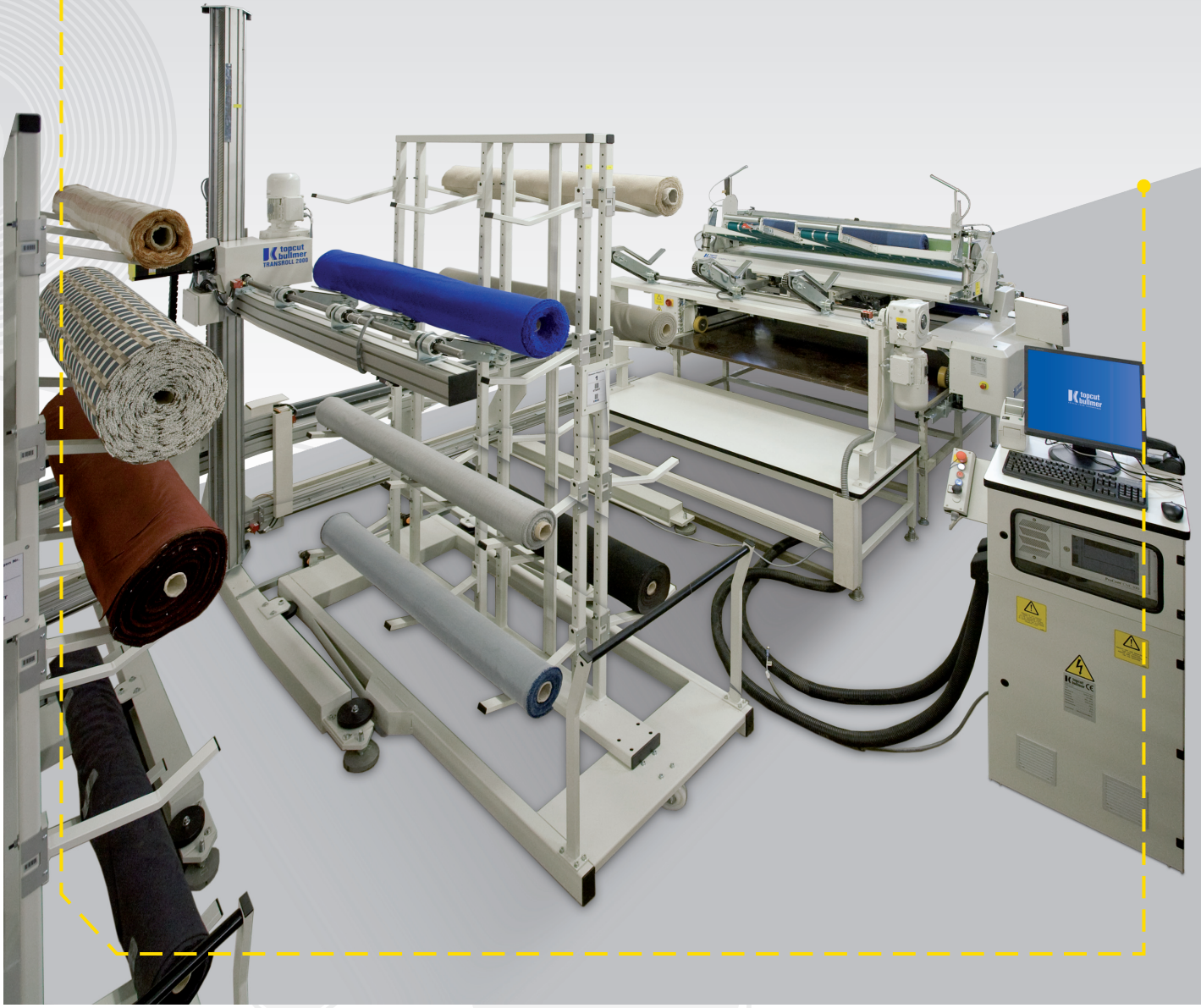
TRANSROLL



Target industries:

Upholstered furniture industry, technical textile processors and related applications.

Material:

All flexible flat materials stored as roll goods.

Special properties:

The Transroll is a flexible fabric roll transport and storing system with automatic roll changer system for direct installation at a cutters front end. It is combined with either a topcut-bullmer spreading machine, a cradle, or a cradle installed in front of a cutter, especially for single ply cutting. The functional interlinking of this system combination ensures automatic work flow from roll provision, through automatic programmed roll change, to fabric spreading and cutting. Remarkably, only one person is required to operate the entire system with the components and process described.

