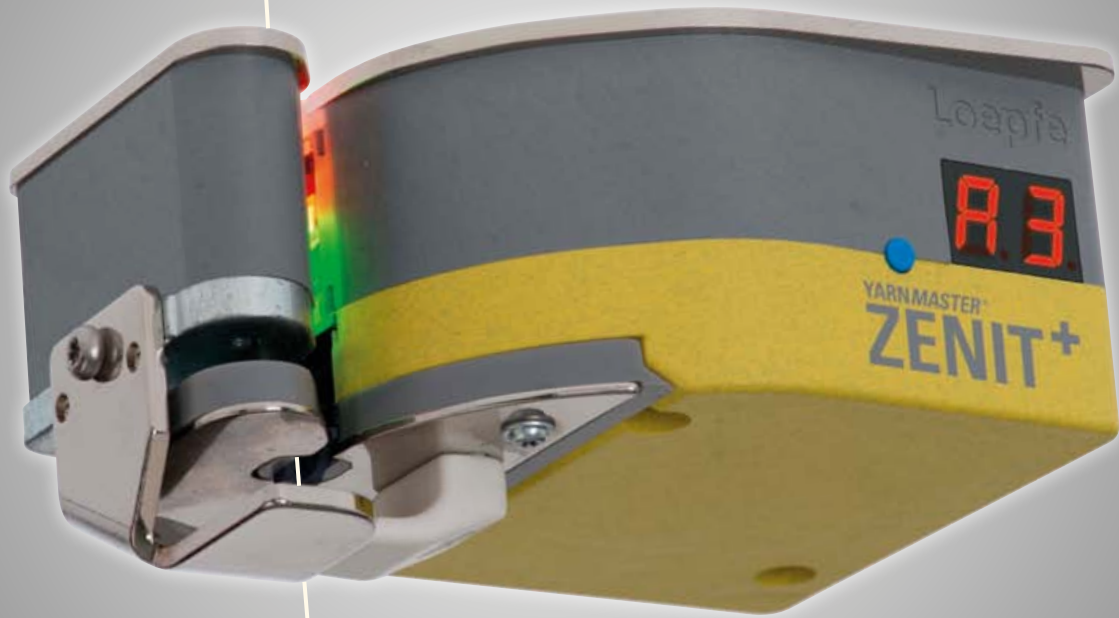# YARNMASTER® ZENIT+

Built to see more

New requirements – innovative solutions

Increased requirements to yarn clearing in the winding process have brought forward a new generation of LOEPFE yarn clearers. LOEPFE has focused on the development and production of optical yarn clearers in Switzerland for half a century already. As the leading supplier of optical yarn clearers, LOEPFE's YarnMaster covers all requirement profiles in the winding process. This makes LOEPFE the competent partner for all spinning mills world-wide.

In addition to yarn clearing itself, a modern sensing head such as YarnMaster ZENIT$^+$ provides the spinner valuable information about the yarns produced. The quality of yarns produced is measured by the yarn clearers at the end of the spinning process. Economically successful spinning mills optimize and correct the spinning process using the existing measurement evaluations provided by YarnMaster yarn clearers.

The advantages of optical yarn fault assessment enable those responsible for quality to make reliable statements concerning the quality of the processed yarn. Only optical yarn clearing considers all yarn quality characteristics!

Textile technologists know that higher-quality yarn results in fewer interruptions in the follow-up processes. The later a fault is corrected in the fabric production process, the more complex and costly this process becomes.

The full potential of yarn clearers must be utilized continuously in the winding process to produce high-quality yarns. In the YarnMaster ZENIT$^+$, the functions of all three available LOEPFE sensor technologies are perfectly tuned with each other.

The long-standing experience of LOEPFE in optical yarn fault assessment is the basis for constant yarn quality. Since decades, leading spinning mills around the world place their confidence in LOEPFE's YarnMaster yarn clearing technology.

YarnMaster ZENIT$^+$ is sophisticated, proven and logically further developed to respond to new requirements!

Loepfe

YarnMaster ZENIT+ convinces with a multiple PLUS factors

→ Guaranteed constant quality in the winding process

→ Trends in production are quickly detected

→ All settings at a glance

→ Simple operation due to a clear menu structure

→ A single sensing head covers any scope of application

→ Online production monitoring with management cockpit

→ Easy to service

→ Database for article and group settings

→ Reliable and state-of-the-art hardware

BUILT TO SEE MORE

Uncompromising constant quality

The complete potential of the yarn clearer must be utilized around the clock in order to economically produce high-quality yarns. However, productivity cannot be increased with automatic settings! Optimum and constantly reproducible clearer settings are also required. Continuously changing ambient conditions do not affect YarnMaster ZENIT$^+$. This results in highest consistency. In addition, the clearer settings are based on experience in most cases or have been clearly defined and adjusted to customer requirements so that no unpleasant surprises can be expected later.

