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EDM

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How to Place an Order for Supplies & Accessories

Simply call our 800 number, Fax your order to 1-800-325-7584, or visit our Web Site at www.intech-edm.com to order on-line. Please provide:

- Your company name and customer account number, if available.
- Name of person placing order, and telephone number.
- Catalog number, quantity and description – include machine brand, model number, serial number and OEM part number, if known.

- Shipping method and any special instructions.
- Purchase order number.

Please note that we accept American Express, Discover, MasterCard and Visa as payment for purchases.

Then enjoy Intech's **60 Day Return Policy*** and **95% Same-day Service Level***.

* See Ordering Information, page 1.3, for details.

Customer Service



Since our Customer Service Representatives interact with so many customers, having many different models of EDM machines, they've had to become the most knowledgeable in the business. The variety and complexity of machines our customers use present two challenges to us.

First, because the parts often look very much alike, it can be confusing as to which part is for which machine model. Second, since each machine model has different characteristics, it's important for us to be familiar with that machine so we can recommend the correct accessory, wire or other product.

To answer these challenges, Intech EDM has developed the most comprehensive on-line computer database in the EDM industry. It identifies all known machine models, and the exact replacement parts, wire and other products each requires.

We continue to refine this system, and are constantly updating it with new information as it becomes available. It's now so smart, we call it **Intech Knows**.

Talk to any of our Customer Service Representatives and tell them about your machine – the brand, complete model number, serial number, and date manufactured (if you know it) – and **Intech Knows** will help us make sure we ship you the correct product for your specific machine.

The logo for EDM, consisting of the letters "EDM" in a bold, white, sans-serif font on a blue rectangular background.

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Dielectric Fluids Technical Information

The following information and graphics are updated excerpts from a publication authored by Frederick H. Herdman, President of Commonwealth Oil Corp., entitled "Everything You Always Wanted to Know About EDM Fluid, but Were Too Afraid to Ask". We believe this to be the definitive statement regarding the specifications and performance characteristics of sinking EDM dielectric fluids, and feel it will be extremely useful to our customers. We appreciate Fred's contribution to our industry.

The appropriate ASTM Tests are referenced, where applicable. ASTM is the American Society of Testing Materials and is the recognized body for establishing proper test methodology and procedures.

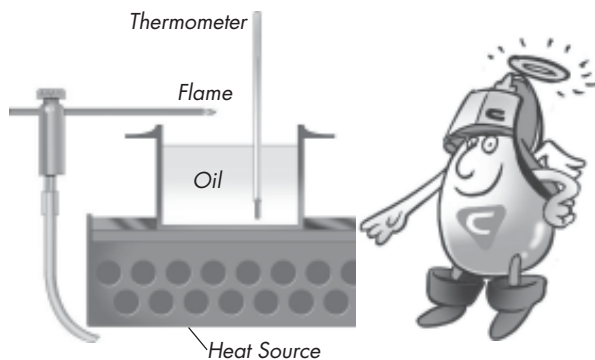
Petroleum Hydrocarbons

Natural petroleum hydrocarbons are an organic compound consisting exclusively of the elements carbon and hydrogen. They are derived principally from petroleum, coal tar and plant sources and are generally grouped into three types – aromatic, naphthenic and paraffinic. For environmental and health reasons, Commonwealth Oil uses paraffinic hydrocarbons whenever possible.

Most synthetic fluids are manufactured from chemical constituents or by polymerization of hydrocarbons (olefins), rather than by conventional refining processes. When compared to conventional oils, synthetics are more expensive, but have better oxidation stability, higher flash points, higher auto-ignition temperatures, lower volatility, and are less corrosive and toxic.

Flash Point

ASTM D92-52 (Cleveland Open Cup)



When a liquid petroleum product is exposed to air, some of it evaporates, causing a certain vapor/air concentration. As the temperature of the liquid product is raised, more and more evaporates, and the vapor/air ratio increases.

Eventually, a temperature is reached at which the vapor/air ratio is high enough to support momentary combustion, *only if a source of ignition is present; an important differentiation from auto-ignition*. This temperature is the Flash Point of the product.

Auto-Ignition Temperature

ASTM 659-78

If no ignition source is present, as heat increases above the product's flash point a temperature is reached at which the product will ignite spontaneously, without an external source of ignition. This is called the auto-ignition temperature of the fluid.

Product	Flash Point (°F)	Auto-Ignition Point (°F)
EDM Fluid (Oil)	259	410
Synthetic EDM	266	428
Mineral Seal Oil	260	455
Unleaded Gas	-40	752
Diesel Fuel	100	482
K-1 Kerosene	100	485
Propane	-108	878
Octane Booster	40	1,000

A comparison of typical Flash Points and Auto-Ignition temperatures of various products.

Viscosity

ASTM D445-82

Viscosity is a measure of a liquid's resistance to flow. It arises from internal friction, which occurs when one layer of molecules of a solvent moves past an adjoining layer in that liquid. A higher viscosity value indicates the fluid is more "viscous", and flows more slowly than a lower viscosity fluid.

Viscosity is most commonly measured in Centistokes (cSt) @ 40°C or in Saybolt Universal Seconds (SUS) @ 100°F. It varies inversely with temperature; i.e., the warmer the fluid becomes, the thinner, or lower viscosity.

Viscosity is an important factor when considering an EDM fluid. Lower viscosity means the fluid is easier to pump and it results in better flushing characteristics.

– Continued on Page 5.4

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Dielectric Fluids Technical Information

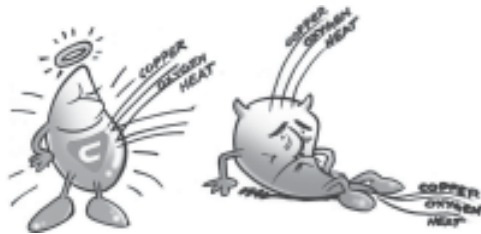
Oxidation Stability

ASTM D2272

Oxidation is a form of deterioration; a chemical reaction that occurs between portions of the oil and whatever oxygen may be present. The oxidation of oils is accelerated by high temperature catalysts, such as copper. The rate of oxidation increases with time and temperature, and oxidation tends to raise the viscosity of an oil.

