

# Starrsed TL



Gold standard ESR



Does your laboratory consider ESR testing in a Total Lab Automation (TLA) configuration? If so, the Starrsed TL is the perfect instrument to perform track connected sedimentation rate testing according to the Westergren gold standard. Highest capacity combined with highest accuracy for lowest total cost of ownership. The Starrsed TL is an extremely versatile instrument to be integrated in virtually every major TLA-track system available. The instrument unites maximum automation, high throughput, small footprint and last but not the least ESR according to the gold standard.

RR Mechatronics has a long and successful track record in automating the Westergren ESR tests. The first automated ESR instrument dates back to 1987. Today many laboratories are dealing with a high volume of tests and look for maximum automation to deal with both operational cost and quality demands. Keeping this in mind, RR Mechatronics has invested significantly in the development of an instrument, to be integrated in so called Total Lab Automation (TLA) solutions that reduces labor to the minimum. With the Starrsed TL, RR Mechatronics developed the standard for ESR in Total Lab Automation.

## The Process

The Starrsed TL is designed to be connected with virtually any TLA track solution through a predefined point in space to collect from and return sample tubes to the track. The Starrsed TL is a unique instrument because it is in fact track independent. Connections for all major track providers are envisioned. The samples for which an ESR test is requested are routed by the LIS towards the predefined point in space where the Starrsed TL is positioned.



## How does it work?

Individual EDTA sample tubes for which an ESR test is requested are transported to the Starrsed TL by means of carts or pucks. Upon arrival at the process queue (part of the TLA solution) a robotic arm collects the EDTA sample tube from the track and holds it in front of the barcode scanner in the instrument. After verification of the barcode, the sample tube shall be placed in the revolving mixing & sampling unit. In the mixing & sampling unit the sample is mixed, subsequently a blood sample is automatically aspirated in one of the 84 glass Westergren pipettes. The Starrsed TL has a fully integrated diluting system, diluting the blood in a ratio of 4:1 with Starrsed Diluent. After aspiration of the sample, the robotic arm picks up the sample tube again and returns it in the cart or puck on the track. The Starrsed TL is capable of manual processing of samples independent of the TLA track. This allows processing of emergency samples efficiently.

### Unique instrument

The Starrsed TL is a unique ESR solution for all demanding TLA labs. The Starrsed TL offers gold standard Westergren ESR in a fully automated environment, directly connected to the TLA track and having all functions executed within the instrument (no functions above the track), with loading and unloading completely operator independent.

## Cleaning

All Westergren pipettes are automatically cleaned and dried after each test and ready for a new sample. Additionally, all 84 pipettes receive an automatic end of day cleaning and rinsing using special Starrsed reagents. This prevents any bacterial growth or protein build-up. All waste fluids, i.e. blood, diluents, cleaning and disinfectant agents, are collected for disposal through the waste line to a centralized waste system.

## Easy to use

A fully intuitive touch screen is all you need to operate the Starrsed TL. The connected PC stores all data, a push of a button is all that is needed to produce the entire instrument operating history. It is possible to monitor the performance of the Starrsed TL on a daily base with the built-in QC program that generates output files for use in Excel or external QC-programs.

## Controls

Good Laboratory Practice (GLP) requires the use of controls to ensure the continued reliability of the measurements. RR Mechatronics supports this with Starrsed Control. Starrsed Controls are processed just like regular blood samples, therefore fully compliant with the ICSH recommendations and CLSI procedures. The QC test results are stored separately from patient test results and presented in the built-in QC-program. Starrsed Controls give maximum reliability at minimal effort and costs.

An External Quality Assessment Service program (EQAS) is available to enter your control data. In EQAS your results are anonymously compared with relevant data of users of same instruments and controls of the same batch (the so called peer group).