→ Clearer settings must be clearly defined specific to the customer

→ Up to 99 different article-related settings can be saved and are immediately available

INTELLIGENT MONITORING
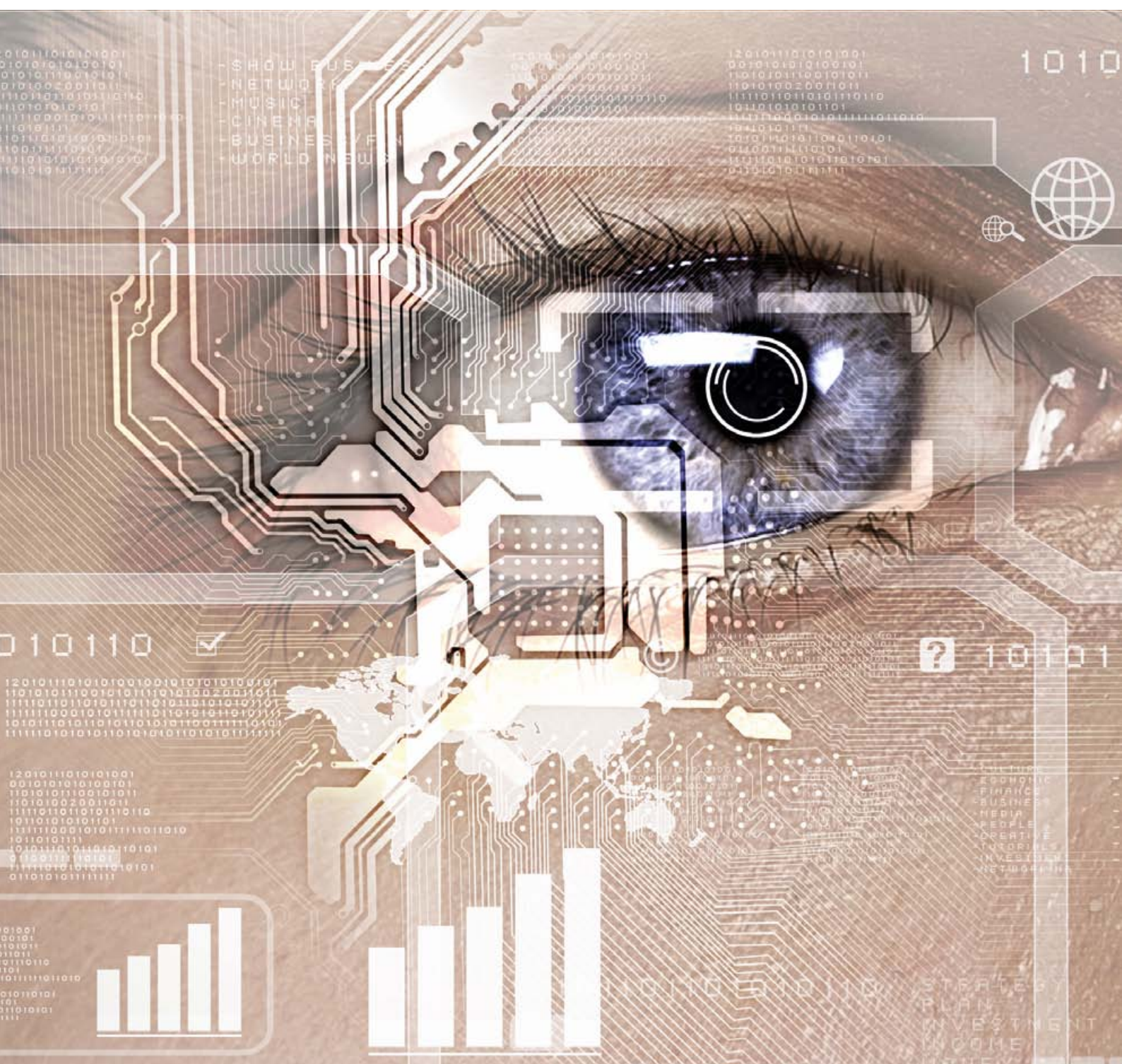
«Optimum and constantly reproducible clearer settings»

Unique precision and repeatable perfomance

Optical precision

The functions of all three known sensor technologies have been perfectly optimized and tuned to each other on the YarnMaster ZENIT$^+$ yarn clearer. Thanks to the fastest and most efficient processor technology, the proven optical and tribo-electric sensors provide even more precise and more exact measuring results. The improved evaluation of the proven measuring sensors in the YarnMaster ZENIT$^+$ today visualizes yarn faults even sharper and more precise than other yarn clearers.

→ Even more precise measuring results thanks to fastest and most efficient processor technology.

→ The most important trends, quality and production overviews are always available in real time.

Optical consistency

Optical yarn clearers provide constant measuring results. Changing ambient conditions do not at all influence the reliability of YarnMaster ZENIT$^+$. The quality cuts, depending on the desired quality and the efficiency of the winding machine, remain constant. The advantages of optical yarn fault assessment enable a reliable quality statement of the yarn to be processed. Only optical yarn clearing considers all yarn quality characteristics! Quality-conscious processors of yarns prefer optically cleared yarns because they can then assume that the yarns always have constant characteristics and quality.

→ Constant measuring results and uniform quality by optical yarn clearers.

