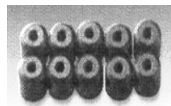


EQUIPMENT FOR EDM HOLE DRILLERS



Equipment for EDM hole drillers

TUBE ELECTRODES, as one of the basic commodities of EDM hole drillers are offered in a separate section - 4 "Tube and threaded/tapping electrodes".

FINE FILTERS for EDM wire cutters and EDM hole drillers

	PHOTO					
Item No.:						
	SF-02 without grooves	SF-01 with grooves	SF-05 wounded	SF-03 without grooves	SF-04 with grooves	H15190/16
Dimensions:	65x250mm			65x122mm		150×31×375mm
Permeability:	5µm			5µm		5µm
Machines:	Agie Charmilles Hitachi Makino			Agie Charmilles		Agie Charmilles Drill Series

Information about delivery of other filters are available on request.

Filter tank for one filter H15190/16



Item No.: FN1H15 Filter tank for one filter H15190/16

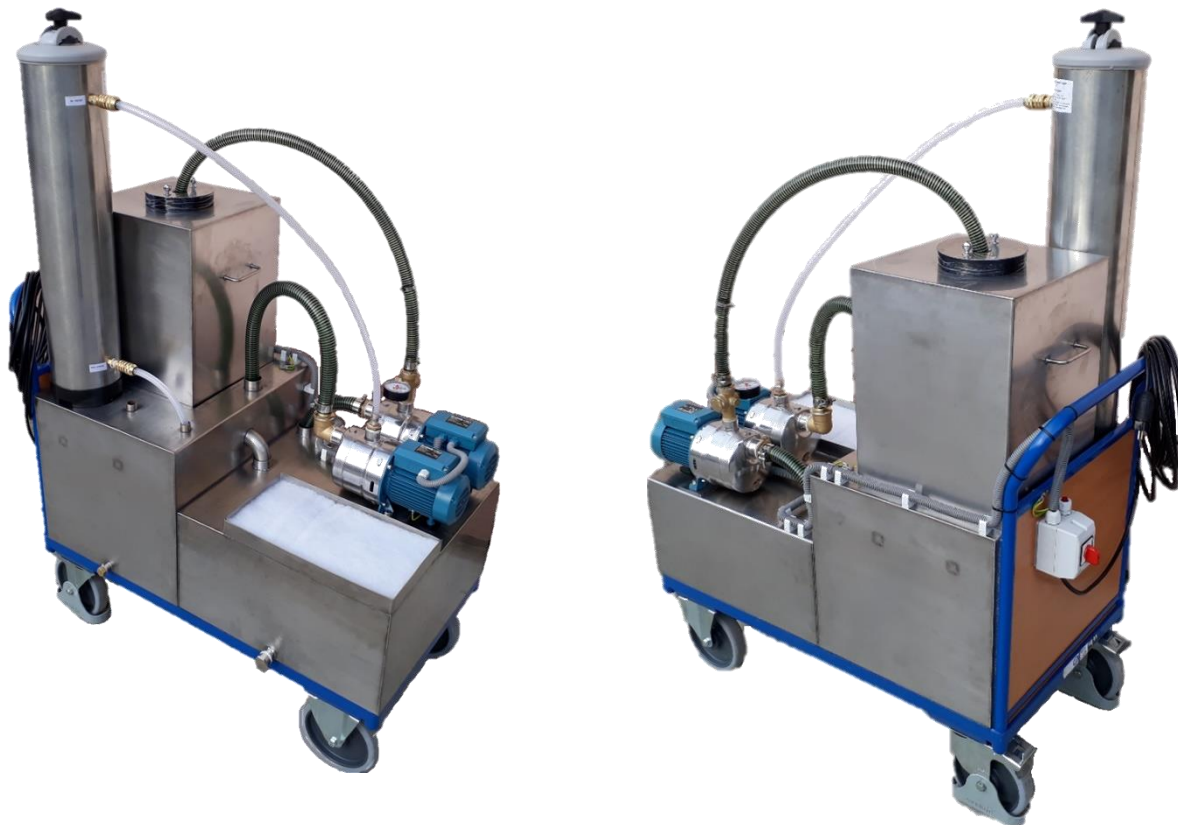


Filter tank with filter H15190/16 serves as replacement for small filters SF type in EDM hole driller's filtration part. Using a large filter H15190/16 increases the lifetime and filter replacement interval in hole drilling EDM. Filter tank is possible for using in older EDM, where had not suitably solved filtration system or where are not more available original filters.

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]:	1160x640x1665mm
Dimension without container for ion exchange resin [LxWxH]:	1160x640x1220mm
Water tank volumes clean filtered and deionized water / with used water / together:	84 l / 84 l / 168 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	$\varnothing_{out.}$ 340mm Height 450mm 5 μ m	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	$\varnothing_{out.}$ 340mm Height 450mm 5 μ m	15,80	from out to in	Center G3/4'' Center Big Nipple	Robofil 240, 440SL CC-series CUT series Robocut CiA, CiB series

Ion exchange resin:

Ion exchange resin is used for water treatment in FD1 filtration and deionization device for EDM hole-drillers and other machines. This makes the water nonconductive, i.e. deionized water. The quality of the ion exchange resin is important for the EDM hole-drilling 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 electrode, through the water, to the working table of the machine and will reduce the drilling speed. We supply ion exchange resin of the highest quality.

Water conductivity can be quickly and easily measure with the digital waterproof conductometer DWCM.



