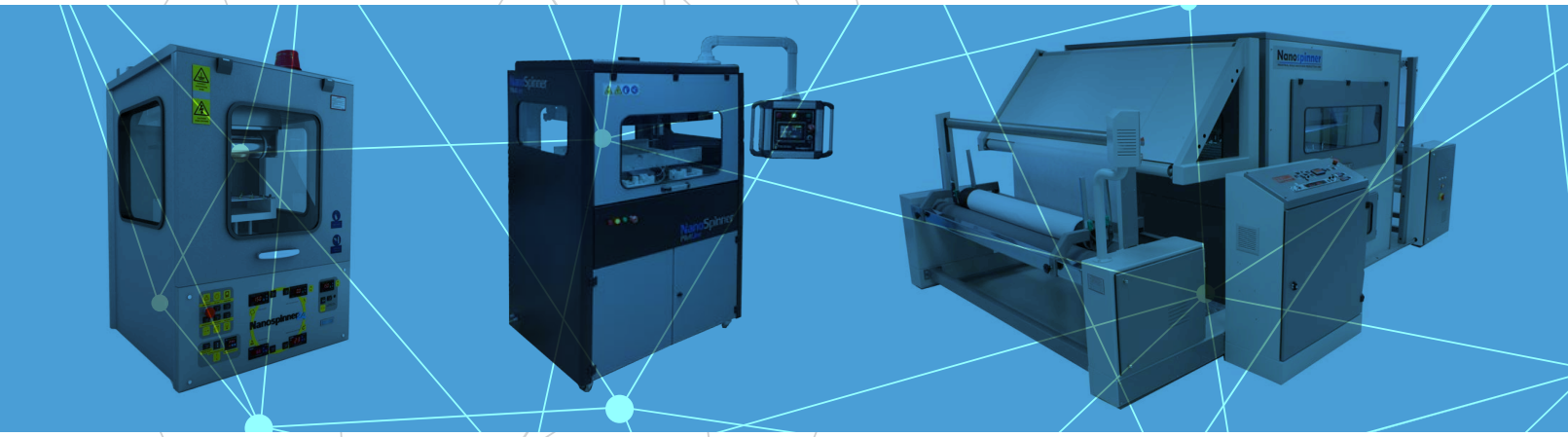
inovenso
innovative engineering solutions



Nanospinner
electrospinning device

Biogenuix®

“Better control,
Better fiber formation...”

Lab Scale Electrospinning Equipment

Inovenso Ltd. Co. is a worldwide electrospinning device manufacturer that provides high precision, easy to use and safe electrospinning equipment for nanofiber based research and products. As Inovenso, we are proud of our "NANOSPINNER" range and our unique designs have proven themselves through superlative performance to hundreds of customers and partners all over the world. Our designs consider the needs, expectations and future visions of our clients and we believe in proactively placing ourselves at the center of the strong, efficient and sustainable interactions that must exist between researchers, manufacturers and users.

As a leading high-tech material form, nanofibers are finding ever-increasing use in the key research areas that will shape a better world. Nanofiber-based products are critical in the development of filtration Technologies for gases and liquids; efficient energy technologies; separator membranes for future energy storage devices and as functional fibrous materials for waterproof and breathable fabrics and textiles. They are also gaining importance in biomedical innovation through their use in wound-dressing membranes and as matrix materials for tissue engineering. To this end, Inovenso designs laboratory-scale, pilot-scale and industrial-scale electrospinning equipment that provides essential manufacturing capability fort hese, and associated materials whilst being committed to the ongoing development of processing facilities that will allow the technology of electrospinning to evolve into new materials, structures and applications. To achieve this, Inovenso actively co-operates and interacts with our customers to tailor systems that suit their aims and goals and future directions.

Inovenso Headquarters are located in Istanbul, Turkey – the geographical and cultural bridge between Europe, Asia and Africa. Visit "www.inovenso.com" to view our product range, accessories list, updated information and the contact details of your nearest Inovenso representative.

Why Electrospinning and Why Nanofibers?

The size of an electrospun fiber can be on the-nano scale and the fibers may possess nano-scale surface texture and porosity, leading to different behaviours and interactions compared to equivalent macro scale materials. The ultra-fine fibers produced by electrospinning are expected to have two main properties, a very high surface-to-volume ratio, and a relatively defect-free structure at the molecular level. This first property makes electrospun material suitable for activities requiring a high degree of physical contact, such as providing sites for chemical reactions, or the capture of small sized particulate materials by physical entanglement such as filtration. The second property should allow electrospun versions of materials to approach their theoretical maximum strength, leading to extremely competitive mechanical performance.

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Nanospinner24 XP
Programmable touch screen control multi-nozzle feeding allowing for high production rates of nanofiber membranes and high surface area coatings

NE300 XP
Programmable touch screen control for advanced research using medium size coating areas coupled with a high throughput production.

Nanospinner24
Multi-nozzle feeding allowing for high production rates of nanofiber membranes and high surface area coatings

NE300
For advanced research using medium size coating areas coupled with a high throughput and excellent process control

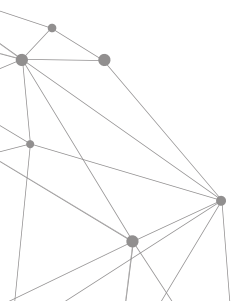
NE200
Single nozzle feeding for relatively small surface area coatings but with a high degree of control, specifically tailored for small solution volumes

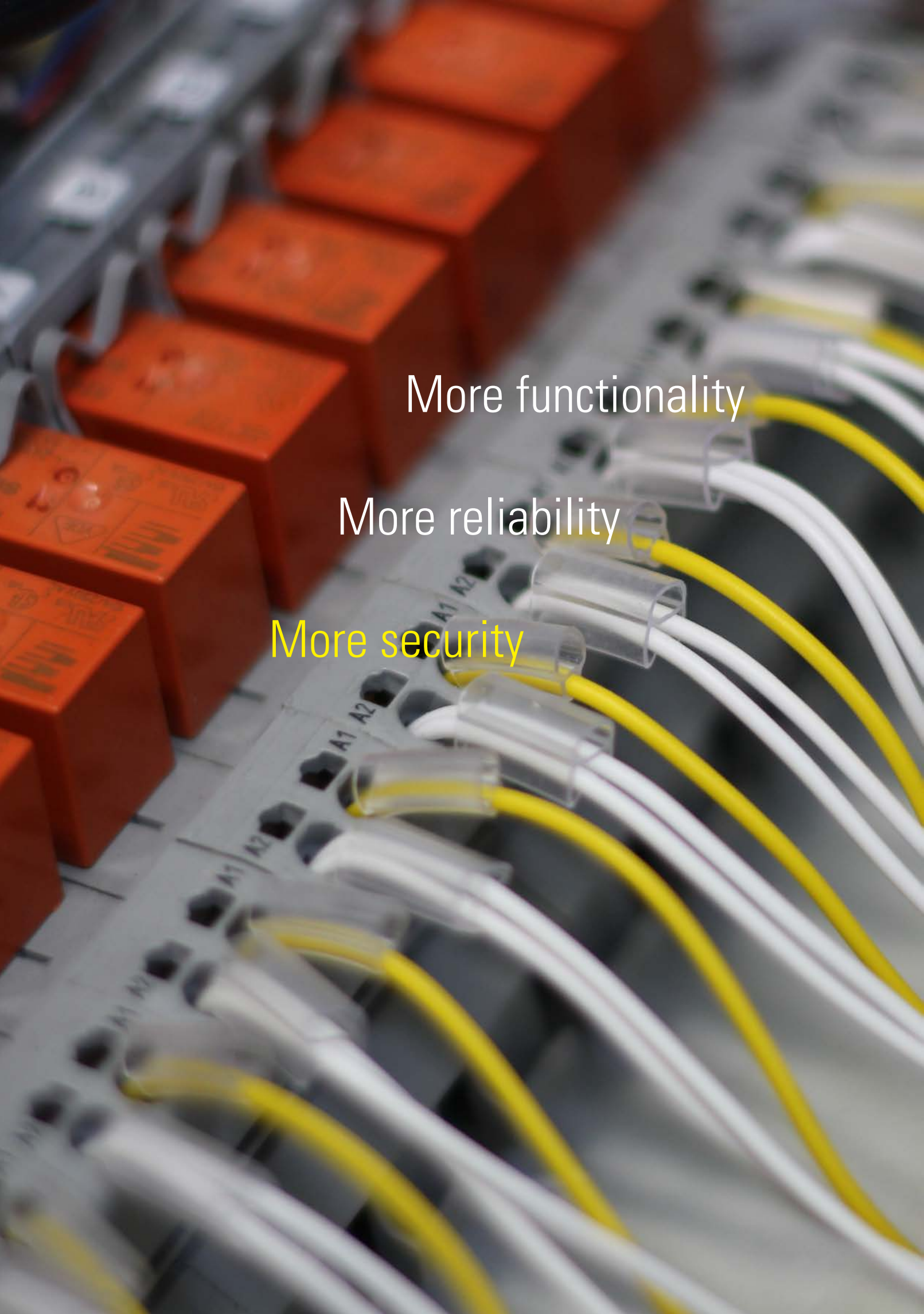
NE100
An introductory-scale electrospinning system enclosed in a custom chamber for a variety of pilot projects

