THE HISTORY OF DORR-OLIVER

Dorr-Oliver began at the turn of the 20th century as two one-man operations, backed by single patents for equipment developed to solve processing difficulties in gold milling.

The founders of both companies realized very early the need for both development of new equipment to make continuous processing possible, and the continuing mechanical improvement of existing machines. Both were also quick to recognize the market potential for engineering services and equipment in the world markets and both established representation in Europe at an early date.

The Dorr Company had been losing money because of faulty classification of gold ore and Dorr's solution was to invent a reciprocating rake classifier to replace inadequate classifying cones. It was accepted virtually immediately and subsequently marketed to other western mills. Two years later, Dorr invented the continuous processing thickener, the first continuous, mechanically equipped sedimentation unit. It separated dense pulp from a slurry and replaced outmoded thickening cones. Once again the new unit was an immediate success. To meet the growing demand for the two new machines, Dorr opened a small office in Denver, Colorado in 1907, but remained active in the gold mill.

At about the same time, E. L. Oliver was faced with the need to devise some means of separating leached slimes from gold bearing cyanide solution. He developed the continuous vacuum filter, the first filter of the day that could make that separation.

The Oliver Continuous Filter was as instant a success as Dorr's new machines. Orders began pouring in from Canada and Mexico as well as the U.S. In 1910, Oliver established his filter company in the same year. Dorr incorporated the Dorr Company, and came up with his third invention -- the agitator. Thus, in the span of six years, what is Dorr-Oliver today was built on four basic inventions.

With an eye to overseas business, Dorr traveled to London in 1910 and made contacts which led to the establishment of an office there two years later. He was already established in Mexico City. In 1911, he arranged for sales representation in Australia and a year later in South Africa.

In 1916, Dorr also made a major commitment to research and development — unusual for his day. He purchased 50 acres of land and an old grist mill in Westport, Connecticut and established the famous Dorr Westport Mill from which were to come a variety of technological developments and innovations.

From 1910 through 1929, the Oliver and Dorr companies grew substantially. Oliver introduced his filters to the pulp and paper, sewage, and beet and cane sugar industries. He acquired the United Filters Company (with the Kelly and Sweetland filters) — broadening the line from strictly vacuum filters to include pressure filters.
During the 1930s, both companies continued their growth trends, spreading operations throughout the world. Four subsidiary companies were already in existence in Europe — in London, Paris, Amsterdam and Brussels. To these, added representation in India in 1933 and in Italy were made four years later.

By the end of World War II, the Don and Oliver companies were active in minerals, pulp and paper, food and chemicals processing, and in municipal and industrial water and wastewater treatment. The Dorr Company had been the first to introduce a lighter torque version of the thickener to sewage treatment. Thus, the Dorr Clarifier, which began to build a market in 1914, eventually became a substantial share of the overall business.

By the early 1950s it became apparent that both companies were so closely alike - in types of equipment marketed, markets served, and marketing philosophies - the board of directors of both companies approved a merger. In late 1954 Dorr-Oliver was formed with offices in nearly fifty points around the globe.

In 1956, Dorr-Oliver operations in Canada were integrated with those of E. Long Ltd. of Orillia, Ontario, creating a subsidiary company Dorr-Oliver-Long. This company has a manufacturing facility that produces major items of D-0 equipment, and a foundry that serves both the Canadian and U.S. companies with cast components.

In the same year, the company further expanded with the acquisition of the Merco Centrifugal Company. Formed as the Merrill Company in the early 1930s, two inventors working together - one a metallurgical engineer who had once worked for Don, and the other a former employee of Corn Products Starch Company - developed the basic Merco disc nozzle centrifuge. One invented the backward reacting nozzle, the other the internal recycle feature that promptly established the Merco name as a leader in centrifugals. The initial products were a carbon steel machine for mining, and a high speed stainless steel machine for food. The food side of the business crew at an accelerated pace as Merco centrifuges rapidly began to replace the old settling tables in starch plants. The trend, begun in the early 1930s, took two decades to mature, but today there is hardly a starch plant anywhere in the world that doesn't use centrifuges. The trend is particularly significant in that by replacing the long, cumbersome, space-consuming settling tables with compact, high-speed sanitary machines, the industry was able to go from six-story buildings in the old days to the modern one or two story starch plant.

