

ALLIS-CHALMERS MANUFACTURING COMPANY

Manufacturers of Power, Electrical and Industrial Machinery
MILWAUKEE, WIS.

DISTRICT OFFICES

ATLANTA, GA., Healey Bldg.
BALTIMORE, MD., Lexington Bldg.
BIRMINGHAM, ALA., Webb Crawford Bldg.
BOSTON, MASS., State Mutual Bldg.
BUFFALO, N. Y., Ellicott Square Bldg.
CHARLOTTE, N. C., Johnston Bldg.
CHATTANOOGA, TENN., Tennessee Electric Power Bldg.
CHICAGO, ILL., 20 No. Wacker Drive
CINCINNATI, OHIO, First National Bank Bldg.
CLEVELAND, OHIO, Guarantee Title Bldg.
DALLAS, TEX., Santa Fe Bldg.
DENVER, COLO., Continental Oil Bldg.

DETROIT, MICH., Ford Bldg.
DULUTH, MINN., Bradley Bldg.
EL PASO, TEX., 2900 San Diego St.
HOUSTON, TEX., Shell Bldg.
INDIANAPOLIS, IND., Merchants Bank Bldg.
JACKSON, MICH., Consumers Power Co. Bldg.
KANSAS CITY, MO., Waldheim Bldg.
LOS ANGELES, CALIF., Rowan Bldg.
MILWAUKEE, WIS., West Allis Works
MINNEAPOLIS, MINN., Foshay Tower
NEW ORLEANS, LA., Canal Bank Bldg.
NEW YORK, N. Y., 50 Church St.
PHILADELPHIA, PA., Broad St. Station Bldg.

PHOENIX, ARIZ., Luhrs Tower
PITTSBURGH, PA., Park Bldg.
PORTLAND, ORE., 220 S. E. Belmont
RICHMOND, VA., Electric Bldg.
ST. LOUIS, MO., Railway Exchange Bldg.
SALT LAKE CITY, UTAH, Kearns Bldg.
SAN ANTONIO, TEX., Frost National Bank Bldg.
SAN FRANCISCO, CALIF., Rialto Bldg.
SEATTLE, WASH., Smith Tower
TAMPA, FLA., 415 Hampton St.
TOLEDO, OHIO, 2nd Nat'l Bank Bldg.
TULSA, OKLA., Public Service Bldg.
WILKES-BARRE, PA., Coal Exchange Bldg.

FOREIGN DISTRICT OFFICES

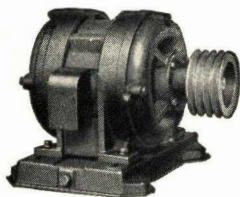
LONDON, ENGLAND; PARIS, FRANCE, Allis-Chalmers (France); SANTIAGO, CHILE, Sociedad Manufacturera Allis-Chalmers; ORURO, BOLIVIA; LIMA, PERU; BUENOS AIRES, ARGENTINA, Allis-Chalmers Mfg. Co. (Argentina)
CANADIAN REPRESENTATIVES: Canadian Allis-Chalmers, Ltd., TORONTO

Products

MOTORS: of any size for any application.
GENERATORS: Alternating or Direct Current; Synchronous Condensers.
TRANSFORMERS: Power; Distribution-Network; Instrument-Metering; FEEDER REGULATORS.
CONVERSION EQUIPMENT: Mercury Arc Power Rectifiers; Synchronous Converters; Motor-Generator Sets.
RAILWAY ELECTRIFICATION EQUIPMENT.
ARMORCLAD SWITCHGEAR; CIRCUIT BREAKERS.
SWITCHBOARDS; CONTROL; GENERATOR VOLTAGE REGULATORS.
STEAM TURBINES and CONDENSERS.



