



**Speed
Reducers,
Speed
Increases
and
Gearmotors
for
Heavy Duty
Applications**



Innovation and Excellence... The Tradition Continues

Our History

The RD Nuttall Company was founded by Mr. RD. Nuttall in 1887 with one gear cutter, five men and a combined capital of \$500.

From this modest beginning, the company grew and prospered, and over the next 42 years made numerous contributions to the gear industry. It was Nuttall that developed flexible gearing for transportation applications, forced feed lubrication for large industrial enclosed gear drives, and manufactured the first integral type gearmotor. And it was Nuttall that made one of the most significant contributions to the field of gear engineering single helical gears.

In 1928, Westinghouse Electric Corporation purchased the business from Mr. Nuttall. Although the name changed, the original commitment to excellence did not. Nuttall was known for its innovation and engineering, for it was our company that developed the modern form of the gearmotor which is used by gear manufacturers all over the world today.

February 1983 signified yet another step forward in Nuttall Gear's history. At that time, we once again became a privately held corporation, continuing the tradition of leading the industry in technology - such as pioneering the use of ion-nitriding for heat treating, and the use of our M^uVG SP-1 60, the ultimate machine available to confirm gear quality.

In 2004, Nuttall Gear became part of the Altra Industrial Motion group of companies. While there have been corporate changes over the years, some things never change, like your need for durable, dependable gears, and our commitment to excellence in both product and service.



Total Drive Source Capabilities

OUR EXPERIENCE

Every hour of every day, thousands of our gear drives are operating throughout the world servicing every industrial, commercial, utility and transportation application imaginable. We have paper machine drives operating at International Paper, Union Camp, Boise Cascade, Champion Paper and Weyerhaeuser. Cooling tower drives operating at Florida Power and Light. High speed compressor drives operating at the Pentagon and the new Denver International Airport, as well as high speed pump drives at Algoma Steel and Tennessee Valley Authority. Offshore oil jack-up rig drives working from the North Sea to the Gulf of Mexico. Grain elevators running in Vancouver, Minneapolis and Houston. Steel and aluminum mill drives operating at U.S. Steel, National Steel, Reynolds Metals and Alcoa. And we have drives running the chemical plants of DuPont.

We have drives for wind turbines, hydro turbines, conveyors, textile mills, extruders, coal crushers, elevators, water screens, rail car dumpers, cranes and hoists, briquetting machines, wood debarkers, radar drives and food machinery drives.

Our aeration and sewage treatment drives are found in towns and cities across the United States. We have compressor drives working at NASA, the Times Square Commercial Center in Hong Kong, and the Petronas Twin Towers in Malaysia ... turbine drives operating at Formosa Plastics in Taiwan ... and pump drives operating in Cogen facilities in Thailand and the Phillipines. We even supply reactant coolant pump speed increaseers for nuclear power plants throughout the United States and the rest of the world.

We handle the big job and the small. And we handle them all with the same commitment to quality and service that made the Nuttall name famous.

OUR PROMISE

We know it takes more than just good gears to make a good company. It takes a special touch for service, because not every order is standard. We pride ourselves in knowing that we can handle the toughest custom job you have.

We will supply an enclosed gear drive to suit any special requirements you need. We will make a unit to fit your space limitation, a drive with custom shafts, units with special seals, or extra long bearing life. We will make vertical and horizontal drives, speed reducers and speed increaseers, cast iron and fabricated steel housings. We supply gearmotors with any type of electric motor, either flange mounted or scoop mounted, constant speed or variable speed.

Total Drive Source is more than a slogan - we are the only company that specializes in providing complete packaged assemblies of both mechanical and electrical drive components.

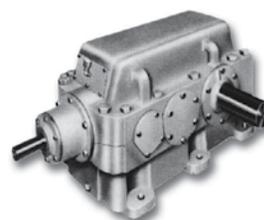
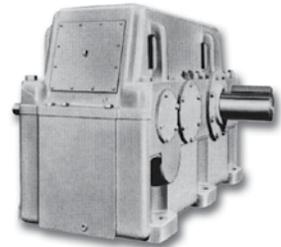
We coordinate your entire mechanical and electrical drive package including gear reducer, and electric motor mounted on a bedplate, with couplings and coupling guards, backstops, creep drives, chains, sprockets, clutches, shoe or disc brakes, or auxiliary lubrication consoles.

You receive it ready to run, not ready to assemble. You will also find our composite drawings are the best around. You can't get this kind of service from any other company in the world. Nuttall Gear is a company with a history of high standards and performance and we work to keep it that way.

YOU CAN COUNT ON IT.