Oxidation stability is an important factor in the prediction of an oil's performance. The higher the operating temperature, the greater the need for oxidation stability, especially if water, catalytic metals or dirt are present.

Oxidation Stability is a very important consideration when selecting an EDM fluid. Lower quality, low cost fluids will oxidize much more quickly and shorten the life of the fluid by as much as 5-7 years. We always prefer graphite electrodes as the material of choice.



Acid Number

ASTM D-974

This test indicates an EDM fluid's life expectancy. A specific quantity of KOH (potassium hydroxide) is required to counter-balance the acid characteristics. How high an acid number can be tolerated depends on the oil and service conditions. An acid number in excess of 0.5 indicates a fluid at the end of its life expectancy.

Acid number is a measure of oxidation stability; the lower the number, the higher the stability; and higher stability results in longer fluid life and greater predictability in your costs.

Evaporation Rate

ASTM D3539-76

Petroleum solvents are volatile materials, and

evaporation rate can be an important factor in some applications, including EDM. Typically,



evaporation rate is never constant for a mixture of compounds, but varies throughout the entire process.

Evaporation rate is important in EDM; it should be as slow as possible, to the point of almost being nil. Re-

duced evaporation means fewer top-ups of new fluid, and operators do not unnecessarily expose their respiratory systems to EDM fumes.

Conductivity/Dielectric Constant

ASTM D877

Dielectric Strength/Breakdown Voltage is the minimum voltage required to produce an electric arc through the fluid. This value is the measure of the insulating (arc preventive) properties of an EDM fluid. A low dielectric-strength value usually indicates contamination from dirt and/or water, which is often introduced into a system by compressed air.

Distillation Range

Distillation of any hydrocarbon product takes place over a range of temperatures. Initial boiling point (IBP) is the temperature at which the liquid begins to boil, and final boiling point (FBP) is the last measurable temperature prior to complete evaporation.

The narrower the distillation range, the fewer varieties of chemicals and hydrocarbons are present; thus a purer fluid. A narrow range also means a more uniform rate of evaporation for the whole fluid, with a resultant consistency in viscosity and flushing characteristics.

Avoid fluids with an IBP of less than 470°F.

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Dielectric Fluids

Technical Information

Specific Gravity (Density)

ASTM D287

Density is the weight of a given product per unit volume (i.e. pounds per gallon), and is usually given as specific gravity. This is important

Comparative Weights/Gallon	
Product	Density (Lbs/Gal)
EDM Fluid (Oil)	6.42
Synthetic EDM Fluid	6.49
Mineral Seal Oil	6.89
10W-30 Motor Oil	7.30
Water	8.34
Tapping Fluid	11.05

to the EDM operator because the higher the density of a given fluid (the more it weighs per gallon), the longer any electrode material or metal particulate will stay in suspension.

A fluid with a high density/specific gravity usually indicates poor life expectancy. A fluid which is too dense is undesirable, particularly with older machines, since too much micro-fine particulate matter in suspension can lead to uncontrolled DC arcing.

Sulfur Content

The more highly refined EDM fluids require extremely low sulfur levels. These products must be non-reactive and non-corrosive, and free of the odors caused by sulfur.

EDM fluids should not be considered for use with sulfur above 3 ppm.

Odor

High quality EDM fluid should be virtually odorless. *The presence of a fuel or solvent type odor will always be a first indicator of a poor quality EDM fluid.*

Color

Buy an EDM fluid listed as 30+ Saybolt, which means it is water white. *Any EDM fluid that is not water white (clear, colorless) out of the barrel is virtually guaranteed to contain hazardous components. In addition, a fluid with low oxidation stability will discolor very quickly.*

Aromatic Hydrocarbons

Any product with an aromatic content greater than 0.05% should be considered too dangerous. *Aromatics are carcinogenic!* Examples are:

Toluene – CAS: 108-88-3 The 27th highest volume chemical produced in the U.S. (1985). Used in gasoline, adhesives, airplane glue, saccharin, and perfumes.

Benzene – CAS: 71-43-2 The 16th highest volume chemical produced in the U.S. (1985). Used in detergents, solvents, chemical intermediaries, and in the manufacture of Maleic Anhydride (permanent press resins for textiles, and pesticides).

Low quality EDM fluids almost always contain high levels of free aromatic hydrocarbons; occasionally in excess of 17%! Aromatic hydrocarbons are usually carcinogenic.

Summary

As can be seen, the desirable characteristics of a modern EDM dielectric fluid are:

- High oxidation stability: >600 minutes ASTM D877
- Low viscosity: 32 to 36 (SUS @100°F)
- High dielectric strength: > 50Kv ASTM D877
- Odor – Nil
- Narrow distillation range
- IBP >470°F (243°C)
- Low specific gravity/density: typically 6.5 Lb/Gal
- Low aromatic content: <0.1%



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Premium Dielectric Fluids from the World's Leading Manufacturer of EDM Fluids

As the world's leading manufacturer of EDM fluids, Commonwealth Oil has created a family of fluids with exceptional purity and long-term stability. They are notable for:

- Extremely low aromatic and sulphur content; minimal fumes, negligible odor and low risk of skin irritation.
- Very high resistance to oxidation, and a narrow distillation range with high boiling points, providing extremely low volatility, reduced evaporation and long service life; saves money by requiring less "topping off" and less downtime for maintenance & cleaning.
- Optimum dielectric strength for maximum metal removal rates and low electrode wear.
- High purity; water white.
- Approvals from leading automotive and aerospace firms; and nuclear facility approved.
- Exceptional value – competitive price, outstanding EDM performance, and longest service life.

EDM 244™

The most popular premium, general purpose dielectric fluid in the EDM industry, EDM 244 is notable for its combination of low viscosity and high flash point for enhanced safety. It has an optimum blend of characteristics which can be used in all applications on all sinking EDM machines, and provides outstanding service life and oxidation stability. The benefits of using EDM 244 include:

- Longer fluid life.
- Reduced DC arcing.
- Reduced recast layers.
- Faster, more efficient flushing.
- Proven performance industry-wide.
- Approved for use in nuclear facilities.
- High API gravity allows rapid settling of particles in filter.
- Reduced mold polishing times

due to higher dielectric strength.

