

Segmented girth gear drive package

Complete drive solution for rotating cylinders



Segmented girth gears in industry

Girth gears are used to drive rotating systems such as dryers, rotary kilns and grinding mills. They are installed around the circumference and transfer torque from the gearmotor to the rotary cylinder, and are available in flange or leaf spring design.

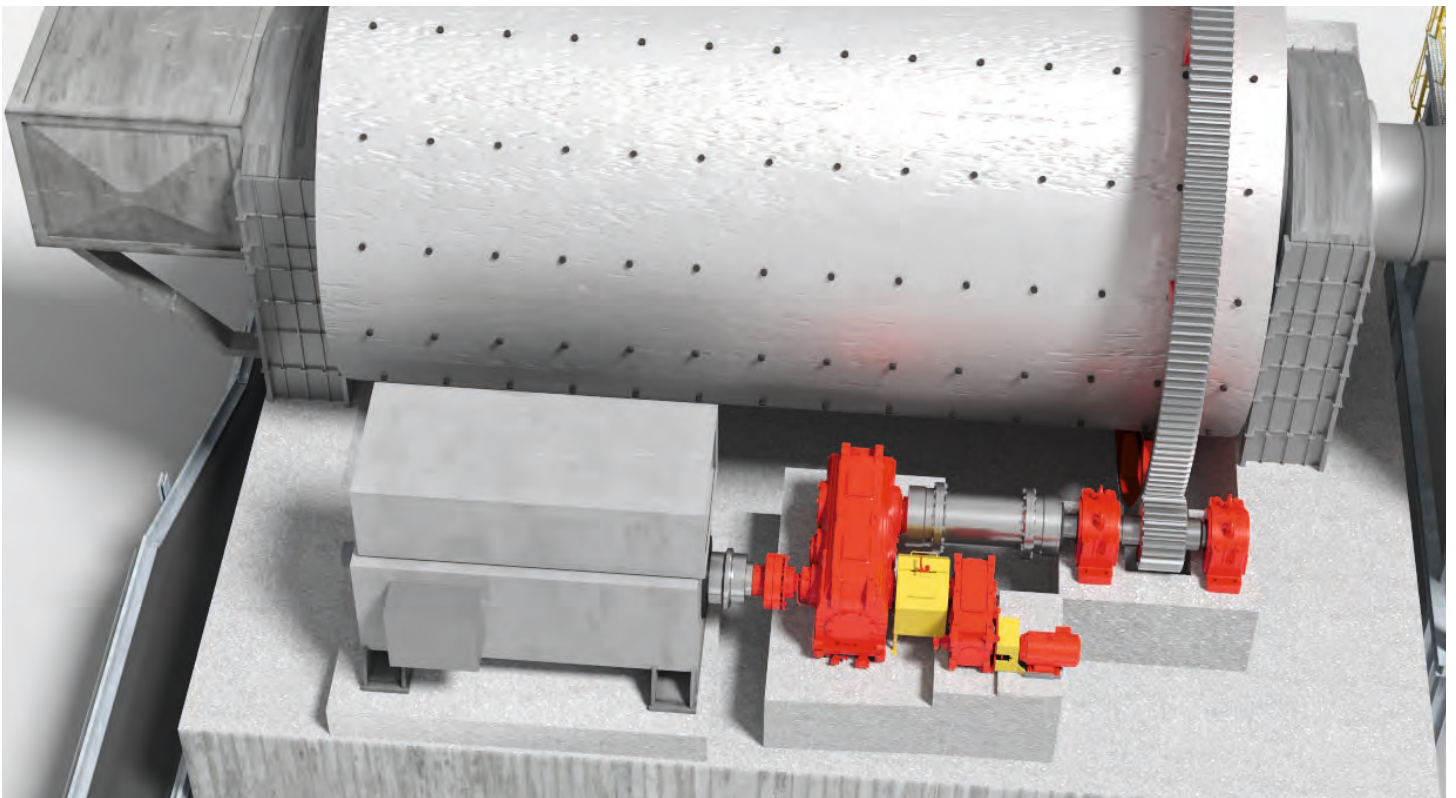
Traditional girth gears consist of two to four extremely large, heavy segments. Their large size makes manufacturing difficult and expensive, leading to a long delivery. In addition, their weight and size often require specialized transportation, along with costly road permits for oversized loads.

