impression cylinder, transfer cylinder and perfecting cylinder. Komori's unique sheet transport system — enabled by the stress-free sheet transfer attributable to this ideal cylinder configuration and by the lower unit air control — allows two-sided printing at 15,000 sheets per hour. Stable sheet transport thanks to the minimal movement along with the small number of gripper changes reduces scratches and smears, lessens curling, and at the same time assures exceptional register accuracy.
In addition, a variety of automatic devices and systems, including the KHS-AI integrated control system, the benderless Full-APC system*, and suction drum lateral movement linked to paper size presets, slash the need for spare paper for printing and preparation tasks and also dramatically cut lead time. Superb performance with heavy stock in either single-sided or double-sided printing mode means that a variety of stunning high added value printing effects can be obtained with special inks and overprint varnish. The Lithrone G40 is a machine of matchless flexibility that addresses a variety of needs at the highest level. By maximizing the benefits of one-pass printing, the Lithrone G40 yields high-order print quality as well as outstanding productivity and profitability.

* Option



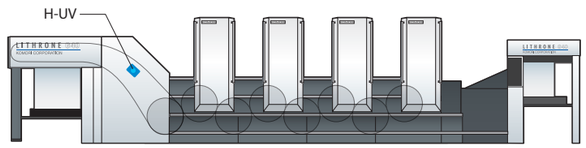
Three Double-size Cylinders
Double-size cylinder configuration with double-size impression cylinders, transfer cylinders and perfecting cylinders.

Custom lineup and specifications

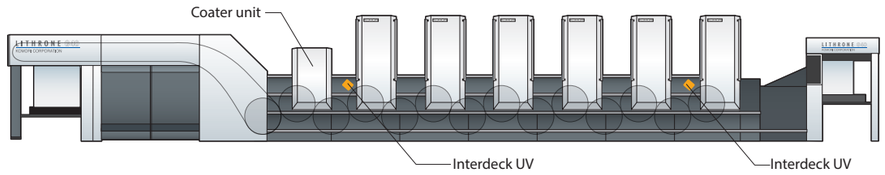
The Lithrone G40 enables one-pass printing with a wide variety of in-line options and specifications, including special inks, overprint varnish, and UV printing units. Specifying the press with one or more coaters or drying units enables high added value printing meeting an unlimited range of needs.

LITHRONE G40 (40-inch Offset Printing Press)

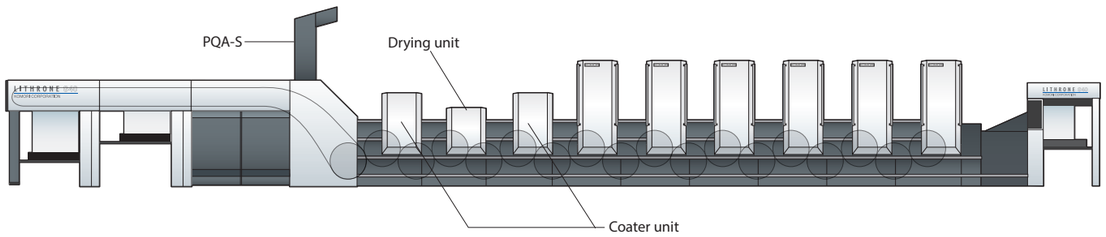
Standard Specification Plus Optional H-UV (GL-440 + H-UV)



6-Color Plus Coater with Conventional UV Specification (GL-640 + Interdeck UV + C + Extended Delivery)

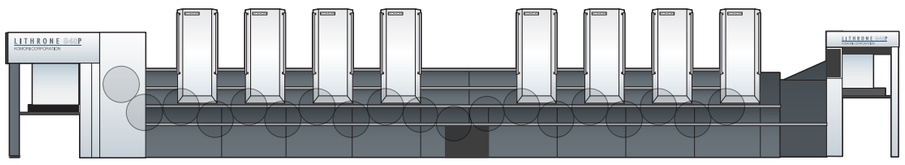


6-Color Plus UV Coating Specification (GL-640 + C + DU + C + PQA-S + Extended Double Delivery)

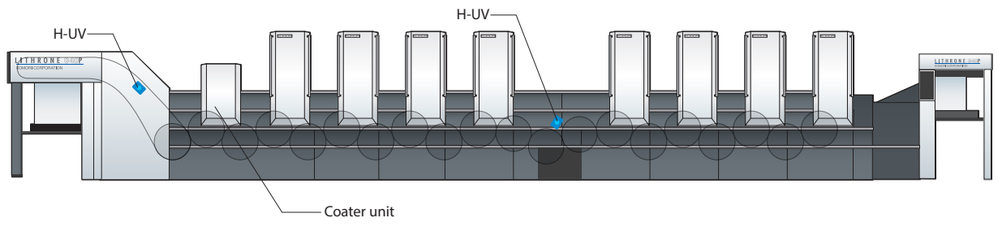


LITHRONE G40P (40-inch Convertible Perfecting Offset Printing Press)