Item No: DN/50/ELEION PLUS

**Ion exchange resin ELEION PLUS extra-long life -
barrel 50L** $\Rightarrow$ the best selling

Item No.: DN/25/ELEION PLUS

**Ion exchange resin ELEION PLUS extra-long life -
bag 25L** $\Rightarrow$ the best selling

Digital waterproof conductometer

Water conductivity in FD1 filtration and deionization device for EDM hole-drillers and other machines can be quickly and simply measured with hand-held digital conductometer.

Item No.: DWCM Digital waterproof conductometer
- measuring range: 0-1999 μ S/cm



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

Filters – strainers for stainless container NDN/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

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



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



Dielectric for EDM hole drillers

SAVAN 400 (concentrate) - Switzerland

Item No.: SAVAN 400

Packaging: canister 3 L

Mixing ratio: 1 L of concentrate to 10 L of distilled (demineralised) water

- ⇒ Increases hole drilling speed
- ⇒ Prevents corrosion
- ⇒ Reduces electrode burning
- ⇒ Recommended by leading EDM hole drillers manufacturers in Europe and Asia



Chemical preparations for EDM

Cleaners SAVAN 210 and ELECLEAN (concentrate)

SAVAN 210 and ELECLEAN cleaners 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.

resp.: **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.



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



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



Item No.: ELECLEAN/1
Bottle 1L



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

Chemical preparations for EDM

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

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 cleaner SAVAN 210 or ELECLEAN

Anti-corrosive spray CORRO-protection

This is used to prevent corrosion of the workpiece during cutting in wire cutting EDM or drilling in hole drilling EDM.

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 or drilling in hole drilling EDM.

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.

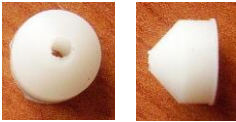


Item No.: NOVACLEAN
Spray - volume 500 ml

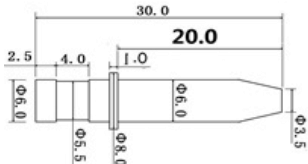
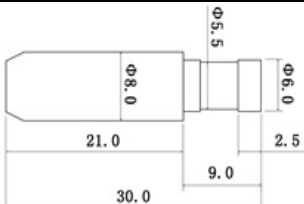
Spare parts for EDM hole drillers

