

The collage displays a variety of industrial and laboratory equipment and chemicals. Key items include:

- A large blue drum with a black lid, labeled "ELEION PLUS".
- Several bottles of "ELERO" and "SAVAN" chemicals, including "ELERO PLUS" and "SAVAN 210".
- A yellow spray bottle and a black sponge.
- A white bag of "ELEION PLUS".
- A can of "Blaser. SWISSLUBE".
- A Blaser spray can labeled "Korózióvédő Spray" and "Corro ochrana".
- A large stainless steel tank and a smaller stainless steel tank.
- A Blaser tube labeled "Blasotop".
- A complex industrial machine with a pump and filters.

Deionization

Ion exchange resin

⇒ Ion exchange resin is used for water treatment in EDM wire cutters and water treatment systems. This makes the water nonconductive, i.e. deionised water. The quality of the ion exchange resin is important for the cutting process. Poor ion exchange resin quality will not sufficiently reduce the conductivity of the water, and thus allow partial discharge of the electric-charge from the wire, through the water, to the working table of the machine and will reduce the cutting speed. We supply ion exchange resin of the highest quality.



Item No: DN/50/ELEION PLUS

Ion exchange resin ELEION PLUS extra-long life - barrel 50L ⇒ the best selling

Item No.: DN/25/ELEION PLUS

Ion exchange resin ELEION PLUS extra-long life - bag 25L ⇒ the best selling



Item No.: DN/50/MB9L

Ion exchange resin Amberlite - barrel 50L

Item No.: DN/25/MB9L

Ion exchange resin Amberlite - bag 25L

Containers for ion exchange resin



Container for ion exchange resin – stainless steel, fitted with hose quick-couplers

Item No.: NDN/8S - **capacity: 8L**
Ø_{contain.} 190mm, Ø_{total} 260mm, height 415mm

Item No.: NDN/12S - **capacity: 12L**
Ø_{contain.} 190mm, Ø_{total} 260mm, height 515mm

Item No.: NDN/16S - **capacity: 16L**
Ø_{contain.} 190mm, Ø_{total} 260mm, height 615mm

Item No.: NDN/20S - **capacity: 20L**
Ø_{contain.} 190mm, Ø_{total} 260mm, height 915mm



Container for ion exchange resin – stainless steel

Item No.:
NDN/30S - capacity: 30L

Information about delivery of other containers are available on request.

Deionization

Filters – strainers for stainless containers NDN/8S-20S



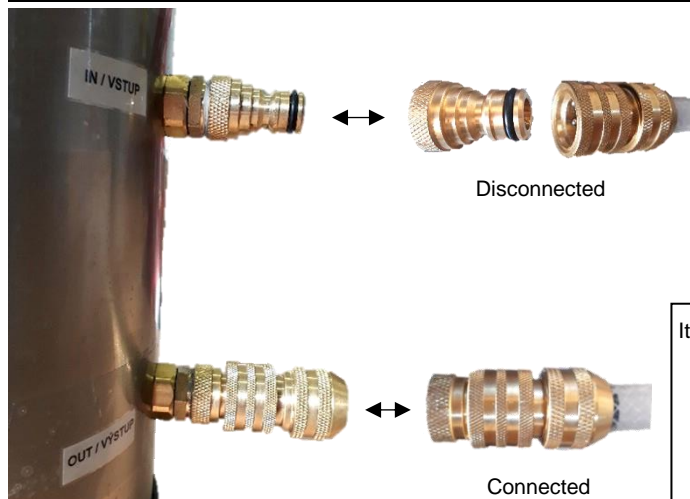
Item No.: HFS-NDN

Complete input (upper) filter-strainer for stainless containers NDN/8S-20S

Item No.: DFS-NDN

Complete output (lower) filter-strainer for stainless containers NDN/8S-20S

Quick-couplers for stainless containers NDN/8S-20S



Item No.: QC-NDN **Set of quick-couplers including the reductions and sealing for hoses connection to the stainless containers for ion exchange resin NDN/8S-20S**