HYDRAULIC TURBINES and AUXILIARIES.
STEAM, OIL and GAS ENGINES.
BLOWERS and COMPRESSORS: Centrifugal, Rotary, Reciprocating.
PUMPS: Centrifugal and Plunger; Pumping Engines.
TEXROPE DRIVES; TRANSMISSION MACHINERY.
INDUSTRIAL MACHINERY: Rock and Ore Crushing; Cement Making; Mining and Metallurgical; Coal Distillation; Timber Preserving; Flour and Cereal Milling; Saw-mill and Wood Conservation; Road Grading; Tillage and Threshing; Combines; Wheel and Track-Type Tractors; "AKON" Boiler Treatment.



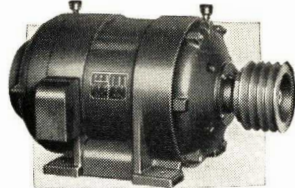
AR Motor

Motors

General Purpose Induction Motors—Types AR squirrel-cage and ARY wound-rotor are built in standard ratings and speeds up to 200 hp. in horizontal or vertical types. Steel frames, silver brazed indestructible rotors, form wound moisture-proof coils, dust- and oil-tight sleeve or anti-friction bearings, efficient ventilation and other desirable qualities are inherent features of these standard motors. Large induction motors are built in all types, including the largest ratings in commercial service and for special torque, speed variation, etc.

Linestart Motors (Normal Torque, Low Starting Current)—These have all the features of standard squirrel-cage motors but designed to start directly across-the-line.

High Starting Torque Motors (High Torque, Low Starting Current)—These are also designed for across-the-line starting.

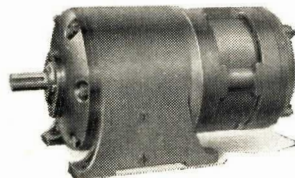


Totally Enclosed Fan-cooled Motor

Totally Enclosed Fan-Cooled Motors—Built in squirrel-cage and wound-rotor types for use where acids, alkalis, metallic dust, corrosive gases, oil, moisture, sand, carbon black, etc., are present. (Approved by the Underwriters for Class II, Group G locations, Grain dust.)

Explosion-proof Motors—These totally enclosed fan-cooled design motors have been approved by the Underwriters in some general purpose squirrel-cage ratings for Class I, Group D locations, Gasoline (Pyroxylin Lacquer Vapor).

Multi-Speed Squirrel-Cage Motors—Built open or enclosed, in the consequent pole type for 2:1 speed ratio; with additional windings for other speed ratios. These are built for the usual applications where horsepower is constant at each speed or for constant or variable torque drives.



Gearmotor Unit

Gearmotor Units—Where low speed drives are required, these units have the motor mounted directly on the helical gear reducer housing, forming a compact, rigidly mounted unit. Standard speeds at the power take-off are from 3:02 to 380 r.p.m., but slower speeds can be provided.

Higher Speed Gearmotors, with gear housing on motor, are built for speeds from 195 to 4000 r.p.m.

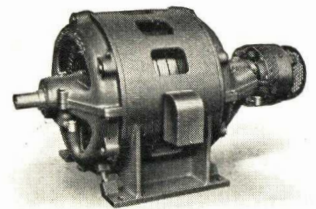
"Seal-Clad" Motors for Textile Mills—Have smooth air passages to allow free travel of lint and dust through the motor.

Synchronous Motors—Built in belted, coupled and engine types, 50 hp. and larger, with torque characteristics for practically all constant-speed drives and for unity or leading power factor for corrective effect on systems where the load power is low.

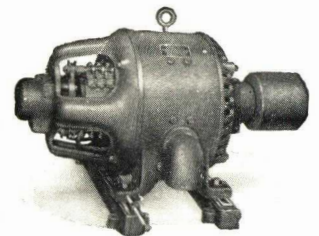
"Hystork" Synchronous Motors combine the starting characteristics of wound-rotor induction motors and the running characteristics of unity power factor synchronous types. They are applicable to grinding mills, conveyors, lineshaft or similar drives.

