

The winding machine – rewinder-Plus

Description of the problem

About 600 textiltubes with a length of about 15 meters depending on rolls has to be wounded up per working day. Out of this textiltubes made from Feinjersey or other products are produced. The existing machine can not met all the new requirements.

The new development has to include

- infinitely variable speed when winding
- shielding any possible risks
- reliable winding and emergency stop
- easy mounting and dismounting of the take up reel
- prevent electrostatic charging caused by winding up
- secure and table base machine



Figure 1 winding up the textiltube



Figure 2 The „old“ winding machine

Description of the solution

The new winding machine called rewinder-Plus

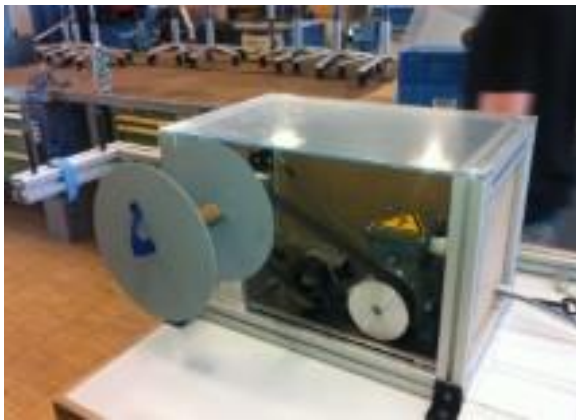


Figure 3 new rewinder Plus

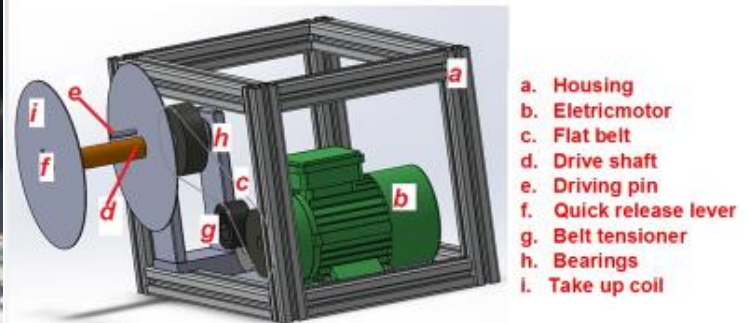


Figure 4 final construction

- **infinitely variable speed when winding with safety stop:** The speed of take-up reel is controlled by a frequency converter, which is mastered by means of a potentiometer-in foot pedal. When pressed with the foot softly, the drive shaft slowly rotates. When increasing the foot pressure, also the rotational speed increases. Releasing the pedal stops the machine immediately. It is an emergency off switch and a power switch supplied

- **shielding of the sources of danger:** The safe operation of the rewinder-Plus is a top priority. It is not allowed that any hands or objects can get into the machine. Therefore, we constructed a housing around the motor and the driving system.- An encapsulated system.

- **reliable winding and emergency stop:**

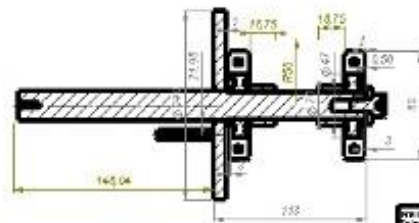
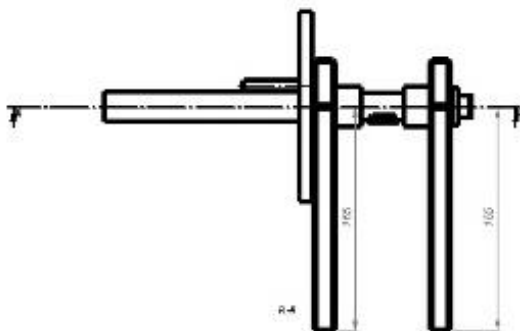
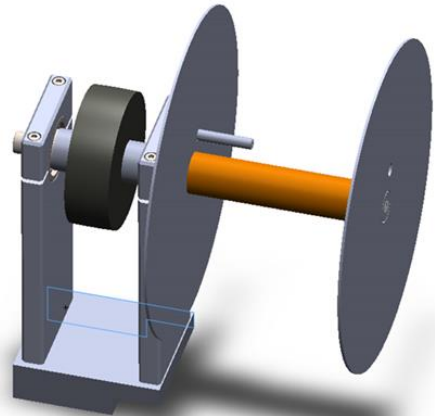
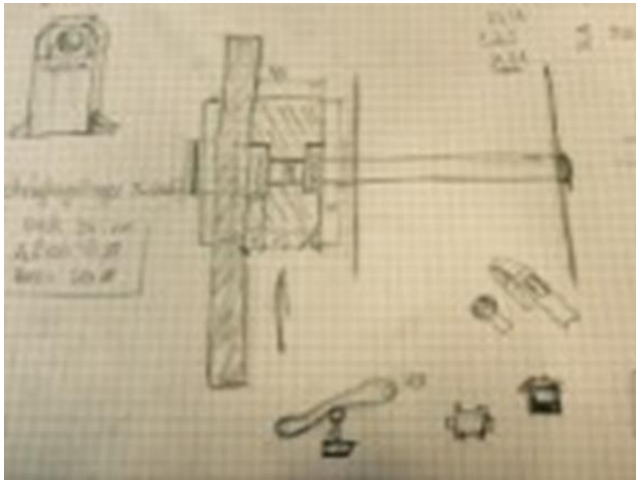
So far, the staff of our silent partner in Rankweil had to hold the textiltube at the beginning made up the first revolutions, to keep the tape on the reel. This represents a great danger. Our solution is simple but very useful. As the role anyway has a driving pin we slotted in a bit. So you can pinch in the textiltube in the driving pin and the textiltube wraps without keeping a hand on. After unreeling simply drag the textiltube out of the slot.

In order for the textiltube is guided laterally (left and right), two guide rollers are mounted as limitations in front of the take up reel.

- **Easy mounting and dismounting of the take-up reel:** It has to secure the take-up reel Important in the attachment of the take-up reel is that it is easy to handle, that it secures the take-up reel even when motor problems exist. We used a quick-release device, as it is known in the bike mount bicycles for clamping the wheel axles.

- **prevent electrostatic charging caused by winding up:** By rotating the take up reel it comes very quickly to a static charge, which discharges itself at the machine operator. Thereby we mounted an anti-static wrist strap. The one end of the tape is attached to the machine and the other end is fastened around the wrist of the machine operator. Thus, the electric charge is discharged into the ground.

.... Some more pictures



PROJEKT	REWEINDER-PLUS	DATE	11.01.2020	ZEICHNUNG	1-2
NUMMER	XX	STATUS	GE. ST. 000	ZEICHNER	XX
GRUPPE	1-2	PROJEKTLEITER	XXXX	PRÜFER	XX