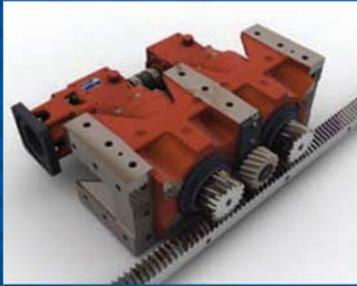


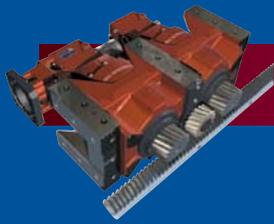
# The Andantex Advantage...



**Your source for high-precision  
motion control components and systems**

**ANDANTEX**  
USA Inc.

# Table of Contents:



**Rack & Pinion Axis Drives**

Page #

**4**



**Servo-Reducers & 2-Speed Spindle Gearboxes**

**5**



**Web Tension Control Systems**

**6**



**Merobel Products**

**7**



**Differential Drives**

**8**



**Right Angle Gearboxes**

**9**



**Mechanical Speed Control Units**

**10**



**After Market Products**

**11**

# The Andantex Advantage...

## It's both the precision products & engineering guidance for your industry-specific application

Andantex USA is a leading provider of high-precision motion control components and systems. We serve machine tool builders, plus the automation, converting and printing industries, as well as manufacturers of high quality industrial machinery.

Our product range includes

- Rack & Pinion Axis Drives
- Servo-Reducers
- Two-Speed Spindle Drive Gearboxes
- Industrial Differentials
- Magnetic Particle Brakes, Clutches & Torque Limiters
- Precision Right Angle Gearboxes
- Digital Controllers
- Multispeed Transmissions

Although our product mix is diverse and covers numerous applications, it's the expert engineering guidance that has made Andantex the provider of choice for countless OEMs as well as end users. Whether your motion requirements involve off-the-shelf products, or more complex engineered systems to meet specific needs, you can always count on **The Andantex Advantage** to deliver both the products and expertise to enhance productivity.

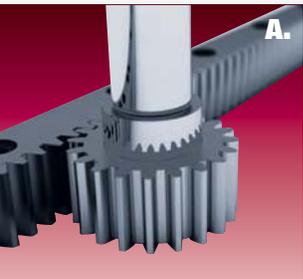
Your source in North America for the following:



HEYNAU



# Rack & Pinion Axis Drives



## A-A1. Modular Rack and Pinion System

This system consists of a standard range of straight, circumferential pitch, and helical racks and pinions. The modular design permits rack lengths from 0.5 meters to 2 meters to be linked end-to-end achieving any desired travel length from standard components. Racks & pinions are available with different materials, heat treatments and quality levels to ensure the correct balance of power, precision and price to meet application requirements.

The standard range is available in modules, M, 1.0 to 10.0 (Diametral pitch, P, 25.4 to 2.54) with lengths up to 2 meters allowing loads from 1lb. to 100,000 lbs. to be moved at speeds from 0 to 1000 ft/s (5 M/s). Rack lengths up to 4 meters (2 meters with ground teeth) and modules up to 20 are available on request.

## Preloaded Rack & Pinion Drive Systems

The positioning requirements of today's ultra-accurate CNC machine tools call for preloaded rack & pinion drives that insure ZERO-BACKLASH during acceleration, steady state, and deceleration.

Andantex offers 2 systems to achieve preload:

### B. TwinDRIVE KRP+

Electrically preloaded TwinDRIVE units achieve the preload by "electrical braking" one pinion against the other. One pinion is considered as the driving pinion, while the other is braking.

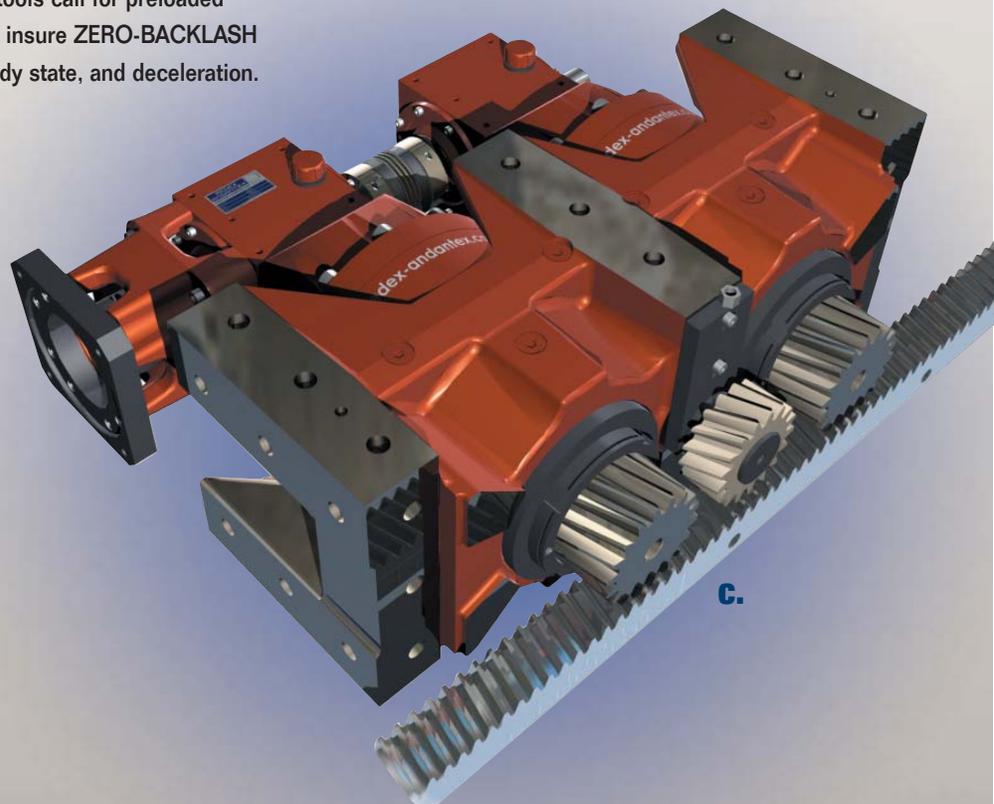
This system requires two motors and a special motor controller to handle the preload.

