GLOSSARY

ABRASION: Migration of foreign material which enters the fluid stream from system components that wear from close tolerances, vibration or shock.

ABRASIVES: hard structurally strong solid.

ABSORB: To take up by cohesive, chemical or molecular action.

ABSORBENT: A filter medium that holds contaminants by mechanical means. When one substance soaks completely through another, sometimes undergoing a chemical change.

ACIDITY: The quality, state or degree of being acid. In lubricating oils, acidity denotes the presence of acid-type constituents whose concentration is usually defined in terms of a neutralization number. The constituents very in nature and may or may not markedly influence the behavior of the fluid.

ADDITIVE: A material, usually chemical, added to a product to impart new or unusual characteristics or to improve existing characteristics.

ADSORBENT: A filter medium primarily intended to hold soluble and insoluble contaminants on its surface by molecular adhesion - no chemical change.

ADSORPTION: The natural phenomenon of a gas, vapor, or liquid being attracted to and held on the surface of a solid. To some extent adsorption takes place on any solid surface, but certain materials have sufficient adsorbent capacity because of the finely divided material to make them useful in such industrial applications as the purification and separation of gasses and liquids.

AGGREGATE: A relatively stable assembly of dry particles formed under the influence of physical forces.

AMBIENT: Surrounding. For example, ambient operating temperatures of a vessel is temperature essentially the same as that surrounding the vessel.

ASME: American Society of Mechanical Engineers.

ATMOSPHERIC PRESSURE: The force exerted on a unit area by the weight of the atmosphere.

ATOM: Smallest particle of an element which retains properties of the element. Example: Carbon Atom (C).

BACK PRESSURE: In filter use, resistance offered by filter, usually measured in PSI.

BACKWASH: To clean a filter element by reversing the direction of flow through it.

BLOTTER TEST: A visible means of checking oil clarity; one drop on a blotter will concentrate dirt or foreign matter in the center of the ring.

BLOWBACK: To reverse flow air, steam or fluid through the media to effect solids removal. Sometimes referred to as backwash.

BUNA N: Gasket material. A synthetic rubber frequently used for vessel closures, flanges, and filter elements.

CAKE: Solids deposited on the filter medium during filtration in sufficient thickness to be removed in sheets of sizable pieces. In many cases, cake my provide its own filter media by adding to the surface of media. Also referred to as discharged solids or residue.

CAPACITY: Volume of product which a vessel will accommodate. This is expressed in gallons or similar units. Also amount which will filter at a given efficiency and flow rate, expressed in gallons per minute or similar units.

CARTRIDGE: medium used in a vessel to perform the function of coalescing, filtering, or separating. Also referred to as element, media, repack, etc. Made in a specified physical shape to be mounted by use of hardware designed for that purpose.

CONTAMINANT: Anything in the fluid that should not be there.

CONTAMINATE: The foreign matter in a fluid which is accumulated from various sources such as system dirt, residue from wear of moving parts, atmospheric solids which settle in an open system. Contaminates tend to discolor a liquid, cause additional wear on moving parts, cause system upsets in process stream, or reduce the efficiency of a fluid. Water as well as solid may be considered a contaminate when the presence of water causes adverse results. The presence of contaminates, whether liquid or solid, is the basis on which the use of filters or separator/filters are sought.

CORROSION: The conversion of metals into oxides, hydrated oxides, carbonates, or other compounds due to the action of air or water or both. Salts and sulphur are also important sources of corrosion. Removal of solids and water reduces the effect or speed of corrosion in many cases; and in other cases, corrosion inhibitors are used to reduce the effect of corrosion.

DENSITY: The weight per unit volume of a substance (specific weight).

DEPTH: A filter medium which primarily retain contaminants within the tortuous passages within the depth of the element wall.

DEPTH TYPE FILTRATION: Filtration accomplished by flowing a fluid through a mass filter media provided a tortuous path with many entrapments to stop the contaminates. Flow may be cross flow such as from the outside or inside and then down the center of an element, or from end to end. Certain types of solids, or combinations of solids, do not lend to surface filtration and depth type filtration is found to be more suitable.