## Westergren Sedimentation Method

One of the oldest and most frequently requested blood tests is ESR. It has not changed fundamentally in the way it is carried out since Westergren described it in 1921. In 2011, the International Council for Standardization in Hematology (ICSH) and the Clinical and Laboratory Standards Institute (CLSI)

defined the Reference Method for ESR to be the Westergren Method; the Gold Standard. The objective of ESR testing is to measure inflammatory state. The Westergren Method measures both infections related to infectious diseases and chronic inflammatory conditions. In addition to being very reliable, the Westergren sedimentation Method is also amongst the cheapest laboratory tests available.

## Additional Benefits

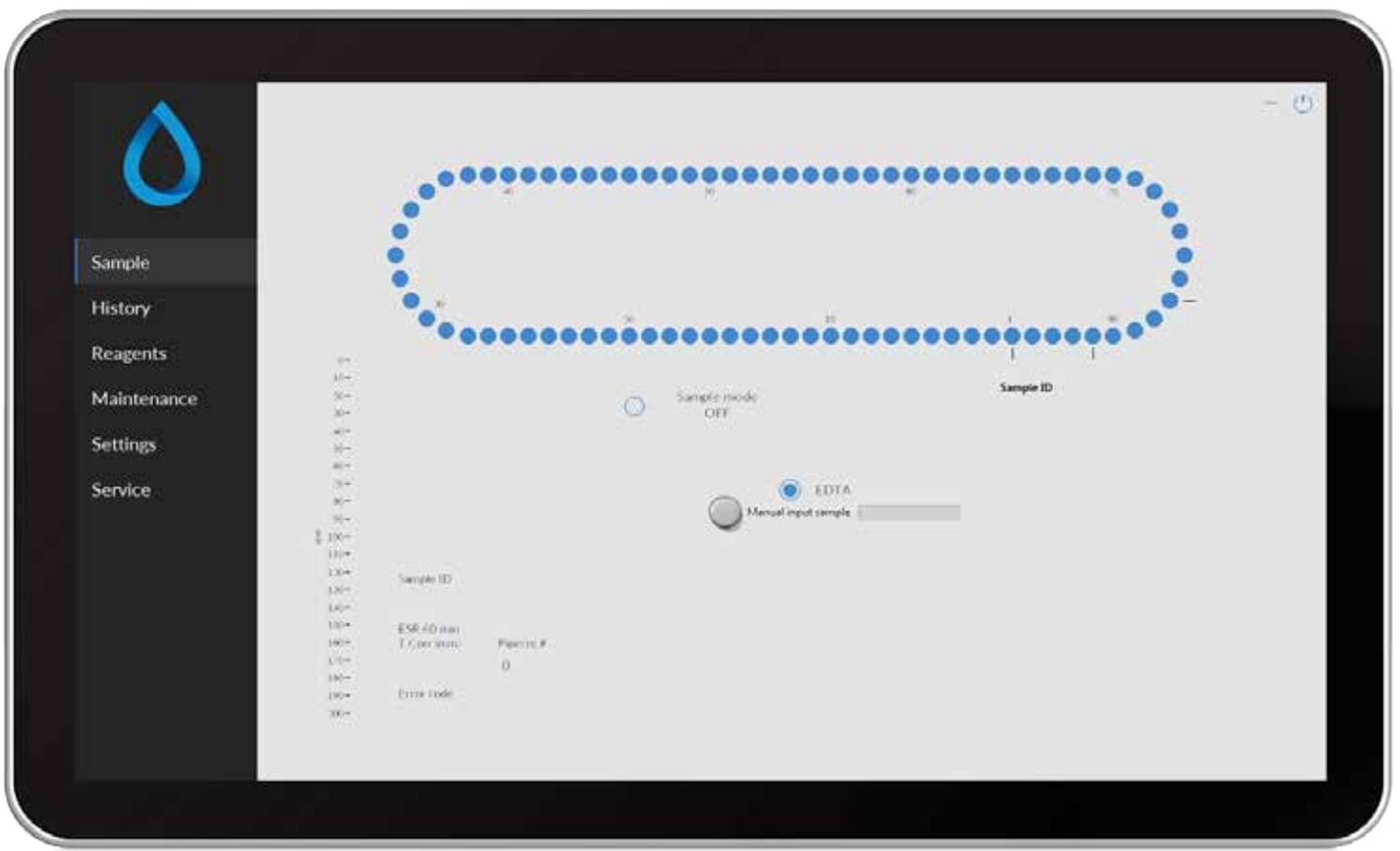
The Westergren pipettes are re-used after automatic cleaning. As opposed to other ESR test instruments, Starrsed instruments actually identify and report hazy samples so that the lab supervisor may decide on further testing.