EDM 259T™

Similar to EDM 244 above, this fluid is specially formulated to be compatible with Transor™ Filtration Systems, and is specifically approved by Transor for use in their systems. Its use helps avoid filter clogging, reduces polishing time, and provides smoother, cleaner cuts.

EDM Super Supreme™

A super-premium dielectric fluid, EDM Super Supreme provides a unique combination of low viscosity and high flash point, with unsurpassed life expectancy and stability. In addition, it is fortified with skin emollients to make it operator-friendly, which helps prevent skin defatting from fluid exposure. Through the inherent nature of its formulation and manufacturing process, EDM Super Supreme offers the longest life of any dielectric fluid, and will not degrade under high amp conditions, high temperatures or in the presence of copper electrodes.

- World's best synthetic dielectric fluid.
- Less corrosive than conventional fluids; rubber component friendly.
- Extremely low toxicity.
- Superior stability and longevity; will not grow "old" and extend burn times.
- Aerospace approved.
- Very low evaporation rate.
- High dielectric strength.

EDM Supreme T™

Similar to EDM Super Supreme above, with the unique characteristics of a superior blended synthetic fluid, EDM Supreme T is specially formulated to be compatible with Transor™ Filtration Systems, and is specifically approved by Transor for use in their systems. Its use helps avoid filter clogging, reduces polishing time, and provides smoother, cleaner cuts.



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Premium Dielectric Fluids

from the World's Leading Manufacturer of EDM Fluids

EuroSupreme™

The newest synthetic dielectric fluid available today, EuroSupreme is ideal for demanding operations that require a rugged fluid.

- Very high flash point while maintaining a low viscosity.
- Extremely low evaporation rate. Operator exposure to fumes is greatly reduced.
- This fluid will not degrade, even at high amps.
- No hazardous components.
- Rubber-component friendly.

Vitality™

Vitality is the first ever bio-enriched dielectric fluid, and is the safest and most "human-friendly" fluid ever formulated for EDM use. It is a super-synthetic manufactured using pharmaceutical grade, health-promoting components.

- Contains natural anti-carcinogens and natural antioxidants, including forms of Vitamins A, D and E.
- The fluid of choice for operators with super-sensitive skin.
- Very low viscosity and very high flash point.
- Extremely low volatility and evaporation rate.

EDM 185™

EDM 185 is a special fluid, developed specifically by Commonwealth Oil to have a very low viscosity rating, and will find wide acceptance with EDM operators producing very fine, intricate work, at very close tolerances, that is typified by narrow gap cutting. The lower viscosity provides rapid and efficient flushing at the point of cut, improving speed of operation and providing better surface finishes and higher accuracy.

- Superior purity and resistance to oxidation.
- Intended for fine, close tolerance sinking applications, or any application where flushing with conventional fluids is less

than satisfactory.

- Odorless and colorless.
- Compatible with all standard filtration media; i.e. paper, diatomaceous earth, edge wafer cartridges, etc.

Micro-Fine 49™

Micro-Fine 49 has been specially formulated for use in machines requiring fine particulates to be held in suspension for extended periods of time. This fluid is particularly ideal for high speed sinking, high surface finish machine applications. The suspended particulate aids spark formation under rapid cutting settings for increased productivity.

- Proven field performance under demanding applications.
- Low viscosity for rapid flushing and high flash point for enhanced safety.
- Clear, colorless fluid; high purity.
- High dielectric strength.
- A Food Grade Oil.
- Ideal for Makino HQSF™ machine technology.

SparkMaster™

SparkMaster is a special, economical fluid which has been developed to give EDM customers a quality alternative to cheap oils which don't hold up over time. Its high flash point makes it ideal for machines dedicated to roughing operations with high amperage cutting, such as shoe molds.

- Environmentally safe; odorless and colorless.
- Reduced misting.

- Compatible with most filtration media.
- Works with all ferrous metals, aluminum, copper, brass and bronze.
- Free of halogens, solvents, PCB's and ozone depleting compounds.

– Please Turn to the Next Page for Specifications and Ordering Information



Technical Data

Property	ASTM Test Method	EDM 244	EDM 259T	EDM Super Supreme	EDM Supreme T	Euro-Supreme	Vitality	EDM 185	Micro-Fine 49	Spark-Master
Viscosity, SUS @ 100°F	D-445	34.1	34.1	36	34.3	35	34	32	34	37.3
Viscosity, cSt @ 40°C	D-445	2.45	2.45	3.0	2.50	2.7	2.5	1.76	2.40	3.4
Flash Point °F, COC	D-92-52	239	239	266	221	257	237	180	>221	280
Specific Gravity @ 60°F	D-1298	0.770	0.770	0.770	0.770	0.770	0.770	0.798	0.790	0.848
Density @ 60°F Lbs./Gallon	D-1298	6.413	6.413	6.41	6.41	6.413	6.41	6.645	6.58	7.06 @ 68°F
Color (Saybolt)	D-156	30+ Water White	30+ Water White	30+ Water White	30+ Water White	30+ Water White	30+ Water White	30+ Water White	Clear, Colorless	Clear, Colorless
Odor	—	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Aniline Point °F	D-611	198	198	213	205	213	213	169	194	174
Dielectric Strength Kv/2.5mm	D-877	50	52.5	>55	>35	>53	>55	N/A	50	N/A