- complete set for one container consist of:
- 2x quick-coupler male,
- 2x quick-coupler female,
- 2x reduction,
- 2x O-ring for sealing the inner part of stainless containers
- 2x O-ring for sealing the outer connection

Notice:

New containers NDN/8S-20S already contain a set QC-NDN

Extended objects gripper

Item No.: EOG-NDN

Extended objects gripper for output (lower) filter-strainer DFS-NDN mounting in stainless containers for ion exchange resin NDN/8S-20S

For simple manipulation with objects in deep and narrow space.
Adjustable length 80-120cm



Chemical preparations for EDM

Cleaner SAVAN 210 (concentrate)

SAVAN 210 cleaner for EDM wire cutters, EDM hole drillers and the work-piece - concentrate
Concentrate can be used also undiluted (pure concentrate) for heavily soiled areas of workpiece. It removes any dirt and corrosion produced during the cutting or drilling. Use a brush or rag to apply cleaner on soiled areas (or use bottle with sprayer to spray soiled areas). Allow to react a few minutes, then wipe with the clean rag. Finally, thoroughly rinse the cleaned area with water. Do not allow the cleaner to leak into dielectric system of machine. For complete cleaning of all dielectric system of machine it is recommended to dilute the product with machine and distilled (demineralised) water in the ratio:

1 part SAVAN 210 : 2 to 3 parts of distilled (demineralised) water.

Select the mixing ratio according to the degree of pollution, or use the cleaner undiluted.

Packaging:



Item No.: SAVAN 210/0,5
Spray bottle - volume 0,5L



Item No.: SAVAN 210/3
Canister - volume 3L

Cleaner ELECLEAN (concentrate)

ELECLEAN cleaner for EDM wire cutters, EDM hole drillers and the work-piece - concentrate
Concentrate can be used also undiluted (pure concentrate) for heavily soiled areas of workpiece. It removes any dirt and corrosion produced during the cutting or drilling. Use a brush or rag to apply cleaner on soiled areas (or use bottle with sprayer to spray soiled areas). Allow to react a few minutes, then wipe with the clean rag. Finally, thoroughly rinse the cleaned area with water. Do not allow the cleaner to leak into dielectric system of machine. For complete cleaning of all dielectric system of machine it is recommended to dilute the product with machine and distilled (demineralised) water in the ratio:

1 part ELECLEAN : 2 to 3 parts of distilled (demineralised) water.

Select the mixing ratio according to the degree of pollution, or use the cleaner undiluted.

Packaging:



Item No.: ELECLEAN/1
Bottle - volume 1L



Item No.: ELECLEAN/4x1+FR
4 x bottle – volume 1L + 1 spray bottle – volume 0,5L



Item No.: ELECLEAN/10
Canister 10L

Spray bottle



Item No.: FR
Spray bottle - empty

- volume 0,5L
- bottle allows simply application of cleaners SAVAN 210 or ELECLEAN, into working area of wire cutting EDM, hole drilling EDM, resp. to the workpiece

Chemical preparations for EDM

Cleaning abrasive block



Item No.: 446.253

Cleaning abrasive block (dimensions: approx. 19x50x80mm)

This rigid porous cleaning abrasive block is used to clean the work table of EDM wire cutters, EDM hole drillers and also workpieces. Suitable for use in combination with cleaners SAVAN 210 or ELECLEAN

Anti-corrosive liquid SAVAN RVH 600

This anti-corrosive liquid prevents corrosion of the workpiece and machine parts during cutting with EDM wire cutters.

It is poured directly into the demineralized water of dielectric system of the EDM wire cutters in the ratio:

0,5 L SAVAN RVH 600 into 100 L water

Packaging:



Item No.: SAVAN RVH 600
Canister - volume 3L



Item No.: SAVAN RVH 600
Canister - volume 5L

Anti-corrosive spray CORRO-protection

This is used to prevent corrosion of the workpiece during cutting. It should be sprayed as a continuous film onto the workpiece before cutting in the EDM wire cutters. Recommended drying time is a minimum of 2 hours.

After cutting clean the sprayed coating from the workpiece with a following cleaner - remover NOVACLEAN.