BasicSystem
Basic electrospinning apparatus at low budget cost designed for fast, simple research tasks

Doublespinner
Advanced electrospinning through the use of two separately controlled spinner heads, tailored for multi component or composit nanofiber membranes

Bicomponent Nozzles (Brass & Stainless Steel)
Provides the means of infusing two different solutions concurrently to obtain core-shell nanofiber products




More functionality
More reliability
More security

Nanospinner24-XP

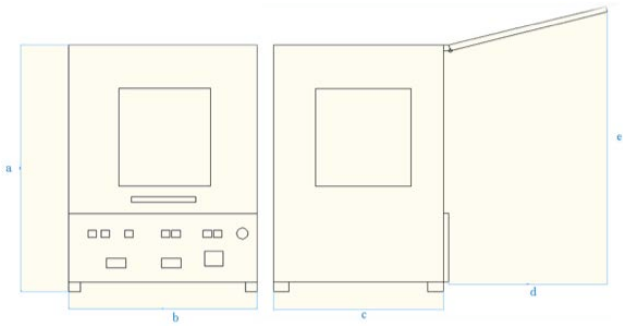
Expert programmable, touch screen, multi-nozzle electrospinning machine.

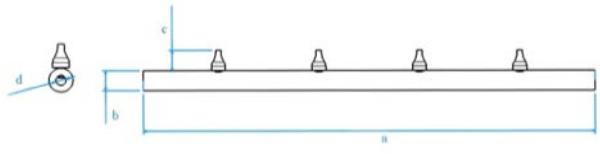
The Nanospinner 24 Expert is designed for precise product development processes. The model is specifically suited to universities and industrial R&D departments engaged in electrospinning over long time intervals requiring in-situ parameter optimization. You can easily re-call the previous recipes and produce new samples within all same parameters thus will provide easy to compare results and creates logical steps for product development. This flexible, programmable, recipe re-call enabled system has long-term electrospinning capability and is supported by a number of customized accessories:

Unique properties	Benefits
Bottom-up spinning	Prevents solvent dropping on sample media which causes defects on nanofiber web surface.
Programmable touch screen control panel	Easy to use, feedback info, precise control
Up to 12 concurrently feeding nozzles	High throughput nanofiber product,on for higher production capacity in less time.
376mm by 280mm coating area	Almost A3 size wide area nanofiber samples even can be used for some of commercial applications.
High speed rotating drum up to 2000RPM	Provides obtaining parallelized nanofiber webs in different morphologies.
Adjustable horizontal movement between 30-80mm and 5-50mm/sec	Precise adjustment of homogeneity for producing highly uniform samples in thickness.
Automatic adjustable spinning distance between 30-230mm. Nozzle to collector.	During the polymer solution optimization precisely adjusting the one of the most critical parameters as distance provides thinnest nanofibers.
Recipe saving and loading option	Easily recall of previous work parameters automatically. No need to adjust all parameters one by one manually.
Extra safety options	Safe-door lock and warning lights to prevent any electrical discharges.

General Description	
Model	NanoSpinner24 XP
Description	Programmable Touch Screen Control Multi Nozzle Electrospinning Unit
Spinning Type	Bottom-Up Spinning
Produced in	Turkey
Construction	
Chassis	Electrostatic Painted (RAL7031+RAL7024) Steel
Feeding Area Material	PE 1000 (High Density, Chemical resistant)
Collector Material	7000 Series Aluminium Alloy
Windows	4 mm Transparent Glass
Total Weight	<150kg(5291oz)
Dimensions	705mm(27.76") x 760mm(29.92") x 1060mm(41.73")

High Voltage Power Supplier	
Produced in	Japan (CE and ISO Certified)
Voltage Range	0- 40 kV
Voltage Precision	100V
Voltage Display	LED Screen
Max Current	0.75 mA
High Precision Micro Pump	
Produced in	Produced in Turkey - Built-in
Flow Rate	0.01-1000ml/h
Flow Rate Precision	0.01ml/h
Flow Rate and Volume Display	On main LCD control panel
Available Syringes	Standard 1, 5, 10, 20, 50 and 60ml





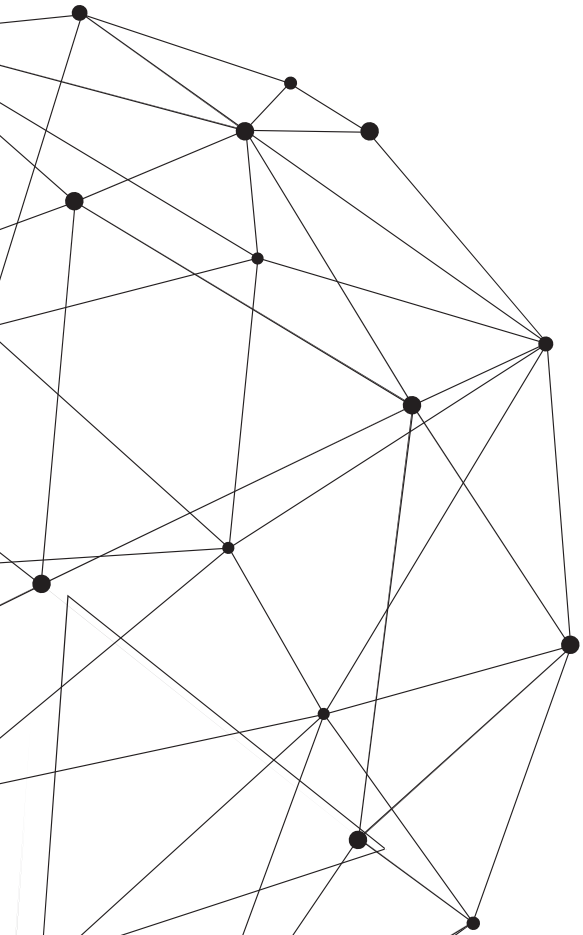
Chassis Dimensions	
a	1060mm(41.73")
b	705mm(27.76")
c	760mm(29.92")
d	629mm(24,76")
e	1205mm(47.44")

Feeding Pipe Set Dimensions	
a	365mm(14.37")
b	12mm(0.47")
c	12,12mm(0.48")
d	5.5mm(0,21")

Collecting Area	
Collector Type	Rotating Cylinder and Constant Plate
Cylinder Material	Aluminium
Constant Plate Material	Aluminium
Cylinder Driving Method	BLDC Motor
Cylinder Dimensions(D x L)	120mm(4.72") x 280mm(11.02")
Fiber Deposition Area	376.8mm(14.83") x 280mm(11.02")
Cylinder Speed	100-2000RPM
Cylinder Surface Speed	Max. 12560mm/sec(494,3inches/sec)
Coating Homogenity System	X-axis repetitive motion
Stroke of Coating Homogenity System	Adjustable Between 30mm(1.18") and 80mm(3.15")
Speed of Coating Homogenity System	Adjustable Between 0 and 8.3mm/sec(0.33inches/sec)
Spinning Distance	
Distance Between Nozzle and Collector	30mm(1.18") - 230mm(9.06")
Distance Adjustment Precision	1mm
Distance Adjustment Method	Linear Actuator
Distance Adjustment Speed	Constant / 6.6mm/sec(0.26 inch/sec)
Distance Indicator	Digital