Ordering Information

Catalog No.	Commonwealth Grade	Description	Catalog No.	Commonwealth Grade	Description
H02440	EDM 244	330 gallon tote	H05000	Vitality	330 gallon tote
H00244	EDM 244	55 gallon drum	H00500	Vitality	55 gallon drum
H02445	EDM 244	5 gallon pail	H05005	Vitality	5 gallon pail
H00259	EDM 259T	55 gallon drum	H00185	EDM 185	55 gallon drum
H02595	EDM 259T	5 gallon pail	H01855	EDM 185	5 gallon pail
H00355	EDM Super Supreme	330 gallon tote	H00049	Micro-Fine 49	55 gallon drum
H00300	EDM Super Supreme	55 gallon drum	H00495	Micro-Fine 49	5 gallon pail
H03005	EDM Super Supreme	5 gallon pail	H02800	SparkMaster	330 gallon tote
H00400	EDM Supreme T	55 gallon drum	H00280	SparkMaster	55 gallon drum
H04005	EDM Supreme T	5 gallon pail	H02805	SparkMaster	5 gallon pail
H00600	EuroSupreme	55 gallon drum			
H00605	EuroSupreme	5 gallon pail			

Also available in tankerloads and 330 gallon totes (pictured at right next to 55 gallon drum). Tote dimensions – 39.5" wide, 47.5" deep, and 54.5" tall (designed to fit on a 40 sq.ft. pallet).



EDM 244, EDM 259T, EDM Super Supreme, EDM Supreme T, Vitality, EDM 185, Micro-Fine 49, SparkMaster, and EuroSupreme are all trademarks of Commonwealth Oil Corporation.

Dielectric Fluids



Dielectric Fluid Specifications		
Product	Flash Point, °F COC	Viscosity @ 100°F SUS
BP 180	180	31.3
BP 200	194	33.9
BP 200T	226	32.6
Alectrol 240	240	32
Grade 25W	170	32.1
Premium Grade 30	210	32.5 to 34

Premium Grade 30

- Low viscosity
- Better gap penetration
- Improved metal removal
- Universal EDM usage

Catalog No.	Description
H00009	55 gallon drum

ALECTROL 240

- Refined dielectric oil
- Superior Oxidation Stability
- Low viscosity
- Low odor

Catalog No.	Description
H00007	55 gallon drum

Grade 25W

- Low viscosity
- Non-irritating
- Pleasant aroma

Catalog No.	Description
H00008	55 gallon drum

BP 180

- Very low viscosity
- High oxidation resistance
- No odor; water-white
- Recommended for close tolerance, narrow-gap cutting applications

BP 200

- Medium viscosity
- High oxidation resistance
- No odor; water-white

- Recommended for general purpose applications; combines good flushing with high erosion rates and good finish

BP 200T

- Low viscosity
- High oxidation resistance
- No odor; water-white
- Premium synthetic fluid; recommended for *all* applications; exceptionally long life

BP Ordering Information

Catalog No.	BP Grade	Description
H00005	180	55 gallon drum
H00013	180	5 gallon pail
H00006	200	55 gallon drum
H00020	200T	55 gallon drum
H00025	200T	5 gallon pail

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Torit Dust Collectors

Cabinet Style Filters

- "Good", economical solution for less demanding applications
- Low cost, easy to install
- No compressed air required for operation
- Compact design reduces required head room and floor space
- Contaminant is easily removed from the base of the collector
- 99.9% overall efficiency by weight
- Clean air can be recirculated
- Low, dirty air inlet acts as a pre-cleaner to prolong filter life
- Direct drive fan on clean air side offers maximum efficiency, life and reliability
- Mild steel construction with a blue enamel finish.
- Models 75 and 84 include:

TEFC Motor
Drawer Base
Filter Bags
Manual Shaker
Fan and Fan Housing
Mild Steel Construction
Blue Enamel Paint



Optional Hopper and 5 Gal. Pail Pack shown



VS Style Filters

- "Better" solution for tougher requirements
- Automatic filter shaker mechanism operates independently of the machine operator during shutdown
- Two stage filtration easily handles large and small particulate
- 300 micron nylon screen captures large particles to prolong filter life
- No compressed air required for operation
- Compact design reduces required headroom and floor space
- 99.99% efficiency down to 0.5 micron particles
- Clean air can be recirculated
- Direct drive fan on clean air side offers maximum efficiency, life and reliability
- Mild steel construction with blue enamel finish
- No tools required for filter change
- Blower chamber acoustically treated to attenuate blower noise
- Inlet baffle acts as precleaner; prolongs filter life
- Models VS-550, VS-1200, & VS-1500 include:

TEFC Motor, Drawer Base Ambient or Delta Pre-Wired Cleaning Control, Filter Cartridges, Customer Specified Inlet Collar (Location 1 of 4 Positions), Mild Steel Construction, Blue Enamel Paint

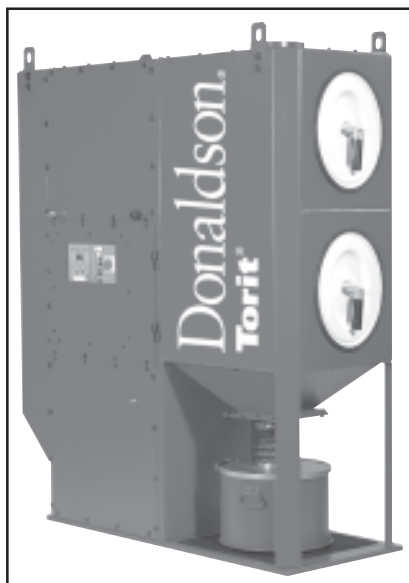


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Torit Dust Collectors

Downflo® Oval 1™

- The “best” Torit model; offers 25% more filtration capacity than same-sized cartridge collectors
- Very Fine Particle Collection – operating efficiency of 99.999% on a .5 micron particle
- Lower initial cost per CFM
- Fewer filter change-out
- Reduced filter disposal cost
- Easy system set-up
- Less maintenance
- 10 year warranty
- Easy-to-Use – quick-release handles provide easy cover removal and faster filter access
- Compact – smaller footprints for maximum cleaning efficiency in smaller spaces
- Cost Effective – patented ExtraLife™ Filter Cleaning System averages up to 30% increase in pulse cleaning energy for unmatched cleaning ability
- Innovative – unique oval-shaped Ultra-Web® cartridge filters provide the longest filter life and highest filtration efficiency
- Complete – packaged with power pack, controls, silencer, damper, dust container and more