During the years following the Second World War, two other equipment developments of note were pioneered by Dorr-Oliver. One involved a stationary centrifugal screen -- the DSM Screen - that had been developed by a Dutch mining company for coal dewatering. Dorr obtained the license to market this machine around the world in other applications, such as food processing and pulp and paper processing for fiber washing, fiber recovery and a variety of separations. The Dutch company also had developed a liquid cyclone and
Dorr obtained this product to add to the company's mix of liquid/solids separation equipment, under the "DorrClone" trade name.

At this time, Dorr also acquired the rights to develop and market the fluid bed thermal treatment principal. It had been originally invented by a petroleum company for cracking. Dorr applied the principle to thermal processing in the company's basic industries, giving rise to a family of equipment that includes incinerators, calciners, roasters, dryers and reactors. Today more than 600 Dorr-Oliver FluoSolids systems are installed, handling the incineration of biological sludges, calcination of mineral products, roasting of other minerals, and the drying of ores, chemicals and similar products.

Thus starting in the gold fields of South Dakota and California at the turn of the century, Don-Oliver has evidenced a solid pattern of growth and diversification in its basic business - the business of fluid/solids dynamics - and has become an acknowledged world leader.
RESUME OF HISTORICAL DEVELOPMENTS

1888-1890  Dorr works as chemical experimenter for Thomas A. Edison.

1900    Oliver graduates from College of Mines of U. of California.

1901    Dorr forms a partnership in a gold mill in South Dakota.

1903    Oliver becomes general superintendent of North Star Mines in California.

1904    Dorr invents rake clarifier and obtains patents on new unit.

1905    Oliver obtains patent on electrolytic precipitation process to recover gold and silver from cyanide-slime slurries.

1906    Dorr invents continuous process thickener.

1907    Oliver invents continuous vacuum filter and develops a line of centrifugal pumps for use with the filter.

1908    Dorr obtains representation in Mexico City.

1909    Oliver sets up his filter company as a full-time operation.

1910    Dorr invents the agitator.

1912    Oliver constructs the first horizontal filter.

1912    Dorr opens his first European office, in London.

1913    Oliver builds the largest filters ever, for filtering lampblack. (Three 15' x 18' machines).

1914    Dorr sells the first clarifier for sewage treatment - a lighter version of the thickener.

1915    Oliver markets the first filters to the chemical industry for potash.

1916    Dorr develops the traction thickener.

1916    Oliver sells the first filters for use in beet sugar processing, for filtering cold saccharate of lime.

1917    Dorr develops the first bowl classifier and installs the first thickener in the beet sugar industry.

1917    The United Filter Company takes over American Filter (disc filters), Kelly Filter and Sweetland Filter (pressure filters). United later is taken over by Oliver.

1919    Dorr sells the first thickener to the cane sugar industry in Cuba.

1919    Oliver sells the first line mud washer and enters the pulp and paper industry.

1919    Dorr develops the washer and slurry mixer.
1920    Oliver sells the first pulp washer for washing soda pulp.
1920    Dorr develops the cane juice clarifier and sells the first one through a representative in Havana.
1921    Oliver develops the Olivite centrifugal pump and begins marketing it.
1922    Oliver sells the first sewage filters.
1925    Oliver sells the first filter for cane mud to a sugar mill in Hawaii.
1925    Dorr develops washing tray thickener and opens overseas offices in Paris and Berlin.
1927    Dorr designs Detritor for sewage degritting.
1925    Oliver sells the first filter for cane mud to a sugar mill in Hawaii.
1928    Oliver acquires United Filter, and with it the company's principal manufacturing facility in Hazleton, Pennsylvania. Also develops and markets first Oliver-Campbell cane mud filter for sugar processing.
1931    Dorr establishes a facility in The Hague (now in Amsterdam).
1931    Dorr and Oliver merge for first time. The merger is dissolved three years later.
1933    Dorr establishes representation in India.
1935    Dorr develops the Torq Thickener.
1937    Oliver develops and markets the Precoat Filter.
1937    Dorr develops a combination washing type tray thickener.
1938    Dorr develops the slaker.
1939    Oliver develops and markets the ODS pump (a diaphragm slurry pump).
1946    Dorr establishes representation in Venezuela.
1949    National Filter Media Corp. formed by consolidating two smaller companies, to manufacture and market filter media.
1954    Dorr and Oliver companies merge for second time.
1956    Merrill Company (Merco centrifugals) is acquired.
1981    Dorr-Oliver becomes a member of the Standard Oil of Ohio concern, SOHIO, one of the largest U.S. corporations. The major stockholder of SOH 10 is British Petroleum (B.P.) in the U.K.