Due to the combination of a number of different work sequences – a continuous automatic process with roll mounting/roll provision/roll feed for spreading or cutting/unrolling/roll rewinding to storage – the Transroll enables significant savings in time and thus improves the cost effectiveness of the process chain. The more frequently the roll is changed and the smaller the number of cut-outs per fabric roll, the greater the time savings and consequently the greater the cost effectiveness of the Transroll.

Standard Version

- Fabric roll transport carriage
- Fabric roll feeder and positioner
- Fabric roll loading and unloading device
- Barcode reader
- Control computer with operating software

Options

- Additional individual roll loading stations for post-cutting or rush orders
- Fabric roll cradle or spreading machine
- Single ply cutter
- „Clean-up aid“ for the cutter, equipped with corresponding software, for identifying the cut sections by projector during clean-up.

Functional description

The (manually) mobile fabric roll transport carriages (Figure 1) are loaded and unloaded outside their operating sites (for example, in the fabric warehouse) and then installed and fixed in their parking slot positions in the system. They are equipped with holding brackets on both sides, with adjustable spacing between them as required by the diameter of the roll. The Transroll is available with any number of transport carriages (subsequent expansion is also possible).

Figure 1: Roll transport carriage

Figure 2: Fabric roll feader

The fabric roll feeder (Figure 2) is comprised of a guide track mounted on the side of the transport carriage, with a vertical, roller-guided supporting column. A pilot carriage on the supporting column with cross-arm and swivelling supporting bracket for the fabric rolls is moved by axis-control and is height-adjustable. The fabric roll feeder is lowered with its cross-arm, bearing the fabric roll, over the provider carriage between the feeder carriage into the programmed position. The swivelling supporting brackets of the cross-arm return the fabric roll to the provider carriage, take up a new fabric roll and move this roll to the programmed position, according to the process (Figure 3).

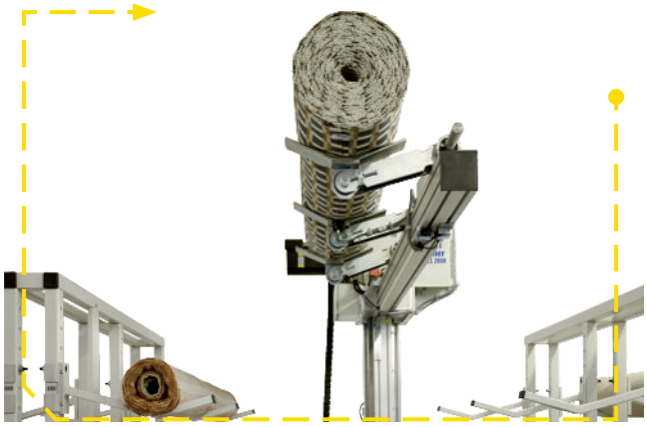


Figure 3: Roll feader moving over carriage

The fabric roll transport carriage then returns to the cradle or spreading machine over the transport system and lays the new fabric roll directly onto the cradle extensions for the cutter or spreading machine. For functional reasons, the cradle is equipped with trough extensions (patent granted), which the fabric roll loading and unloading device can drive under or through for placing or removing a fabric roll. In combination with the loading and unloading device and the roll transport carriage, the supporting brackets of the feeder execute an intermeshing up-and-down movement, along with lateral swivelling, allowing the loading and unloading of the fabric rolls (Figure 4).