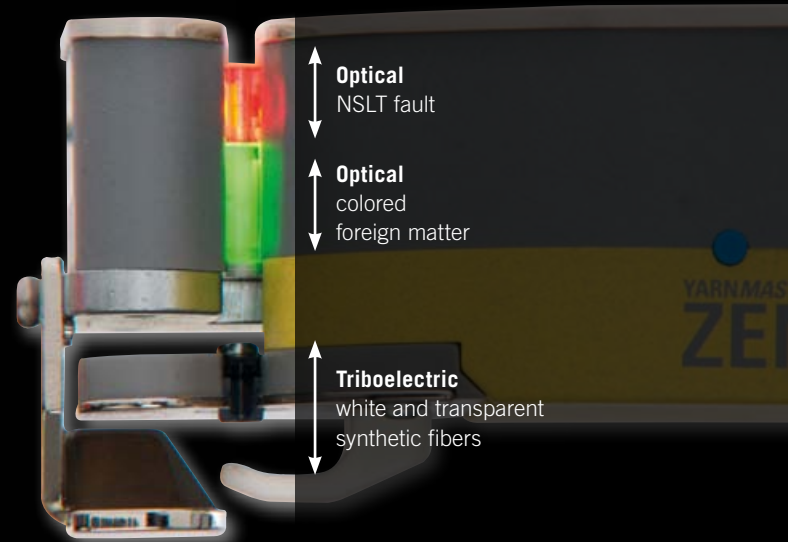→ High quality – independent of changing ambient conditions.

Universally applicable

All existing LOEPFE standards of modern yarn quality monitoring are available in one sensing head! All splice technologies which can be called up can also be used with YarnMaster ZENIT$^+$. There are no limits for YarnMaster ZENIT$^+$, and it secures the investment for the future!

→ Covers the range of yarn counts from Nec 2,4 to Nec 320 with just one sensing head.

FIRST-CLASS

Optical
NSLT fault

Optical
colored
foreign matter

Triboelectric
white and transparent
synthetic fibers

YARN-MAS
ZE

«Optical precision with all-round view»

Functioning and adaptable technology

Progress with technology

YarnMaster ZENIT$^+$ uses state-of-the-art and fastest processors and measuring technology. These innovative technical components allow even more precise yarn clearing and a multilayered evaluation of the measuring results. The easy to service and easy to operate central unit LZE-V with its 15.6 inch screen convinces with its clearly structured user interface. The possibility of having the status of the central unit checked by experienced LOEPFE technicians using remote control and to perform software updates, if needed, provides reliability. All this proves how LOEPFE has utilized state-of-the-art technology in the development of YarnMaster ZENIT$^+$.

System components

All electronic components for evaluation, cutting mechanisms and sensors of YarnMaster ZENIT$^+$ are contained in one housing. The material of the robust housing is made from specially shielding material. This prevents malfunctions, e.g. caused by smartphones, in direct vicinity of the winding machines. The perfectly mounted cutting mechanism was considerably improved. The intelligent knife force regulation enables a longer service life.

Intelligent sensing head

The YarnMaster ZENIT$^+$ matrix display on the sensing head informs the user in detail, already at the spindle, about status and cutting information. This means an enormous improvement in visual yarn fault control.

Test mode

When looking for a certain yarn fault type, e.g. B2, it is entered in the classification matrix of central unit LZE-V. When the specified yarn fault type runs through the sensing head, the spindle is stopped and the matrix display on the sensing head displays the specified event B2. An efficient quality check is thus achieved with simple menu navigation.

