

CLEVELAND GEAR

Open Gearing • Modular Reducers • Custom Drives



CLEVELAND GEAR

First in gears. First in excellence.



MORE THAN 80 YEARS OF UNEXCELLED PRECISION



Since Cleveland Gear's beginning in 1912, our watchwords have been precision, performance and on-time delivery of the finest quality power transmission equipment in the industry. How well we have lived by those words is reflected in our reputation as being among the world leaders in worm gear technology. Then, as now, when you specify Cleveland, you can be sure that your exact requirements are being fulfilled — whether it be for open gearing, standard reducers, or custom drives designed for your special applications.

Maximizing CNC technology

Our precision tooling is matched to the latest in manufacturing and processing technology, including a Liebherr CNC worm gear hobbing machine and a Klingelnberg CNC thread grinder. An important aspect of our manufacturing capabilities is based on our continuing capital investments including heat treating, CNC turning centers and related machines.

After the basic machining is completed, strict tooth-contact pattern testing is done to assure optimum performance from gears that run smoothly and perform properly. Our state-of-the-art composite gear checker closely monitors runout and spacing, in addition to worm profile and lead — another assurance of long-running reliability.

On-line, up to speed, and rolling

A vital addition to our total production capabilities is our new multi-million dollar Flexible Manufacturing Cell that lets us respond virtually at once to all of your needs. Specifically, this means providing you with off-the-shelf speed reducers in a single day. Or modifying any of our hundreds of standard products for delivery in just a few days — not weeks.

Cleveland Gear is unique in the industry in that we maintain the tightest control over quality and delivery. We do this by conducting the entire process from design to production of each and every product and product assembly — all under a single roof, under a single corporate entity.



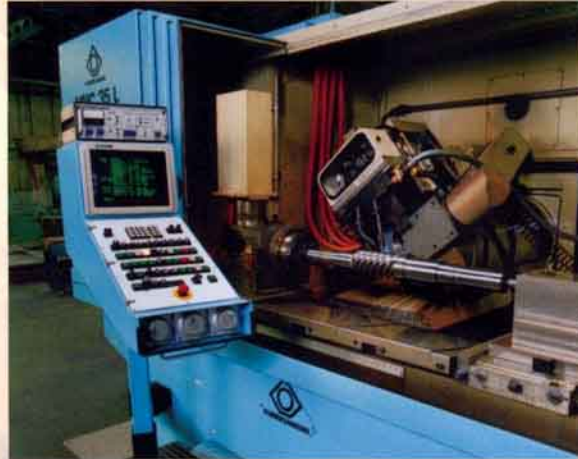
This Cleveland Gear speed reducer has been in continuous service since its installation in 1921.

Cleveland's Master Worm System

Because we produce our own tooling — and maintain more than 1,500 hobs in stock (along with corresponding master worms), we have been able to perfect a unique Master Worm System. With the Master Worm System, we can replace either member in a gear set at any time — a perfect match — without the customer expense of having to replace the entire set.

Our composite gear checker closely monitors runout and spacing, as well as worm profile and lead to assure long-running reliability.

Add it all up and we're sure you'll agree: with Cleveland, you get the best in high performance power transmission equipment ...every time...backed by a staff of highly qualified field service engineers.



We manufacture:

Worms up to 14" diameter
Worm gears up to 110" diameter
Worm gear sets up to 60" center distance

Materials:

Cast iron, ductile iron, bronze, carbon and alloy steel

Heat treatment:

Hardened, case hardened, flame hardened and induction hardened

Tooth forms:

Thousands of cutting tools coupled with CNC equipment produce virtually any worm gear geometry.





OPEN GEARING: UNSURPASSED SELECTION...