General Purpose Direct-Current Motors—Built in standard ratings up to 200 hp. for constant speeds (60 cycle speeds). Adjustable-speed ratings available for speed ranges up to 4 to 1. Both types are also built for vertical service.

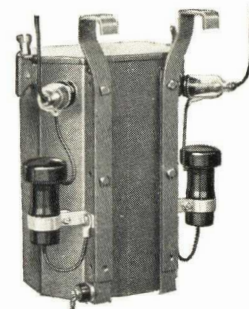
Large d-c. Motors (Frog Leg Wound), are built for hoist and other services.



1200 R.p.m. Synchronous Motor



Type "E" Direct-current Motor



Distribution Transformer with Surge-Diverters

Transformers

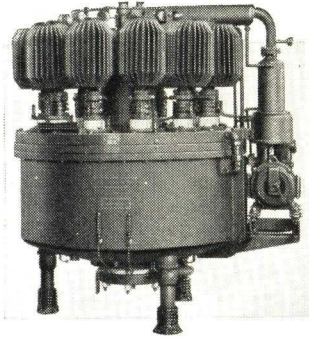
Built in all sizes and voltages—for power, distribution, instrument and metering service.

Power Transformers are built for any capacity, voltage or application, water-cooled, self-cooled or forced air-blast. **Distribution Transformers** are built single and polyphase, for outdoor, indoor, vault, network, or subway service, including conventional cable lead types, demountable stud bushing type, roof-bushing type and units with surge diverters built integral.

Automatic Feeder Voltage Regulators are of the step type self-contained, indoor or outdoor, quiet, economical, and give very smooth regulation.

Conversion Equipment

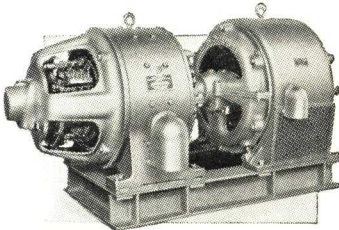
Allis-Chalmers Mercury Arc Rectifiers (*Brown Boveri Design*)—Convert alternating current to direct current without moving parts, noise or vibrations. They possess the advantage of high efficiency at all loads, low installation, operating and maintenance cost. They operate safely under the most adverse a-c. line conditions and are especially adaptable to automatic control.



600 Volt, 3000 Amp., Mercury Arc Power Rectifier

Standard rectifiers are built in sizes from 150 kw. at 250 volts up to the highest commercial ratings and voltages of converting apparatus. They are the ideal converter for railway service and for industrial substations with heavy fluctuating load and low machine load factor.

Synchronous Converters—These form another convenient and efficient means of converting from alternating to direct current. They are built in standard ratings to 3000 kw. for industrial, mining or railway service.



150-Kw. Motor-Generator Set

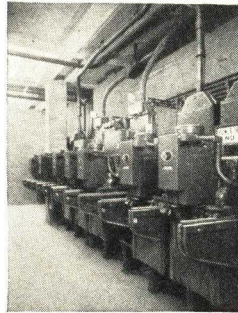
Induction Motor-Generator Sets—Built in ratings of 1 kw. and larger in standard commercial voltages for both d-c. and a-c. machines.

Synchronous Motor-Generator Sets—Built in ratings of 50 kw. and larger in standard voltages.

Sets are built for special purposes, such as Flywheel Sets for reversing hoist or mill motors, Frequency Changers, Balancers, Boosters, Equalizing Sets, etc.

Armorclad Switchgear

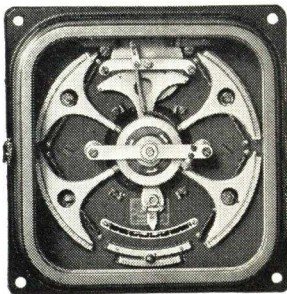
These units combine into one compact factory-built unit, the busbar, oil circuit breaker, disconnects instrument transformers, cable pot-heads and supporting framework. Allis-Chalmers-Reynolds Armorclad switchgear is noted for its safe, compact and sturdy construction, low maintenance and installation cost, and is available in all standard ratings for metal-clad switchgear.



