

STAALKAT OPTIGRADER SERIES

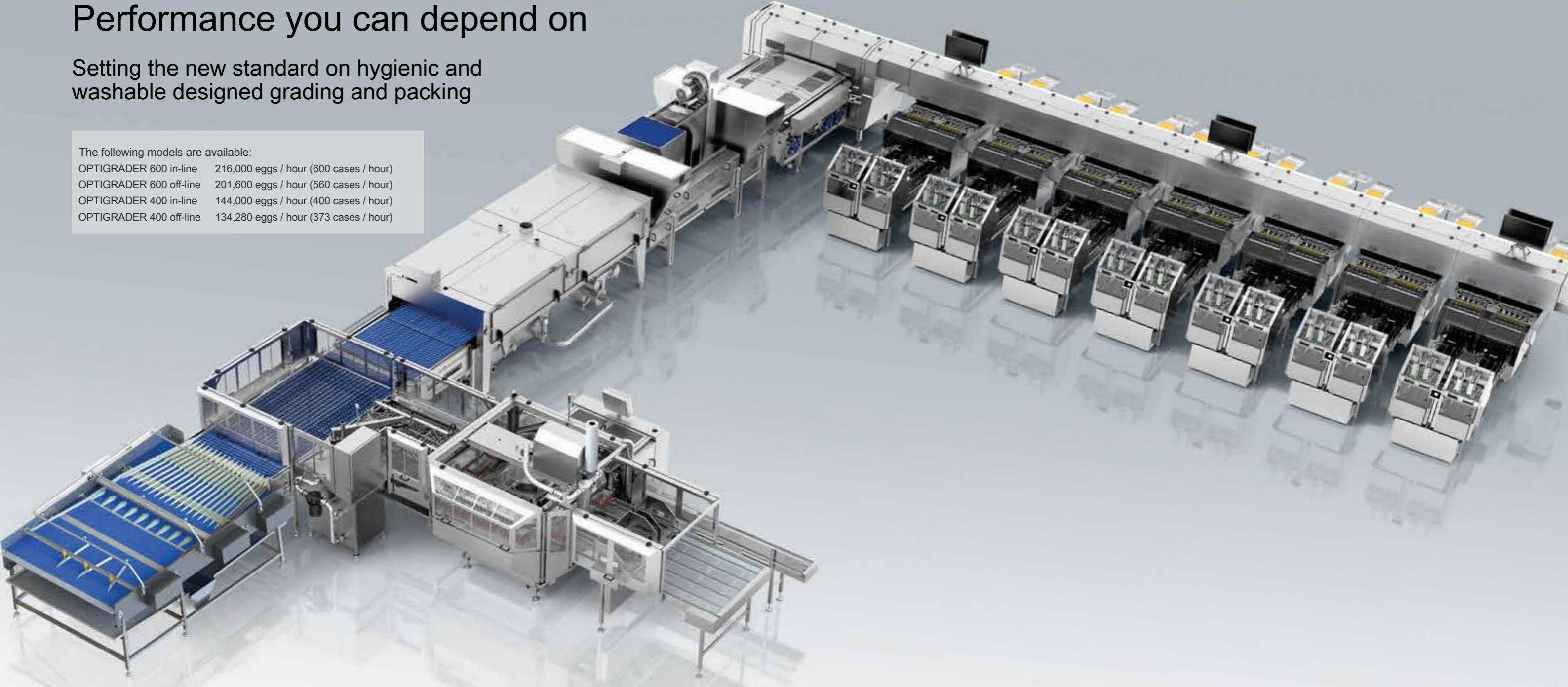


Performance you can depend on

Setting the new standard on hygienic and washable designed grading and packing

The following models are available:

OPTIGRADER 600 in-line	216,000 eggs / hour (600 cases / hour)
OPTIGRADER 600 off-line	201,600 eggs / hour (560 cases / hour)
OPTIGRADER 400 in-line	144,000 eggs / hour (400 cases / hour)
OPTIGRADER 400 off-line	134,280 eggs / hour (373 cases / hour)



The SANNOVO TECHNOLOGY GROUP brings you a new generation of egg grading and packing with the STAALKAT OptiGrader having a capacity up to 600 cases per hour, 216.000 eggs per hour.

The STAALKAT gentle egg handling and new software gives every owner the opportunity to pack more **Grade A** eggs.