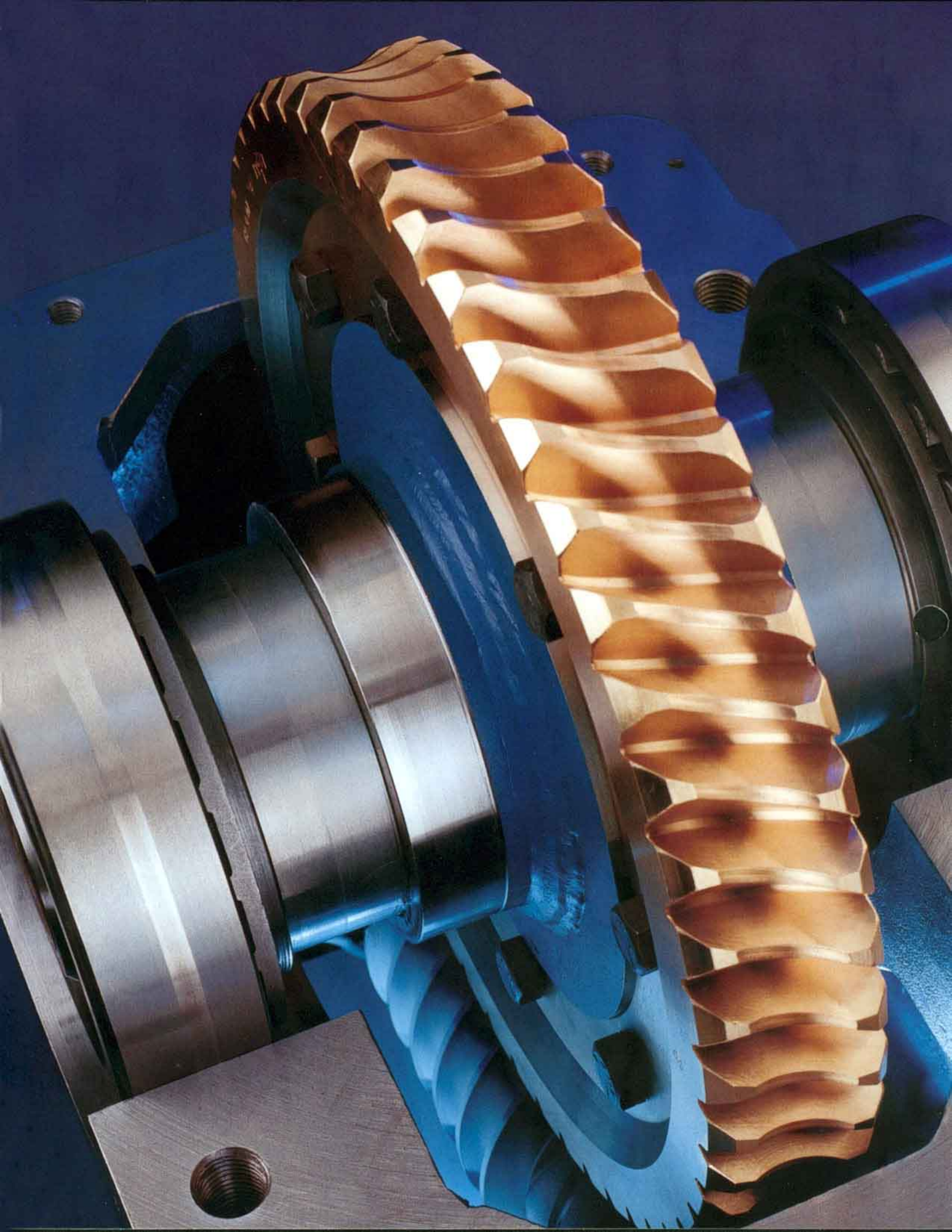
Because of the complexities of worm gear manufacturing, we produce our own tooling. Today we have more than 1,500 hobs in stock, with corresponding master worms. This unique system means we can replace either member in a gear set at

any time — a perfect match without having to replace the entire set. It is not only our permanent job record, it is your assurance of precise duplication of any and every gear set we've ever made.



- **Smaller sizes (3" through 6" centers)** have a bronze rim centrifugally cast onto a ductile iron center for exceptionally strong mechanical keying between the two parts.
- **Larger sizes (7" through 36" centers)** have a flanged rim for bolting to either a standard Cleveland center or the builder's special center.
- **Catalog #600**

... GUARANTEED REPEATABILITY.



SPEED REDUCERS: UNCOMPROMISING QUALITY...