Automation
System Power Button
Emergency Stop Button
Safe Door Button
LED Illumination On/Off
Exhaust Fan On/Off
Cylinder Rotation On/Off
Digital Cylinder Speed Indicator
Coating Homogenity System On/Off
Coating Homogenity System Stroke Adjustment
Coating Homogenity System Speed Adjustment
Spinning Distance Adjustment
Digital Spinning Distance Indicator
Pump On/Off
High Voltage Adjustment
Digital High Voltage Indicator
Digital Temperature Indicator
Digital Relative Humidity Indicator
Technical Requirements
220 V 50/60 Hz Power Plug
External Grounding Line
Table

Feeding Area	
Number of Nozzle on Each Feeding Pipe Set	4 pcs
Number of Feeding Pipe Set	Up to 3 Sets
Number of Nozzle	Up to 12 Nozzles
Single Nozzle Production	Available
Feeding Pipe Material	Aluminium
Nozzle Material	Electrically Conductive Brass
Nozzle Inner Diameter	0.8mm(0.315")
Minimum Required Solution for Single Nozzle Feeding	3ml
Minimum Required Solution for Each Feeding Pipe Set	9.35ml
Minimum Required Solution for Full Loading	28.05ml



Optional Accessories for Nanospinner24-XP

- Changeable collectors
- Co-Axial nozzle system
- Heat controlled chamber
- Humidity controlled chamber
- Camera integrated chamber
- Atmosphere controlled chamber
- Heating collector
- Vacuum holder collector

Easy to use systems

Ne300-XP

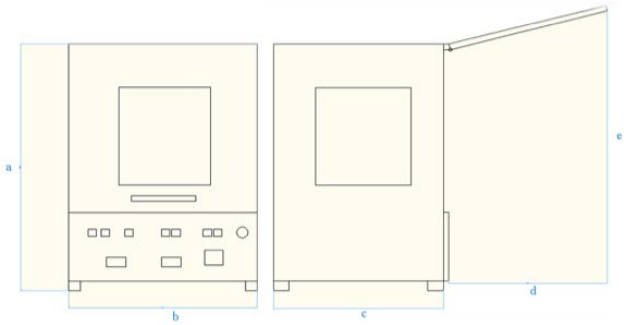
Expert programmable, touch screen, multi-nozzle electrospinning machine.

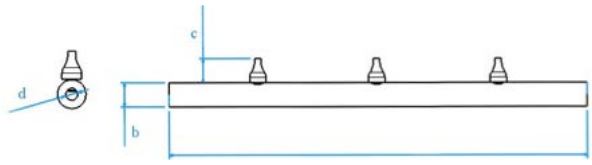
The NE300 Laboratory scale electrospinning unit is a budget friendly model that can yield large areas of uniform nanofiber coatings. It has a 9-nozzle feeding unit along with basic cylindrical and plate collectors that allow for a wide range of membrane geometries to be produced from polymers such as PU, Nylon, PAN, PVA i.e. By Programmable touch panel control it can be easily re-call the previous recipes and produce new samples within all same parameters thus will provide easy to compare results and creates logical steps for product development. This flexible, programmable, recipe re-call enabled system has long-term electrospinning capability and is supported by a number of customized accessories.

Unique properties	Benefits
Bottom-up spinning	Prevents solvent dropping on sample media which causes defects on nanofiber web surface.
Programmable touch screen control panel	Easy to use, feedback info, precise control
Up to 9 concurrently feeding nozzles	High throughput nanofiber product,on for higher production capacity in less time.
314mm by 220mm coating area	Allows to produce A4 size wide area nanofiber samples
500RPM rotating drum collector	Provides more homogen distributed nanofiber samples in A4 size.
Adjustable horizontal movement between 30-80mm and steady speed	Precise adjustment of homogeneity for producing highly uniform samples in thickness.
Automatic adjustable spinning distance between 30-230mm. Nozzle to collector.	During the polymer solution optimization precisely adjusting the one of the most critical parameters as distance provides thinnest nanofibers.
Recipe saving and loading option	Easily recall of previous work parameters automatically. No need to adjust all parameters one by one manually.
Extra safety options	Safe-door lock and warning lights to prevent any electrical discharges.

General Description	
Model	NE300- XP
Description	Programmable Touch Screen Control 9 Multi Nozzle Electrospinning Unit
Spinning Type	Bottom-Up Spinning
Produced in	Turkey
Construction	
Chassis	Electrostatic Painted (RAL7031+RAL7024) Steel
Feeding Area Material	PE 1000 (High Density, Chemical resistant)
Collector Material	7000 Series Aluminium Alloy
Windows	4 mm Transparent Glass
Total Weight	<150kg(5291oz)
Dimensions	705mm(27.76") x 760mm(29.92") x 1060mm(41.73")

High Voltage Power Supplier	
Produced in	Japan (CE and ISO Certified)
Voltage Range	0- 40 kV
Voltage Precision	100V
Voltage Display	LED Screen
Max Current	0.75 mA
High Precision Micro Pump	
Produced in	Produced in Turkey - Built-in
Flow Rate	0.01-1000ml/h
Flow Rate Precision	0.01ml/h
Flow Rate and Volume Display	On main LCD control panel
Available Syringes	Standard 1, 5, 10, 20, 50 and 60ml





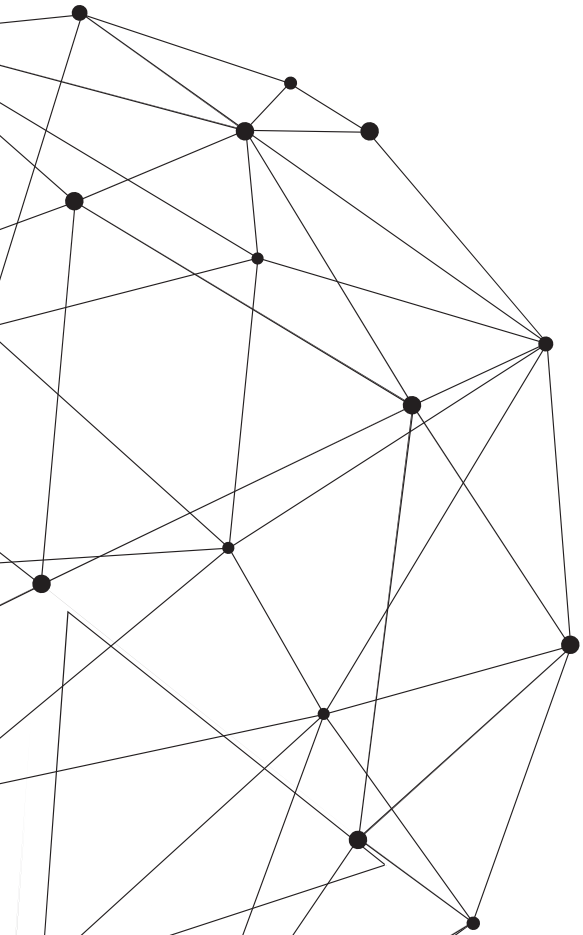
Chassis Dimensions	
a	1060mm(41.73")
b	705mm(27.76")
c	760mm(29.92")
d	629mm(24,76")
e	1205mm(47.44")

Feeding Pipe Set Dimensions	
a	365mm(14.37")
b	12mm(0.47")
c	12,12mm(0.48")
d	5.5mm(0,21")

Collecting Area	
Collector Type	Rotating Cylinder and Constant Plate
Cylinder Material	Aluminium
Constant Plate Material	Aluminium
Cylinder Driving Method	BLDC Motor
Cylinder Dimensions(D x L)	100mm(3,9") x 220mm(8,7")
Fiber Deposition Area	314mm(12.5") x 220mm(8,7")
Cylinder Speed	100-500RPM
Cylinder Surface Speed	Max. 12560mm/sec(494,3inches/sec)
Coating Homogenity System	X-axis repetitive motion
Stroke of Coating Homogenity System	Adjustable Between 30mm(1.18") and 80mm(3.15")
Speed of Coating Homogenity System	Steady 40mm/sec
Spinning Distance	
Distance Between Nozzle and Collector	30mm(1.18") - 230mm(9.06")
Distance Adjustment Precision	1mm
Distance Adjustment Method	Linear Actuator
Distance Adjustment Speed	Constant / 6.6mm/sec(0.26 inch/sec)
Distance Indicator	Digital