The Starrsed TL makes use of EDTA sample tubes. The advantage is that EDTA anti-coagulated blood is very stable compared to pre-citrated samples, allowing for accurate ESR test results up to 24 hours after collection. This provides laboratories with even more logistical flexibility. The Starrsed TL dilutes the blood sample in agreement with the Westergren Method. This compensates for different hematocrit levels. The hematocrit level of the sample therefore will not influence the accuracy of the measured ESR. Purchase or Lease

The Starrsed TL may be purchased, leased over a period of time, or installed on a cost-per-test basis. This brings the automated Westergren Method within everybody's professional reach.

All specifications of the Starrsed TL are available on our website [www.rrmechatronics.com](http://www.rrmechatronics.com)





## The Starrsed Line

Starrsed ESR instruments are unique due to the fact that they are the only fully automated ESR instruments that comply with the 2011 published reference method for ESR testing. The reference method is referred to as Westergren. The Starrsed instruments offer solutions in the range from tube-based to rack-based to track-based. Laboratories that operate multiple Starrsed instruments are assured that results are reliable, reproducible and comparable.

A complete overview is available on our website [www.rrmechatronics.com](http://www.rrmechatronics.com)

## Overview of RR Mechatronics

RR Mechatronics: Masters of Measurement. We are passionate about the development of highly precise analytical instruments. RR Mechatronics, established in The Netherlands in 1986, focuses on medical analytical laboratory instruments. We serve laboratory customers and OEM-partners all over the world. RR Mechatronics is the world leader in automated true Westergren ESR instruments. Tens of millions of ESR tests are performed with RR Mechatronics instruments, the only automated instrument fully complying with the Westergren Method. In addition to ESR solutions, RR Mechatronics has also developed a unique and highly specialized red blood cell analysis platform to evaluate the rheology of blood. It measures, amongst others, RBC, osmotic resistance, deformability and aggregation and is used in the diagnosis and treatment of RBC membrane disorders. In addition to the hematology related instruments, RR Mechatronics develops and markets reagent reconstitution instruments that help laboratories save on reagent use. To complement our line of instruments, we also offer diluents, cleaning-agents, controls, and specific reagents.

For over 25 years we have adhered to the belief in the exponential strength of technological advancement. RR Mechatronics has a track record of thinking in terms of solutions, not problems. We do not have all the answers, but persistently strive to find them in close collaboration with research scientists and our OEM-partners. These partnerships significantly contribute to our high quality work.



## Global Distributors Network

RR Mechatronics is active worldwide. Where we don't sell and service directly, we have strong partnerships with locally renowned, highly specialized, and certified distributors. We do understand that service of daily used instruments must be performed on-site and our distributors are organized to do just that. The focus on uptime is paramount. All of our distributors are required to have factory-trained engineers available locally. Our distributors also offer service contracts, which can include both immediate response and planned maintenance.

## RR Mechatronics USA

Mechatronics USA is the specialized sales and service organization for RR Mechatronics instruments in the United States. We understand that service of daily used instruments must be performed on-site and we are organized to do so countrywide. The focus on uptime is translated into service contracts that include both immediate response and planned maintenance. Mechatronics operates a 24/7 service number for any service request.





# RR Mechatronics

Masters of Measurement

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