Armorclad Switchgear in an Office Building

Switchboards and Control

This company engineers and manufactures a complete line of switchboards and automatic control boards for power stations, substations, and industrial plants including automatic starters for induction motors and synchronous motors.



Rocking Contact Regulator

Generator Voltage Regulators

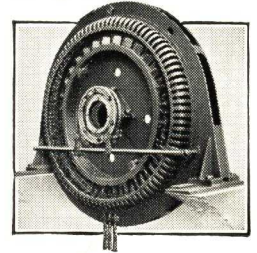
These regulators (*Brown Boveri Design*) have *rocking contacts* which do not require periodic inspection, adjustment or replacement. Once properly installed they regulate automatically with minimum maintenance. Over 26,000 have been installed in all parts of the world.

Generators

These include a-c. and d-c. machines of all characteristics and any practicable capacity—turbo-generators; water-wheel

generators, including automatic, semi-automatic or outdoor type; engine generators; coupled or belted generators.

They can be furnished with any prime mover as complete power units with steam and hydraulic turbines, steam, oil or gas engines.



Engine Alternator

Corliss Engines

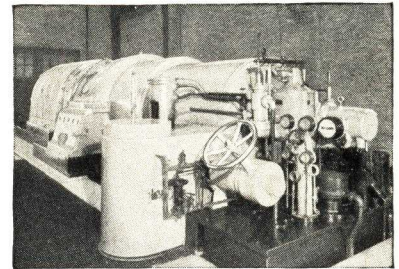
These are noted for their high efficiency, reliability and long life. Having built over 6,000,000 hp. of Corliss engines during the past 50 years, Allis-Chalmers recommends and builds them to meet practically every industrial requirement.

Gas Engines

Gas engines rated from 500 to 10,000 hp. are designed to operate on producer, natural, illuminating, coke oven, or blast furnace gas.

Steam Turbines

Efficient, reliable, accessible reaction type steam turbine and generator units are built from 200 kw. to 150,000 kw. or larger if desired, and for any steam pressure and temperature limited only by the suitability of present available materials. These include condensing, non-condensing, bleeder and mixed pressure types. Impulse turbines are built for auxiliary drive.



6000-Kw. Turbo-alternator Unit

Condensers

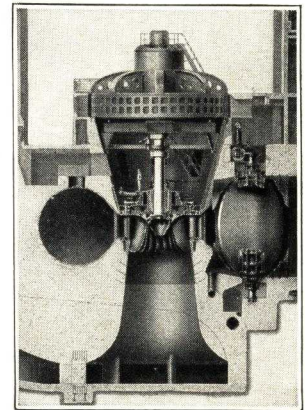
Built in surface and jet types in all sizes and including auxiliary air evactors, condensate and circulating water pumps.

Hydraulic Turbines

Allis-Chalmers hydraulic turbines now in operation or under construction, total over 6,000,000 hp. comprising propeller, Francis, and impulse types for heads ranging from 6 to 2500 ft. All are individually designed for capacities and characteristics to suit their respective developments.

Low permanent cost results from their simplicity and dependability.

Having both turbines and generators of its own design and manufacture, Allis-Chalmers can furnish complete hydro-electric units under one contract insuring undivided responsibility.

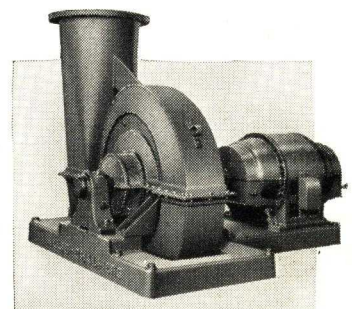


54,000 Hp. Hydraulic Turbine and 27-Ft. Butterfly Valve

Blowers and Compressors

Centrifugal Blowers and Compressors

In single- and multi-stage types, for volumes up to 130,000 c.f.m. and pressures from 1 lb. G., to 125 lbs. G., are built for Blast Furnace, Converter and Cupola Blowing, Gas Boosting, and Exhausting, Gas Generator Blowing, supplying blast for Oil-fired, Gas-fired, and Pulverized Coal-fired Furnaces, Scavenging and Supercharging Oil and Gas Engines, Pneumatic Conveying, Agitating Liquids, etc.