Automation
System Power Button
Emergency Stop Button
Safe Door Button
LED Illumination On/Off
Exhaust Fan On/Off
Cylinder Rotation On/Off
Digital Cylinder Speed Indicator
Coating Homogenity System On/Off
Coating Homogenity System Stroke Adjustment
Coating Homogenity System Speed Adjustment
Spinning Distance Adjustment
Digital Spinning Distance Indicator
Pump On/Off
High Voltage Adjustment
Digital High Voltage Indicator
Digital Temperature Indicator
Digital Relative Humidity Indicator
Technical Requirements
220 V 50/60 Hz Power Plug
External Grounding Line
Table

Feeding Area	
Number of Nozzle on Each Feeding Pipe Set	3 pcs
Number of Feeding Pipe Set	Up to 3 Sets
Number of Nozzle	Up to 9 Nozzles
Single Nozzle Production	Available
Feeding Pipe Material	Aluminium
Nozzle Material	Electrically Conductive Brass
Nozzle Inner Diameter	0.8mm(0.315")
Minimum Required Solution for Single Nozzle Feeding	3ml
Minimum Required Solution for Each Feeding Pipe Set	9.35ml
Minimum Required Solution for Full Loading	28.05ml



Optional Accessories for Ne300-XP

- Changeable collectors
- Co-Axial nozzle system
- Heat controlled chamber
- Humidity controlled chamber
- Camera integrated chamber
- Atmosphere controlled chamber
- Heating collector
- Vacuum holder collector

Special designs and customised manufacturing according to your desires

Nanospinner24

Advanced multi-nozzle model

1-12 Multinozzle spinning

L Size drum collector

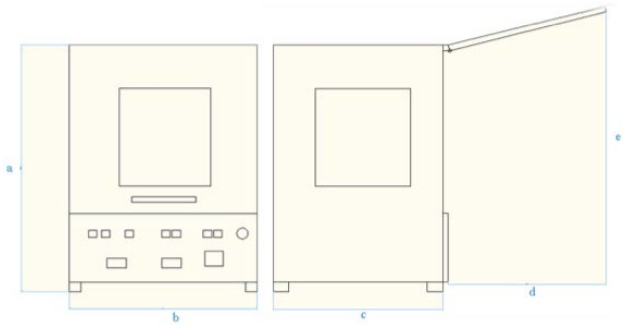
Advanced automation

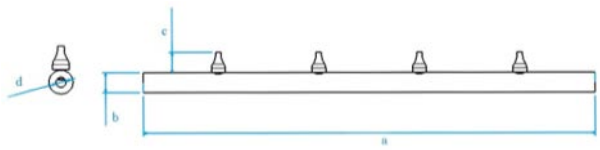
The Nanospinner 24 is designed to develop sample nanofiber membranes used primarily in textile and air filtration applications, but also in the chemical, medical, construction and agriculture industries. The model is specifically suited to universities and industrial R&D departments engaged in electrospinning over long time intervals requiring in-situ parameter optimization. This flexible, long-term electrospinning capability is supported by a number of customized accessories:

- Bottom-up spinning
- Up to 12 concurrently feeding nozzles
- 376mm by 280mm coating area
- High speed rotating drum up to 2000RPM
- Adjustable horizontal movement between 30-80mm to get more uniform membranes
- Automatic adjustable spinning distance between 30-230mm
- Extra safety options such as safe-door and warning light to prevent danger from high voltage exposure

General Description	
Model	NanoSpinner24
Description	Advanced Multi Nozzle Electrospinning Unit
Spinning Type	Bottom-Up Spinning
Produced in	Turkey
Construction	
Chassis	Electrostatic Painted(RAL7031+RAL7024) Sheet Metal
Feeding Area Material	PE 1000(High Density, Chemical resistant)
Collector Material	7000 Series Aluminium Alloy
Windows	4 mm Transparent Glass
Total Weight	<150kg(5291oz)
Dimensions	705mm(27.76") x 630mm(24.80") x 1060mm(41.73")

High Voltage Power Supplier	
Produced in	United States (CE and ISO Certified)
Voltage Range	0- 40 kV
Voltage Precision	100V
Voltage Display	LED Screen
Max Current	0.75 mA
High Precision Micro Pump	
Produced in	United States (CE and ISO Certified)
Flow Rate	0.01-1000ml/h
Flow Rate Precision	0.01ml/h
Flow Rate and Volume Display	LED
Available Syringes	Standard 1, 5, 10, 20 and 50ml
Feeding Area	
Number of Nozzle on Each Feeding Pipe Set	4 pcs
Number of Feeding Pipe Set	Up to 3 Sets
Number of Nozzle	Up to 12 Nozzles
Single Nozzle Production	Available
Feeding Pipe Material	Aluminium
Nozzle Material	Electrically Conductive Brass
Nozzle Inner Diameter	0.8mm(0.315")
Minimum Required Solution for Single Nozzle Feeding	1ml
Minimum Required Solution for Each Feeding Pipe Set	9.35ml
Minimum Required Solution for Full Loading	28.05ml





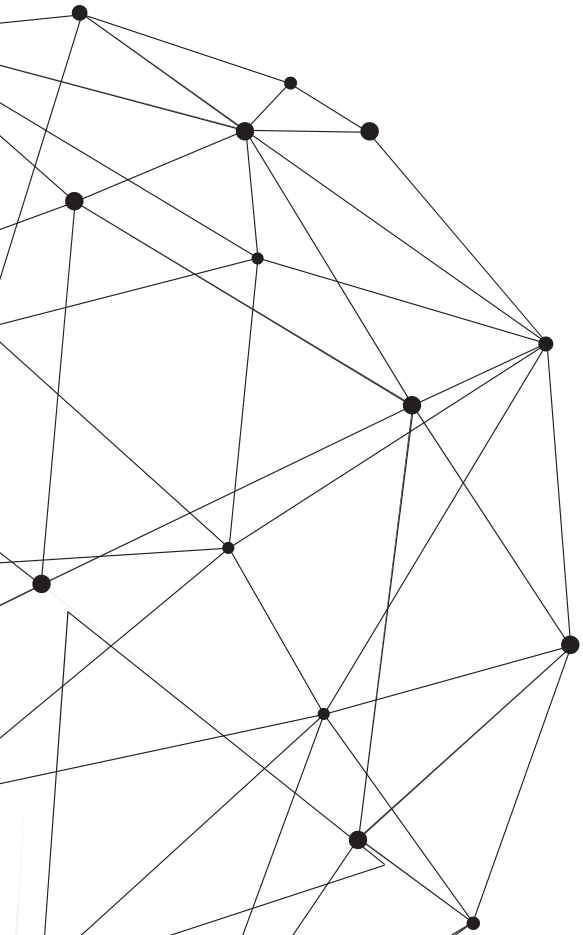
Chassis Dimensions	
a	1060mm(41.73")
b	705mm(27.76")
c	630mm(24.80")
d	629mm(24,76")
e	1205mm(47.44")

Feeding Pipe Set Dimensions	
a	365mm(14.37")
b	12mm(0.47")
c	12,12mm(0.48")
d	5.5mm(0,21")

Collecting Area	
Collector Type	Rotating Cylinder and Constant Plate
Cylinder Material	Aluminium
Constant Plate Material	Aluminium
Cylinder Driving Method	BLDC Motor
Cylinder Dimensions(D x L)	120mm(4.72") x 280mm(11.02")
Fiber Deposition Area	376.8mm(14.83") x 280mm(11.02")
Cylinder Speed	100-2000RPM
Cylinder Surface Speed	Max. 12560mm/sec(494,3inches/sec)
Coating Homogenity System	X-axis repetitive motion
Stroke of Coating Homogenity System	Adjustable Between 30mm(1.18") and 80mm(3.15")
Speed of Coating Homogenity System	Adjustable Between 0 and 8.3mm/sec(0.33inches/sec)
Spinning Distance	
Distance Between Nozzle and Collector	30mm(1.18") - 230mm(9.06")
Distance Adjustment Precision	1mm
Distance Adjustment Method	Linear Actuator
Distance Adjustment Speed	Constant / 6.6mm/sec(0.26 inch/sec)
Distance Indicator	Digital