DIELECTRIC: A substance which will not conduct electricity. A non-conductor.

DIFFERENTIAL PRESSURE: The difference in pressure between two give points of a filter, separator/filter, etc.

DUAL DENSITY: A depth element that is constructed of two different medias not blended into a homogeneous mixture but remaining as two different distinctive medias.

EFFICIENCY: Degree to which element will perform in removing solids and/or liquids. Output divided by input.

ELEMENT: Medium used in vessel to perform the function of coalescing, filter or separating. Also referred to a s a cartridge, repack, etc. The porous device which performs the actual process of filtration.

ELEMENT BY-PASS VALVE: A valve within a filter to limit the differential pressure which can be impressed across the filter element.

EMULSIFICATION: A dispersion of one substance in the form of minute drops within another substance.

EMULSION: A dispersion of fine liquid particles in a liquid stream which do not necessarily dissolve in each other but are held in suspension. Many emulsions may be broken by coalescing the liquids are immiscible. Emulsion stabilizers modify the surface tension of the droplets which makes coalescing difficult, if not impossible.

FILTER: A term generally applied to a device used to remove solid contaminate from a liquid or gas, or separate one liquid from another liquid or gas. A filter, as referred to in the industry today, is a devise which removes contaminates. If a devise used to remove solids and liquids contaminates, it is referred to in general terms as a separator, separator/filter, or entrainment separator. A filter may be one of a number of such types as replaceable cartridge, cycle, edge, leaf, baffle, plate and frame, precoat an centrifuge. The term filter is sometimes erroneously use to describe the media used inside the vessel or filter case, but the correct use should be filter element, cartridge, etc.

FILTER EFFICIENCY: Expressed as a percent of contaminant introduced to the system, it is the ability of a filter to remove specified contaminants at a given contaminant concentration under specified test condition.

FILTER ELEMENT LIFE: Span of operation from clean unit to a predetermined pressure drop build up - usually measured in lapsed time.

FLOW RATE: The rate at which a product is passed through a vessel or system: generally expressed as gallons per minute; barrels per hour, barrels per day, actual or standard cubic feet per minute, hour day, etc.

FLUID: A liquid or gas which can be filtered by passing though a filter.

FREE WATER: Water entrained in a lubricating oil or fuel forming two distinct phases with the fluid and having a tendency to separate as a result of the differences in densities.

HOLDING CAPACITY: In general usage refers to the amount of solids, particulate or foreign material one or more elements is capable of retaining up to the terminal or maximum differential pressure. Also can refer to volumetric holding capacity of either a solid or a liquid.

HYDRAULICS: The study of fluids a rest or in motion.

IMPURITY: See "contaminant" - any undesirable material in the fluid.

INDICATOR, BYPASS: An indicator which signals alternate flow.

LACQUER: A natural or synthetic resin which is dissolved in a suitable solvent such as hydrocarbon oil rich in aromatics. When applied, the oil solvent evaporates, leaving behind a lacquer film.

LINE SIZE: The size of line used to carry the product in a system, such as a sic inch line.

MICRON: A short unit of length in the metric system. One millionth of a meter, 10-4 centimeter, 10-3 millimeter or 0.000039 of one inch. Used as a criterion to evaluate the performance or efficiency of a filter media or to describe the condition of either the influent or effluent. Usually stated in terms of being either absolute or nominal. Nominal micron rating is generally taken to mean that 98% of all articles over a given micron value have been removed by a specific media or medium. Absolute micron rating is generally taken to mean that all particles over a given micron value have been removed. The naked eye can see a particle 40 microns or larger.

MIGRATION: Contaminant or media released downstream from the filter element.

PREFILTER: Filter for removing gross contaminate before the product stream enters a separator/filter.

PRESSURE ATMOSPHERIC: The force exerted by the atmosphere at sea level, which is equivalent to 14.7 psi.

PRESSURE DIFFERENTIAL: The difference in pressure between two points.

PRESSURE DROP: The difference in pressure between two point, generally at the inlet and outlet of a filter or a separator/filter. Measured in pounds per square inch gage, or inches of mercury.