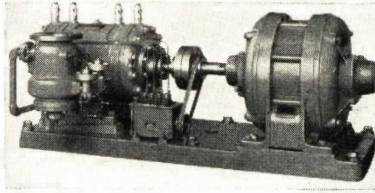


Motor Driven Turbo-Blower 32,000 c.f.m. at 2 lbs. G

Rotary Blowers and Compressors—Of the positive pressure, sliding-vane type, built for pressures up to 150 lbs. G., and volumes up to about 2000 c.f.m., in single- and two-stage types, water-cooled and air-cooled. These machines are admirably suited for use as dry vacuum pumps, for any vacuum up to 29.85 in. Hg. (referred to 30 in. barometer).

Reciprocating Air and Gas Compressors

—Built from 3000 to 15,000 c.f.m. capacity or larger for all pressures up to 5000 lbs. G. These units are built with the Company's steam engines or gas engines, or electric drives.



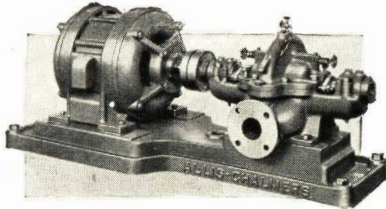
Rotary Compressor

Centrifugal Pumping Units

The ALLIS-CHALMERS MANUFACTURING COMPANY makes a specialty of combined units consisting of pump and motor power of their own manufacture as the best way of giving purchasers a complete unit with both pump and drive properly proportioned and with undivided responsibility for the performance of the unit as a whole.

The type "S" pump which is the most generally used type is a single stage, double suction, horizontal shaft, bronze fitted pump built in sizes 1½-in. to 30-in. discharge; capacities, 30 to 42,000 g.p.m.; heads up to 200 ft., and in some of the smaller sizes for still higher heads.

The type "LS" is a lower head type "S" pump used for condenser circulating pumps, sewage pumps, drainage pumps and any other service requiring large capacities against relatively low heads. Built in sizes 24 in. to 60 in.

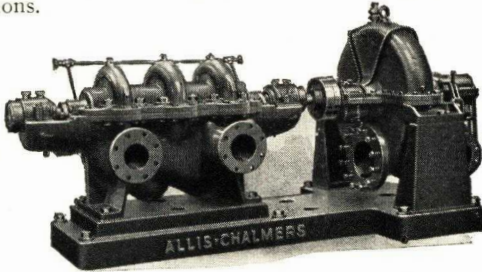


Motor Driven Type "S" Pump

Multistage Types

The multistage type centrifugal pumps are the double suction type "M" built in sizes 2½ in. to 16 in.; good for pressures up to 1500 lbs. in some sizes and depending on arrangement; the type "ST" built in sizes 2½ in. to 14 in.; the type "HYC" which has two-stage, back-to-back impellers and is built in sizes 4 in. to 14 in.

The type "M" pump is used for boiler feed service, oil pipe line pumps, fire service, high pressure water supply and similar applications.



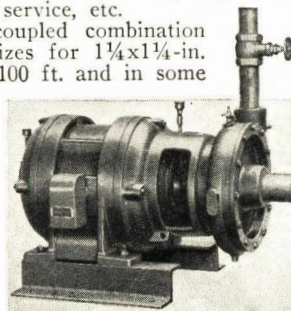
Type "M," with Steam Turbine Drive

Other Types

The type "SSOR" pump is used for handling high consistency paper stock, for sewage service, etc.

