The basic version already incorporates the following equipment:

- A high performance feeder specially designed for “scroll” and rectangular sheets
- A patented high-precision registering system, KUNZIMATIC, with EASY SWITCH between “scroll” and rectangular sheets
- A fully automatic plate changing < 4 min on a 6-colour press
- An ERGOTRONIC central control console with EASY REPEAT
- An automatic sheet-size setting, extendable to the complete line
- A COMBIMATIC washing system for plate, blanket and printing cylinder
- An automatic inking washing system, EASY WASH
- Circumferential, side register and cocking, all remote-controlled from the ERGOTRONIC console
- Adjustable gripper bars
- Disconnectable inking units
- A fully-integrated diagnostic system for remote service with modem
- A special geometry of the plasma covered blanket and impression cylinder for metal decoration
- Newly designed grippers for metal printing

High speed guaranteed by:

- A servo-driven feeder
- A patented KUNZIMATIC high-precision registering system
- A VARISPEED registering drum
- Newly designed guiding elements
- Basic frames cast in one single piece
- A precision roller-bearing system with the cylinders pre-tensioned to prevent backlash
Sheet Run

The gripper systems and profiles of the blanket- and impression-cylinder are specially designed for metal printing. They therefore guarantee a gripper margin of 3 mm and a print start of 5 mm.

Double-sized impression cylinders and transfer drums (850 mm) guarantee a smooth sheet run. The sheet transfer between the printing units throughout the entire press is monitored by sensors. Specially designed gripper bars allow the processing of sheet thicknesses from 0.12 to 0.4 mm.

The sturdy frame is cast in one single piece, reducing vibration and guaranteeing the highest printing quality at maximum speed.

KUNZIMATIC
A patented, vacuum powered system for precise sheet registering at the front and side lays.
After precise registering with the KUNZIMATIC system, the sheet is smoothly transported downwards. This precision registering is < 15 μm at the infeed and < 10 μm between the printing units.

VARISPEED Registering Drum
An intelligent gripper transfer system which extends the time period between gripper and gripper. This ensures a perfect transfer of the sheets even at the highest speeds. The picture aside shows the combination of the swing gripper acting from below and the Varispeed drum for smooth acceleration of the sheets.

Architecture
The gripper systems and profiles of the blanket- and impression-cylinder are specially designed for metal printing. They therefore guarantee a gripper margin of 3 mm and a print start of 5 mm.
Make Ready

The basic version includes an array of automation devices. They considerably reduce the make-ready time.

The devices include:

The Automatic Sheet-Size Setting Device

When entering the required sheet dimensions on the Ergotronic console, the automatic sheet-size setting device fully automatically adjusts the feeder, the infeed table, the transfer drums and the delivery of the METALSTAR 2 press. External aggregates can easily be integrated.

The Combimatic Washing System

This washing system cleans the plate-, blanket- and impression cylinder. According to the chosen program, the washing unit moves among the three cylinders into respective positions. Completely controlled from the Ergotronic console, this system guarantees greatly improved access to the cylinders as three separate devices.

Positions of the Combimatic Washing Unit
1) The impression cylinder
2) The blanket cylinder
3) The plate cylinder
4) The washing system

Setting of the sheet size on the Ergotronic console
The Fully-Automatic Plate Changing Device

It reduces the changing time on a 6-colour press to less than 4 minutes. Even during a production run, the plate for the following print job can be inserted into the plate magazine.

At the touch of a button on the Ergotronic console, the magazines move into changing position. The whole process runs without further manual operation.

The fully automatic plate changing device allows for the multiple use of plates.
Inking and Dampening

Inking Unit

Its fast reaction provides uniform ink application over the whole sheet, even with difficult prints; accurate reproducibility for repeat jobs; low start-up wastage; and absolute stability throughout long runs. These features are the essentials for the inking units of the METALSTAR 2 to attain highest print quality.

In case a print job does not require the use of all inking units, specified inking rollers can be disengaged from the drive. The declutch of a inking unit reduces wear on the inking rollers.

Dampening Unit

The VARIDAMP continuous-feed dampening system is a three-roller unit with an additional oscillating bridge roller which can be set to various operation positions.