This new generation is setting higher standards in food safety, egg quality, ease of cleaning, sanitation, machine performance, reliability, cases per man hour and a low usage of spare parts. The details in this design will make a significant difference in machine efficiency and operating costs in a challenging 7 day a week inline

or double shift operation. STAALKAT provides a real alternative in egg grading with a machine design that makes sense and the industry is familiar with.

This exciting, new generation STAALKAT can be configured to fit into the same footprint as the older 300 to 400 cases per hour, 108.000 to 144.000 eggs per hour machines. It can be installed with used STAALKAT or other packers on the new grader to reduce your initial investment. Multicasers and robots can also be used. If you decide to stay with a 12 row infeed your egg washer and drier can also be used. STAALKAT is making every effort to reduce your costs.

This new system has been carefully engineered from

the new loader to the carton closer. The SANNOVO OptiLoader, initially designed for poor second quality breaker eggs, handles all used or new paper and plastic trays. The open, wash down design including, leaker, dirt, crack and blood detection systems have improved accuracy and sanitation over anything else available. The transfer from 12 or 18 rows of eggs to 4 rows is the most reliable and stable in the industry. The chain carrier actually comes to a momentary stop while the eggs are transferred.

After carefully listening to the industry and anticipating future needs in food safety, sanitation, packaging, traceability of product, gentle egg handling and egg production changes, SANNOVO and STAALKAT have

combined their engineering talent, to design an egg grader that will have the reliability and features you require and deserve to maximize your Grade A eggs with a performance you can depend on.





LOADING

The SANOVO OptiLoader has years of experience loading poor quality eggs for the egg breaking industry, both new and used paper and plastic trays. Each of the three stacks of eggs are independently lifted for pick up. The servo driven tray destacker and loader transfers 180 or 270 eggs at a time onto the infeed roller conveyor slowly and gently. In-line / Off-line version is available as well as an optional CIP cleaning system. The most compact design available.



ACCUMULATOR

The SANOVO Accumulator orients the eggs into 12 or 18 rows with the highest filling rate in the industry. Belt material has been carefully chosen to minimize contact surface while the open construction allows thorough cleaning. Optional CIP cleaning is available.



ROLLER ENTRY CONVEYOR

The roller entry conveyor transports the eggs towards the weighing and insert section. Material of the rollers has been specially chosen to withstand numerous cleaning products. To reduce cleaning time and improve sanitation level a CIP system can be added, from the first roller towards the insert mechanism.

The shape of the rollers gives stability allowing camera based detection systems to perform a optimum performance. The design minimizes horizontal surfaces to reduce dirt accumulation. The roller entry conveyor is based on a modular principle in order to meet your future requirements.



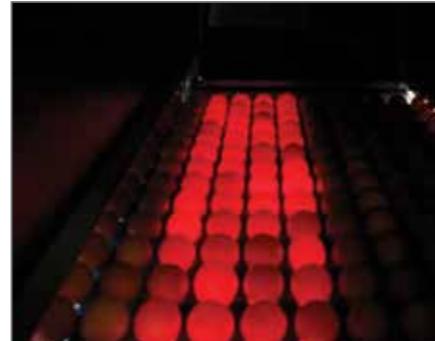
ROLLER CLEANING SYSTEM

The roller cleaning system operates in accordance with the infeed rollers and is located under the roller conveyor. Three brushes run and sweep the rollers during operation. The system is detachable for high pressure cleaning.



UV

The UV system uses Ultra Violet technology to reduce contamination and bacteria on the shell surface of the eggs before weighing and packing. Entry guards ensure that UV-C light stays within the system, being detachable it makes cleaning very easy. If the system is tilted the safety switches automatically shuts down the UV lights to ensure safe environment for the operator.



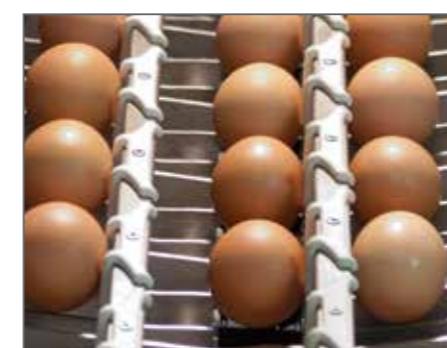
LEAK DETECTION

The leak detector can be installed to reject eggs before the egg washer reducing water contamination and antifoaming chemicals. It can be installed after the washer to reject leakers before traveling under the high velocity air drier reducing the risk of contaminating clean, first quality eggs or after the drier in tandem with the dirt detector. Rejected leakers will be dropped into a bin or optional auger and centrifuge. The system is making use of laser light technology placed underneath and away from the egg flow. False rejects are minimized and shiny wet surfaces do not influence the detection rate.