Item No.:
CORRO-protection
Spray - volume 400 ml

Cleaner – remover of anti-corrosive sprayed coating CORRO-protection from the workpiece after cutting - NOVACLEAN

It is use to quick remove of sprayed coat CORRO-protection from the workpiece after cutting in WEDM.

After this preparation spraying is coat of CORRO-protection on the workpiece immediately dissolved.

Let the dissolved coat drain away from the workpiece, or alternatively wipe off with cloth.



Item No.:
NOVACLEAN
Spray - volume 500 ml

Auxiliary equipment



Item No.: DWCM

Digital waterproof conductometer

- to measure a conductivity of water for EDM wire cutters and EDM hole drillers
- measuring range: 0-1999 $\mu\text{S/cm}$



Portable optical refractometer

- to measure the mixing ratio of liquids
- e.g. anticorrosion liquids in water of EDM wire cutters, dielectric for EDM hole drillers in water etc. ...

Item No.: Refractometer 0-32%

- measuring range: 0 - 32%
- accuracy 0,2%

Item No.: Refractometer 0-18%

- measuring range: 0 - 18%
- accuracy 0,1%



Single component adhesive

- is recommended for joining small adjacent surfaces
- suitable for electrode production materials, such as graphit, copper, copper tungsten...
- suitable for quick joining electrode production materials together with clamping pallets – palletisation for EDM

If necessary, we also provide the multi-component adhesives, suitable for larger surfaces to be glued.



Item No.: Z 041

Adjustable flow meter

- for the regulation of upper and lower head flushing in EDM wire cutters

Information about delivery of other auxiliary equipment for EDM are available on request.

Lubricants



Item No.:
Blasolube 301

- High-performance grease for linear guides and ball screws.
- Suitable for lubrication of bearings, pulleys and other machine parts in contact with water. Insoluble in water. NLGI 2.

Packaging: Metal box - content 900 g



Item No.:
Blasotop
(= grease Blasolube 301 in plastic cartridge 400g)

- High-performance grease for linear guides and ball screws.
- Suitable for lubrication of bearings, pulleys and other machine parts in contact with water. Insoluble in water. NLGI 2. Also suitable for grease gun MP1.

Packaging: Plastic cartridge - content 400 g



Item No.: MP1
Grease gun (lever press)

- With hose, fixed tube and 3 fittings
- For using with plastic cartridges e.g. with BLASOTOP



Item No.: MOBIL VACTRA No. 4
**Oil for the lubrication of linear guides
and ball screws - canister 20 L**

Suitable for machines with central distribution of lubricating oil

Information about delivery of other products are available upon request.

Water Demineralization

Professional Water Treatment System

This equipment is capable of converting regular water to demineralised water, which can be used in EDM wire cutters, EDM hole drillers and for many other industrial purposes. If demineralised water is used in metalworking machines mixed with the emulsion, the emulsion's lifespan is many times higher. Emulsion which is diluted with demineralised water is not subject of spoilage (odour) as fast as it is with using of regular water.

- => Treated water conductivity in range: 0 – 5 $\mu\text{S}/\text{cm}$.
- => Absolute filtration efficiency down to 0,2 μm , water is practically free of all solids.
- => Usage of quality demineralised water decreases wear of the ion exchange resin used in EDM wire cutters and significantly improves its service life.
- => High efficiency, in terms of the ratio of treated water to wastewater. This is much higher than with inexpensive hobby treatment units without pumps.
- => The high performance pump continuously backwashes the reverse osmosis membranes, thereby significantly extend membrane's service lifetime.
- => Minimal maintenance costs.

Two variants are offered: UV 1 and UV 2.