Item No.	Description		For diameters	Photo
SU-001/set	Keyless chuck - complete	JT0 with female adapter (with inner thread)	0 ~ 3,0 mm	
SU-001	Keyless chuck	JT0 without adapter	0 ~ 3,0 mm (on request also for bigger diameters)	
ADAP1/SU-001	Female adapter (with inner thread) for keyless chuck SU-001 and SU-002/F			
SU-001 Max/set	Keyless chuck - complete	JT1 with female adapter (with inner thread) The same thread of adapter, as in SU-001/set resp. ADAP1/SU-001	0,3 ~ 6,5 mm	
ADAP2/SU-001	Male adapter (with outer thread) for keyless chuck SU-001 and SU-001/M			
SU-001/M	Chuck with key - set	Yukiwa with male adapter (with outer thread) KTC etc.	0,30 ~ 4,0 mm (on request also for bigger diameters)	
SU002/F	Chuck with key - set	Yukiwa with female adapter (with inner thread) Chmer Jinyoung ARD	0,30 ~ 4,0 mm (on request also for bigger diameters)	
SU-001/Ocean/set	Keyless chuck - complet	JT0 with adapter OCEAN, Huber	0 ~ 3,0 mm	
SU-003	Collet holder TYP I.: 0,00~0,50 a 0,50~1,00 mm		0,00 ~ 1,00 mm	
	Collet holder TYP II.: 1,00~1,50 a 1,50~2,00 mm		1,00 ~ 2,00 mm	
	Collet holder TYP III.: 2,00~2,50 a 2,50~3,00 mm		2,00 ~ 3,00 mm	
SU-004	Collets for SU-003		0,00~0,50 mm	
			0,50~1,00 mm	
			1,00~1,50 mm	
			1,50~2,00 mm	
			2,00~2,50 mm	
			2,50~3,00 mm	

Spare parts for EDM hole drillers

Item No.	Description		For diameters	Photo
SU-005	Rubber seal of tube electrodes D= 8 mm H= 6 mm		0,10 ~ 0,50 mm	
			0,60 ~ 1,00 mm	
			1,10 ~ 1,50 mm	
			1,60 ~ 2,00 mm	
			2,10 ~ 2,50 mm	
			2,60 ~ 3,00 mm	
R-004	Rubber seal of tube electrodes D= 7 mm H= 8 mm		0,30 ~ 0,80 mm	
			0,90 ~ 1,00 mm	
			1,10 ~ 1,80 mm	
			1,90 ~ 2,00 mm	
			2,10 ~ 2,80 mm	
TS-004	Rubber seal of tube electrodes for TS guide D= 7 mm H= 10 mm	From one side of seal is small universal hole, from opposite side is seal without hole.	0,30 ~ 3,00 mm	
			Universally type for diameters 0,30 ~ 3,00 mm	
C-ER16	Rubber seal of tube electrodes for collets ER16 D= 11,5 / 12,5 mm H= 7 mm		0,10 ~ 0,50 mm	
			0,60 ~ 1,00 mm	
			1,10 ~ 1,50 mm	
			1,60 ~ 2,00 mm	
			2,10 ~ 2,50 mm	
			2,60 ~ 3,00 mm	
			3,10 ~ 4,00 mm	
			4,10 ~ 5,00 mm	
	Rubber seal Charmilles HD30CNC Ø 8,6mm H=12mm	A/C: 200.007.058 335.009.134	0,2 ~ 1,00 mm	
		A/C: 200.007.060 335.009.136	1,1 ~ 2,00 mm	
		A/C: 200.007.062 335.009.138	2,1 ~ 3,00 mm	
	Seal cap HD30CNC Ø 6mm H=1,7mm	A/C: 333.010.463	0,2 ~ 1,00 mm	
		A/C: 333.010.464	1,1 ~ 2,00 mm	
		A/C: 333.010.465	2,1 ~ 3,00 mm	
	Rubber seal Agie Drill 20 Ø 8,5mm H=5mm	A/C: 335.014.866	0,5 mm	
		A/C: 335.014.867	1,0 mm	
		A/C: 335.014.868	2,0 mm	
		A/C: 335.014.869	3,0 mm	