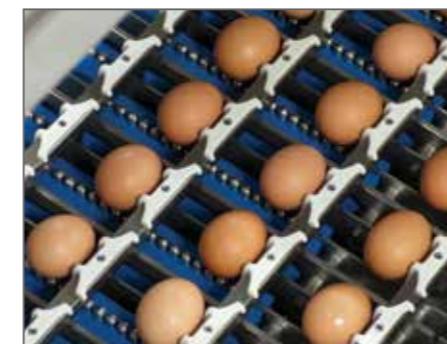
DIRT DETECTION

The high performance dirt detector with adjustable sensitivity makes use of an advanced full color camera vision system that identifies dirts down to 1mm². Detected dirt eggs can be sent back to the egg washer or sent to a packing lane.



WEIGHING

A digital, dynamic, stable egg scale weighs each egg with a readout of 0,1 gram and tests itself for recalibrations between each egg. The STAALKAT egg scale and entire infeed and transfer insert is washdown with an open sanitary design. The scale is mounted under the egg for maximum stability, observation and ease of cleaning. Calibrating the 12 or 18 weighing scales can be done within minutes. Fragile moving plastic parts are not part of the STAALKAT design.



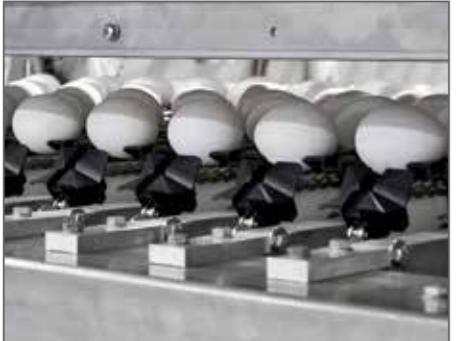
CRACK DETECTION

The advanced washdown STAALKAT crack detector has no moving mechanical or electrical parts. It is not necessary to constantly sense and adjust for the continual variation of egg weights. This robust system converts the digital signals into multiple crack categories. The operator can determine what level of crack should go to various undergrade categories. There are no delicate parts or complicated time consuming cleaning requirements.



UNDERGRADE CONVEYOR

STAALKAT's exclusive egg conveyor can send any egg weight or second quality egg out of the grader before the transfer to the chain conveyor. This exclusive design creates an extra packing location without adding to the footprint. It allows the off-grades and over- and underweight eggs to be packed without being transferred into the 4 row chain conveyor. From this conveyor the off-grades can also be sent directly to a breaker or farmpacker.



INSERT TRANSFER

The most reliable transfer from 12 or 18 rows of eggs into the chain conveyor in the industry. STAALKAT has eliminated compound cantilevered motions, delicate machine components and fragile swing arms with critical timing, sensitive to egg weight variations. The overhead 4 row egg conveyor momentarily stops while 48 or 72 eggs are gently lifted into the egg carriers during the right or left hand transfer. This STAALKAT transfer proven for many years has been expanded to a four row 600 cases per hour / 216.000 eggs per hour grader.



CARTON CLOSER

The new generation, low profile, variable speed carton closer, adds reliability and flexibility to the packaging line. The end alignment, denesting, packing, egg printing, and closing are all on the same side of the system. The double denester feature allows one trained machine operator to control all the packer functions up to 600 cph. There is no need for the operator to crawl back and forth under the machine to manage, observe or help the packing functions.



BLOOD DETECTION

The system detects large till tiny spots of blood. Detected blood eggs can be programmed to be ejected out of the egg carrier chain at the end of the grader or sent to any lane. The whole system is placed above the egg carrier chain and can be tilted for easy cleaning and makes it very accessible. Intelligent software recognizes the difference between brown or white eggs and adjusts the parameters automatically.



CARTON CONVEYORS

A variety of take away conveyors lengths are available to meet individual egg packaging requirements. Egg printing, carton labeling, dating and 30 egg tray stacking is all available. Take away conveyors are designed to meet the needs by further automation with SANVO End-of-line automation.



