GLASS TWISTER.
HIGH-PERFORMANCE RING TWISTING MACHINE.

GLASS FILAMENT TWISTING.
Competence in Twisting.

Twisting and cabling systems

Allma in Kempten and Volkmann in Krefeld form the Allma Volkmann Business Unit in the Saurer Group. Allma and Volkmann are leaders on the global market for twisting and cabling technology.

At our site in Krefeld, we develop, produce and market twisting and cabling systems for staple fibre, carpet and glass filament yarns throughout the world. We enjoy an excellent reputation as provider of complete solutions and comprehensive systems. Our products are the result of the wealth of experience gained over many generations in combination with the know-how of today for the textile industry of tomorrow. Here, tradition and the latest technology merge to form a symbiosis of expertise, quality and reliability.

Our aim is to continuously develop innovative and cost-effective products at the highest level for the benefit of our customers. Our core competencies also include the technical/textile support service we provide, together with a high degree of customer proximity resulting from our globally networked service organisation, as well as the fast and customer-focused supply of original parts.
The Volkmann GlassTwister is an innovative high performance ring twisting machine for winding up glass filament and plied yarns and has become well established in the market. Our twisting systems provide an optimum level of variability and flexibility. Along with a range of services oriented toward customer needs, there is an attractive comprehensive package available – from project planning to the service warranty and original part availability spanning all machine generations.

Main highlights are:

- Central adjustment of all parameters on an industry standard PC with touchscreen
- Single-motor spindle drives and ring rail movement
- Single-motor synchronous drives of creel baskets
- Pneumatic brake for twisting spindle and creel baskets
- Precise ring rail control with monitoring by means of linear encoder
- Weight compensation by spring packs (without counterweights)
- Variably adjustable package building for optimum package unwinding
- Spindle speed range 3000 to 8000 rpm
- User-friendly placement height of 1.85 m
E³ – Triple added value

We aim to provide our customers with innovative products that make a difference in their production and profitability. The passion for our products drives our innovation. By focusing on our customers’ requirements and combined with Saurer’s philosophy of innovation and sustainability, triple added value has been created.

**Energy**
- Up to 15% lower energy consumption due to optimised drive motors and bearing technology
- Optimised smooth running of the ring rail system due to drive systems without counterweights

**Economics**
- Up to 3.5% higher economy in the fine yarn sector and the best finished package quality
- 100% tested sectional design, leads to faster production start
- ≤ 1% process-related yarn break rates

**Ergonomics**
- Up to 11% improved ergonomics and user-friendly machine due to low-height design
- ≤ 82 dB(A) noise emission
- Individual adaptations to your requirements
GlassTwister ring twisting machine

- The innovative machine for the production and twisting of single and multiple yarns

GlassTwister with the latest design, a broad range of functions and ergonomic design. Your customers will be delighted when you provide them with the perfect yarn packages produced on our GlassTwisters. The optical appearance of the packages alone is impressive. Further processing of the yarn e.g. on the weaving machine is excellent. This is made possible due to the precisely controlled ring rail movement of the GlassTwister, using a ball screw and linear encoder, and high resolution digital output cards from the PLC controller.

In addition to a highly developed and state-of-the-art technology, GlassTwisters offer the following with regard to efficiency and economy:

- Full motorisation of the machine, beginning with the synchronised single drive of the creel baskets and the twisting spindle; enables a very low level of spare parts consumption. Tangential belt drives which are usually subject to high wear and tear do not exist in the GlassTwister.
- The spindles which are also subject to high loads are designed in such a way that they can be re-greased without having to stop the machine, i.e. without any production losses.
- Non-slipping synchronous drives for the individual creel baskets ensure equal running lengths of the yarn packages over the entire package journey. This results in minimum yarn remnants in downstream processing and thus savings in raw material costs.
- The modern drive concept of the GlassTwister machines allows low maintenance requirements and long maintenance intervals, thus ensuring a high availability of the machine.
- The sectional design and the tested preassembly at the manufacturer's factory allows the installation times and thus the installation costs to be reduced to a fraction of those needed by other glass yarn machinery manufacturers for the installation of their machines.
Data input and monitoring of process parameters and production data

For best package building and formation, several frequency inverters are integrated for motor control of creel baskets, ring twisting spindles and servo drives for controlling the ring rail motion.