TYPE TDS / HPD, Parallel Shaft Speed Reducers

are available with torque ratings up to 6,000,000 inch-pounds, and standard gear ratios up to 1500:1. TDS and HPD units incorporate precision helical gearing (in single, double, triple, quadruple and quintuple reductions) enclosed in heavy duty cast iron or welded steel housings. Type TDS units utilize through hardened gears and Type HPD units utilize case hardened and ground gears. Standard features include tapered roller bearings, large inspection plates, a positive splash system for lubrication, extra wide bearing spans and center bearing supports; all to provide a rugged, reliable unit with proven dependability in virtually every industrial application. Nuttall Gear can supply TDS and HPD units separately or in a completely engineered package including motor and reducer mounted on a bedplate.



TYPE TDS, Bevel Right Angle Speed Reducers

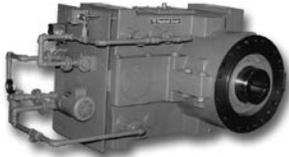
are available in ratings from 50,000 to 5,000,000 inch-pounds of torque and gear ratios from 4: 1 to 357:1. the input shaft is at a right angle to the output shaft, which may be horizontal or vertical shaft up and down.

This provides flexibility in space utilization for typical applications such as material handling or cooling tower drives. These units retain the Type TDS design features, including tapered roller bearings and heavy duty cast iron or welded steel housings. Nuttall Gear can supply drives separately or as a packaged assembly with motor and reducer mounted on a bed plate.



TYPE DHE / DVE, Horizontal or Vertical Extruder Drives,

are available with torque ratings up to 600,000 inch-pounds and gear ratios from 6:1 through 25:1. This unit is available in case sizes for 2 inch through 10 inch extruder applications and can be mounted in the upright configuration or in the horizontal position. Standard construction includes all cast iron housings for quiet operation, integral thrust bearing, and a through bored output shaft for screw ejector or cooling. Custom output flanges and shaft dimensions are available to suit your air space adapter and screw shank requirements. In addition, Nuttall Gear offers "change gear" Type UE vertical and horizontal extruder drives with similar features and options, such as piggy-back motor mounts.



VERI-DRI, Vertical Concentric Shaft Drives,

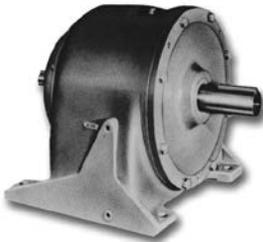
are available with torque ratings up to 230,000 inch-pounds and output speeds from 1.5 to 780 RPM. Veri-Dri models are available as gearmotors, both integral construction and C-face mounted, or as reducers. All types utilize "dry-well" construction to prevent possible oil contamination in the product or process. They are well suited for water treatment, food processing, and chemical duty;

on aerators, mixers, agitators, and blenders. Cast iron housings, bi-directional shaft mounted lube oil pumps and flow indicators are just a few of the features that make Veri-Dri gearmotors and reducers rugged and reliable performers.



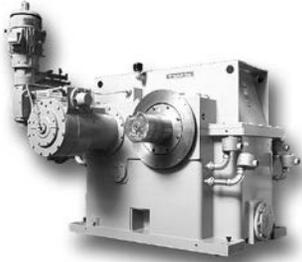
TYPE R, Moduline® Concentric Shaft Speed Reducer,

are available with torque ratings up to 233,000 inch-pounds, and standard gear ratios up to 985:1. Type R drives incorporate precision helical gearing in single, double, triple, or quadruple reductions. Standard features include rugged cast iron housing, and tapered roller bearings. Millions of hours of field operations have made the Type R-Moduline the standard for industrial applications. These heavy reducers are well suited for use with any prime mover – AC or DC motors, gasoline or diesel engines, power take-off shafts, and line shafts. Optional modifications might include special ratios, taconite seals, backstops, bedplates, or special output shaft dimensions to meet your exact requirements.



TYPE SU / SD, High Speed Gears,

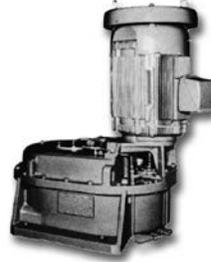
are available in ratings up to 40,000 HP and output speeds up to 20,000 RPM or higher in ratios up to 9:1. Nuttall Gear's



design features include heavy cast iron or welded steel housings for strength and rigidity, dynamically balanced precision double helical gears for uniform load distribution, and oversized split sleeve bearings with labyrinth oil seals to insure the reliability of this high speed unit. Millions of hours of operation have proven the design integrity of the Type SU / SD on typical applications such as pumps, fans, turbines and compressors. These high speed units can be supplied with an integrally mounted lube oil system including filter and cooler or with a remote lube oil console. Typical options might include oil temperature and pressure gauges or switches, bearing temperature detectors, vibration probes and turning gears. Type SU / SD High Speed Gears are available for AGMA 6011, API 613 / 677, and Class I-E Nuclear Safety Related Applications.