Item No.: UV1

- Capacity: Variable, around 15 l /hour.
(Depends on feed water quality)
Recommendation: not exceed 200 l of treated water per day.
- Power source: 230V / 50Hz
- Input power: 130W
- Weight: 30 kg
- Dimensions: Height 860 x Width 900 x Depth 320mm
- Standard installation: Wall mounted



Item No.: UV2

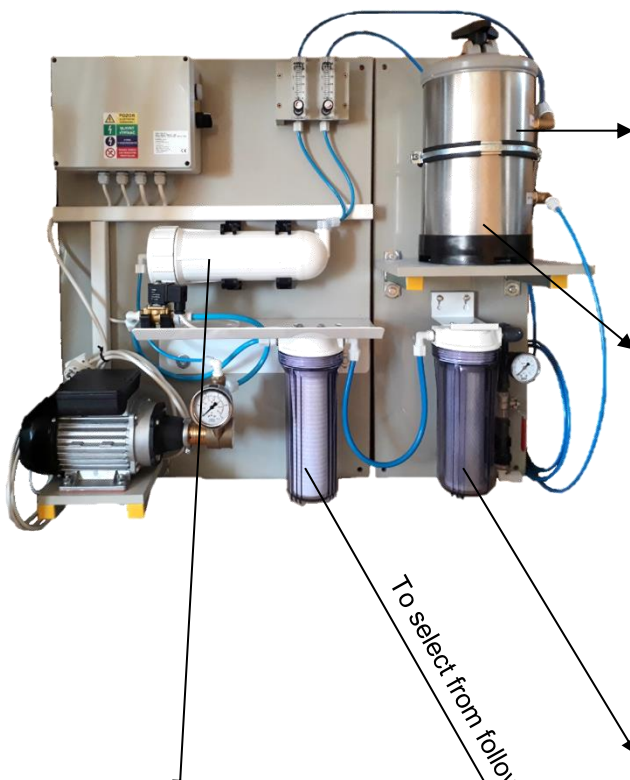
- Capacity: Variable, min. 30 l /hour max. 50 l /hour.
(Depends on feed water quality)
- Power source: 230V / 50Hz
- Input power: 350W
- Weight: 45 kg
- Dimensions: Height 860 x Width 1200 x Depth 320mm
- Standard installation: Wall mounted











Our professional-grade industrial water treatment system cannot be compared with the inexpensive hobby-grade household water treatment units.

Water Demineralization

Accessories for water treatment system



<p>Item No.: DN/50/ELEION PLUS barrel 50L</p> <p>Item No.: DN/25/ELEION PLUS bag 25L</p> <p>The best-selling ion exchange resin ELEION PLUS with extra-long life</p>	
<p>Item No.: HFS-NDN</p> <p>Complete input (upper) filter-strainer to stainless containers for ion exchange resin NDN/8S-20S</p>	
<p>Item No.: DFS-NDN</p> <p>Complete output (lower) filter-strainer to stainless containers for ion exchange resin NDN/8S-20S</p>	
<p>Item No.: JF-AU</p> <p>Fine filter with activated carbon 65x250x27mm Permeability: 10µm</p>	
<p>Item No.: MFRO/UV1</p> <p>Reverse osmosis membrane filter for water treatment system UV1</p> <p>76x298mm</p>	
<p>Item No.: SF-02</p> <p>Fine filter – without grooves 65x250mm Permeability: 5µm</p>	
<p>Item No.: SF-01</p> <p>Fine filter – with grooves 65x250mm Permeability: 5µm</p>	
<p>Item No.: SF-05</p> <p>Fine filter – wound type 65x250mm Permeability: 5µm</p>	

To select from following filters

Water Demineralization

Water treatment system accessories exchange intervals

Exchange intervals may vary significantly among individual users, depending mainly on the quality and purity of the inlet water and the intensity of water treatment system usage. For the average intensity of water treatment system usage, with inlet water from public water source, we recommend the following exchange intervals:

JF-AU Fine filter with activated carbon D65 x H250mm, permeability 10 micrometers:

Exchange on a quarterly basis or when the pressure drop of 0.8 bar.

SF-01 Fine filter – with grooves D65 x H250mm, permeability 5 micrometers:

Exchange on a quarterly basis or when the pressure drop of 0.8 bar

DN/25/ELEION PLUS or DN/50/ELEION PLUS

Ion exchange resin ELEION PLUS extra-long life - bag 25L, or barrel 50L:

Replace ion exchange resin with a new one when measures with handheld digital waterproof conductivity meter higher conductivity of final treated water. We recommend to exchange when conductivity of treated water becomes greater than 5µS / cm, but the latest at 15µS / cm. Stainless container for ion exchange resin holds about 8L of resin. It is the same ion exchange resin which is used in wire cutting EDM.