Automation
System Power Button
Emergency Stop Button
Safe Door Button
LED Illumination On/Off
Exhaust Fan On/Off
Cylinder Rotation On/Off
Digital Cylinder Speed Indicator
Coating Homogenity System On/Off
Coating Homogenity System Stroke Adjustment
Coating Homogenity System Speed Adjustment
Spinning Distance Adjustment
Digital Spinning Distance Indicator
Pump On/Off
High Voltage Adjustment
Digital High Voltage Indicator
Digital Temperature Indicator
Digital Relative Humidity Indicator
Technical Requirements
220 V 50/60 Hz Power Plug
External Grounding Line

Nanospinner24 Users	
3M Corporation	USA
Stanford University	USA
Nanyang Technological University	Singapore
University of Freiburg	Germany
King Saud University	Saudi Arabia
Aksa Acrylic	Turkey
Uludag University	Turkey
National Bore Research Center	Turkey
Anadolu University	Turkey
Bursa Technical University	Turkey



Optional Accessories for Nanospinner24

- Changeable collectors
- Co-Axial nozzle system
- Heat controlled chamber
- Humidity controlled chamber
- Camera integrated chamber
- Atmosphere controlled tube
- Heating collector
- Vacuum holder collector


inovenso
innovative engineering
We supply A4 size samples
to you, with your own
polymer solutions

Ne300

Mid-size multi-nozzle model

1-9 Multinozzle spinning

M Size drum collector

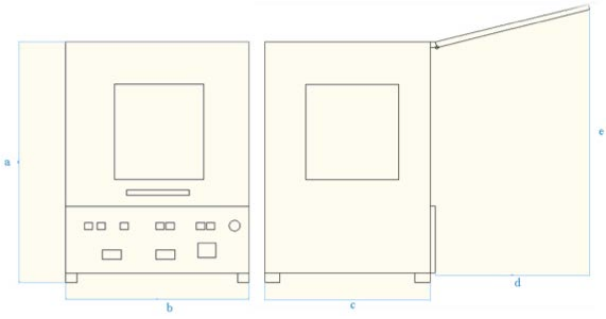
Essential automation

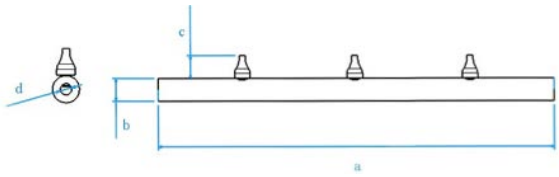
The NE300 Laboratory scale electrospinning unit is a lower-budget model that can yield large areas of uniform nanofiber coatings. It has a number of control parameters that are either automatically or manually changed. It has a 9-nozzle feeding unit along with basic cylindrical and plate collectors that allow for a wide range of membrane geometries to be produced from polymers such as PU, Nylon, PAN and PVA.

- Bottom-up spinning
- Up to 9 Nozzles for high-throughput electrospinning
- 314mm by 220mm coating area
- Electrically insulated cabinet with high density chemically inert PE parts
- Automatic control of voltage, flow rate and collector motion (z-axis, x-axis and rotation)
- Extra safety options such as safe-door and warning light to prevent danger from high voltage exposure

General Description	
Model	NE300
Description	Multi-nozzle mid-size electrospinning unit
Spinning Type	Bottom-up spinning
Produced in	Turkey
Construction	
Chassis	Electrostatic Painted(RAL7031+RAL7024) Sheet Metal
Feeding Area Material	PE 1000(High Density, Chemical resistant)
Collector Material	7000 Series Aluminium Alloy
Windows	4 mm Transparent Glass
Total Weight	<150kg(5291oz)
Dimensions	705mm(27.76") x 630mm(24.80") x 1060mm(41.73")

High Voltage Power Supplier	
Produced in	United States (CE and ISO Certified)
Voltage Range	0- 40 kV
Voltage Precision	100V
Voltage Display	LED Screen
Max Current	0.75 mA
High Precision Micro Pump	
Produced in	United States (CE and ISO Certified)
Flow Rate	0.01-1000ml/h
Flow Rate Precision	0.01ml/h
Flow Rate and Volume Display	LED
Available Syringes	Standard 1, 5, 10, 20 and 50ml
Feeding Area	
Number of Nozzle on Each Feeding Pipe Set	3 pcs
Number of Feeding Pipe Set	Up to 3 Sets
Number of Nozzle	Up to 9 Nozzles
Single Nozzle Production	Available
Feeding Pipe Material	Aluminium
Nozzle Material	Electrically conductive brass
Nozzle Inner Diameter	0.8 mm (0.32")
Minimum Required Solution for Single Nozzle Feeding	1 ml
Minimum Required Solution for Each Feeding Pipe Set	9.35ml
Minimum Required Solution for Full Loading	28.05ml





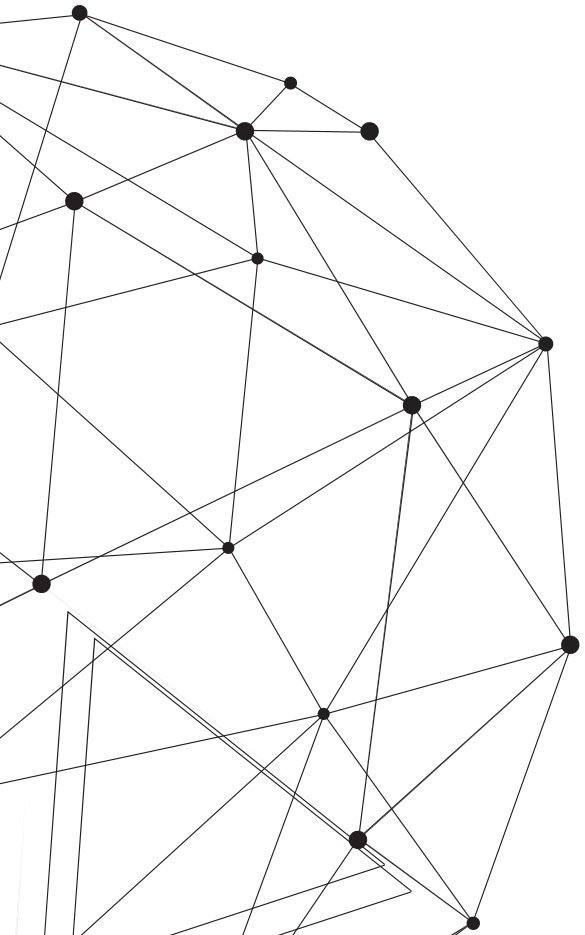
Chassis Dimensions	
a	1060mm(41.73")
b	705mm(27.76")
c	630mm(24.80")
d	629mm(24,76")
e	1205mm(47.44")

Feeding Pipe Set Dimensions	
a	365mm(14.37")
b	12mm(0.47")
c	12,12mm(0.48")
d	5.5mm(0,21")

Collecting Area	
Collector Type	Rotating cylinder and constant plate
Cylinder Material	Aluminium
Constant Plate Material	Aluminium
Cylinder Driving Method	BLDC motor
Cylinder Dimensions(D x L)	100mm (3.9") x 220mm (8.7")
Fiber Deposition Area	314mm (12.5") x 220mm (8.7")
Cylinder Speed	100-500RPM
Cylinder Surface Speed	Max. 2616mm/sec (103.0"/sec)
Coating Homogenity System	X-axis repetitive motion
Stroke of Coating Homogenity System	Constant: 80mm (3.2")
Speed of Coating Homogenity System	Constant: 8.3mm/sec (0.3"/sec)
Spinning Distance	
Distance Between Nozzle and Collector	30mm(1.18") - 230mm(9.06")
Distance Adjustment Precision	1mm
Distance Adjustment Method	Linear Actuator
Distance Adjustment Speed	Constant / 6.6mm/sec(0.26 inch/sec)
Distance Indicator	Digital

Automation
System Power Button
Emergency Stop Button
Safe Door Button
LED Illumination On/Off
Exhaust Fan On/Off
Cylinder Rotation On/Off
Digital Cylinder Speed Indicator
Coating Homogeneity System On/Off
Spinning Distance Adjustment
Digital Spinning Distance Indicator
Pump On/Off
High Voltage Adjustment
Digital High Voltage Indicator
Digital Temperature Indicator
Technical Requirements
220 V 50/60 Hz Power Plug
External Grounding Line