Applications/sectors

- Mining
- Energy sector
- Pulp and paper industry
- Steel
- Cement production
- Chemicals
- Environment

By combining the latest engineering and manufacturing methods, SEW-EURODRIVE provides **segmented** girth gears that result in significant user benefits.

SEW-EURODRIVE uses only Austempered Ductile Iron (ADI) for girth gears because of its outstanding mechanical properties. ADI has a high contact fatigue strength and becomes harder during operation. Its extremely high tensile strength allows the segments to be smaller and lighter, yet extremely strong. Therefore, shipping, assembly, and maintenance are easier and much more cost effective.



Overview of benefits

Easy casting

The design of the feeders and the use of heat sinks combined with the relatively short segments guarantee a seamless casting quality.

Practical handling

The handling of the individual segments and component groups is simplified both in the factory and at the construction site. There is no need for special transportation arrangements. Segmented girth gears can be transported in standard containers.

Optimized quality assurance

The minimized size brings also cost advantages when it comes to the scrapping of blanks. Flawless blanks can be used without additional welding or oversizing.

Exact pitch accuracy

The segmented girth gears of SEW-EURODRIVE guarantee an initial pitch accuracy of ISO 8 (AGMA 9). The vibrations of the girth gears are kept to a minimum due to the high pitch accuracy.

Simple exchange

If a segment is damaged, it can be exchanged without dismantling the whole ring.

Low weight

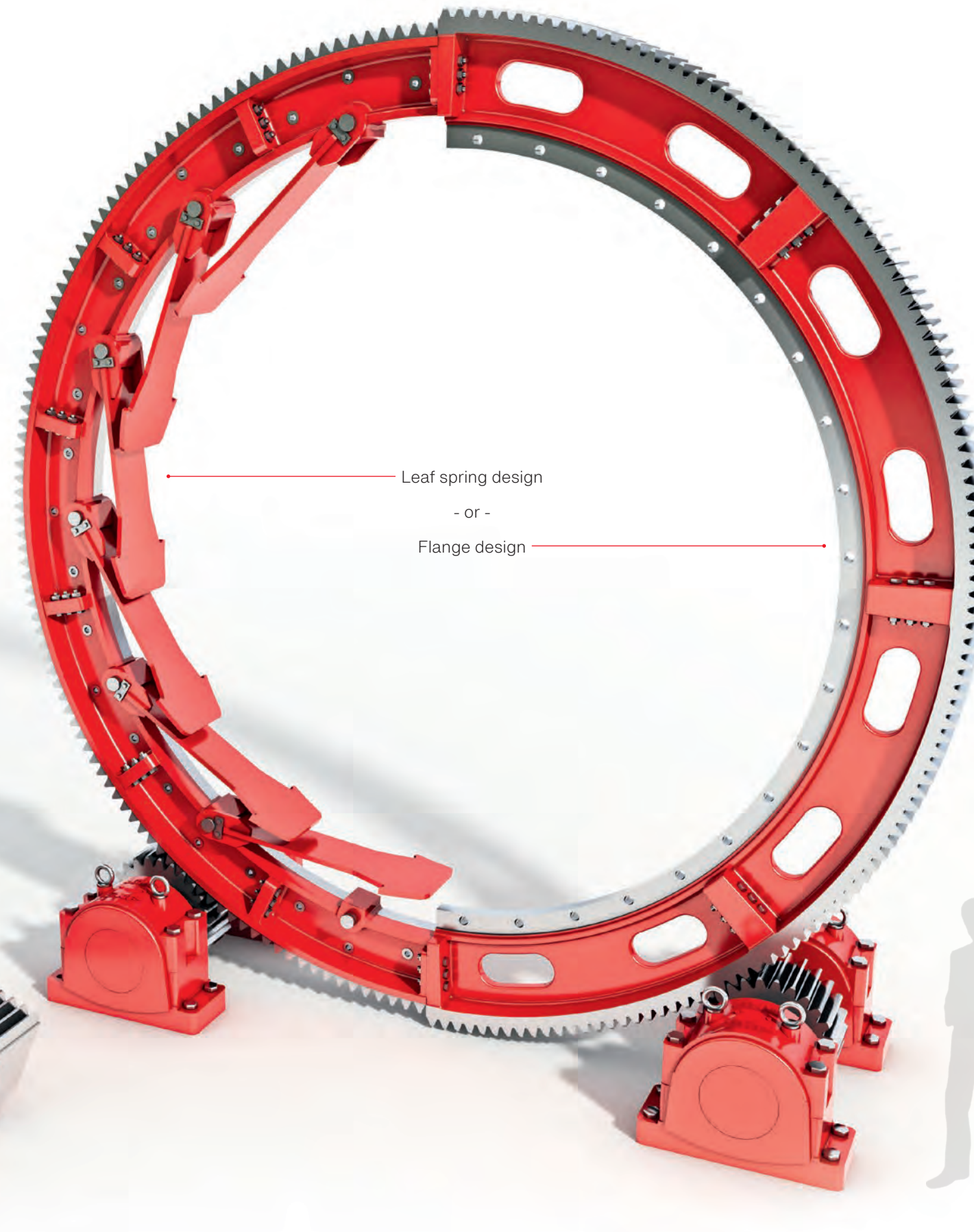
ADI has an over-average contact fatigue strength due to its cold work hardening properties. These properties combined with an appropriate girth gear size enable a compact and lighter design compared to the traditional solution. The low weight is important for the handling and the assembly of the girth gear as well as the achievable circumferential velocity.