◀ Modular Speed Reducers

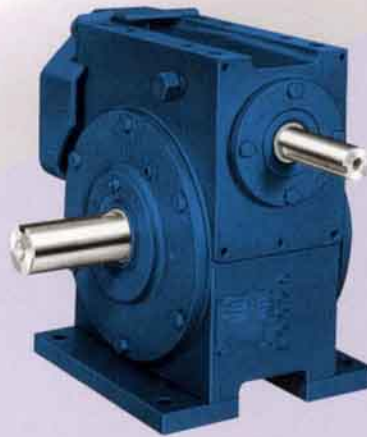
Center distances from 1.35" to 4.00"
Single reduction from 5:1 to 100:1 — up to 15 hp;
up to 3,585 in-lbs output torque
Double reduction from 50:1 to 3,600:1

• Catalog #400

E-Line Modular Speed Reducers ▶

Center distances from 3" to 7"
Single reduction from 4-5/6:1 to 61:1 —
up to 55 hp; up to 36,000 in-lbs output torque
Double reduction from 50:1 to 3,600:1

• Catalog #520 & #521



◀ Fan-Cooled Heavy-Duty Speed Reducers

Center distances from 3" to 12"
Single reduction from 3-1/9:1 to 95:1 — up to 169 hp;
up to 145,000 in-lbs output torque
Double reduction (helical worm) from 32:1 to 394:1 —
up to 58 hp; up to 145,000 in-lbs output torque
Double reduction (worm-worm) from 25:1 to 6,650:1 —
up to 33 hp; up to 145,000 in-lbs output torque