EGG RELEASE

The 4 row egg carrier chain releases each egg individually by weight and category into soft brushes, the most gentle transfer in the industry. The brush receiver eliminates a multiple series of critical high speed transfers, risking small hair line cracks that can open after transport and in-store handling. There are no critical transfers or timing issues.



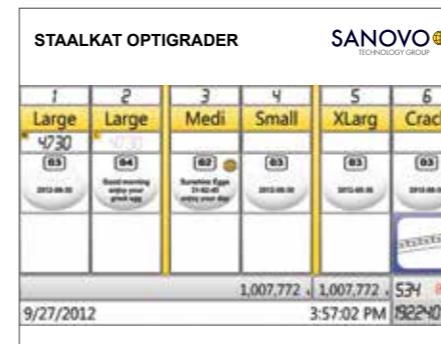
ROBOTS AND AUTOMATION

Case packing, display loader, pallet loading and unloading and warehouse automation are available to meet your specific packing needs to reduce labor and increase gentle egg handling. The SANNO End-of-the-line automation and Robots can be designed to meet individual plant needs.



DENESTER

A revolutionary denesting system from STAALKAT grabs the inside of the carton or tray with 32 needles and places it directly on the packer lane increasing reliability. The packer eliminates pen conveyors and carton jams before packing. Denester adjustments on pack changeover have been reduced and the denester is manufactured as a refined accurate machine. A second denester for each packer is available to eliminate changeover down time, doubles the denester carton storage, reducing labor and acting as a back up to damaged or poor quality packaging.



INFORMATION SCREENS

INFORMATION SCREENS
Every six packing lanes are standard equipped with large screens on the back and front. The information screens provide real-time information of the grader speed, printer texts and current grader status, in order to minimize response time and maximizing your productivity.



SPECIAL DENESTERS

STAAKLAT will engineer special denesters for customers including 24 and 36 egg lidded carton denester. All available without the need to extend the packer base and electronics. Customized denesters are available on request for your special packaging needs.



TOUCH SCREEN

The new STAALKAT OptiGrader touch screen controls the system and the whole process with large overhead displays for all grading room operators to observe. The touch screen is ICON based and a Windows operating system. Accessibility of data and user friendliness go hand in hand. The menu structure can be determined and altered by each operator creating the perfect user program for the packing station. Only 4 inkjet printing heads are required at 600 cases per hour / 216.000 eggs per hour. Traceability software to keep track of every egg that enters the grader and packer is available.

A dedicated partner to the egg industry

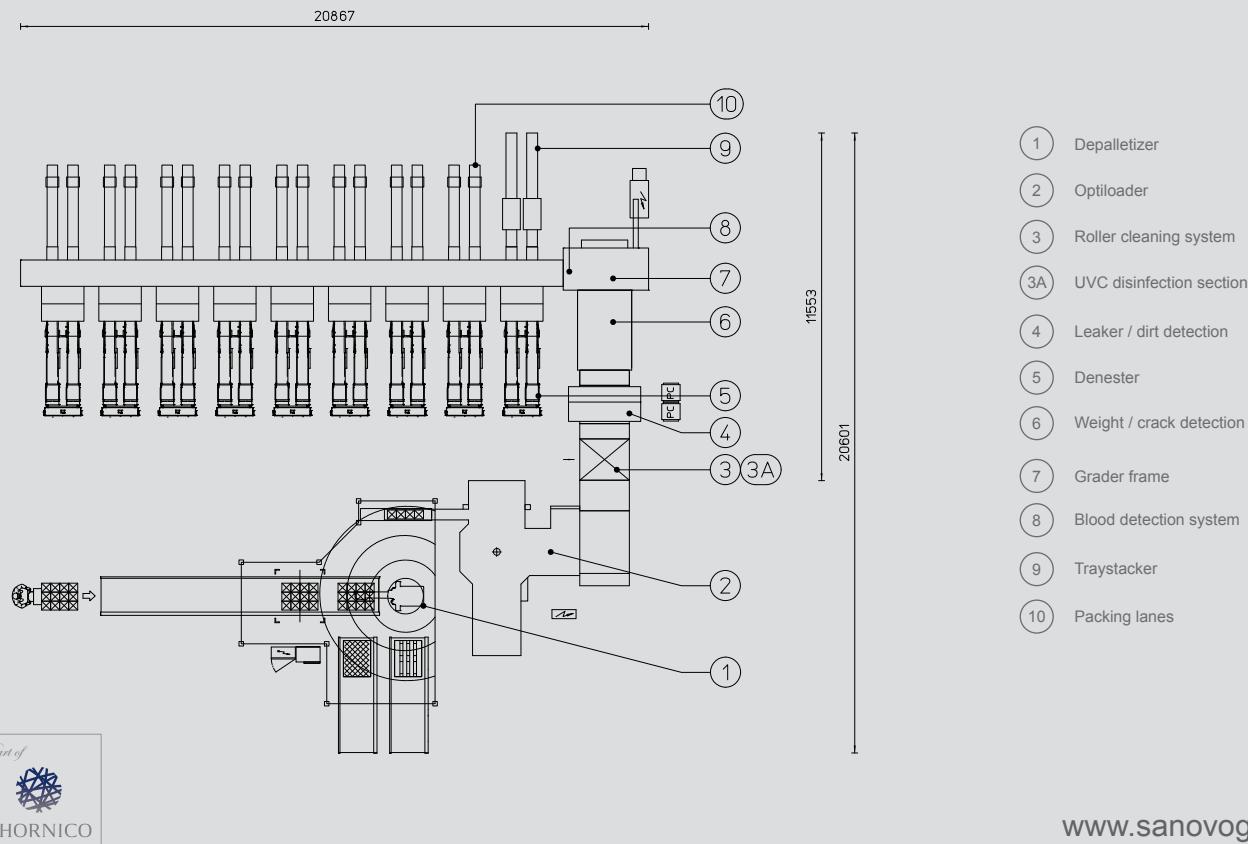
Most eggs in the world - before they end up as a consumer product as shell egg or egg product - have been handled by a SANNOVO TECHNOLOGY GROUP product. All products pass an extensive test in our facilities before being shipped to customers located in every corner of the world.