RELIABILITY
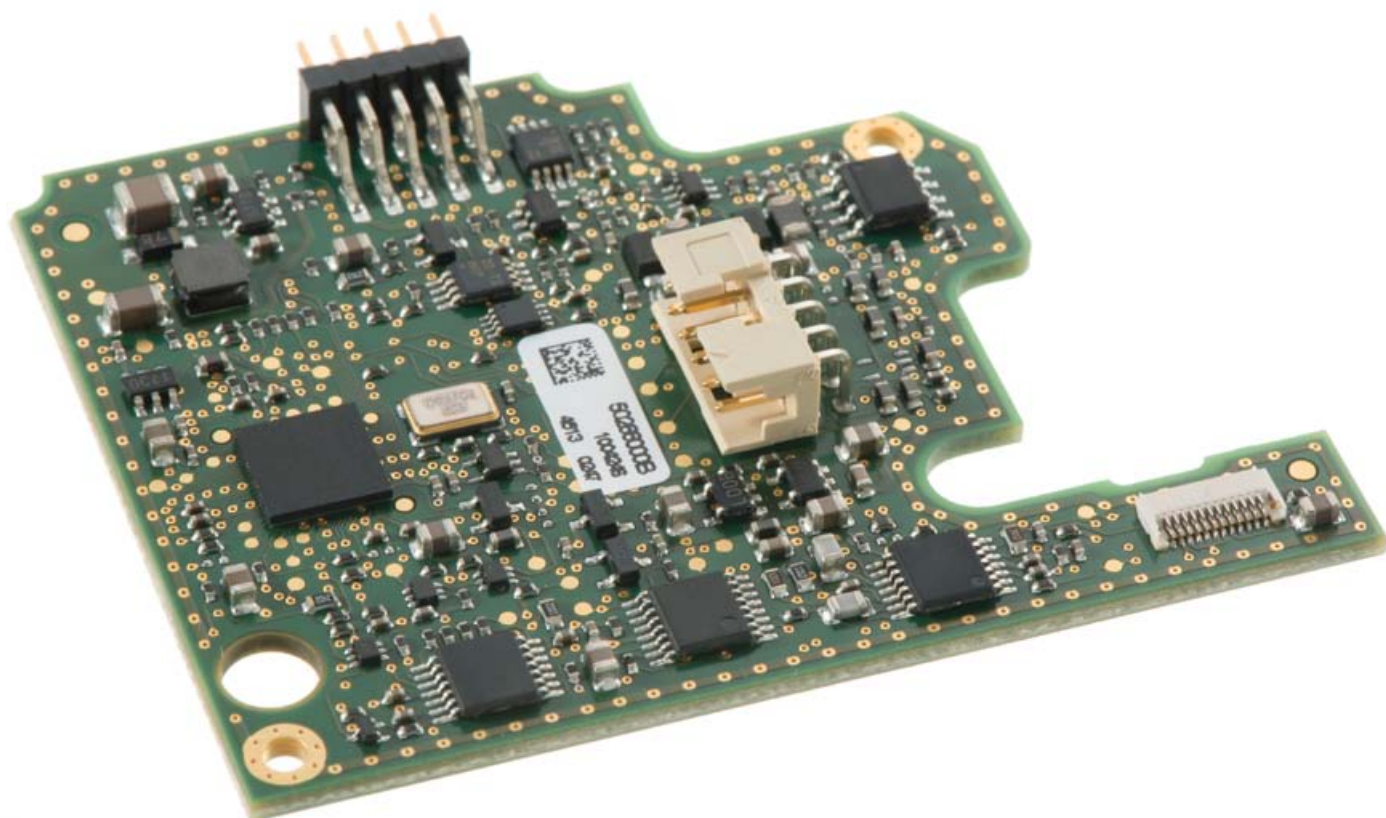
«LOEPFE is focussing on state-of-the-art and fastest processors and measuring technology.»

Comprehensive overall control

Complete overview at the touch of a button

Thanks to its clearly structured graphic user interface, its reliability and extremely simple operation, the new central unit LZE-V serves as innovative cockpit. The newly designed dashboard provides the user with all required information at the touch of a button. Everything is available at a glance and in real time. A 15.6 inch screen is used for the cockpit. The touch-sensitive screen is operated by simple tapping, press and hold or wiping movements. Quality and production reports can be called up at any time thanks to top power density of the central unit.

Easy-to-read reports

These let the experienced specialist recognize immediately where intervention and optimization are required within the spinning process. Necessary steps can be taken immediately. The user always maintains the overview. Specific maintenance work in the spinning process can be optimized in order to achieve a constant yarn quality. Shift reports for the last five shifts can be retrieved without problems. Further highly estimated advantages are the possibility to save settings for up to 99 article and to edit them individually or transfer them to other machines, if required.

Increased efficiency

New articles are configured once and are then available for all machines and users. This contributes towards increasing efficiency and constant quality. The collected yarn clearer information is shown in graphic form in the LOEPFE management cockpit. One touch of a button provides a detailed overview of the most important quality data and trends. The YarnMaster ZENIT[+] dashboard function informs in real time about important cutting limits and set off-limits as well as user defined alarms. All data can be displayed via USB or directly on a tablet PC. Maximum usability enormously simplifies set-up and operation.

COMFORT

«This allows to further increase the yarn quality and the efficiency of your processes again.»

Accurate and reproducible results

Classes and channels

YarnMaster ZENIT[+] has the finest classification. The desired quality is achieved with highest efficiency thanks to individual fine adjustment. Those responsible for quality in any spinning mill appreciate the highly selective setting options supported by an extension of the classification matrix in the YarnMaster ZENIT[+] yarn clearing system.

➜ 152 thick place classes as well as 36 thin place classes are now available.

➜ Switching between scatter plot view and classical classification

Splice settings

Most exact monitoring of splices was also taken into account. The splice class matrix has now been extended to 188 classes. This applies across short, long and thin faults! If the splice quality deteriorates, an alarm is triggered immediately and the spindle is blocked. Necessary maintenance work on the splicer can be performed quickly and production resumed. This ensures that the splice joints in constant quality will not give cause for complaint.

Cluster solutions

YarnMaster ZENIT[+] combines classical channel clearing with class clearing, therefore the frequency of an occurring yarn fault in a certain monitoring length is taken into account which does not influence the periodicity with YarnMaster ZENIT[+]. The basic functionality of yarn clearing with YarnMaster ZENIT[+] is extended by…

➜ neps clusters

➜ short clusters

➜ long clusters

➜ thin clusters

➜ class alarms

Thanks to the wide basic functionality of YarnMaster ZENIT[+], LOEPFE customers have even the rare occurring short, long and thins faults always under control.