• Catalog #500

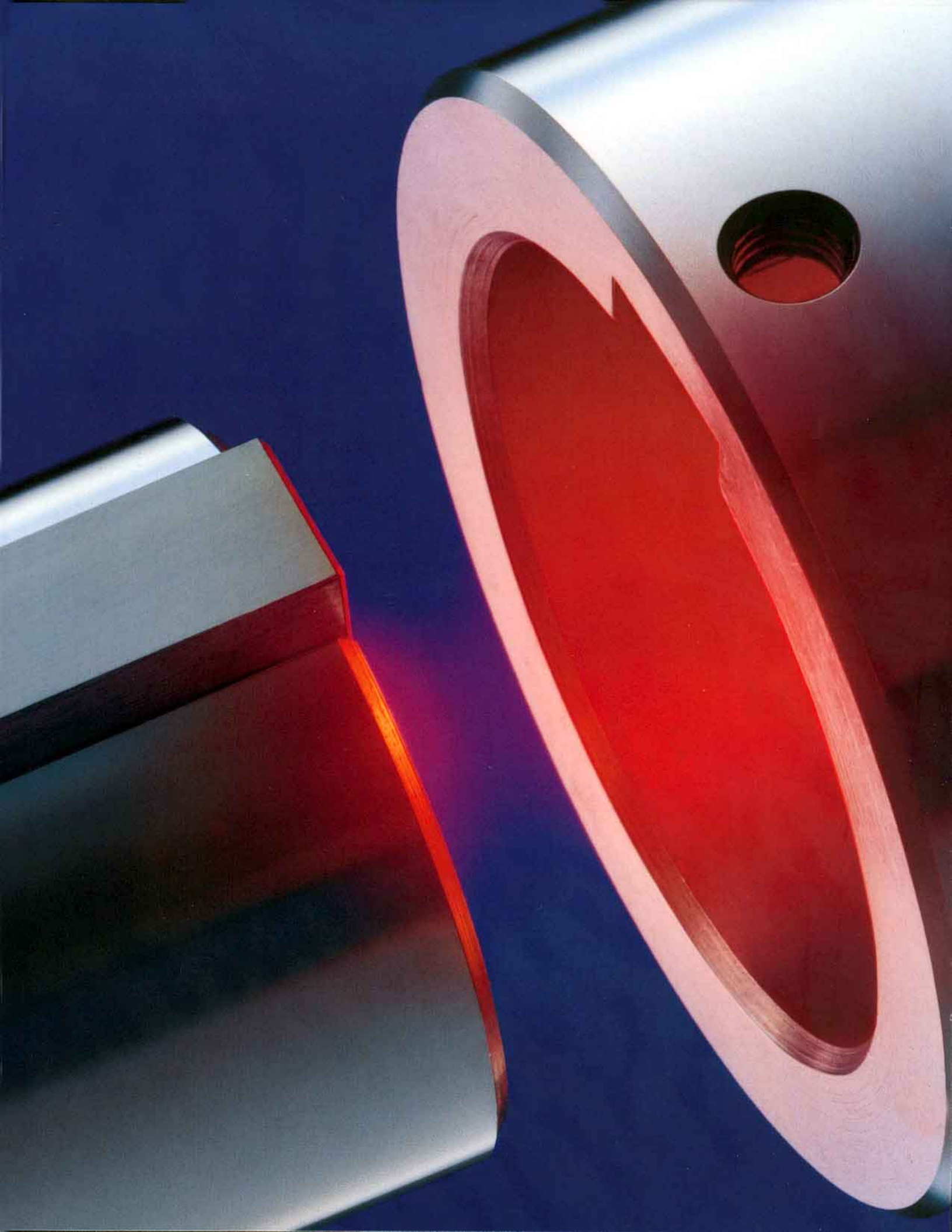
Heavy-Duty Speed Reducers ▶

Center distances from 13.4" to 36.0"
Single reduction from 3-5/9:1 to 100:1 — to over 640 hp;
to over 1,985,000 in-lbs output torque
Double reduction (helical-worm) from 30.8:1 to 430:1 —
to over 610 hp; to over 1,985,000 in-lbs output torque
Double reduction (worm-worm) from 96.7:1 to 4,118:1 —
to over 110 hp; to over 630,000 in-lbs output torque
Multiple reduction (triple worm) from 15,000:1 to 220,000:1 —
to over 50 hp; to over 300,000 in-lbs output torque

• Catalog #700



... GUARANTEED FLEXIBILITY.



CUSTOM DRIVES: UNLIMITED CHOICE...



Available in fabricated steel or cast iron housings, depending on quantity required. Power ratings range from

fractional to hundreds of horsepower, ratios up to 220,000:1, with output torques over 2,000,000 in-lbs.

- **Call or fax us for a quote on your specific custom drive needs.**



...OUTSTANDING PERFORMANCE.

PRECISION GEARING: USUAL AND UNIQUE APPLICATIONS

If your requirements include new geometry, our engineers and designers can provide it. From CAD to CAM, our totally integrated facilities allow us to design, manufacture, check and test gears and gear sets — any size, any quantity.

We analyze your situation and requirements, taking into account input horsepower, reduction ratios, output torque and service factors. Only by doing this can we help you obtain the best gear drive for your specific needs.

COMMITTED TO OUR CUSTOMERS

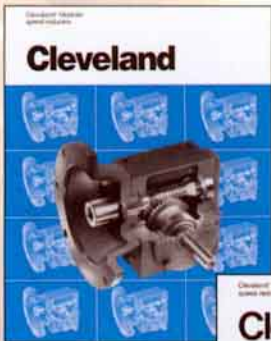
At your service — that's our motto. Twenty-four hours a day emergency service promises quick response to any downtime situation you may experience. Our representatives are more than sales people; they are true sales engineers

who will work to solve whatever gearing problem you face — and, if necessary, we can put three shifts on the task to achieve satisfactory results for you.



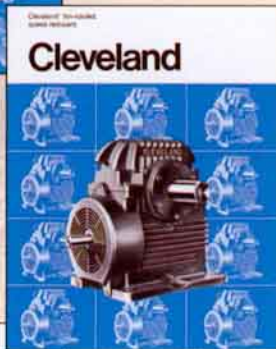
CLEVELAND GEAR'S LIBRARY OF TECHNICAL CATALOGS

"MUSTS" FOR YOUR ENGINEERING DEPARTMENT



◀ **Catalog # 400 - Modular Speed Reducers**

Complete 72-page catalog of diagrams and specifications including design features, engineering, selection data and part numbering.



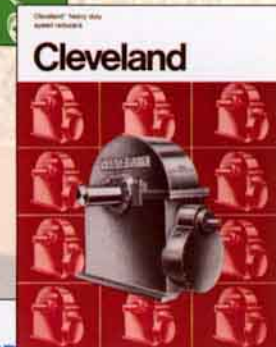
◀ **Catalog # 500 - Fan-Cooled Speed Reducers**

Extensive data on selection, installation and maintenance, including design features, ratings and dimensions on all three types.



◀ **Catalog # 600 - Open Gearing**

Includes application classifications and service factor tables, plus ratings tables, special designs, and worm and gear dimensions.



◀ **Catalog # 700 - Heavy Duty Speed Reducers**

Comprehensive reference with selection guide and rating tables for single, helical worm gear, and double reduction speed reducers.



◀ **Catalog # K208 - Speed Variators**

Describes all four equipment model variations and all four control methods, complete with design considerations and engineering data.

CALL TOLL-FREE: 1-800-423-3169

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Distributed By:



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