**Industry PC for central setting**

Setting all parameters on the IPC with touchscreen, e.g. setting of:
- Speed of creel basket motors
- Spindle speed
- Ring rail speed
- Package building
- Defined yarn length per spindle
- Temperature, air quantity, etc. for hot-air dryer (optional)

Any special wishes which your customers may have with regard to yarn package shapes can be easily fulfilled.
Why glass filament yarns are twisted or produced on the GlassTwister from Volkmann

Twisting / producing the individual filaments in parallel alignment on the Volkmann GlassTwister offers the greatest yarn integrity. This is the only way that further processing is possible at the highest level. The yarn cops of the GlassTwister used as packages in particular guarantee a perfect sequential behaviour at maximum feed-in speeds of more than 900 m/min.

1. Yarn path
2. Creel basket
3. Yarn sensor with yarn guide
4. Yarn balloon ring
5. Twisting ring with ring traveller
6. Motor spindle
7. Twist bobbin
8. Separator
9. Ring rail drive
10. On/off switch of the ring twisting position
Creel baskets with single drive

The mature technical design of the creel drives provides many benefits to operating and maintenance personnel:

- Robust creel basket with single motor drive and pneumatic tensioning device
- Speed centrally and electronically adjustable via frequency inverter
- Precise synchronous motor drive
- Start and stop individually per position
- Drive motors with thermal protection
- Comfortable placement height 184.5 cm
- Low noise emissions
- Ergonomic and user-friendly machine

Latest drive technology
Motorised spindle and ring rail control

Ring twist spindle

- Speed range 3000 rpm up to 8000 rpm
- Speed variation +/-0.3% over the entire package journey
- Control of spindle motors by means of frequency inverter
- Spindle motors with system control via CAN bus and thermal protection
- Pneumatic spindle brake
- Perfect yarn guidance with yarn balloon guide and balloon limiter ring
- Central oil supply and twist rings

Low maintenance requirements, easy to operate

The low-maintenance spindles can be re-greased within the shortest time, thus considerably increasing the service life.

Precise ring rail control

- Monitoring by linear encoder
- Weight compensation by spring packs (no counterweights)
- Precise yarn storage and variable package building
- Optimum unwinding characteristics of the twist packages produced for follow-on processes
### Technical and textile data

<table>
<thead>
<tr>
<th>GlassTwister</th>
<th>VGT 9</th>
<th>VGT 11</th>
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</thead>
<tbody>
<tr>
<td>Spindle spacing</td>
<td>mm 240</td>
<td>280</td>
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<tr>
<td>Number of spindles</td>
<td>max. 144</td>
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<tr>
<td>Number of sections</td>
<td>max. 12</td>
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<tr>
<td>Spindles per section</td>
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<td>12</td>
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<tr>
<td>Count range</td>
<td>tex 5.5 up to 68</td>
<td>11 up to 544</td>
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<tr>
<td>Twist range</td>
<td>t/m 10 up to 250</td>
<td>15 to 250</td>
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<tr>
<td>Twist direction</td>
<td>S / Z</td>
<td>S / Z</td>
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<tr>
<td>Spindle speed</td>
<td>rpm 3000 up to 8000</td>
<td>3000 up to 8000</td>
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<tr>
<td>Creel basket speed</td>
<td>rpm 50 up to 375</td>
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<td>Ring rail speed</td>
<td>m/min 0.1 up to 4.0</td>
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<tr>
<td>Winding traverse</td>
<td>mm 420</td>
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<tr>
<td>Ring diameter</td>
<td>mm 165 (others on request)</td>
<td>216 (others on request)</td>
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<tr>
<td>Ring height</td>
<td>mm 6.3 / 4.8</td>
<td>6.3 / 9.5 / 16.7</td>
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<td>Spindle yarn weight</td>
<td>kg max. 8</td>
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<td>Creel yarn weight</td>
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<tr>
<td>Creel diameter</td>
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<td>Creel basket inner diameter</td>
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<td>Creel basket length</td>
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<td>Option: bobbin adapters, remote diagnosis system, drying systems as hot air or infrared</td>
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### Number of spindles

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<td>Machine length VGT 9 mm</td>
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<td>4632</td>
<td>6072</td>
<td>7512</td>
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<td>Machine weight VGT 9 N</td>
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<td>19032</td>
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<td>18552</td>
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<td>Machine weight VGT 9 N</td>
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<td>55700</td>
<td>61600</td>
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<td>Machine weight VGT 11 N</td>
<td>56100</td>
<td>62900</td>
<td>69700</td>
<td>76500</td>
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</tbody>
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Note: Specifications without protection rails and drying units (length and weight data according to execution)
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