SELECTIVE
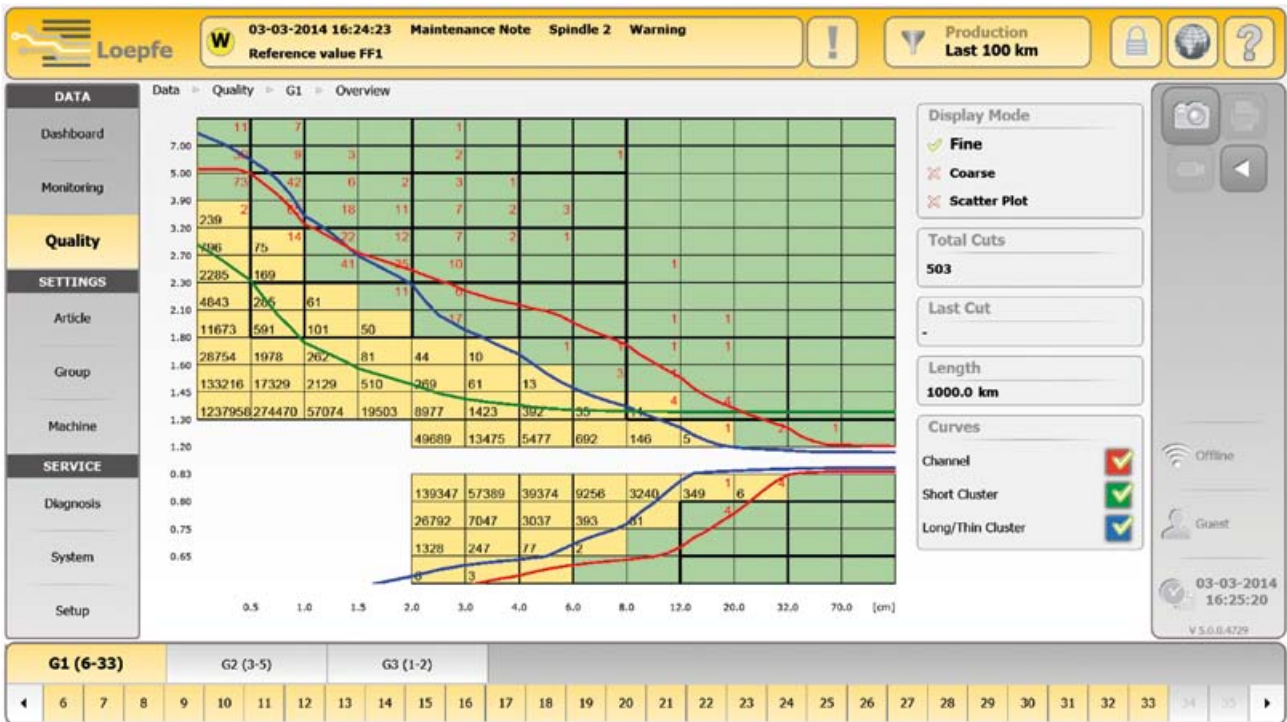
«Only LOEPFE provides a reproducible overall setting for class and channel clearing.»

Solutions for unconventional applications

For core yarns

Elastic yarns are more popular than ever. Yarns with two or three components are today used successfully for stretch fabrics in the varying fabric constructions and final applications. Special attention in the production process has been paid to feed the elastanes to the fiber strand. Precise setting options of core guidance and a constant run of the filament to the fiber strand are important preconditions for faultless integration into the ring yarn. However, there is no 100% process reliability. Core yarns where the elastanes are not perfectly spun into the fiber strand, are often the cause of costly complaints.

The optical measuring principle of the LOEPFE yarn clearers also shows its advantages here. Visual yarn faults are reliably detected with LOEPFE yarn clearers! The yarn count of the elastanes used has no influence on the possible detection of these faults!

In view of the constantly increasing quality requirements in this higher market segment, it is more important than ever to know exactly that you can always rely on YarnMaster ZENIT[+] yarn clearers. LOEPFE provides an extremely reliable tool to safely detect even the finest irregularities of the yarn.

For fancy yarns

The optical measuring principle is the preferred measuring system for fancy yarns. YarnMaster ZENIT[+] provides many useful tools and solutions for tailored yarn clearing and reliable quality verification. Fancy yarn spinners appreciate the possibility of excluding certain effects, e.g. defined flames, from clearing, whereby faults in the complete remaining area are reliably recognized and eliminated.