PRESSURE RATING, OPERATING: The normal pressure at which a filter housing is capable of operating at specified operating conditions.

PRESSURE RELIEF: Valve which permits enough liquid or gas to escape from the vessel to prevent extreme pressure build up within the vessel.

PSI: Pounds per Square Inch.

PSIA: Pounds per Square Inch Absolute.

PSID: Pounds per Square Inch Differential.

PSIG: Pounds per Square Inch Gage.

RATE OF FLOW: The rate at which a product is passed through a vessel or system; generally expressed as gallons per minute, barrels per hour, barrels per day, actual or standard cubic feet per minute, hour day, etc. Same as flow rate.

RATED FLOW: Normal operating flow rate at which a product is passed through a vessel; flow rate which a vessel and media designed to accommodate.

SEPARATION: The action of separating solids or liquids from fluids. May be accomplished by impingement, filtration, or by coalescing. The term "separation" is used in some circles when referring to the separation of liquids. Also sued to describe the action in the second stage of two-stage separation.

SEPARATOR: A device whose primary function is to isolate contaiminants by physical properties other than size.

SEPARATOR/FILTER: Vessel which removes solids and entrained liquids from another liquid or gas. Uses some combination of a baffle and/or coalescer, filter or separator element. May be single stage, two stage or singe or two stage with prefilter section for gross solids removal. Common application is the removal of water from gas or another immiscible liquid. General reference to term applies the equipment is capable of both separation and filtration to specific degrees of efficiencies.

SERVICE LIFE: The length of time an element operates before reaching the maximum allowable pressure drop.

SLUDGE: Dirt, carbon, water and chemical compounds as found in oils.

SOLID SUSPENSION: A mixture of solids suspended in a fluid.

SOLIDS: A mass, or matter, contained in a stream which is considered undesirable and should be removed.

SURFACE AREA: Total area of an element that is exposed to approaching flow. See "percent free area".

SURGE: The peak system pressure measured as a function of restricting or blocking fluid flow.

TURBIDITY: Stirred up sediment or contaminant in a fluid.

VACUUM: Reference to pressure below atmospheric.

VISCOSITY: Degree of fluidity; property of fluid's molecular structure by virtue of which they resist flow. The resistance of flow exhibited by a liquid resulting from the combined effects of cohesion and adhesion. The unit so f measurements are the poise and the stoke. A liquid has a viscosity of one poise if a force of one dyne per square centimeter causes two parallel liquid surfaces once square centimeter in area and one centimeter apart or move past once another at a rate of once centimeter per second. There are a great many rude and empirical methods for measuring viscosity which generally involve measurement for the time of flow or movement of a a ball ring or other object t in a specially shaped or sized apparatus.

AERATORS BUILT TO LAST

Our Troubled Waters...

Ponds and lakes, whether they are man made or natural, have a natural life cycle. They start out clean, fresh and clear, grow into middle age with weed and algae growth and high nutrient levels, and pass into old age as shallow bogs or marsh land. Before man began to impact the environment, this progression too hundred and even thousands of years. Ponds and lakes now can be created, live and die within decades. Why are the lives of our ponds and lakes so short? Much of the reason lies in the fact that water is our most abused, and least understood, natural resource.

Algae is a warning that a water quality problem exists. Sludge causes foul odors and depletes oxygen, killing fish and other beneficial aquatic life, and deminishing the water holding capacity of a pond. If left unchecked, a pond will not only become smelly and unsightly, but can gradually turn into a marshy swamp, and eventually into dry land.

Aeration is the key to keeping ponds and lakes functional and free from water quality problems. By bringing oxygen into the water and increasing the circulation, aeration naturally stimulates the water cleanup process and improves the overall quality of the aquatic ecosystem.

WE GIVE NATURE A BOOST

The dramatic increases in oxygen and circulation by Otterbine aerators speed up the biodegrading process of organic waste and fertilizer run-off. The added dissolved oxygen helps the bacteria in the pond or lake break down unpleasant odors and organic waste. The result is cleaner, odor free water.

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Please call for current prices.