Westinghouse Electric & Manufacturing Co.

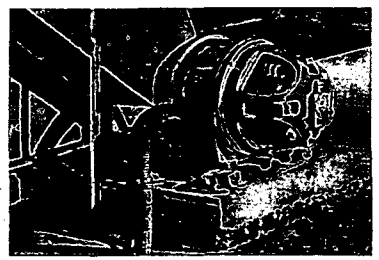
East Pittsburgh **Pennsylvania**

Research, Application and Design Engineers will cooperate and solve any electrical problem for heating and ventilating systems.
Sales Offices and Service Shops in all Principal Cities

Quiet Operating Motors

The Westinghouse Company has long recognized the need for quiet operating machinery and has devoted a vast amount of research work to the development of special instruments to measure noise accurately. The human element, which gives variable results, is eliminated in all testing procedure.

Westinghouse Quiet Operating Motors are specially designed and *individually*

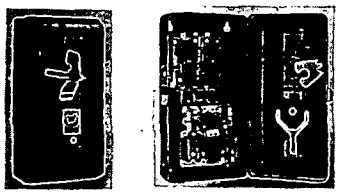


A Type CW Variable Speed, Quiet Operating Motor Driving Fan

tested under loaded and unloaded conditions in a sound-proof room. A special nameplate is your assurance of their high standard of quiet operation.

Lasting quietness is assured by rigid, unit cast motor frames which contribute to the permanence of bearing alignment and air gap. Rotors are given a special dynamic balance, practically eliminating noises due to vibration.

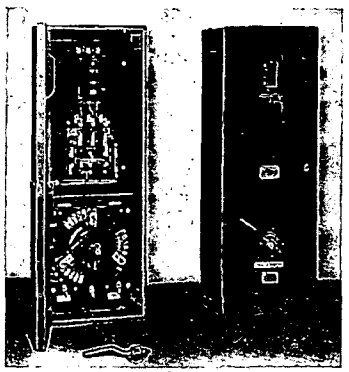
Motor Control



5 hp "De-ion" Combination Linestarter with Magnetic Contactor and Disconnect Switch in same enclosure.

Starters, speed regulators, thermostats, switches and Nofuze circuit breakers are available for every requirement.

For fan drives, the new Westinghouse Type O-1 Controller offers unusual advantages. This unit assembly includes the equipment ordinarily housed in three separate cabinets. Primary Linestarter,



Open and Closed Views of Type O-1 Fan Drive Control, Wall-mounted Types

speed regulator and Nofuze breaker for circuit disconnect and protection are all mounted and wired in a neat cabinet for wall or floor mounting. Installation is greatly simplified and its appearance is improved.

Arc Welding



FlexArc A-c. Welder for Simplified Fabrication

For the fabrication of thin-gauge materials such as ducts, Westinghouse offers the FlexArc A-C. welder. Its operation is extremely simple and it uses less than 15 cents worth of power an hour. One man can wheel it easily from place to place. It operates from the ordinary single-phase power circuit.

See also Page 819

Jones & Laughlin Steel Corporation

AMERICAN IRON AND STEEL WORKS

Jones & Laughlin Building, **Pittsburgh, Pa.**

WELDED AND SEAMLESS STEEL TUBULAR PRODUCTS

J & L Welded Pipe

Jones & Laughlin manufactures Standard Weight, Extra Strong, and Double Extra Strong Welded Pipe, Black and Galvanized, for steam, gas, air, water, refrigeration and sprinkler work. Sizes: ⅛ in. to 16 in. O.D. inclusive.

J & L Copper-bearing Steel Pipe, when specified, can be supplied in standard weight, or extra strong, black or galvanized. Use of this product is recommended for long life, where piping is to be exposed to the atmosphere or other alternate wet and dry conditions.

Jones & Laughlin Steel Pipe is made of soft, weldable steel rolled from solid ingots made to a special analysis which, checked over a period of years, has proved to be very uniform in quality. The steel pipe produced from this special grade of J & L Steel is soft and ductile, free cutting, strong at the welds, and free from excess scale. J & L Pipe is commercially straight and free from blisters, cracks or other injurious defects and is well within the allowable tolerances as to dimensions and weights, and true to round in the outside diameter.

Careful attention is given the threading of the pipe with good clean-cut threads fitted with sound couplings correctly tapped to give a tight joint. Soft, ductile steel of free cutting quality enables the contractor to cut clean, sound threads on the job.

The Jones & Laughlin process of galvanizing assures a thorough coating and insures against pipe being clogged with spelter. The surface of the pipe is carefully cleaned so that when the galvanized coating is applied it adheres strongly and does not tend to flake off.

J & L Seamless Pipe

J & L Seamless Pipe is made in three weights; standard, extra strong and double extra strong. Sizes: ⅜ in. nominal to 14 in. O.D. inclusive.

J & L Seamless Steel Pipe is pierced from a solid billet—there are no welds. The result is dependable and uniform wall strength. The method of manufacture, and the use of only specially selected steel, assure exceptional ductility, a quality that is essential to successful coiling and bending, and flanging for Van Stone joints.

J & L Seamless pipe can be used with full satisfaction in either threaded joint or completely welded installations. Ductility, strength and safety—highly developed attributes of J & L Seamless—make this product especially adaptable for air, steam, gas and gasoline lines, boilers, refineries, dry kilns, refrigerating systems and other exacting applications.

J & L Hot Rolled Seamless Steel Boiler Tubes

J & L Seamless Boiler Tubes are manufactured in accordance with the *A.S.M.E.* Boiler Code and comply with the *A.S.T.M.* Specifications and the rules and regulations of the Bureau of Navigation and Steamboat Inspection of the U. S. Department of Commerce. They are supplied in a full range of standard sizes, from 1 in. O.D. to 6 in. O.D. inclusive.

The process by which Jones & Laughlin manufactures seamless boiler tubes is largely responsible for the unusually high ductility of the product. It is a process in which a forging action is predominant. This forging action gives to the steel the greater density and higher ductility that may be expected of any forging operation. It makes it stronger yet more pliable and, therefore, more easily formed in its cold state. Forging also effectively eliminates any such imperfections as air holes or blow holes that may be present in the steel.

Inspection of this product begins with the careful selection of the steel for the billets and continues without interruption through every stage of manufacture. It is your assurance of receiving only the very finest boiler tubes that can be manufactured.

Other J & L Tubular Products

J & L also manufactures Reamed and Drifted Pipe in sizes 1 in. to 6 in. inclusive, Dry Kiln Pipe, Pipe for Refrigeration Service, Water Well and Irrigation Casing, Line Pipe and a complete line of Oil Country Tubular Products in welded and seamless.