Spare parts for EDM hole drillers

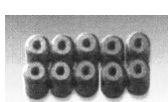
Item No.	Description		For diameters	Photo
SU-006/ Typ A	Ceramic guide Dclamping = 6 mm Type A		Available for diameters: 0,1-1,0mm	
SU-006/ Typ B	Ceramic guide Dclamping = 6 mm Type B		Available for diameters: 0,1-4,0mm	
SU-006/ Typ C	Ceramic guide Dclamping = 9 mm Type C		Available for diameters: 0,1-7,0mm	
SU-006/ L=80 B	Ceramic guide Dclamping = 6 mm Type B	Length L=80mm	0,2-3,0mm	
SU-006/ L=80 C	Ceramic guide Dclamping = 9 mm Type C	Length L=80mm	3,1-6,0mm	
SU-006/ SLIM- LONG	Ceramic guide (Longer, Slim) Dclamping = 6 mm Dbody = 3 mm	Lengths 50/75/100mm	0,3-1,0mm	
SU-006/ RB	Reduction bush for guides SU-006 with clamping diam. 6mm Dclamping = 9 mm	Reduction – for clamping of guides SU-006 with clamping diameter 6mm, into guide holder with diameter 9mm		 
IT-001	Collet for EDM hole drillers	ER-11	All sizes	
Z-011	Ceramic guide SU-006 holder		  	
Z-010	Protective cover against dielectrics splashing		  	

Spare parts for EDM hole drillers

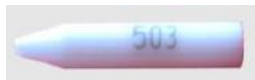
Item No.	Description	Sodick K1C		Photo
TS-001	TS guide * L=23mm D _{max} = 13 mm D _{clamping} = 10mm * On request we provide also extended versions	Sodick K1C	0,30 ~ 3,00 mm	
TS-002	Collets for TS guide	Sodick K1C	0,30 ~ 3,10 mm	
TS-003	Spacer for TS guide	Sodick K1C	0,30 ~ 3,10 mm	
TS-004	Set of rubber seals for TS guide D= 7 mm H= 10 mm	Sodick K1C	0,30 ~ 3,00 mm	
TS-001 set	Compact set of TS guide	Guide 1 pc	for 0,30 ~ 3,00 mm	
		Collect 1 pc		
		Spacer 1 pc		
		Rubber seals 10 pc		
	TS guide Ceramic body + sapphire insert 23x10mm	Sodick K1C Matra BT Charmilles SH2	0,32 ~ 3,02 mm	
	Compact set of TS guide	Guide 1 pc	0,32 ~ 3,02 mm	
		Collet 1 pc		
		Spacer 1 pc		
		Rubber seals 10 pcs		
	TS extension guide Stainless steel body + sapphire insert 50x10mm	Sodick K1C Matra BT Charmilles SH2	0,32 ~ 3,02 mm	
	TS extension guide Stainless steel body + ceramic insert Different lengths are available	Sodick K1C Matra BT Charmilles SH2	0,3 ~ 3,00 mm	

Spare parts for EDM hole drillers

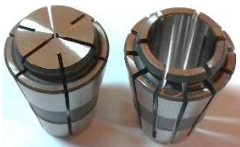
Item No.	Description	Sodick K1C		Photo
	Lock nut	3503843		
	Valve set	2081590	pumpa SF30	
	Piston packing	596934 022364 2081589	pumpa SF30	
	OMNI seal	0225733		
	Back-up ring	0223708		
	O-ring	2070362	P6	
	Carbon brush	3503548		