Model DFO 2-2

Ordering a Torit Dust Collector

Since there are a myriad of options, configurations, sizes, etc., Torit Dust Collector products almost always have some degree of customization, and they are typically engineered for your specific application; usually using standard components. Therefore, we strongly suggest you provide us with the following information so we can prepare a customized quotation for your specific needs:

1. Type of dust?
2. Continuous or intermittent duty cycle?
3. Daily operational hours?
4. Number of days per week of operation?
5. Duct work size (ID or OD)?
6. Required air flow (in CFM)?
7. Airstream temperature?
8. Total system static pressure (in w.g.)?
9. Approximately how much dust is being generated?
10. Filter preference – cartridge or bag?
11. Will the collector be located indoors or outdoors?
12. Voltage: 110V, 220V, 208V, 230V, 460V, 575V?
13. Single or 3-phase motor?
14. Will you need a motor starter and controls for the collector?
15. Do you have any special space constraints?

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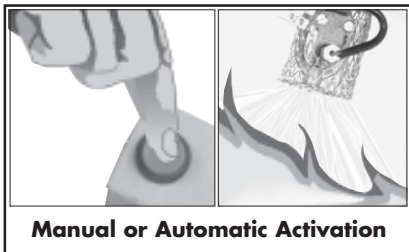
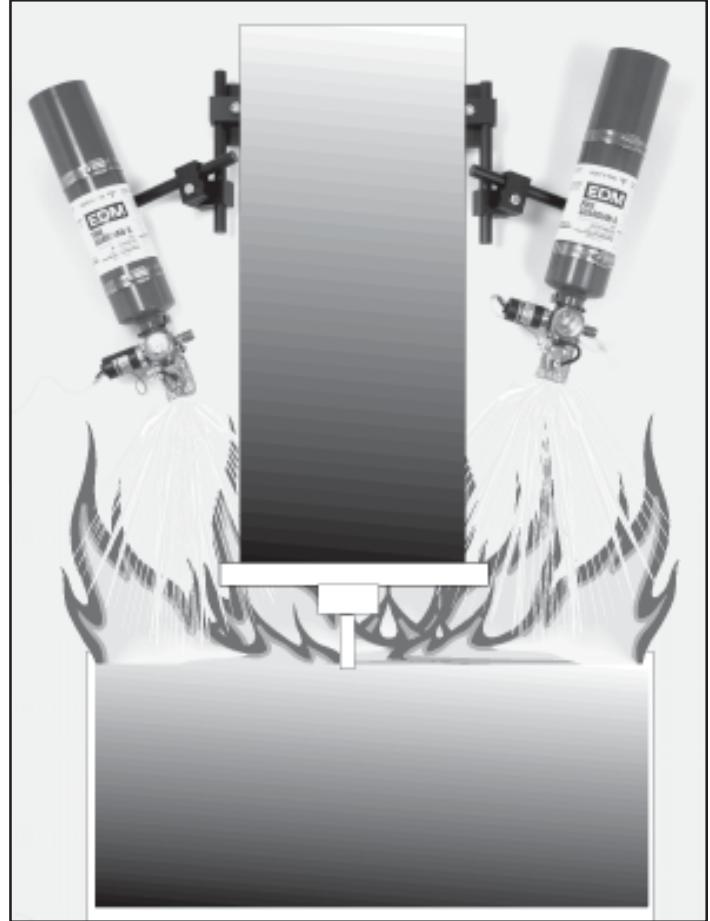
Fire Guardian 3

The Ultimate Automatic Fire Extinguisher & Alarm System for Your Sinking EDM Machine

Even in the most professionally managed sinking EDM operations, the possibility of fire exists in the dielectric tank. Many tragic fires have occurred when dielectric fluids or gases have been ignited during EDM operations by the electrical discharge spark in the gap.

Fire Guardian 3 is the latest design update to the well-known and widely used Fire Guardian product developed by Intech EDM many years ago. Automatically activated by heat, or manually by machine-mounted push button, the system floods the work tank with proven Halon 1211 vapor, extinguishing a fire in just seconds. When activated, the system shuts down the machine's power supply to prevent re-ignition, and it sounds a loud warning horn.

- Halon vapor dissipates quickly, leaves no residue, and it's nontoxic – won't contaminate your dielectric fluid.
- Can cover a work tank area of up to 8 square feet.



Manual or Automatic Activation

- New installation instructions.
- New testing instructions, including a test light to verify that installation is correct.
- New wire connections.
- Easily installed on any sinking EDM machine; operates on standard 115/120V AC. Systems come complete with mounting brackets, warning horn/smoke alarm,

control box with manual push button, and wiring.

- Automatically activates at 154°F; activates manually with machine-mounted push button.
- Warning horn is also a smoke alarm; can alert you of heavy smoke emissions which may precede a fire. New 3-way grounded plug for horn.
- Automatically shuts down EDM machine power supply to prevent re-ignition.
- Single or dual extinguisher systems; two sizes.
- Reduces insurance costs*.

** Consult your insurance carrier. Important Note: Fire Guardian 3 is not intended for "lights out", completely unmanned operation, and any use in such manner is done at the machine owner's own risk.*



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Fire Guardian 3



- ❶ Halon** extinguishers, including temperature sensors and wiring leads.
- ❷ Mounting bracket.
- ❸ Combination warning horn/smoke alarm.
- ❹ Control box with manual push button and system "On" light.

** EDM Fire Guardian 3 utilizes re-cycled Halon 1211, which is readily available and approved for this application.

Size Recommendations

- Model L-2 has 2 – 2-3/4 lb. extinguishers and can cover a tank size up to 4 sq. ft. in area.
- Model L-4 has 2 – 5 lb. extinguishers and can cover a tank size up to 8 sq. ft. in area.
- It is recommended that 2 extinguishers be used on normal installations because the ram or quill partially blocks the vapor spray pattern from a single extinguisher. The extinguishers should be mounted as close to the work area as possible and pointed directly at the electrode.
- Under ideal conditions (no blockage from flush nozzles, tooling, etc.), a small, bench-type machine may utilize a single extinguisher.
- If in doubt, please consult Intech EDM. Recommendations and technical assistance are available to help you select the correct system and also to guide you through the installation process.