VERI-DRI, Vertical Parallel Shaft Drives,

are used for applications with higher power requirements, and are available with torque ratings up to 1,200,000 inch-pounds, and standard gear ratios up to 238:1. "Dry-well" construction, bidirectional shaft mounted lubrication oil pumps, oil flow indicators, and large inspection covers are standard features of the entire Veri-Dri product line. As with the smaller units, a wide selection of modifications and options, such as oil pressure switches, temperature switches, oil filters, immersion heaters, pressure gauges, and a choice of motor enclosures may be ordered to give you the right drive for your application.



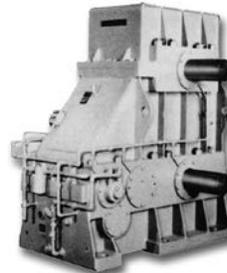
TYPE G, Moduline® integral Gearmotors,

are available in ratings from 1 to 200 HP and output speeds from 1.5 to 1430

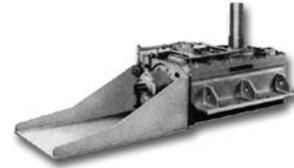
RPM with AGMA Class I, II, or III service factors. This compact integral design, pioneered by Nuttall Gear, fits many applications and provides total drive source responsibility for motor and gear application and performance. AC motors, both standard and high efficiency, and DC motors are available in all enclosures. A complete range of optional motor modifications can be supplied to tailor the Moduline Gearmotor to your exact requirements. Cast iron housings and tapered roller bearings are standard features of the gear boxes. Special shafts, seals, slide rails, brakes, and a variety of mounting positions are available with this versatile Gearmotor design.

METAL INDUSTRY DRIVES

- Nuttall Gear has supplied the metals industry with a wide variety of gear drives for its many different applications, from the simplest standard unit to the more complex drives specifically developed for a particular application or customer requirement. Combination reducer/pinion stands, separate pinion stands, pinch roll drives, flattener drives, single- and multispeed recoilers and uncoilers, all have



been produced for mills and processing lines all over the world. Special features, such as hollow-bored lowspeed shafts, provisions for stripping mechanisms and hold-down rolls, are designed to customer requirements. Nuttall Gear will custom design and manufacture units to your requirements or we will manufacture them to your design.



TYPE DRV AND TRV, Right Angle, Vertical Output Shaft,

gear drives are available with torque ratings

up to 5,000,000 inch-pounds in gear ratios up to 238:1. Special output shaft bearings for downthrust, an oversized housing for maximum self-cooling thermal capacity, a shaft driven pump for force feed lubrication, and special corrosion resistant hardware and epoxy paint make this design particularly suitable for the most severe environments, such as cooling towers. In addition, this type of unit is also available with similar features, but with output shaft down and "dry-well" (zero leakage) construction. This configuration is most appropriate for chemical process vertical mixers, vertical pump drives and aeration drives.

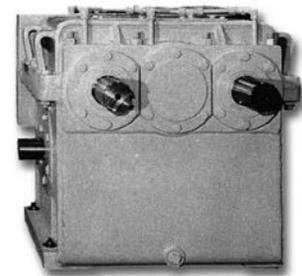
TYPE U, Moduline® Scoop Mount Gearmotors,

are available in ratings from 1 to 200 HP and output speeds from 1.5 to 420 RPM with AGMA Class I, II, or III service factors. This design allows for the use of standard foot mounted NEMA frame AC motors or DC motors. Total drive source responsibility for motor and gear performance can be left to Nuttall Gear, with standard or high efficiency motors available in all enclosures. A complete range of optional motor modifications can be supplied to tailor the Moduline Gearmotor to your exact requirements. The speed reducer features standard cast iron housings and tapered roller bearings, with optional backstops, slide rails, special shafts, seals, and a variety of mounting positions available.



CUSTOM ENGINEERED DRIVES,

which include some of our most outstanding products, cannot be found in our catalog, because they were designed for specific customer



and/or application requirements. The unit shown above is a twin output shaft, right angle, spiral bevel/helical gear combination with a "change gear" capability, providing 32 different gear ratios in 1% increments. By working closely with the customer, Nuttall Gear progressed from a blank sheet of drawing paper to a finished unit, shipped in 16 weeks. Nuttall Gear's strong application and design engineering capability has earned a reputation for producing unique gear drives both economically and on a timely basis. Contact us for your next special gearing application.

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*Worm Gear and
Helical Speed Reducers*

The Brands of Altra Industrial Motion

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