Wrong
spun into the
fiber strand

Perfect
spun into the
fiber strand
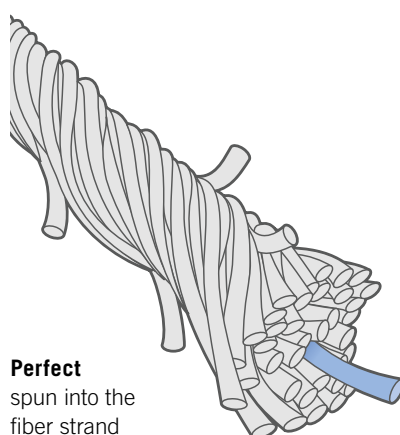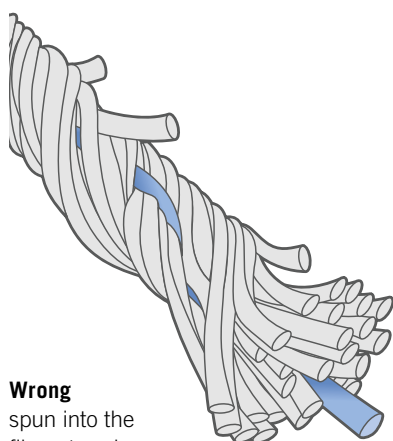
EASY TO APPLY

«Even unconventional
yarns need monitoring»

Online quality assurance

Detecting off-standard bobbins

The philosophy of online quality assurance in the winding process, introduced by LOEPFE into the spinning mill world, provides all relevant quality test characteristics with the exception of strength and tensile tests. Experienced spinning mill experts no longer rely on random samples! The collection of off-standard bobbins is in the center of interest. LOEPFE's surface index channel SFI/D prevents this risk. Even when a lot was found good using time-consuming laboratory verifications, strikingly divergent off-standard bobbins give cause for complaint. These problems can be avoided with LabPack.

LabPack online laboratory

Complete quality monitoring can be achieved with the LabPack functions. The spinning expert uses the edited quality reports to intervene in time in the spinning mill process. By analyzing the quality reports, service and maintenance work can be optimized which, apart from a constant quality, also results in cost savings.

24 h / day online evaluation of quality data:

➔ Hairiness

➔ Neppiness

➔ Yarn irregularities

➔ Off-limit alarm functions

➔ Class alarm functions

➔ F-organic filter

The comprehensive Option LabPack of YarnMaster ZENIT[+] is supplemented in a meaningful and practical manner by

➔ Diameter variations VCV

➔ Diameter variations SFI/D

➔ IPI diameter-related imperfections

➔ IPI alarm functions

CONSISTENTLY

No more random samples

100%
PASS

ZENIT⁺

off-
standard

off-
standard
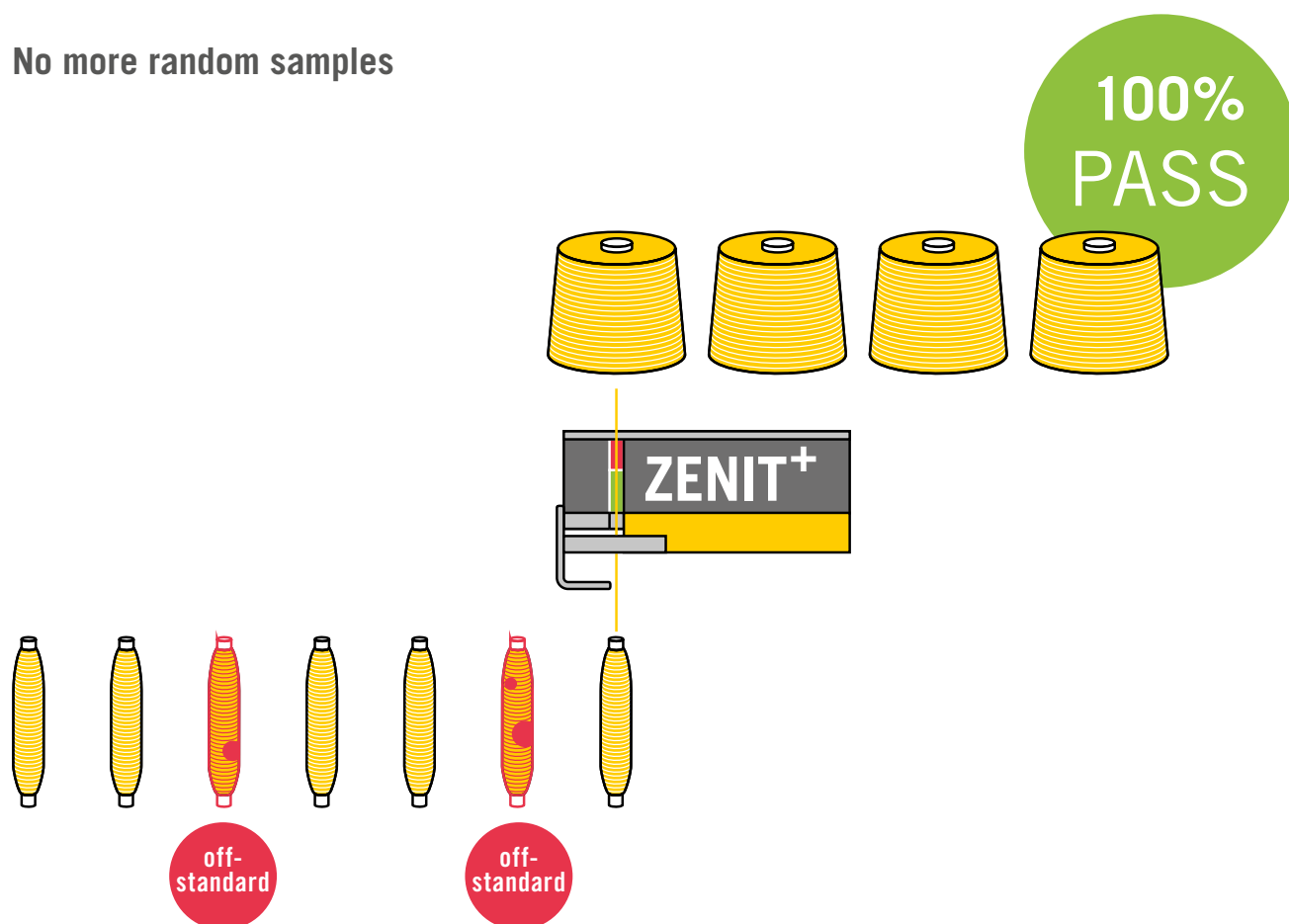
«Experienced spinning mill experts no
longer rely on random samples!»

