



# EcoStar® felting needle

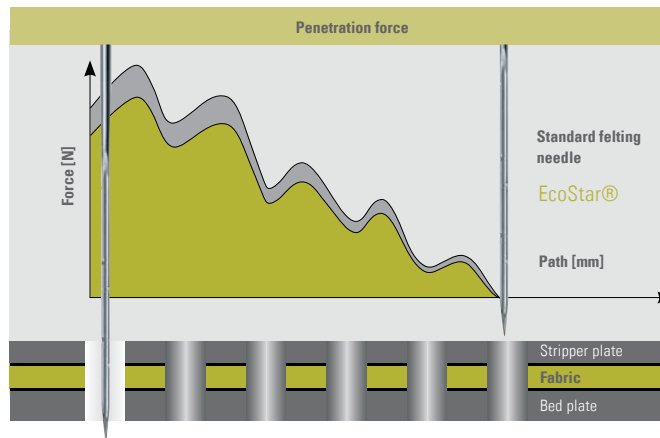
The universal felting needle for practically any requirement: durable, energy-saving and sustainable.

## Characteristics and special features:

- Equilaterally formed triangular working part
- Parallel working part from the point to the conical transition
- Barb dimensions identical across all the edges
- Traditional number of barbs: 2 barbs per edge
- Convex shaped working part core with edges evenly offset by 120°
- Rectangular shaped edge surfaces
- Reduced cross-section compared to the standard needle (needle cross-section surface reduced by 13 %)
- High level of stability due to vertically projecting edges (same bending strength properties as standard felting needles)

## Benefits:

- More even surface of the finished product
- Lower penetration force and material displacement without compromising efficiency
- Reduced energy requirement during needling



Measurement of penetration force and mechanical work

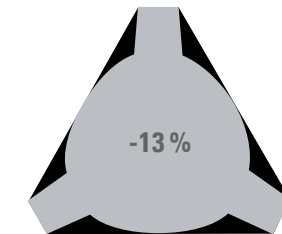
# GROZ-BECKERT

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Working part cross-section

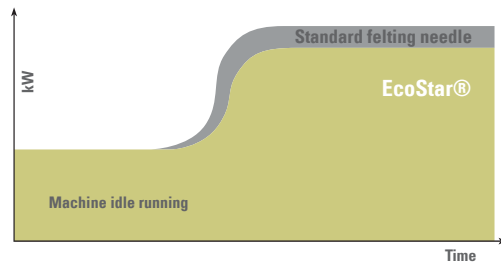


Comparison of cross-section: Standard triangle (outside) and EcoStar® (inside)

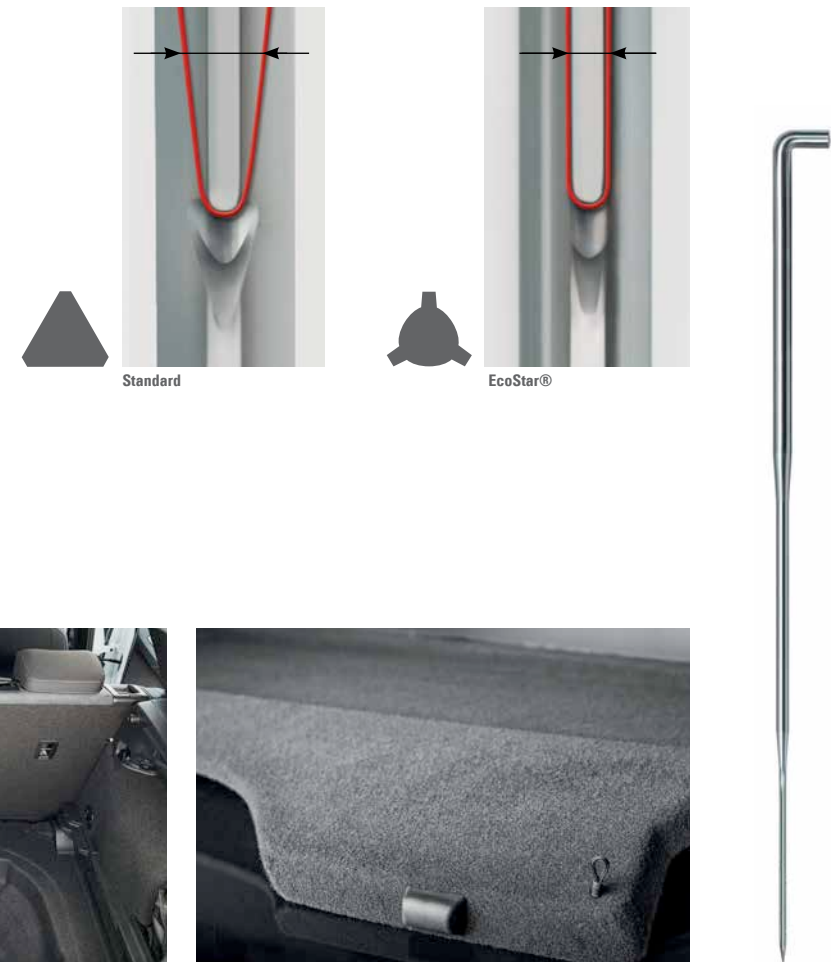


## Sample calculation of energy reduction:

- When working with high fabric weights, the EcoStar® felting needle can also drive down energy consumption by up to 7 % (corresponds to an energy saving of up to 1 kW). With a machine capacity utilization of around 85 % and a price of 0.1 € per kWh this corresponds to savings of 328 € over a calendar year (180 working days).
- The narrower looping angle at the undercut (improved fiber adhesion) and the leaner needle cross-section (lower material displacement) are key to these improvements.



## Energy reduction



## Fields of application

All applications placing stringent demands on the product surface

## Availability

- Gauges: 32–42 gauge
- Needle lengths: 3", 3.5"
- Barb shapes: RF

Other gauges, barb shapes and needle lengths on request



Luggage compartment lining



Hat/parcel shelf