New products are constantly being developed; innovation and product functionality are always given priority.

Focus on research and development is a key issue, allowing us to continue to design and supply total solutions for our customers.

Our products meet international requirements and standards, and, as a turnkey supplier, SANNOVO TECHNOLOGY GROUP offers every aspect of the construction of an egg plant – from building design over layouts, engineering and installation to commissioning and training of local staff.

SANNOVO TECHNOLOGY GROUP is a global organization, represented in all regions of the world. With our network, service and spare parts are always within easy reach.



SANNOVO TECHNOLOGY GROUP

SANNOVO TECHNOLOGY GROUP
5210 Odense - Denmark
TEL +45 66 16 28 32
info@sanovogroup.com

SANNOVO TECHNOLOGY NETHERLANDS
7122 MP Aalten - The Netherlands
TEL +31 543 473 868
staalkat@sanovogroup.com

SANNOVO TECHNOLOGY USA
MI 48170 Plymouth
TEL+1 248 662 1030
usa@sanovogroup.com

SANNOVO TECHNOLOGY JAPAN
Tokyo 166-0003
TEL +81 3 5378 8784
japan@sanovogroup.com

SANNOVO TECHNOLOGY VOSTOK
127106 - Moscow
TEL +7 985 991 3230
vostok@sanovogroup.com

SANNOVO TECHNOLOGY CHINA
Shanghai 200031
TEL +86 21 5403 9207
china@sanovogroup.com

SANNOVO TECHNOLOGY ITALY
36030 Montecchio Precalcino
TEL +39 0445 334505
italy@sanovogroup.com

SANNOVO TECHNOLOGY BRAZIL
18087-180 Sorocaba SP
TEL +55 (15) 3238 2921
brazil@sanovogroup.com

SANNOVO TECHNOLOGY ARGENTINA
C1107AAP, Buenos Aires
TEL+54 11 4314 1032
argentina@sanovogroup.com

SANNOVO TECHNOLOGY MEXICO
Del. Cuajimalpa de Morelos, C.P. 05000
TEL + 52 55 8994 2585
mexico@sanovogroup.com

SANNOVO TECHNOLOGY TAIWAN
80145, Kaohsiung City
TEL +886 9333 17710
taiwan@sanovogroup.com

SANNOVO TECHNOLOGY MALAYSIA
48000, Kuala Lumpur
TEL+60 12 2556 718
malaysia@sanovogroup.com

SANNOVO PROCESS SOLUTION
5210 Odense - Denmark
TEL +45 66 16 28 32
process@sanovogroup.com

RAME-HART INC.
NJ 07869 Randolph - USA
TEL +1 973 335 0560
ramehart@sanovogroup.com