NE300 Users	
Toronto University	Canada
University of California, Riverside	USA
Nanyang Technological University	Singapore
SUTD	Singapore
Izmir High Technology Institute	Turkey
NumeChem Ltd.	Turkey
Yeditepe University	Turkey
Boğazici University	Turkey
Erciyes University	Turkey
Abdullah Gul University	Turkey
Hacettepe University	Turkey
Istanbul Technical University	Turkey



Optional Accessories for Ne300

- Changeable collectors
- Co-Axial nozzle system
- Heat controlled chamber
- Humidity controlled chamber
- Camera integrated chamber
- Atmosphere controlled tube
- Heating collector
- Vacuum holder collector


Comprehensive support of
the system and all spare
parts for 10 years

Ne200

Advanced single-nozzle model

Singlenozzle spinning

Changeable collectors

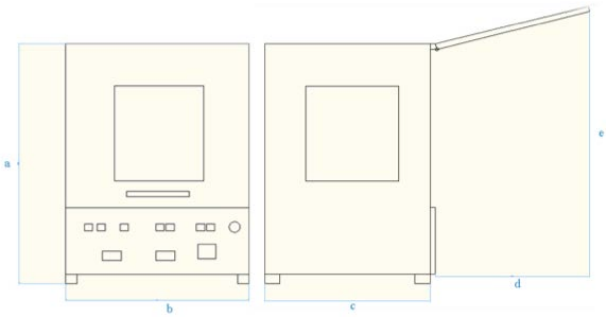
Buttom-up spinning

The NE200 lab scale electrospinning unit is the basic electrospinning unit for universities and R&D companies. It is aimed at simple nanofiber production for basic or beginner research.

Optional Accessories for Ne200

- Changeable collectors
- Co-Axial nozzle system
- Heat controlled chamber
- Humidity controlled chamber
- Camera integrated chamber
- Atmosphere controlled tube
- Heating collector
- Vacuum holder collector

General Description	
Model	NE200
Description	Single nozzle electrospinning unit
Spinning Type	Bottom-up spinning
Produced in	Turkey
Construction	
Chassis	Electrostatic Painted(RAL7031+RAL7024) Sheet Metal
Feeding Area Material	PE 1000(High Density, Chemical resistant)
Collector Material	7000 Series Aluminium Alloy
Windows	4 mm Transparent Glass
Total Weight	<110kg(3880 oz)
Dimensions	560mm (22.0") x 540mm (21.3") x 900mm (35.4")



Chassis Dimensions	
a	900mm(35.4")
b	560mm(22")
c	540mm(21.3")
d	475mm(18.7")
e	1080mm(42.5")

Collecting Area	
Collection Type	Changeable plate collectors (Round plate D130, two parallel rods, two opposite rods, four cross rods, 3D aligned fiber apparatus, yarn apparatus collectors)
Flat Plate Material	Aluminium
Spinning Distance	
Distance Between Nozzle and Collector	30mm(1.18") - 230mm(9.06")
Distance Adjustment Precision	1mm
Distance Adjustment Method	Linear Actuator
Distance Adjustment Speed	Constant / 6.6mm/sec(0.26 inch/sec)
Distance Indicator	Digital

High Voltage Power Supplier	
Produced in	United States (CE and ISO Certified)
Voltage Range	0- 40 kV
Voltage Precision	100V
Voltage Display	LED Screen
Max Current	0.75 mA
High Precision Micro Pump	
Produced in	United States (CE and ISO Certified)
Flow Rate	0.01-1000ml/h
Flow Rate Precision	0.01ml/h
Flow Rate and Volume Display	LED
Available Syringes	Standard 1, 5, 10, 20 and 50ml
Feeding Area	
Number of Nozzles	1pcs
Nozzle Material	Electrically conductive brass
Nozzle Inner Diameter	0.8 mm (0.31")
Minimum Required Solution for Single Nozzle Feeding	1ml

Automation
System Power Button
Emergency Stop Button
Safe Door Button
LED Illumination On/Off
Exhaust Fan On/Off
Spinning Distance Adjustment
Digital Spinning Distance Indicator
Pump On/Off
High Voltage Adjustment
Digital High Voltage Indicator
Technical Requirements
220 V 50/60 Hz Power Plug
External Grounding Line

NE200 Users	
Northeastern University	USA
University of Kentucky	USA
University of Basque Country	Spain
SUTD	Singapore
Alexandria Res. and Tech. City	Egypt
Marmara University	Turkey
Atilim University	Turkey


Technical consulting and
support with our
skilled team

Ne100

Single-nozzle basic model

Singlenozzle spinning

Flat plate collector

Buttom-up spinning

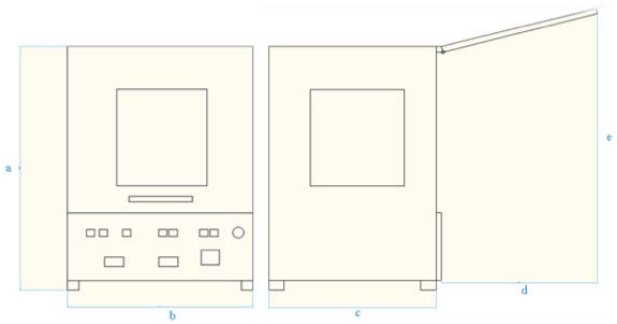
Single Nozzle & Polymer Jet

The NE100 is a basic, single-nozzle electrospinning unit that lets you to do basic spinning on an easy-plug round shape metal collector. It is designed for small-scale production of nanofiber mats.

Optional Accessories for Ne100

- Changeable collectors
- Co-Axial nozzle system
- Heat controlled chamber
- Humidity controlled chamber
- Camera integrated chamber
- Atmosphere controlled chamber
- Heating collector
- Vacuum holder collector

General Description	
Model	NE100
Description	Single-nozzle electrospinning unit
Spinning Type	Bottom-up spinning
Produced in	Turkey
Construction	
Chassis	Electrostatic Painted(RAL7031+RAL7024) Sheet Metal
Feeding Area Material	PE 1000(High Density, Chemical resistant)
Collector Material	7000 Series Aluminium Alloy
Windows	4 mm Transparent Glass
Total Weight	<110kg(3880 oz)
Dimensions	560mm (22.0") x 540mm (21.3") x 900mm (35.4")



Chassis Dimensions	
a	900mm(35.4")
b	560mm(22")
c	540mm(21.3")
d	475mm(18.7")
e	1080mm(42.5")

Automation
System Power Button
Emergency Stop Button
Safe Door Button
LED Illumination On/Off
Exhaust Fan On/Off
Spinning Distance Adjustment
Pump On/Off
High Voltage Adjustment
Digital High Voltage Indicator
Technical Requirements
220 V 50/60 Hz Power Plug
External Grounding Line

High Voltage Power Supplier	
Produced in	United States (CE and ISO Certified)
Voltage Range	0- 40 kV
Voltage Precision	100V
Voltage Display	LED Screen
Max Current	0.75 mA
High Precision Micro Pump	
Produced in	United States (CE and ISO Certified)
Flow Rate	0.01-1000ml/h
Flow Rate Precision	0.01ml/h
Flow Rate and Volume Display	LED
Available Syringes	Standard 1, 5, 10, 20 and 50ml
Feeding Area	
Number of Nozzles	1pcs
Nozzle Material	Electrically conductive brass
Nozzle Inner Diameter	0.8 mm (0.31")
Minimum Required Solution for Single Nozzle Feeding	1ml

Collecting Area	
Collection Type	Round plate D130
Flat Plate Material	Aluminium
Spinning Distance	
Distance Between Nozzle and Collector	30mm(1.18") - 230mm(9.06")
Distance Adjustment Precision	1mm
Distance Adjustment Method	Linear Actuator
Distance Adjustment Speed	Constant / 6.6mm/sec(0.26 inch/sec)
Distance Indicator	Manuel

NE100 Users	
Honeywell International Inc.	USA
National University of Singapore	USA
Hungarian Academy of Sciences	Spain
Ege University, Textile Lab	Singapore
Ege University, Biomaterial Lab	Egypt
K.MaraşSütçü İmam University	Turkey
Istanbul Technical University	Turkey
Dumlupınar University	Turkey
Düzce University	Turkey
Acıbadem University	Turkey
Gazi University	Turkey
Pamukkale University	Turkey

BasicSystem

Stand-Alone basic unit

Singlenozzle
multi direction

Flat plate
collector

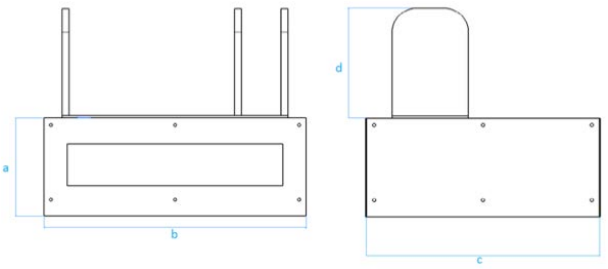
Stand alone
system

The stand-alone basic electrospinning system is designed for low-cost, small-scale nanofiber research, producing results from a single-nozzle configuration in a compact unit. Spinning distance, flow rate and applied voltage are all easily controlled in horizontal or vertical spinning mode.