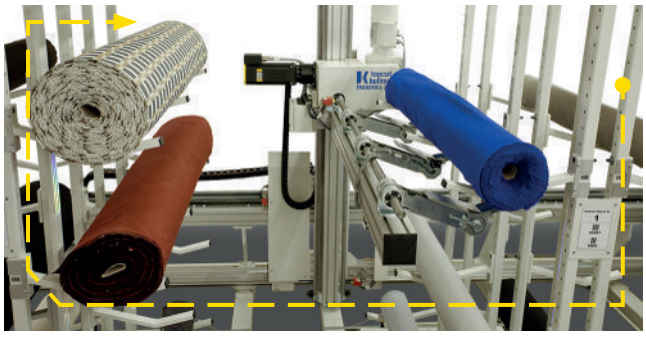
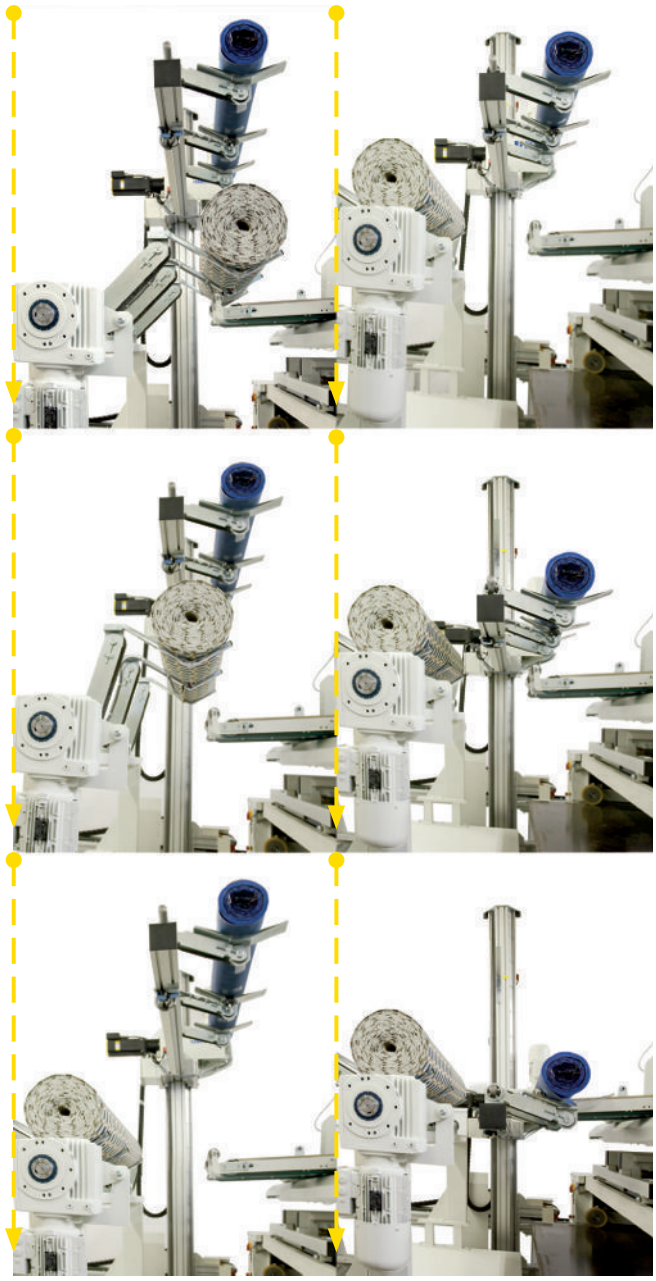


Figure 4: Roll change - roll transfer

Time sequencing and loading

The fabric rolls are sensed by the fabric roll transport carriage via barcode according to their identification numbers and location numerals in storage (Figure 5) and called by the spreading machine or the cutter corresponding to the order sequence. Changing fabric rolls takes place automatically. While the laying machine lays material from a fabric roll or the cutter is cutting from the fabric roll, the fabric roll feeder returns the previous fabric roll to its storage location and brings the next fabric roll called to the feeding position. Changing the fabric roll for a spreading machine requires only around 15 seconds, while no time at all is required for the cutter, as the fabric roll change takes place during the cutting of the previous cutting window (time-overlapping processes).



When the programming of the fabric roll transport carriage and the roll stations allows the serial processing of the rolls on the transport carriage, changing the transport carriage allows continuity over the entire work flow and process.

During automatic work flow with the Transroll, a transport carriage already processed can be replaced by a „new“ one (Figure 6). For safety reasons, automatic operation must be interrupted while changing over. The location numbers of the rolls and the roll identification numbers are entered via keyboard or barcode scanner for the new carriage. After changing the roll transport carriage, the user resumes automatic operation.

↑ Bild 6: Codierung Wagen, Platzziffer und Ballenident-Nr.