The speed of the dampening unit is automatically matched to the press speed to ensure a uniform application of dampening solution. VARIDAMP units are also equipped with a switchable differential drive. This creates a wiping effect between the dampening roller and the plate cylinder thus eliminating hickies.

Ink Duct

The COLORTRONIC ink duct is designed with metering zones (zonal ink metering). This design ensures a completely side-effect-free operation and an absolute consistency of duct settings even over long runs.

Side-effect-free ink metering in the Colortronic ink ducts.
Central Console

The Ergotronic central console is the principal work station of the printer. All the functions of the machine are controlled from here: colour and dampening solution, register control, sheet-size setting, washing programs and many others.

**Easy Repeat**

Up to 10,000 printing jobs can be memorized. Easy Repeat allows the automatic adjustment of all essential printing parameters and reduces make-ready times by minimizing job repetition.

Plain language on the display panel shows conditions of the machine, eventual faults of the operating process, or whether guards are open. This enables quick and easy intervention.

The control is equipped with an electric height and inclination adjustment, guaranteeing the ideal ergonomic working conditions for each operator.

The Ergotronic with the Colortronic console is the principal information and control station for the printer.

Register adjustment via Ergotronic control.

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The diagram shows the integration of the METALSTAR 2 into the digital environment of pre-press and service logistics:

1. **Prepress Link**
   In case digital CIP 3/4 data are available, it is recommended to link up the METALSTAR 2 in order to provide the pre-settings of the ink profile by digital means. This increases efficiency and quality and lowers costs.

2. **Computer to plate (CTP)**
   KBA-MetalPrint offers consulting in choosing the plate setter, which fits to the specific demands of each customer, in integrating the setter into the existing workflow and in adapting the setter to the printing press.

3. **Opera**
   Can be easily and economically integrated into the Ergotronic Central Control, into an existing organisation and can be extended at any later date according to changing demands.
Sheet Transport System

Belt Delivery

Coating Tower

UV-Final Cure

Sheet Ejection with Re-Insertion

DENSITRONIC S

Automatic Print Changing Device
Coating Tower

The coating tower is an integral part of the printing machine. The sheet will only be registered once and always remains inside the grippers, which assures the highest spot coating precision at highest speeds. The standard configuration of the METALSTAR 2 includes a chambered doctor blade (anilox system) with a screen roller for precise application of defined UV varnish quantities.

SPRINT Revolver Coater Type 490

The SPRINT Revolver Coater is a completely new-designed machine. This machine is ideal for in-line operation in a printing line and can be used either with UV or conventional coating. Its REVOLVER change-over system allowing cylinder changes in less than three minutes is a revolution in coating technology. It is equipped by default with the Flexocoat System and has fully automated sheet size change.

The Anilox coating system
A chambered doctor blade for in-line coating
The coating tower is equipped with an automatic changing device for anilox rollers

Automatic change of the Flexocoat cylinder
Separate servodrive for Flexocoat cylinder and counter pressure cylinder

The Anilox coating system
A chambered doctor blade for in-line coating
The coating tower is equipped with an automatic changing device for anilox rollers
Digital Integration

OPERA – Integrated Workflow

The METALSTAR 2 is easily linked up with existing Production and Management Control Systems. The OPERA (OPEN ERgonomic Automation) System is a modular, open and flexible concept that automates modern production management. Digital data exchange can be tailor-made among the processes of prepress, decorating and subsequent processing up to the integration of the commercial and management levels, regardless of the company’s size.

In addition, OPERA, maintains top quality control and monitors the production of printed metal sheets. Other options include extending with Logotronic up to the entry of production data, interfacing with production management department, production analysis, etc.

Thanks to its modular design the Ergotronic console can be extended and provides for cross-linked printing production. The following graphic offers a general view:

Remote Service

Service online – includes a comprehensive concept for remote diagnosis and maintenance via phone modem as well as a video conference system as an independent component for the transmission of live images and speech via ISDN. Modern electronic communication channels such as phone, Internet and satellite transmission are employed. Service online increases the machine availability and reduces service costs.