HFS-NDN and DFS-NDN filters – strainers for stainless containers:

In water treatment system UV1 is recommended exchange interval 1 time per year, or 1 time per 2 years according to intensity of water treatment system usage. Change if filling time of 50L barrel for treated water significantly increases. For example, if a new water treatment system filled a 50L barrel with treated water during approx. 3 hours, and now it takes much longer (treated water flow into barrel water is very weak, it is a signal to replace HFS-NDN and DFS-NDN. Mostly are changed together with MFRO / UV1.

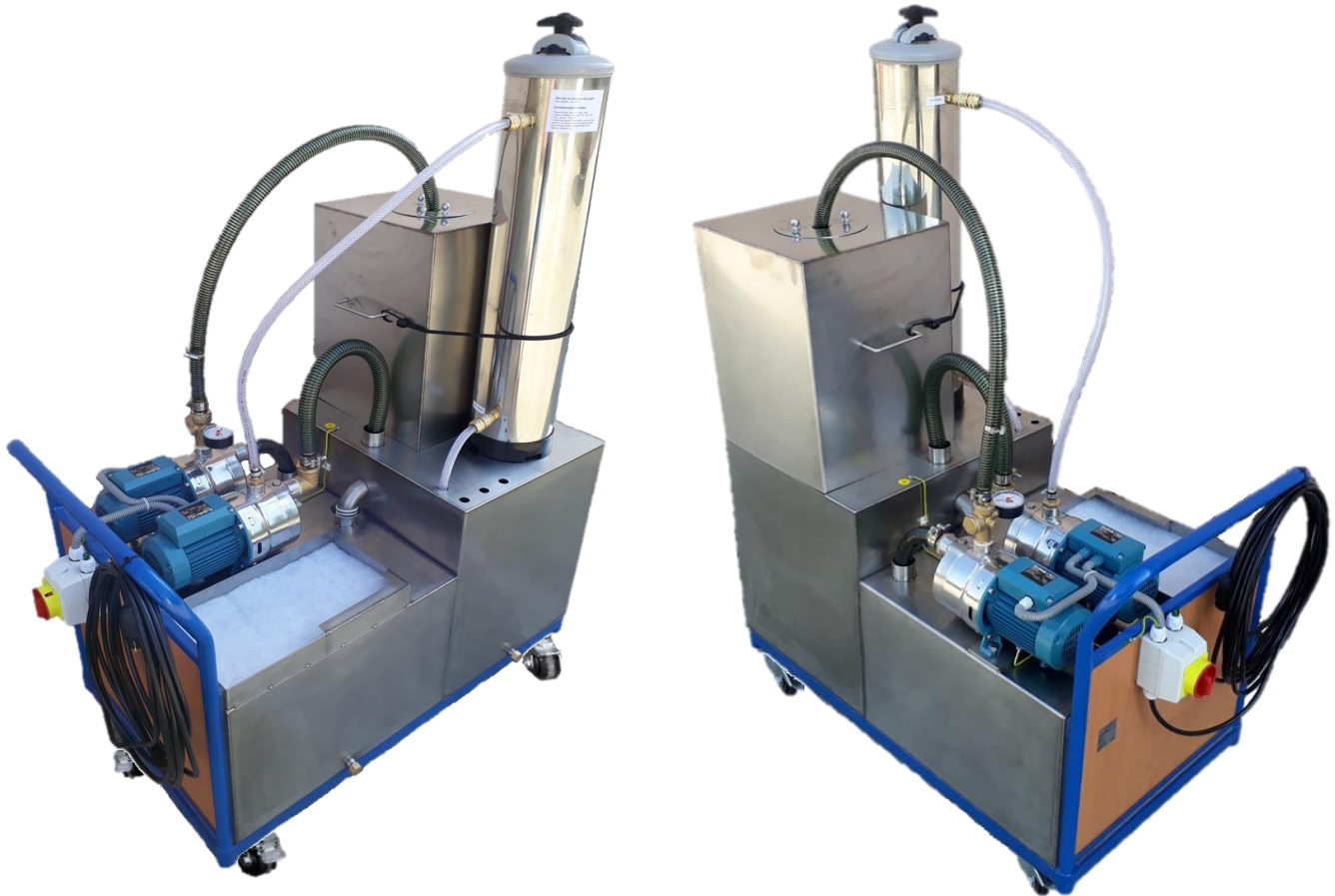
MFRO/UV1 Reverse osmosis membrane filter for water treatment system UV1:

It depends on the incoming water hardness and structure. Also on the amount of treated water. In some regions of Slovakia with extra hard water and with the maximum usage of water treatment system it last for a 1 year (or less). In areas with low water hardness and with the usage of water treatment system in lesser degree it lasts up to 7 years. This is individual. Change if filling time of 50L barrel for treated water significantly increases. For example, if a new water treatment system filled a 50L barrel with treated water during approx. 3 hours, and now it takes much longer (treated water flow into barrel water is very weak, it is a signal to replace. Mostly is changed together with HFS-NDN and the DFS-NDN.

FD1 Filtration a deionization device for EDM hole-drillers and other machines.

Item No.: FD1

Filtration a deionization device for EDM hole-drillers and other machines



Dimension with container for ion exchange resin [LxWxH]:	1160x640x1620mm
Dimension without container for ion exchange resin [LxWxH]:	1160x640x1220mm
Water tank volumes clean filtered and deionized water / with used water / together:	120 l / 120 l / 240 l
Container for ion exchange resin volume:	20 l

Filter: 1x filter SUPER340C or SUPER 340CS, also possible to use lower height filters SW-43-1

Technical parameters of filters are on next page, in section 2, or on our web pages: <http://www.elero.sk/Filtre.pdf>

Filtration medium: Distilled / demineralized water, or ordinary tap water

It is possible to produce the device without deionization, also for water with emulsion or for dielectric for die-sinking EDM

Power supply: 230V AC, 50Hz

Electric power input / electric power: 1300W / 900W

Electric power cable: 10m

Pumps have built-in idle protection

Notice:



Before pouring the water or other possible medium, disconnect device FD1 from electric power!

With electric installation and electric parts of device FD1, can only be handled by a person qualified to do so!

Accessories for FD1 filtration and deionization device for EDM hole-drillers and other machines.

Filters:

In FD1 filtration and deionization device for EDM hole-drillers and other machines are using the same filters - SUPER 340C or SUPER 340CS, which are using also in new EDM wire-cutters AGIE CHARMILLES, or FANUC.

Photo	Item No.	Machine	Dimensions Permeability	Filtrat. area m ²	Flow direct	Conne- ction	Specification
	Super340C (dual filter)	Charmilles Fanuc	Ø _{out.} 340mm Height 450mm 5µm	21,84	from out to in	Center G3/4'' Center Big Nipple	Robofil 240, 440SL CC-series CUT series Robocut CiA, CiB series
	Super340CS	Charmilles Fanuc	Ø _{out.} 340mm Height 450mm 5µm	15,80	from out to in	Center G3/4'' Center Big Nipple	Robofil 240, 440SL CC-series CUT series Robocut CiA, CiB series

Filtration material

Item No.: Filmat 13-20 **Filtration material of thickness 13-20mm**

- to filtration of coarse impurities on the hole of a lower tank
for used water

- Width of the roll 2000 mm x length we cut as required
- Can be ordered only in multiples of 2 m²
- Minimum order = 2000 mm x 1000 mm, i.e. 2 m²



Ion exchange resin:

Item no.: DN/50/ELEION PLUS

or

Item no.: DN/25/ELEION PLUS

... more information are available in this section, on page no.2.

Digital water conductometer:

Item No.: DWCM

... more information are available in this section, on page no.6.

Filters – strainers for stainless container for ion exchange resin NDN/20S

Item No.: HFS-NDN

and

Item No.: DFS-NDN

... more information are available in this section, on page no.3.

Extended objects gripper

Item No.: EOG-NDN

... more information are available in this section, on page no.3.