

## Application report - Yarn speed measurement



### Faculty of Textiles & Design:

The Reutlingen campus has now been offering textile training for 165 years. Reutlingen University cooperates with companies, research institutes, and universities on a national and international level, and puts the resulting synergies to practical use. They combine theory and practice, and their laboratories, which are the only of their kind in the world, without doubt represent the beating heart of the faculty at Reutlingen University. Students can learn about the complete textile process chain within the faculty's factory hall, which spans more than 3500 m<sup>2</sup>.

### Task:

The yarn speed is to be measured on a plain stitch circular knitting machine. This type of machine is usually used to produce simple knitted products such as T-shirts and underwear. In this case, a typical single jersey T-shirt is being knitted. Measuring the yarn infeed in metres or the speed, as well as the yarn tension, is important in order to produce a knitted fabric that is perfect in terms of appearance and a constant fabric weight per square metre.



Image source: Reutlingen University

### Solution / Result:

The measurement is performed using a [rotaro T \(A5-1200\)](#) at the feeder outlet, i.e. between the feeder and the knitting machine. These measurements should be carried out regularly when changing batches or to check the machine settings so as to avoid costly complaints.

The measurements were carried out on our Terrot Type S3P plain stitch circular knitting machine, equipped with looping feeders from Memminger IRO.

The rotaro T hand tachometer is just as helpful during the installation and setup of machines and systems as it is for servicing, monitoring production processes, or use within the development laboratory. For example, the speeds of motors, turbines, and pumps can be measured, as can the speeds of agitators, centrifuges, and conveyor systems, or the running speeds and the lengths of threads, foils, and belts.

A special adapter enables the rotaro T to measure the lengths and speeds of yarns, wires or (glass) fibres.



rotaro T video

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### Knittig machine data:

Plain stitch circular knitting machine with 62 feeders, a 26-inch knitting cylinder diameter with an E 18 gauge, which means 18 knitting needles per inch and a total needle count of 1476 knitting needles.

Each system has a so-called feeder that delivers the required quantity of yarn to the knitting needle. The so-called loop feeders, which are driven centrally by a toothed belt and servo motor, thus ensure an even length of yarn that is fed to the knitting needle.

### Rotaro family:

The various devices that make up the rotaro product family record the running of machines and systems.

The mechanical adapter and the various measuring attachments available (such as the measuring tip or measuring wheel) are easy to fit, attaching with a noticeable click.

And if you don't need the device at any particular moment, all accessories can be safely and securely stored in the case, so as always close to hand.



rotaro T



rotaro family with various adapters

RHEINTACHO is a flexible and competent partner. We can assist you whenever rotational speeds need to be measured or monitored as a control variable for machine processes. Innovative, modern production techniques, efficient quality assurance, and first-class staff are the cornerstones of our company. We apply our extensive expertise in rotational speed measurement to produce high-quality systems and customised solutions.