The modular extension of the OPERA system allows the digital data communication crosslinked up to the printing shop.
Sheet Handling

Pallet Changer

Continuous feeding operation by automatic pallet changing with empty pallet extraction.

- Gap of only 15 seconds
- High productivity gain when running long jobs
- Stack infeed storage function, automatic stack infeed control
- Easy system deactivation for small runs of one pallet

Operation Mode

Automatic

- Pallet fork in waiting position until hoist changing level is achieved
- Fork inserts automatically and takes over the production stack thus actuating the feeder height level control while the new stack is brought into position underneath
- When pallet is empty, suckers stop and fork moves with the empty pallet out of the feeder area.
- New pallet moves to working position and feeding starts again
- Fork sets pallet onto extraction rails and moves back into waiting position when pallet is pushed out.

Last sheet clamp option

In order to avoid the last sheet being transported into the press a clamp fixes the last sheet onto the empty pallet.

SMS Sheet Management System

Management of waste sheets and inspection sheets during set up and production on the printing machine.

The SMS is used to eject sheets for inspection at recommended intervals.

- Ejecting and reinsertion of sheets at high speed – damage free
- Safe and convenient operation
- Stacking waste sheets without damage for re-use of aluminium and tin sheets
The machine can be programmed to eject a set number of sheets that will be delivered to the container and 1 good sheet that will be ejected into the tray for the operator to inspect. This avoids waste sheets being mixed with the good production sheets.

The operator at the feeder can also eject a sheet into the container by pushing a button at the feeder.

Double Box Stacker

Nonstop stacking operation by automatic double box stacker and optional empty pallet insertion.
- Nonstop, continuous production
- Creating high productivity
- Wide belt design for optimum support of sheets
- Stack delivery storage function, automatic stack conveyor control

Stacker Equipment
- Single sheet counter per box
- Additional total sheet counter
- Automatic stack ejection when box change is activated
- Automatic conveyor starting and stack transportation to the exit

Optional Features
- Dynamic sheet control for each box
- Overhead design with magnetic stoppage (impact free slow-down)
- Automatic format setting by job pre-selection from the central console
- Empty pallet insertion and centralizing
- Additional conveyor segments allow automatic stack storage

Overhead Electromagnetic Sheet Control

This revolutionary option represents a completely soft and controlled method to slow down the metal sheet from full production speed to an impact-free stacking. The overhead electromagnetic sheet control does not only avoid damages of the sheet even at high speed it also reduces noise to an unrivaled level. Thanks to the unique slow-down process the sheet falls vertically onto the stillage, which avoids the occurrence of scratches completely.
Quality Control

Real Time Quality Monitoring System PRINT CHECK 3000

- High-resolution video cameras monitor the complete area of each sheet for colour deviations, dirt or scumming during the complete print run.
- The system recognizes even the smallest differences at high speed.
- Upcoming variations within the adjusted tolerance range are displayed continuously on the screen. Additionally, a signal appears, which allows the printer to react before waste sheets are printed.
- The program allows to record the quality of each job

Colour Quality Control Densitronic S

Densitronic S is a modern measuring system for the online control of the print quality. It can measure not only colour densities in control strips but also spectral and colorimetric values in the image. The sensor of the Densitronic S system combines a spectrometer and a densitometer in one measuring head. The colour corrections are calculated automatically and transferred to the printing units. The Densitronic S saves time in adjusting the printing press and is an efficient tool for quality control.

ACRC Automatic Camera Register Control

Reduces set-up times by an automatic register setting device with camera ensuring a fast register adjustment and data transfer for corrections in the printing press.
Prepress

Three Modules Provide Tailor-Made Solutions

KBA-MetalPrint possesses a comprehensive overview on the market of prepress systems and consults you individually and on a neutral basis. This includes all options which may provide benefits for your current situation. You as our customer can choose the kind of support you really need. We adjust our scope of support to your desires and requirements.