Optional Accessories for Basic System

- Changeable collectors
- Co-Axial nozzle system

General Description	
Model	Basic system
Description	Single-nozzle electrospinning unit
Spinning Types	Bottom-up, top-down, side–by-side spinning
Produced in	Turkey
Construction	
Chassis	1.5mm stainless steel
Feeding Area Material	PE 1000 (high density, chemical resistant)
Collector Material	Stainless steel
Total Weight	<40kg (1410oz)
Dimensions	563mm (22.2") x 460mm (18.1") x 445mm (17.5")



Chassis Dimensions	
a	210mm(8.3")
b	563mm(22.2")
c	460mm(18.1")
d	235mm(9.3")

Automation
System Power Button
Emergency Stop Button
LED Illumination On/Off
Pump On/Off
High Voltage Adjustment
Digital High Voltage Indicator
Technical Requirements
220 V 50/60 Hz Power Plug
External Grounding Line
Basic System Users

Boğaziçi University	Turkey
Yalova University	Turkey
Ege University	Turkey
SüleymanDemirel University	Turkey
TUBITAK	Turkey
Yildiz Technical University	Turkey

High Voltage Power Supplier	
Produced in	United States (CE and ISO Certified)
Voltage Range	0- 40 kV
Voltage Precision	100V
Voltage Display	LED Screen
Max Current	0.75 mA
High Precision Micro Pump	
Produced in	United States (CE and ISO Certified)
Flow Rate	0.01-1000ml/h
Flow Rate Precision	0.01ml/h
Flow Rate and Volume Display	LED
Available Syringes	Standard 1, 5, 10, 20 and 50ml
Feeding Area	
Number of Nozzles	1pcs
Nozzle Material	Electrically conductive brass
Nozzle Inner Diameter	0.8 mm (0.31")
Minimum Required Solution for Single Nozzle Feeding	1ml

Collecting Area	
Collection Type	Flat plate
Flat Plate Material	Stainless Steel
Spinning Distance	
Distance Between Nozzle and Collector	30mm(1.18") - 300mm(11.8")
Distance Adjustment Method	Manuel
Distance Indicator	Manuel

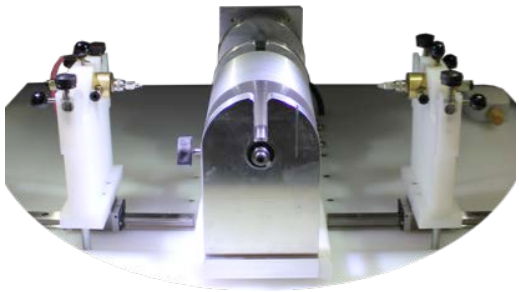
DoubleSpinner

Composite Nanofiber Production Unit

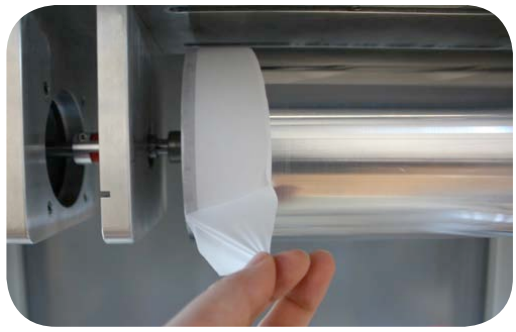
Double sided multinozzle

Horizontal spinning

Changeable collectors



Double Sided spinning mechanism



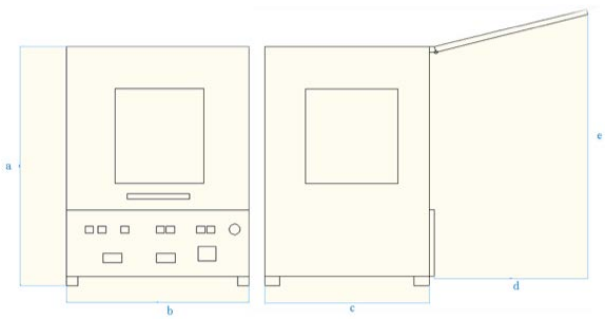
Membrane Layer collected on the cylinder collector

An advanced research unit that allows multi component nanofiber membranes to be produced through the use of separately controlled left and right spinner units.

Optional Accessories for Double Spinner

- Heat controlled chamber
- Humidity controlled chamber
- Camera integrated chamber

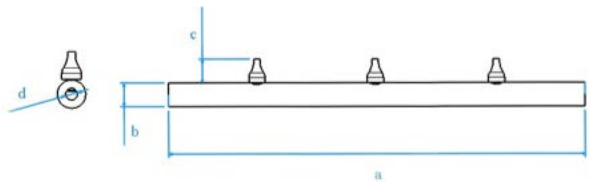
General Description	
Model	Doublespinner
Description	Multi-nozzle double-sided electros-pinning unit
Spinning Type	Double-sided horizontal spinning
Produced in	Turkey
Construction	
Chassis	Electrostatic painted (RAL7031+RAL7024) sheet metal
Feeding Area Material	PE 1000 (high density, chemical resistant)
Collector Material	7000 series aluminium alloy, stain-less steel
Windows	4 mm transparent glass
Total Weight	~220kg (7760oz)
Dimensions	800mm (31.5") x 800mm (31.5") x 1000mm (39.4")



Chassis Dimensions	
a	1060mm(41.73")
b	800mm(27.76")
c	800mm(24.80")
d	629mm(24,76")
e	1205mm(47.44")

Collecting Area	
Collector Types	Flat plate and rotating cylinder, shaft, disk
Cylinder and Disk Material	Aluminium
Flat Plate Material	Stainless steel
Cylinder Driving Method	BLDC motor
Cylinder Dimensions(D x L)	100mm (3.94") x 100mm (3.94")
Fiber Deposition Area	314 mm (12.4") x 100mm (3.94")
Cylinder Speed	100-2000RPM
Cylinder Surface Speed	Max. 10466mm/sec (412"/sec)
Coating Homogenity System	X-axis repetitive motion
Speed of Coating Homogenity System	Adjustable between 0 and 8.3mm/sec (0.33"/sec)
Spinning Distance	
Distance Between Nozzles and Collector	30mm (1.2") - 230mm (9")
Distance Adjustment Precision	1mm
Distance Adjustment Method	Linear actuator
Distance Adjustment Speed	Constant: 6.6mm/sec (0.26"/sec)
Distance Measurement Method	LED

High Voltage Power Supplier (x2)	
Produced in	United States (CE and ISO Certified)
Voltage Range	0- 40 kV
Voltage Precision	100V
Voltage Display	LED Screen
Max Current	0.75 mA
High Precision Micro Pump (x4)	
Produced in	United States (CE and ISO Certified)
Flow Rate	0.01-1000ml/h
Flow Rate Precision	0.01ml/h
Flow Rate and Volume Display	LED
Available Syringes	Standard 1, 5, 10, 20 and 50ml
Feeding Area	
Nozzles on Each Feeding Pipe Set	3,2,1 pcs
Number of Feeding Pipe Set	Up to 3 Sets
Number of Single Nozzles	Up to 3+3 standard nozzles
Number of Co-Axial Nozzles	2 pcs
Feeding Pipe Material	Aluminium
Nozzle Material	Electrically conductive brass
Nozzle Inner Diameter	0.8mm for single nozzle
Co-Axial Nozzle Inner Diameters	0.8-1.6 mm