The type "SSU" is a close-coupled combination pump and motor unit built in sizes for 1¼x1¼-in. to 4x3-in. sizes for heads up to 100 ft. and in some of the sizes 200 and 300 ft. These pumping units have a multitude of uses, water supply, or air conditioning and washing machines, cooling water supply, oil industry and anywhere else a small, reliable, efficient pumping unit is required.

General catalog 1632L describing the Company's complete line of Centrifugal Pumps sent on request.



Type "SSU"

Texrope Drives

(Texrope—Trade-mark Reg. U. S. Pat. Off.)

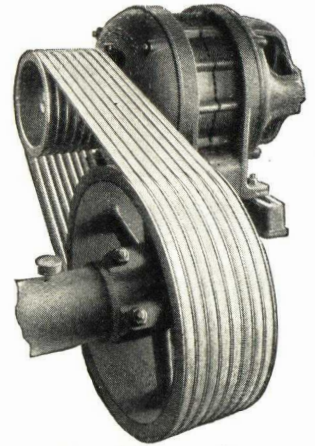
"Texrope" is the trade name and registered trade-mark of V-belt drive products of ALLIS-CHALMERS MANUFACTURING COMPANY.



Allis-Chalmers multiple V-belt drive is a patented product. This drive consists of a number of trapezoidal shaped, endless flexible belts running in V-shaped grooves. Power is transmitted by the wedging contact between the Texrope Belts and the grooves in the sheaves.

Advantages

- Positive yet flexible.
- Permits close coupling of driving and driven shafts.
- Smooth-starting—shock absorbing.
- Requires no lubrication and little attention.
- Silent always.
- Multiple belts of high overload capacity insure continuity of operation if one or two fail.
- Operates well in dusty or moist locations.
- Economical.
- Extensive tests prove high efficiency.
- Pressure on bearings is unusually low.
- Reverses as easily as an induction motor.
- Operates in any position.
- Slight adjustment takes up stretch.
- In about seven years, over 150,000 Texrope Drives aggregating more than 2,000,000 hp. have been applied to almost every form of industrial machinery for ratings ranging from ¼ hp. to 2000 hp. The Texrope drive was pioneered and is backed by an organization specializing in power and its utilization in industry, and has received the endorsements of leading engineers all over the world.



Typical Texrope Drive

Stock, Standard and Special Ratings

Stock Drives—For immediate shipment from various consigned stock points, are available for all popular motor ratings from ½ to 100 hp. There are 64 to 83 different ratios for each rating so that practically any speed reduction or increase can be had within the range of 1:1 to 7:1.

Texsteel Texrope Drives—¼ to 15 hp., also available from stock, supply the demand for a low priced unit. Texsteel sheaves are accurately formed of extremely tough steel, then welded and attractively finished in an aluminum lacquer. They are light in weight and easily installed.

Standard Drives—Not in stock, command early shipment since patterns are on hand and standard drawings are already complete. Standard drives are available for ratings between 50 and 300 hp.

Texrope Drives or Belts for all requirements can be selected from Catalog 150, available on request; also picture bulletin No. 1228.

Special Drives—Include large or special ratings and drives to suit special conditions, also flywheel sheaves for compressors or crushers, clutch applications, rim sheaves, etc. Split or clamp hub sheaves are furnished where required.

Texrope Belts

Texrope belts are made in accurately machined molds, in five cross-sectional sizes and various lengths suiting all requirements. These are also available for immediate shipment from various consigned stock points.

General Power Transmission Machinery

The Company builds a complete line of substantially built power transmission machinery for heavy duty continuous operations, including; Shafting to large sizes; Friction Clutches and Couplings; Bearings, etc.; Cast Iron Pulleys; Tighteners; Rope Transmissions; Iron and Mortise Gears; Fibre and Iron Frictions; and Sawmill and Flour Mill Elevating and Conveying Equipment. Write for Power Transmission Catalog stating your requirements.