Longer service life

With the correct dimensioning, load and lubrication, an ADI girth gear is nearly wear-free.

Short delivery time

The small segments allow for a fast production and therefore a short delivery time.



Technical data

- Girth gear pitch diameter up to 53 feet (16 m)
- Gearing width up to 37 inches (950 mm)
- Power rating up to 11,400 HP (8,500 kW) per pinion
- Maximum pitch line velocity 275 in/sec (7 m/s)
- Girth gear module 20, 25, 30, and 40 mm
- Calculation according to standard ISO 6336 or AGMA

International standards:

- ISO 17804 "Ausferritic spheroidal graphite cast irons"
- AGMA 939-A07 "Austempered Ductile Irons For Gears" details the excellent mechanical properties of ADI
- AGMA 6014-B15 "Gear Power Rating for Cylindrical Shell and Trunnion Supported Equipment"

Full girth gear drive package

SEW-EURODRIVE manufactures 100% of its girth gears in-house using a proprietary process. SEW-EURODRIVE is able to provide the complete drive package to include the girth gear, gear units, drive pinions, base frame, inching drives, and other options.

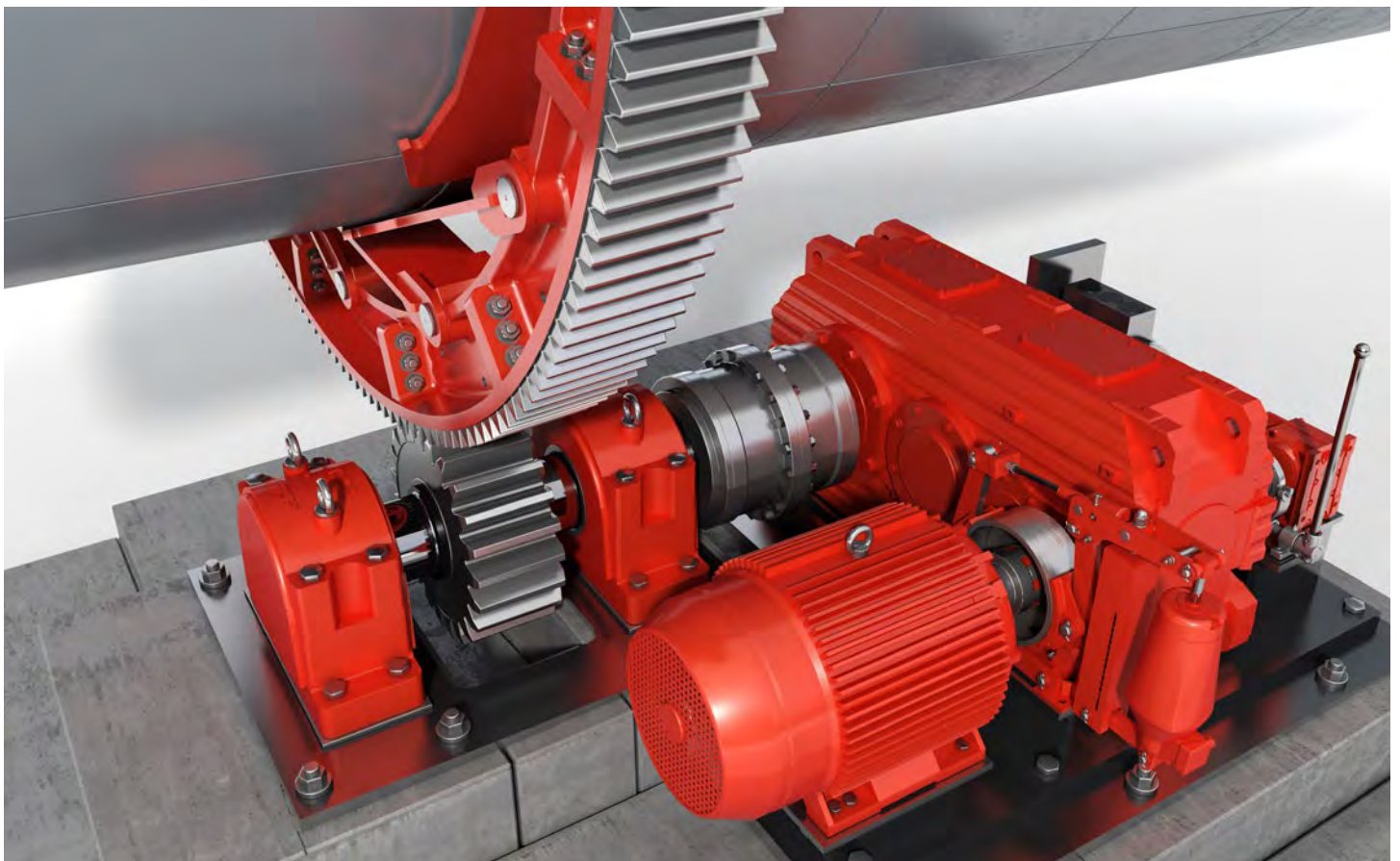
The pinion may be mounted directly onto the output shaft of the gear reducer, or separately using a pedestal bearing. SEW-EURODRIVE also provides installation and start-up commissioning services.

Common girth gear applications