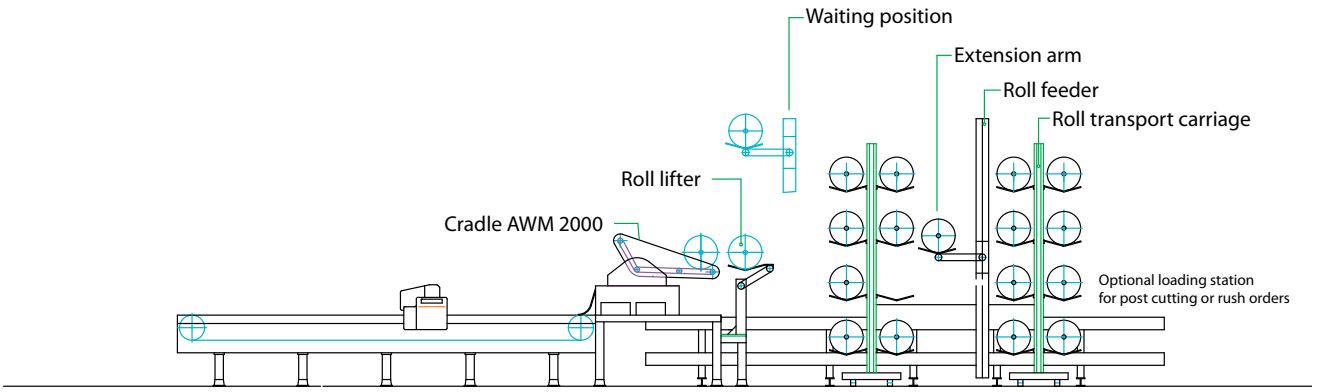
← Bild 5: Rollenwechsel an der Abwickelmulde in nur 15 Sekunden

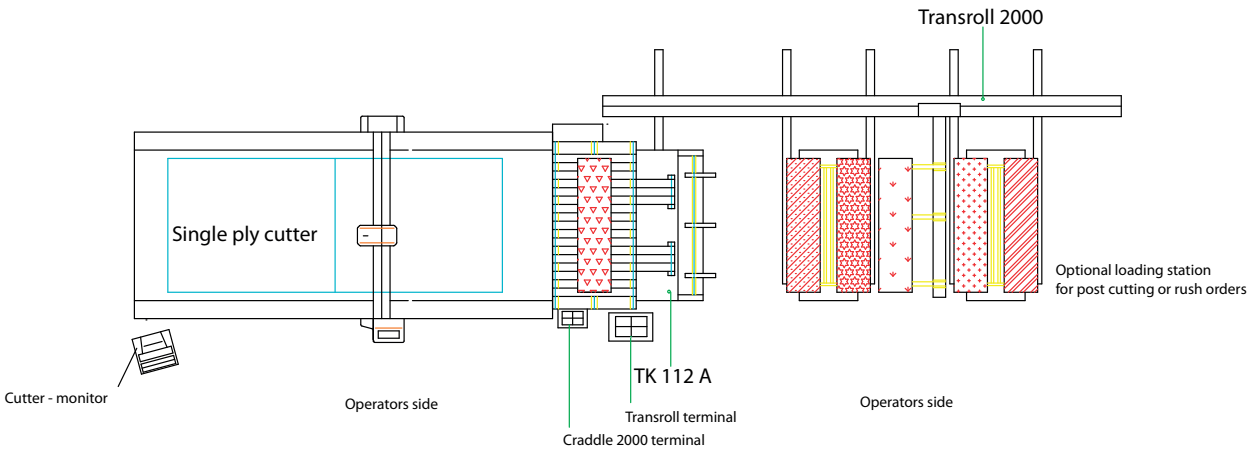
Case-Study

In 2007, a Transroll with cutter for single ply cutting was installed in a former company with 290 employees in the classic to modern upholstered seating furniture industry for the target group 50 and older with fully integrated production for around 500 seating units per day. Three years later (2010) the second system was installed, due to the following results obtained with the first system:

- 34 linear metres fabric processing with 438 cutting profile metres per hour
- Personnel reduction of three workers in two-shift operation
- Fabric savings = 14 %
- Increased main machine utilisation time by 35 % to 85 %

Configuration example





Technical Data

Working widths:	1600, 1800, 2000 mm
Roll diameters:	300, 400, 500 mm
Max. roll weight:	80 kg (higher roll weights upon request)
Roll exchange time	12-15 Sek.
Capacity of roll transport carriage:	8 rolls with 400 mm diameter 10 rolls with 300 mm diameter
Supplies:	230/400 Volt, 50Hz, ca. 5 kW

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