ELECTRIC MOTOR LAMINATION
BLANKING LINES
Precise coordination between slide movement and part removal ensures higher stroke rates and production safety.
Schuler is a system supplier offering innovative and flexible systems tailored to customer requirements for manufacturing electric motor laminations using progressive and compound blanking processes.

Our equipment can efficiently produce blanks for applications ranging from segments, stators and rotor plates to pre-cut round blanks in various sizes. The blanking machines are highly automated and used for large and medium-sized blanks.

Using compound blanking dies, one or two blanks can be produced precisely with each press stroke.

Blanking line for the manufacturing of electric motor laminations using progressive and compound blanking processes.

SCHULER WORLDWIDE

As the technological and global market leader in metal and plastic forming equipment, Schuler offers cutting edge presses, automation, dies, process know-how and services for the entire metal forming industry and lightweight vehicle construction. Its clients include car manufacturers and their suppliers, as well as companies in the forging, household equipment, packaging, energy and electrical industries. Schuler is the market leader in coin minting technology and supplies systems solutions for the aerospace, railway and large pipes industries. With 5,500 employees, Schuler is represented in 40 nations around the world. The Austrian ANDRITZ Group holds a majority share in Schuler.
Flexible applications with a Schuler blanking press.

BLANKING PRESS.
HIGHLY PRECISE AND FLEXIBLE.
Our blanking presses are optimally designed using FEM calculation. To balance the mass in the press, the two connecting rod drives are designed in transverse direction with two herringbone main gears rotating in opposite directions. The slide runs play-free with 8-way roller guides and positive locking to the hardened guide rails of the press frame. The hydraulically-controlled ejector system is located in the slide. The pressure pins can be directly controlled using dynamic cams to consistently eject the blanks from the top die. The slide counterbalance and the hydraulic overload protection, combined with automatic re-circulating lubrication, assure reliable production.

Very low deflection of the press bed and slide reduces strain on the dies, increasing their service life. The bed, slide bolster plates for clamping dies and scrap removal through the bed are designed according to customer requirements.

Benefits
- Complete lines from a single source
- High productivity
- High utilization of the line
- Many different versions
- Long die service lives

Options
- Hydraulic or manual die clamping
- Motorized or manual die change
- Scrap conveyor systems
- Stroke adjustment
- Sound protection measures
The electric motor lamination blanking line is operated using a Windows-based visualization system. It is easy, clear, convenient to use and user-friendly. Furthermore, parameters such as stroke, stroke rate, press force and shovel stroke, etc., can easily be entered by the machine operator. The visualization and control system for the entire line has been developed by the Schuler Group.

The entire line is controlled by an integrated press control system. Additionally, secondary control stations are provided at the corresponding line components for simpler operation and an improved overview.

### PRESS CONTROL AND VISUALIZATION SYSTEM

**Clear and user-friendly visualization system.**

### Technical specifications

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<td></td>
<td>2,500 – 6,300</td>
<td>1,300 × 1,300</td>
<td>Monoblock</td>
<td>Transverse shaft</td>
<td>Circular blanks/segments</td>
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<td>11,600 × 1,600</td>
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<td>2,400 × 1,600</td>
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- **Die technology:** 1 or 2 blanks per stroke
- **Production type:** Progressive and compound blanking
- **Removal technology:** Shovel/nose transfer
- **Stacking technology:** Pallets (also multiple stacking) and mandrels
- **Stacking stations:** Either 1 or 2

Additional sizes according to customer requirements. Subject to technical modifications.
COMPONENTS OF AN ELECTRIC MOTOR LAMINATION BLANKING LINE

1. Material feed  5. Electronic high-speed servo feed  7. Removal shovel/conveyor belt  9. Product example: circular blanks up to Ø 1,300 mm and segments
AUTOMATION COMPONENTS.
COORDINATED SYSTEM ACCURACY.
UNLOADING DEVICE AND STACKING SYSTEM

The lightweight unloading shovel is electronically linked to the press, with continuous comparison of the nominal and actual positions of the slide and shovel. Sensors confirm the presence of parts in the shovel for production process reliability. The movement of the unloading shovel can be programmed by the main control system. The operator can therefore flexibly adapt the line to the specific die and blank sizes. The result is a shovel stroke rate optimized to the respective blank size, thus increasing production output and the productivity of the overall line.

COIL FEED LINE

The coil feed lines integrated into the overall system are designed for the special requirements of magnetic steel processing. The coil feed line range includes a wide variety of options and can be adapted to specific requirements and equipment variations.

Our Power Feed roll feed with ServoDirect drive, as well as low-play and maintenance-free planetary gear units, ensures dynamic performance and system accuracy. The roller coating is also optimized for the particular application.

Components
The end-of-line system consists of three components:
- Steel fabrication including conveyor belt systems for transporting the blanks
- Shovel system
- Two stacking stations with blank transport

DIE TECHNOLOGY

Tailor-made progressive and compound blanking dies ensure economic production. To keep material costs down by reducing scrap, the blanks are arranged optimally on the coil. The design of the active parts in tool steel, PM steel or tungsten carbide is state-of-the-art and carried out according to customer requirements.
SYSTEM COMPONENTS.
UNLOADING TECHNOLOGIES IN LINE WITH CUSTOMER REQUIREMENTS.

Unloading technology: the flap technique is an alternative to the shovel system.

FLAP TECHNIQUE FOR CIRCULAR BLANKS

As an alternative to removing the blanks with a fully automatic shovel system, circular blanks in particular can also be removed using the so-called flap technique. Two catch flaps are embossed into the scrap web which take the finished blanks out of the machine’s work area in the feed direction and place them on a conveyor belt. The blanks are then stacked on a mandrel.

Successfully implemented
The following technical advances in removal technology have been realized so far:
• Removal of two blanks at the same time on the upper and lower sides of the shovel
• Integration of the flap transfer technique or operation without shovel system
• Stacking onto hydraulically retractable mandrels
• Integration of buffer conveying systems
• Simple removal system to control cost – with one stacking station and no shovel
Over 900 service employees worldwide provide expert support 24/7 in close cooperation with you – our partners. Our main priority is always to ensure the ultimate productivity and safety of your production equipment in order to secure your company’s continued success.

With over 170 years of experience and expertise, we can guarantee the best possible support for the operation of your machines – and not only those supplied by Schuler, but by all other manufacturers. Whatever the situation, Schuler Service has the right solution for your specific needs.

Schuler Service offers a tailored portfolio of services covering the entire life cycle of your equipment.

Want to know more about our full range of services?
Simply scan the QR code with the camera of your smartphone or tablet.

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