| | Mill | Rotary kiln |
|-------------------|---------------------------|--------------------|
| Power | Up to approx. 15 MW | Up to approx. 1 MW |
| Diameter | Up to approx. 53 ft (16m) | Up to 30 ft (9m) |
| Installation | Flange | Leaf spring |
| Speed of rotation | High (10 – 20 rpm) | Low (1 – 4 rpm) |

Drive package components

- Segmented girth gear
- Leaf springs or flange design
- Drive pinion and pedestal bearing
- Main gear unit
- Motors
- Auxiliary drives
- Lubrication system
- Base frame
- Couplings and covers
- Condition monitoring
- Installation and startup services





U.S. locations

U.S. Headquarters/Southeast Region

SEW-EURODRIVE, Inc.
220 Finch Road
Wellford, SC 29385
P: (864) 439-7537
cslyman@seweurodrive.com

Southwest Region

SEW-EURODRIVE, Inc.
202 W. Danieldale Rd.
DeSoto, TX 75115
P: (214) 330-4824
csdallas@seweurodrive.com

Western Region

SEW-EURODRIVE, Inc.
30599 San Antonio St.
Hayward, CA 94544
P: (510) 487-3560
cshayward@seweurodrive.com

Midwest Region

SEW-EURODRIVE, Inc.
2001 West Main St.
Troy, OH 45373
P: (937) 335-0036
cstroy@seweurodrive.com

Northeast Region

SEW-EURODRIVE, Inc.
2107 High Hill Rd.
Bridgeport, NJ 08014
P: (856) 467-2277
csbridgeport@seweurodrive.com

Industrial Gears

SEW-EURODRIVE, Inc.
148 Finch Rd.
Wellford, SC 29385
P: (864) 439-8792
igorders@seweurodrive.com