Ordering Information

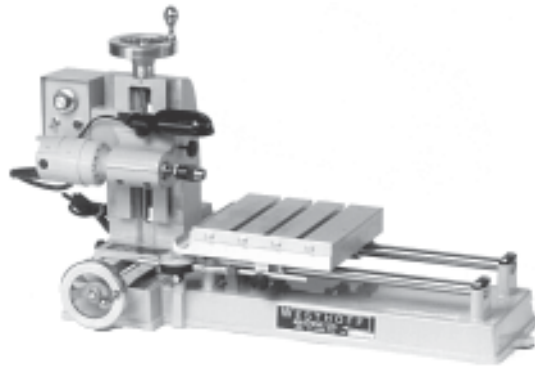
Catalog No.	Description
AZ9168	Model L-2 System: 2 – 2-3/4 lb. extinguishers, mounting brackets, control box with push button, warning horn/smoke detector, wiring & instructions
AZ9169	Model L-4 System: 2 – 5 lb. extinguishers, mounting brackets, control box with push button, warning horn/smoke detector, wiring & instructions
AZ9170	Model L-2(1) System: 1 – 2-3/4 lb. extinguisher for single coverage, mounting bracket, control box with push button, warning horn/smoke detector, wiring & instructions
AZ9171	Model L-4(1) System: 1 – 5 lb. extinguisher for single coverage, mounting bracket, control box with push button, warning horn/smoke detector, wiring & instructions
AZ9172	Additional L-2 2-3/4 lb. extinguisher complete with sensor & wire leads
AZ9173	Additional L-4 5 lb. extinguisher complete with sensor & wire leads
AZ9174	Additional mounting bracket
AZ9176	Refill – recondition and recharge your used L-2 2-3/4 lb. extinguisher bottle;
AZ9177	Refill – recondition and recharge your used L-4 5 lb. extinguisher bottle

EDM

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Westhoff Drilling Machine



Catalog No.	Description
AZ1100	Model 100-1 Drilling Machine Complete (8-½" Table Travel)

Series 100 Specifications	
Overall Size	18" High x 24" Wide x 26" Long
Weight	50 lbs.
Work Table	8-½" x 8-½" with 5-½" Travel (100-2) or 8-½" Travel (100-1)
Head Travel	4-½" Vertical
Horizontal Travel	12"
Spindle Speed	Rheostat (solid state) 0 to 15,000 R.P.M.
Chuck	Albrecht Keyless 0-1/8"; capacity with through hole 1/16" x 5" deep
Work Table Load Capacity	30 lbs.
Motor	1/10 H.P. 115 V.
Lead Screws	Stainless steel with 10 pitch ground thread
Dials	Aluminum anodized; friction setting graduated by .001"
Lead Nut, Wear Pads & Gibs	Wear-resistant, self lubricating nylatron
Base, Column Head & Work Table	Cast aluminum for light weight and durability; base and table are ribbed constructed for added strength and rigidity
Bearings	Linear ball bushings for ease of linear motion
Shafts	60 Case hardened and precision ground for durability and minimum warpage

Providing proper dielectric coolant and flushing flow is one of the most important factors in successful EDMing.

Now you can drill holes in your electrodes down to .005" in diameter to ensure a proper volume of dielectric flow in even the most difficult of EDM applications, such as "Thin Blades" and "Ribs".

The Westhoff Drilling Machine is an ultra-sensitive tool designed and built specifically to perform this critical function.

Flush Hole Drills

All flush hole drills sold in packs of 5.

Catalog No.	Diameter (In)	Length (In)	Flute Length (In)
AZ1101	.0135	2	3/8
AZ1102		4	3/4
AZ1103	.020	4	3/4
AZ1104		6	1-1/4
AZ1105	.025	4	3/4
AZ1106		6	1-1/2
AZ1107	.031	4	1/2
AZ1108		6	1-1/2
AZ1109	.040	4	1/2
AZ1110		6	3
AZ1111	.052	4	1/2
AZ1112		6	3
AZ1113	.062	6	3
AZ1114	.078	6	3
AZ1115	.093	6	3
AZ1116	.120	6	3



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Electro-Glove



The ideal hand protection; forms an invisible barrier (or "glove") that protects hands and forearms against stains, paint, oil, dielectric fluids, grease, inks, etc. It helps keep hands clean, and makes clean-up easy – just wash away. Protects cuts and scratches. Pump dispenser included with gallon container.

Catalog No.	Size	Quantity/Pack
H20002	Quart	4
H20003	Gallon	2

Electrobond Adhesive

For Bonding Graphite to Graphite

Electrobond Adhesive differs from conventional adhesives in that it contains no solvents, and bonding occurs without the use of heat, catalysts or excessive pressure. Available in 1 oz. bottles or as a complete kit. *Note:* For long shelf life, store in a refrigerator.

Catalog No.	Description
H10001	1 oz. Bottle with Dispensing Spout
H10005	Complete Bonding Kit 1 – 1 oz. Electrobond Adhesive 1 – 2.3/4 oz. Surface Activator Solution 1 – 2 oz. Electro-Conduit

Dielectric System Cleaning Agents

Use these Commonwealth Oil products in sequence, prior to changing your dielectric fluid, to clean grease, grit and grime from your machine's system. EDM Ram Cleaner* is a low foaming liquid cleaner, and EDM Flushing Fluid is a food-grade quality flushing oil. For technical details, call Intech EDM Customer Service.

Catalog No.	Description
H00051	EDM Ram Cleaner* – 55 gallon drum
H00052	EDM Ram Cleaner* – 5 gallon pail
H00061	EDM Flushing Fluid* – 55 gallon drum
H00062	EDM Flushing Fluid* – 5 gallon pail

* A Trade Mark of Commonwealth Oil Corp.

Electro-Conduit

For Bonding Graphite to Graphite

When using Electrobond Adhesive, use nickel-based Electro-Conduit when bonding graphite to either graphite or metal to ensure good conductivity.