For clean yarns – nothing else

Known problems

The quality of the raw material is subject to variations. There is an on-going demand for constant yarn quality. The market requires nothing but clean yarns. Cotton and its contamination have different qualities. One time, it is the inadequate quality that causes problems, next time, malignant white packaging material creeps into processing. The basic raw material runs through different foreign matter technologies in the blowroom of the spinning mill. A large part of the foreign matter is thus detected early and eliminated from the material flow. Modern foreign matter elimination technologies often even have additional modules for the detection of «invisible» foreign parts, for example, foils or white polypropylene packaging material. They work very effectively nowadays, but still cannot solve this ever-present problem in the spinning mill. A spinner knows how much a complaint due to foreign matters costs!

Brand-new solution

As a pioneer in foreign matter detection in the winding process, LOEPFE has the most experience. For many years, LOEPFE has offered solutions with proven sensors to counteract this problem. Also in foreign matter detection, YarnMaster ZENIT^{+}, thanks to optimized evaluation of the proven measuring sensors, sees foreign matters even more efficiently than ever.

PIONEERING

«Foreign matters of any color and materials are reliably detected.»

Sensitive perception

Dark and bright foreign matters

The YarnMaster ZENIT$^+$ has been equipped with foreign matter sensors which have been developed further. These are used for the detection of colored foreign matters in white as well as dyed yarn, and for the detection of «invisible» foreign matters, e.g. white polypropylene fibers.

Dark and bright foreign matters are each classified in 64 multi-colored foreign matter classes. The option to eliminate strongly contaminated bobbins from the winding process with alarm functions and cluster settings saves a lot of trouble and has a positive influence on efficiency. The multi-colored dark and bright foreign matter classes can be used simultaneously on YarnMaster ZENIT$^+$. Manufacturers of mélange yarns especially appreciate this exclusivity of LOEPFE YarnMaster ZENIT$^+$ clearers. This allows to detect spinning bobbins whose color hue deviates too much from the mean value of the complete lot!

EXCLUSIVE

«Reliable detection of foreign matters thanks to LOEPFE, the pioneer of foreign matter detection.»

The invisible becomes visible

The new Polypropylene P3 sensor

The patented solution for the detection of foreign matters based on their different electrical charging behaviors is worldwide an exclusive feature in yarn clearing. Friction is automatically generated during the winding process. We make use of the resulting triboelectric effect. The triboelectric series specifies which materials are charged less and which are charged more. One of the many positive characteristics of cotton is that it is not charged statically. Synthetic fibers, e.g. PP, PE foils and PES, are charged statically. This triboelectric effect forms the technical basis for elimination of even the smallest disturbing fibers in the winding process at highest winding rates.

With the new P3 sensor, LOEPFE YarnMaster ZENIT[+] once again sets a milestone in foreign matter clearing technology. The introduction of these triboelectric sensors by LOEPFE allows today to reliably detect synthetic in raw-white yarn during the winding process. If the P3 sensor is used in YarnMaster ZENIT[+], it provides a maximum of clearing efficiency.

The spinner who is capable of keeping not only colored foreign matters away from the cone in the final process of yarn production has a clear economic advantage.