Perfector Specification (GL-840P)



Perfector Specification Plus Aqueous Varnish and Optional H-UV (GL-840P + C + H-UV + Extended Delivery)



LITHRONE G40 Specifications (40-inch Offset Printing Press)								
Model			GL-240	GL-440	GL-540	GL-640	GL-740	GL-840
Number of colors			2	4	5	6	7	8
Max. printing speed		sph	16,500				15,000	
Min. printing speed		sph	3,500					
Max. sheet size		mm (in.)	720 × 1,030 (28$^{11}/_{32}$ x 40$^{9}/_{16}$)					
Min. sheet size		mm (in.)	360 × 520 (14$^{3}/_{16}$ x 20$^{15}/_{32}$)					
Max. printing area		mm (in.)	710 × 1,020 (27$^{15}/_{16}$ x 40$^{5}/_{32}$)					
Sheet thickness range		mm (in.)	0.04~0.8 (0.0016 - 0.0315) : *option 0.06 ~1.0 (0.0024 - 0.0394)*					
Plate size		mm (in.)	800 × 1,030 (31$^{1}/_{2}$ x 40$^{9}/_{16}$)					
Blanket size		mm (in.)	920 × 1,040 (36$^{7}/_{32}$ x 40$^{15}/_{16}$) - including aluminum bar					
Feeder pile height		mm (in.)	1,150 (45$^{9}/_{32}$)					
Delivery pile height		mm (in.)	1,150 (45$^{9}/_{32}$)					
Dimensions	Length (L)	mm (ft.)	7,585 (24'11")	9,941 (32'7")	11,119 (36'6")	12,297 (40'4")	13,475 (44'1")	14,653 (48'1")
	Width (W)	mm (ft.)	3,900 (12'9") [5,640 (18'6") with blower cabinet]*1				4,050 (13'3") [5,640 (18'6") with blower cabinet]*2	
	Height (H)	mm (ft.)	2,153 (7'1") [2,634 (8'8") - with cover open]					
Weight		kg (lb.)	19,020 (41,932)	32,480 (71,606)	39,210 (86,443)	45,940 (101,280)	52,670 (116,117)	59,400 (130,955)

*1 With plinth : 3,790 (12'5") [5,530 (18'1") with blower cabinet]
*2 With plinth : 3,940 (12'11") [5,530 (18'1") with blower cabinet]
* Press configuration can be up to 12 colors.

LITHRONE G40P Specifications (40-inch Convertible Perfecting Offset Printing Press)								
Model			GL-440P	GL-540P	GL-640P	GL-740P	GL-840P	GL-1040P
Number of colors			4	5	6	7	8	10
Max. printing speed		sph	15,000					13,000
Min. printing speed		sph	3,500					
Max. sheet size		mm (in.)	720 × 1,030 (28$^{11}/_{32}$ x 40$^{9}/_{16}$)					
Min. sheet size		mm (in.)	360 × 520 (14$^{3}/_{16}$ x 20$^{15}/_{32}$)					
Max. printing area		mm (in.)	710 × 1,020 (27$^{15}/_{16}$ x 40$^{5}/_{32}$)[Single-sided] 700 × 1,020 (27$^{9}/_{16}$ x 40$^{5}/_{32}$) [Double-sided]					
Sheet thickness range		mm (in.)	0.06 ~ 0.6 (0.0024 - 0.0236) / 0.04 ~ 0.3 (0.0016 - 0.0118)					
Plate size		mm (in.)	800 × 1,030 (31$^{1}/_{2}$ x 40$^{9}/_{16}$)					
Blanket size		mm (in.)	920 × 1,040 (36$^{7}/_{32}$ x 40$^{15}/_{16}$) - including aluminum bar					
Feeder pile height		mm (in.)	1,450 (57$^{3}/_{32}$)					
Delivery pile height		mm (in.)	1,380 (54$^{11}/_{32}$)					
Dimensions	Length (L)	mm (ft.)	13,854 (45'5")	15,032 (49'4")	16,210 (53'2")	17,388 (57')	18,566 (60'11")	20,922 (68'8")
	Width (W)	mm (ft.)	3,790 (12'5") [5,530 (18'1") with blower cabinet]			3,940 (12'11") [5,530 (18'1") with blower cabinet]		
	Height (H)	mm (ft.)	2,453 (8'1") [2,934 (9'7") - with cover open]					
Weight		kg (lb.)	39,990 (88,163)	47,080 (103,794)	54,170 (119,424)	61,250 (135,033)	68,340 (150,664)	82,520 (181,925)

* Maximum printing speed is subject to change depending on printing conditions.
* Total Length of LITHRONE G40P includes the feeder/delivery steps and the operation stand.
* Performance and numbers may differ from specifications herein, and specifications may also be modified for product improvements.
* Margin for vacuum wheels on back side of sheet required for double-sided printing.