Catalog No.	Description
H10030	2 oz. Bottle

EDM Surface Finish Scale



Surface finish scale has 9 accurate specimens of EDM surfaces on tool steel, from 16 to 250 micro inches. Includes leather case.

Catalog No.	Description
AZ9093	EDM Surface Finish Scale

Commclean™ Floor Cleaner



The Phosphate Free, Professional Cleaner for Your Factory Floors, Trucks and Other Hard Surfaces

- A bio-stable cleaner effective for removing oil, grease and dirt.
- Excellent detergency at room temperature.
- Effective in hard water areas; safe on all metals and painted surfaces.
- Completely biodegradable (no phosphates); compatible with most sewage waste water treatment systems.
- Moderate foam, easy rinsing; does not leave a slippery residue.
- A product of Commonwealth Oil Co.

Catalog No.	Description
C30005	5 Gallon Pail
C30055	55 Gallon Drum

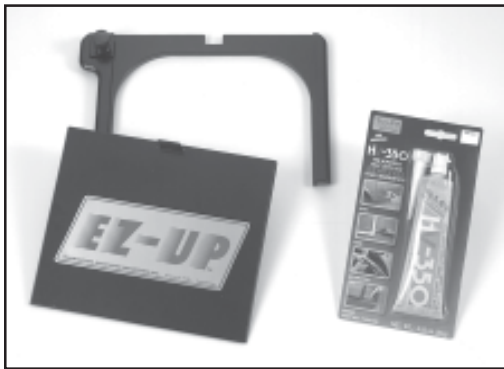
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Vortex 800™ Dust Guard



Vortex 800 Dust Guard Housing



EZ-UP Dust Guard Door Upgrade Kit

Vortex 800 Dust Guard Housing for Surface Grinders

- Installs easily in minutes
- Meets OSHA Regulations
- Revolutionary "Sliding Door" design with lock; minimizes loss of suction force with infinitely adjustable door height for special grinding jobs
- Simplifies wheel changing, measuring and visual inspections
- Features multiple indicator mounting holes
- Fully serviceable design allows easy clean out
- Precision die cast aluminum construction for durability and weight savings
- U.S. Patent No. 6,503,125

EZ-UP Dust Guard Door Upgrade Kit

- Complete door and frame upgrade kit
- Fits existing dust guards and upgrades your surface grinder dust guard to Vortex technology

Catalog No.	Description	Machines
AD9880	Vortex 800 Dust Guard Housing	All Surface Grinders
AD9881	EZ-UP Dust Guard Door & Frame Upgrade Kit	All Surface Grinders
AD9882	3" ID Bracket	Harig
AD9883	3-1/8" ID Bracket	Boyer-Schultz, Sharp
AD9884	3-1/4" ID Bracket	Brown & Sharpe
AD9885	3-3/4" ID Bracket	Abrasive, K.O. Lee
AD9886	2-Pc Bracket w/3-hole Face Mount	Mitsui (104mm screw hole space)
AD9887	2-Pc Bracket w/3-hole Face Mount	Kent
AD9888	3-1/8" ID Bracket w/3-hole Face Mount	Chevalier (New)
AD9889	100mm Bracket	Chevalier (Older)
AD9890	3-3/4" Bracket w/3/16" Counterbore	K.O. Lee
AD9891	2-Pc Bracket w/3-hole Face Mount	Kent (100mm screw hole space)
AD9892	80mm Bore Bracket, 3.15" ID	Okamoto
Other bracket sizes available; please call Customer Service		



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Vac-U-Guard



The lightweight aluminum Vac-U-Guard is designed for tool room grinders which machine graphite or light dusty materials. When used with adequate dust collection equipment, Vac-U-Guard improves collector efficiency and shop air quality. Please specify spindle housing diameter when ordering. Listed are the most popular grinding machines with appropriate Vac-U-Guard sizes.

Catalog No.	Description	Machines
AD9995	Vac-U-Guard without bracket	—
AD9996	3" Bracket	Reid, Harig, Covell, K.O. Lee, Parker-Majestic (extended), Do-All (old), Norton (no wheel larger than 8")
AD9997	3-1/8" Bracket	Boyar-Schultz, Zayre
AD9998	3.150" Bracket	Misui and Okamoto (1-1/8" length of bore bracket)
AD9999	3-3/4" Bracket	Gardiner, Clausing, Abrasive

EDM Oil-Feeding Tubing Chucks



Models EDM 125

Catalog No.	Model	Shank Size	Capacity
AC6083	EDM 125-1/2S*	1/2"	0 to 0.125"
AC6084	EDM 125-3/4S*	3/4"	0 to 0.125"

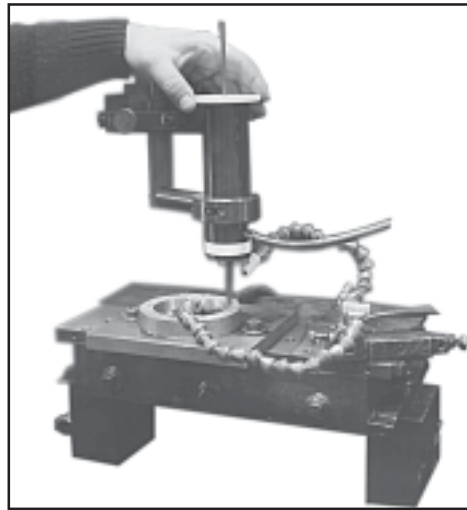
* Step down length of shank is 2".

- Through center hole in chuck provides positive flushing for use with tubing electrodes.
- Runs true within 0.005" T.I.R.
- Will fit any EDM machine with "V" Block or collet.
- Complete unit hardened and ground.
- Easily seal tubing by turning knurled collar of chuck.

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EDM Hand Feed Tapper



The EDM Hand Feed Tapper is the most economical available to the users of EDM equipment. It is fast cutting and requires less than one minute set up time. Quick change lead nuts, guide bushings and tapping electrodes for all sizes from 4-40 thru $\frac{3}{4}$ -16 are in stock for immediate delivery. Please see Catalog Page 3.15 for tapping electrodes specifically recommended for this unit. Special sizes can be furnished in two weeks. Tapper is supplied fully insulated for use on all types of EDM machines.