VISIBLE
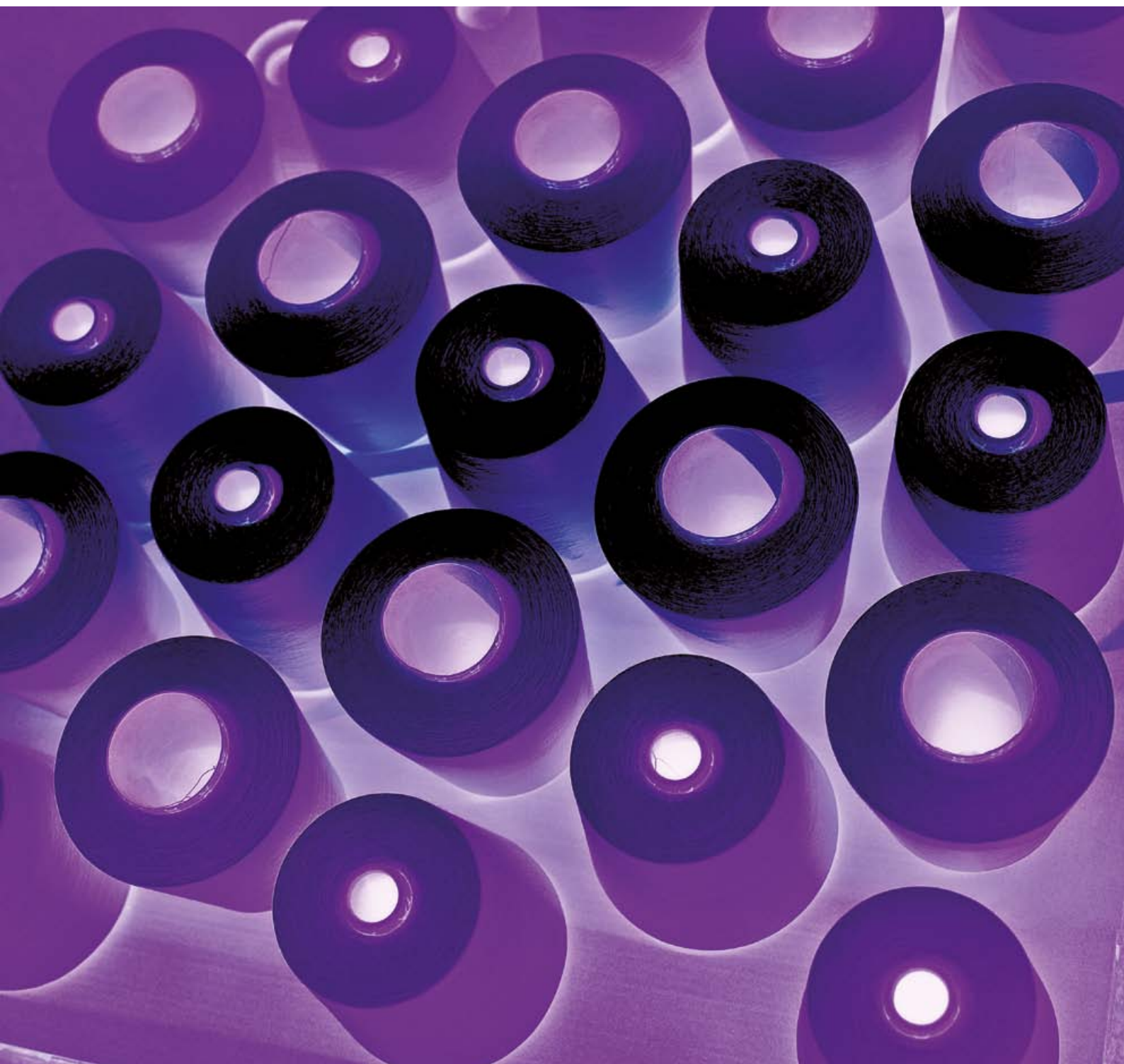
«Only high-quality yarn ensures trouble-free downstream operations.»

Steady performance

Constant quality

To reliably ensure uniform production quality, regular maintenance is inevitable, also for the yarn clearer. The intelligent central unit of LOEPFE YarnMaster ZENIT$^+$ controls monitoring and supervising of the yarn clearers. It automatically prompts required maintenance work in certain intervals. The timely performance of the required maintenance work is reliably signaled, documented and complied with.

The YarnMaster ZENIT$^+$ sensing head is equipped with state-of-the art control engineering which ensures constant yarn clearing. Of course, the integrated blow out process is triggered with each splice cycle which prevents contamination of the sensors and the sensing head.

SYSTEMATIC

«YarnMaster ZENIT$^+$ informs reliably when there is the need for intervention.»

YarnMaster ZENIT with a Plus!

P clearing
- → Clearing of synthetic foreign matters PP PE etc.

F clearing
- → Clearing and classification of foreign matters, dark and bright
- → Foreign matter clusters, dark and bright
- → Organic filter

LabPack (Options)
- → Imperfections IPI, IPI alarm
- → Off-standard bobbin detection SFI/D
- → Variable CV channel (VCV)

Quality pack
- → Surface index SFI
- → Channel clearing: N neps, S short faults, L long faults, T thin faults
- → Yarn count channel, short count channel
- → Cluster channel long / short / thin
- → Class clearing, classification of yarn faults
- → Splice channel, splice class clearing
- → Classification of splice faults
- → Scatter Plot
- → Class alarm, off-limit alarm
- → Dashboard trend, alarm, cut, off-limit
- → Warning, alarm message window
- → Message window with intervention
- → Import/export data
- → Shift reports, shift calendar
- → Style administration 99, group administration 30
- → Remote access
- → Online help
- → TK software update

YM ZENIT⁺   YM ZENIT⁺ F   YM ZENIT⁺ FP

BUILT TO SEE MORE – LOEPFE

«Trust is the foundation of a
long-term relationship»

Loepfe

Subject to technical modifications