**MODULE 1 – CONSULTANCY**
- Analysis of job and product structure on site
- Definition of project objectives
- Analysis of existing resources
- Offer of tailor-made solutions

**MODULE 2 – PROJECT MANAGEMENT PREPRESS**
- Preparation of installation
- Project Planning
- Project Coordination during installation and product training

**MODULE 3 – PROCESS CALIBRATION**
- Standardisation of all production steps
- Achievement of consistent and reproducible printing results for coloured packaging design
- Adaptation of digital colour proof to printing results
- Minimization of make-ready time and waste of material

Finding the ideal prepress configuration which meets entirely the individual requirements represents a challenge since a vast number of suppliers are promoting their products on the market. KBA-MetalPrint is watching constantly the development on prepress technology. Therefore, just take advantage of neutral consultancy:

- To ensure that the solution meets your requirements and existing workflow
- To optimize the prepress process and the achieved quality
- To gain maximum efficiency in respect to cost and revenue
- To achieve a perfect interfacing to your METALSTAR 2

KBA-MetalPrint supports you with Colour Competence:

- CMYK
- Hexachrome
- HiFi – Colour
- Special Colour
- Digital Colour Proofing
# Technical Data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Minimum</th>
<th>Standard</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum sheet size</td>
<td>1000 x 1200 mm</td>
<td>39.40” x 47.30”</td>
<td></td>
</tr>
<tr>
<td>Minimum sheet size standard</td>
<td>600 x 710 mm</td>
<td>24” x 28”</td>
<td></td>
</tr>
<tr>
<td>Sheet thickness standard</td>
<td>0.12 – 0.40 mm</td>
<td>0.0050” – 0.0157”</td>
<td></td>
</tr>
<tr>
<td>Size of printing plate</td>
<td>1095 x 1220 mm</td>
<td>43.11” x 48.03”</td>
<td></td>
</tr>
<tr>
<td>Maximum printing area</td>
<td>995 x 1200 mm</td>
<td>39.17” x 47.24”</td>
<td></td>
</tr>
<tr>
<td>Plate thickness</td>
<td>0.3 – 0.4 mm</td>
<td>0.0118” – 0.0158”</td>
<td></td>
</tr>
<tr>
<td>Size of pre-bar blanket</td>
<td>1275 x 1220 mm</td>
<td>50.20” x 48.03”</td>
<td></td>
</tr>
<tr>
<td>Gripper margin</td>
<td>3 mm</td>
<td>0.118”</td>
<td></td>
</tr>
<tr>
<td>Print start</td>
<td>5 mm</td>
<td>0.198”</td>
<td></td>
</tr>
<tr>
<td>Maximum printing speed performance</td>
<td>10,000 sheets/h depending on internal conditions in the printing shop and quality of the material used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum weight of feeder pile</td>
<td>3500 kg</td>
<td>(167 spm)</td>
<td></td>
</tr>
</tbody>
</table>

The enlisted data apply to the basic version of the METALSTAR 2.

<table>
<thead>
<tr>
<th>Machine Version</th>
<th>Two colours METALSTAR 2</th>
<th>Three colours METALSTAR 2</th>
<th>Four colours METALSTAR 2</th>
<th>Five colours METALSTAR 2</th>
<th>Six colours METALSTAR 2</th>
<th>Seven colours METALSTAR 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>10150 mm / 33.3 ft</td>
<td>11790 mm / 38.68 ft</td>
<td>13430 mm / 44.06 ft</td>
<td>15070 mm / 49.45 ft</td>
<td>16710 mm / 54.83 ft</td>
<td>18350 mm / 59.64 ft</td>
</tr>
<tr>
<td>Power of motor</td>
<td>33 / 33</td>
<td>33 / 33</td>
<td>47 / 47</td>
<td>47 / 47</td>
<td>65 / 65</td>
<td>65 / 65</td>
</tr>
<tr>
<td>Total load</td>
<td>146 / 44 ft</td>
<td>147 / 45 ft</td>
<td>164 / 49 ft</td>
<td>165 / 49 ft</td>
<td>187 / 51 ft</td>
<td>189 / 52 ft</td>
</tr>
<tr>
<td>Standard tension</td>
<td>400 V / 50 Hz, 3 phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Some of the functions described above are options and can be combined to provide customer-specific configurations. Therefore, we reserve the right to modify design features and technical data.

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