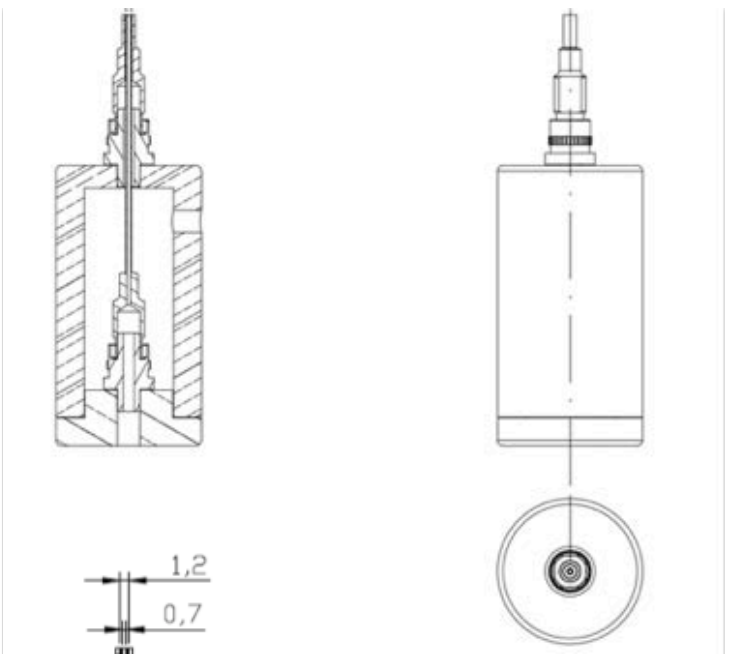
Feeding Pipe Set Dimensions	
a	140mm(5.5")
b	12mm(0.47")
c	12mm(0.47")
d	5mm(0,2")

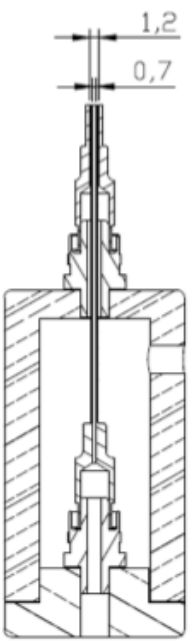
Automation
System Power Button
Emergency Stop Button
Safe Door Button
LED Illumination On/Off
Exhaust Fan On/Off
Cylinder Rotation On/Off
Digital Cylinder Speed Indicator & Control
Coating Homogenity System On/Off
Coating Homogenity System Speed Adjustment
Spinning Distance Adjustment (x2)
Digital Spinning Distance Indicator (x2)
Pump On/Off (x2)
High Voltage Adjustment (x2)
Digital High Voltage Indicator (x2)
Digital Temperature Indicator
Digital Relative Humidity Indicator
Technical Requirements
220 V 50/60 Hz Power Plug
External Grounding Line

Doublespinner Users	
Northeastern University	USA
Mena Diagnostic	Libya

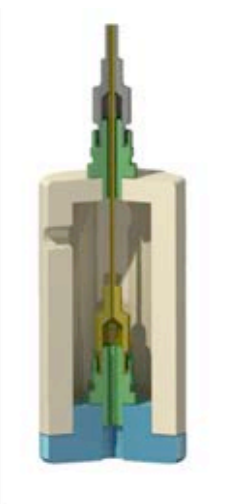
Co-Axial Nozzles (Brass & High Chemical Resistant Stainless Steel)

The Co-Axial Nozzles allows for the infusion of two different solutions at the same time to obtain core-shell nanofiber structures. It can be used with the Inovenso range of electrospinners as well as any other compatible model. The Luer-lock design allows for easy cleaning and maintenance and its only requirement is for two independent pump mechanisms.



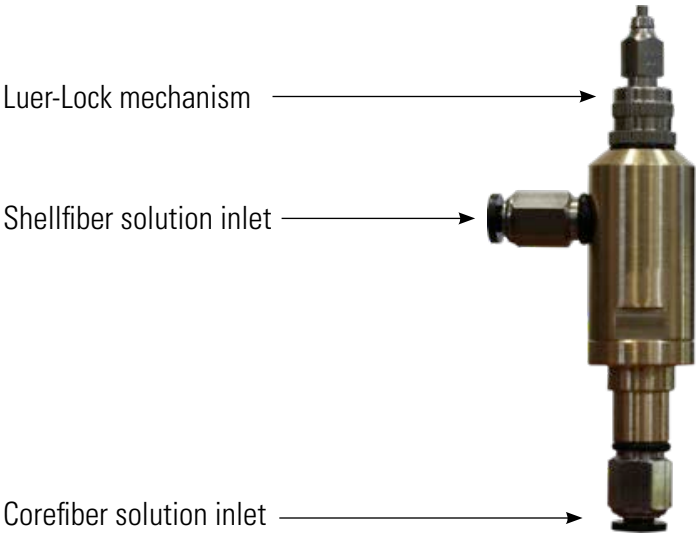


"Brass Co-Axial Nozzle"



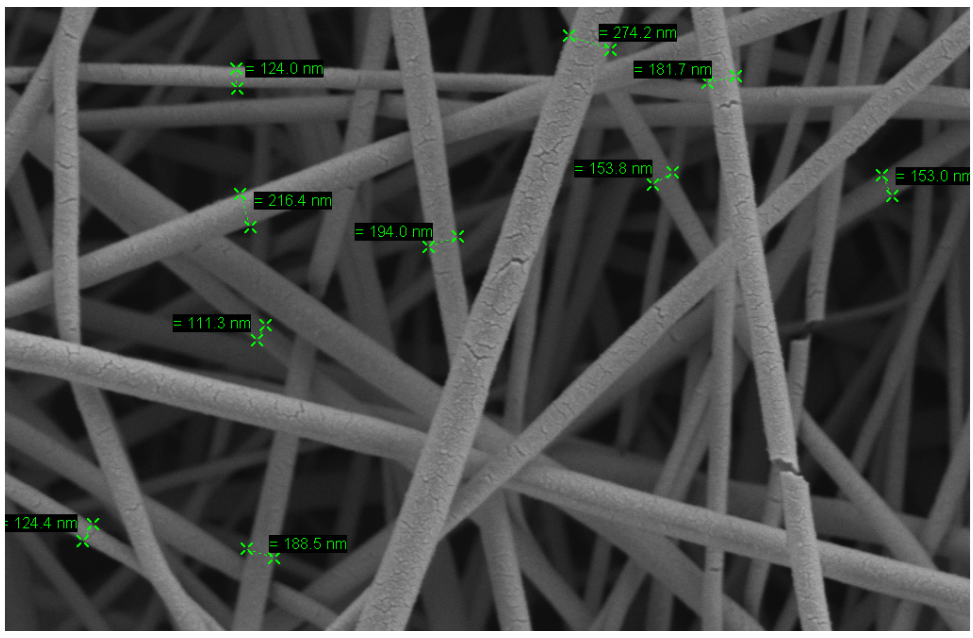
"High Chemical Resistant Stainless Steel Co-Axial Nozzle"

Co-Axial option package includes a Co-Axial nozzle, PE tubing for solution distribution from the pumps to the nozzle and an additional micropump.



Core and Shell outlets from top

Bicomponent Fiber formation with the Co-Axial Nozzles



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innovative engineering solutions

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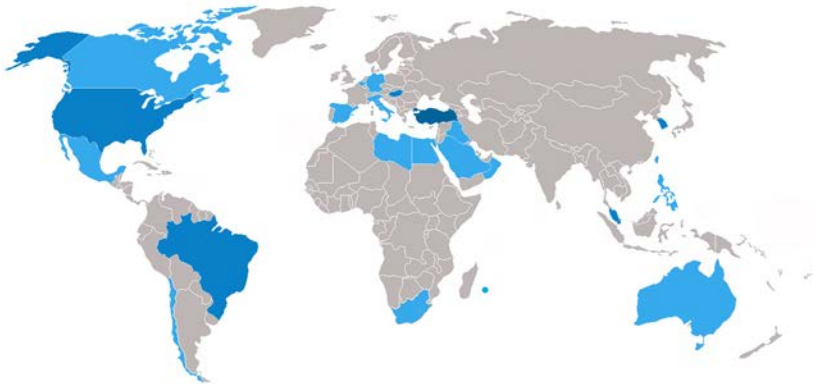

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