Catalog No.	Description
AZ6090	EDM Handfeed Tapper – includes Guide Bushing, $\frac{1}{4}$ -20 Lead Nut and one $\frac{1}{4}$ -20 Electrode. Shipping Weight – 6 lbs.

Lead Nuts & Guide Bushings for EDM Hand Feed Tapper

All lead nuts and guide bushings sold individually.

For Use with Thread Size	Guide Bushings Catalog No.	Lead Nuts Catalog No.
4-40	AZ5101	AZ4250
5-40	AZ5102	AZ4251
6-32	AZ5103	AZ4252
8-32	AZ5104	AZ4253
10-24	AZ5105	AZ4254
10-32		AZ4255
1/4-20	AZ5106	AZ4256
1/4-28		AZ4257
5/16-18	AZ5107	AZ4258
5/16-24		AZ4259

For Use with Thread Size	Guide Bushings Catalog No.	Lead Nuts Catalog No.
3/8-16	AZ5108	AZ4260
3/8-24		AZ4261
7/16-14	AZ5109	AZ4262
7/16-20		AZ4263
1/2-13	AZ5110	AZ4264
1/2-20		AZ4265
9/16-12	AZ5111	AZ4266
9/16-18		AZ4267
5/8-11	AZ5112	AZ4268
5/8-18		AZ4269
3/4-10	AZ5113	AZ4270
3/4-16		AZ4271



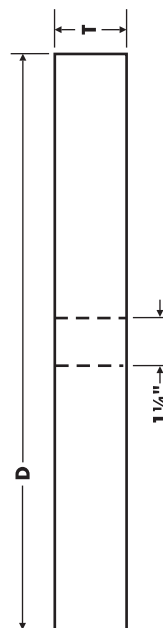
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Grinding Wheels for Graphite



Intech EDM grinding wheels for graphite are premium wheels manufactured to our exacting specifications; we use them every day in our custom graphite electrode department. They are made from silicon carbide specifically for use on graphite, and have a very uniform grain structure and texture. They hold radii and sharp corners exceptionally well for extended grinding.

Catalog No.	Specification	Grit Size	Diameter "D" (Inch)	Thickness "T" (Inch)
AW7051	GC60-H11V	60	7	1/2
AW7052	GC80-H11V	80		
AW7053	GC100-H11V	100		
AW7071	GC60-H11V	60	7	3/4
AW7072	GC80-H11V	80		
AW7073	GC100-H11V	100		
AW7101	GC60-H11V	60	7	1
AW7102	GC80-H11V	80		
AW7103	GC100-H11V	100		
AW8051	GC60-H11V	60	8	1/2
AW8052	GC80-H11V	80		
AW8053	GC100-H11V	100		
AW8071	GC60-H11V	60	8	3/4
AW8072	GC80-H11V	80		
AW8073	GC100-H11V	100		
AW8101	GC60-H11V	60	8	1
AW8102	GC80-H11V	80		
AW8103	GC100-H11V	100		



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MECATOOL Sinker Tooling

Mecatool, the inventor of the ICS and GPS workholding systems for EDM and chip making applications, has long been known as an innovator in the high precision tooling market. Mecatool's systems are designed to maximize machine productivity by reducing costly machine down time. An extensive product line allows Mecatool to provide solutions matched to customer requirements.

Mecatool products are the result of our extensive practical experience in precision

workholding. The excellent stability and repeatability for which Mecatool products are known are due to an uncompromising commitment to quality in materials and engineering practices.

In 1997, Mecatool became part of the AGIE CHARMILLES Group. This alliance provides Mecatool with the unique advantage of accurate first-hand knowledge of the broad variety of customer requirements, and the opportunity to offer productivity enhancing solutions to our customers.

GPS 70/120 System

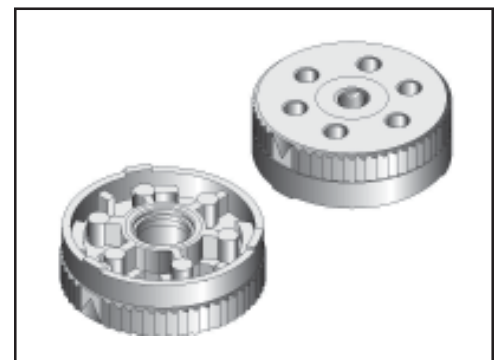


The **GPS 70 / 120 system** is designed for medium and large size electrodes. Features include:

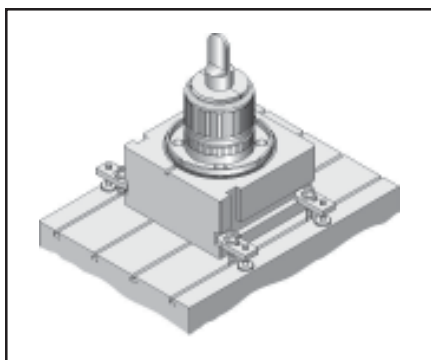
- Speed: Press-shell design feature eliminates messy gluing, screwing and soldering operations.
- Compatibility: Easily integrates with our smaller GPS Mini system.
- Tool-changing: Compatible with most major manufacturers.
- Cost: Press-shell holders are reusable.

The **GPS 70 / 120 System** uses a proven palletized design that ensures repeatability of .00008 inches over 30,000 clamping operations.

The unique pallet design integrates all of the reference surfaces, eliminating any effect from mishandling or contamination.



Catalog No.	Description	Quantity/Pack
AMS500010	GPS70 Pallets	9 pieces
AMS500020	GPS120 Pallets	4 pieces



A full range of electrode holding devices are available including the patented press-shell holders, parallel holders, V-blocks, collet chuck and 20 mm shank holders.

Various machining blocks are available to enable the use of the GPS 70/120 system for machining of electrodes in conventional operations

Due to the inherent system rigidity, GPS 70/120 is ideal for all metal applications including high-speed milling.



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