Item No.	Description	AGIE CHARMILLES ACT spark		Photo
ACT-001	Guide L=35mm D _{max} = 16 mm D _{clamping} = 12mm	SD1M	0,30 ~ 3,00 mm	
ACT-002	Collect for TS guide	SD1M	0,40 ~ 3,10 mm	
ACT-003	Spacer for TS guide L=10mm, D=8,0mm	SD1M	0,40 ~ 3,10 mm	
ACT-004	Set of rubber seals for TS guide	SD1M	1,00 ~ 3,20 mm	

Spare parts for EDM hole drillers

Item. No.	Description		Machine	Diameters	Photo
	Guide ETC Stainless body + ceramic insert 42x16x12 mm		Agie Drill * Typ Electrodechanger	0,30 ~ 3,00 mm	
	Ceramic guide ø5h6 5 x 12,6mm		Agie/Charmilles	0,30 ~ 3,00 mm	
	Guide holder L=18mm	5H6	Agie/Charmilles	Single size for ceramic guide	
		2.5H6			
	Guide holder L=35mm	5H6	Agie/Charmilles	Double size for ceramic guide	
		2.5H6			
	Ceramic tip for microerosion 2,0x12,6mm		Sarix + other	0,053mm	
				0,058mm	
				0,063mm	
				0,068mm	
				0,073mm	
	Ceramic tip 2,5x12,6mm		Sarix + other	0,103 ~ 1,015 mm	
	Taper guide Stainless body + sapphire insert 24x14mm		Sodick K1CS, K1CN	0,32 ~ 3,02 mm	
	Taper extension guide Stainless body + sapphire insert 50x14mm		Sodick K1CS, K1CN	0,32 ~ 3,02 mm	
	Guide Makino Stainless body + ceramic insert 21x10mm		Makino EDNC30F, EDGE1, EDG2	0,02 mm	
				0,06 mm	
				0,07 mm	
				0,08 mm	
				0,1 -2,0 mm	
	Guide Makino Stainless body + ceramic insert 21x10mm		Makino EDNC30F, EDGE1, EDG2	0,1 ~ 3,0 mm	

Spare parts for EDM hole drillers

Item. No.	Description	Machine	Diameters	Photo
	Guide ELENIX Stainless body + sapphire insert L=31mm	ELENIX CT/ST/JT/MT/ - series	0,3 ~ 4,5 mm	
	Guide ELENIX extension type A Stainless body + sapphire insert L=61mm	ELENIX CT/ST/JT/MT/ - series	0,3 ~ 1,8 mm	
	Guide SEIBU Stainless body + ceramic insert 14x20 mm	SEIBU old models	0,3 ~ 3,0 mm	
	Guide SEIBU Stainless body + ceramic insert 14x40 mm	SH100 B/C	0,3 ~ 3,0 mm	
	Guide AGEMA Brass body + sapphire insert 5x5mm	Agema	0,2 ~ 2,0 mm	
	Collet for EDM hole drillers AGEMA	Agema	All sizes	
	Guide AGIE Stainless body + ceramic insert 10x8mm	AGIE old models	0,2 ~ 3,0 mm	
BS11	Electrode holding system with tungsten-carbide core	For older AGIE DRILL	0,09 ~ 3,0 mm (supplied for a specific electrode diameters)	
	Swivel joint 28,5x70mm	1/8NPT RH Heun Apos		
		M10x1 Agie Drill		
	Lock nut M22x1,5	Heun Apos	To fix ceramic pipe guide together with collet ER16	

Spare parts for EDM hole drillers

	Collets	Heun Apos	0,5 ~ 6,0mm (supplied for a specific electrode diameters)	
	Electrode holder	Heun Apos		
	Guide CDM Stainless body + ceramic insert 12 x 38mm	CDM-Rovella	0,3 ~ 3,0 mm	
SU-007	Filter SUS 3µm			

Information about delivery of other spare parts and goods are available on request.