### C. DualDRIVE DRP+

Mechanically preloaded DualDRIVE units achieve the preload by torsionally winding one pinion against the other. One pinion is considered fixed and the other spring loaded.

This system is driven by only one motor and does not require any special motor controller.

The preload is obtained with a REDEX patented preloading system.



## A. SRP - High Tech Planetary Reducer

SRP reducers are designed to be an integrated machine sub-assembly consisting of a minimum backlash, hardened and ground REDEX planetary gear train, high capacity tapered roller bearing supported ISO 9409 output flange and input flanges allowing universal servo-motor mounting. A high quality spiral bevel gear train is available as an option for right angle requirements. SRP is the ultimate high-tech servo reducer providing the superior torsional and radial stiffness, minimum backlash and excellent torque density required for precision motion control applications. Available in 5 sizes, with optional output pinions for transmitting torques up to 4000 Lb.Ft.

## B. Servo-Worm Reducers

This line of servo-worm reducers was specifically developed for use with the latest servo motor technology in applications that demand precise positioning and repeatability. These applications often occur in the Material Handling, Automation, CNC Machine Tool & Robotics Industries.

These reducers are available in six sizes, with ratios from 2 to 24:1 and output torque capacities to 4,400 lb.ft. The units provide an angular backlash of less than 6 arc minutes and have the advantage of "in the field" adjustable backlash. The worm & wheel gear designs are optimized for minimum backlash.

## C. Z-Series Spiral-Bevel Gearboxes

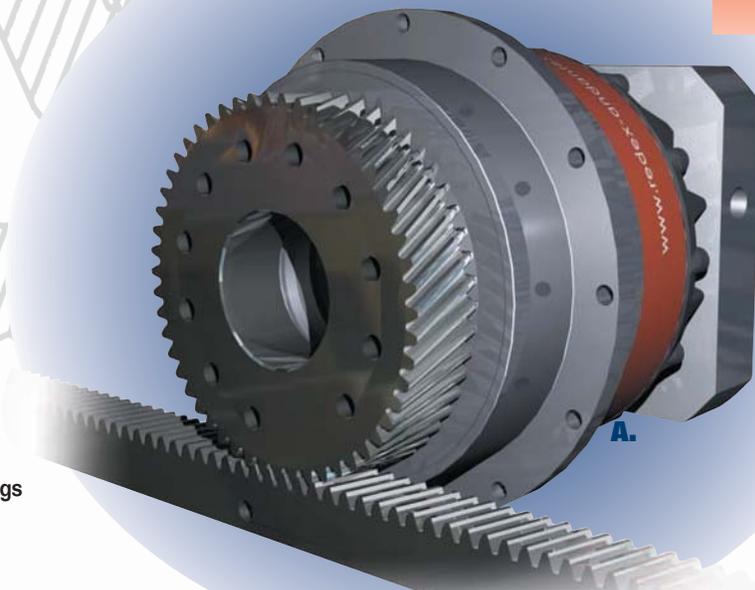
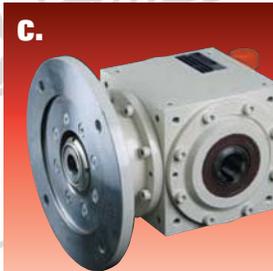
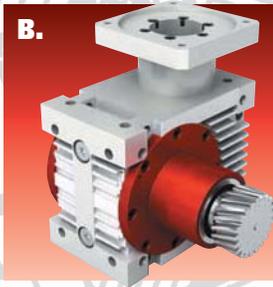
The new Z-Series precision spiral-bevel gearboxes feature Klingelnberg spiral-bevel gears made of case-hardened alloy steel. These versatile units can be equipped with motor mounting flanges, labyrinth seals, and ratios up to 6:1 for continuous duty servo requirements. Efficiency of the units is from 95 to 98%. Features include low backlash (three arc-minutes), high input speeds (3,000 rpm) and horsepower ratings from 2 HP to 540 HP.

## D. MSD - Machine Tool Spindle Drive Gearboxes

These conventional 2-speed gearboxes extend the constant power speed range of spindle drive motors, providing high output speeds (8,000 rpm) for finishing aluminum and high torque at low speeds for hogging out steel. Standard ratios are 1:1 and 3.8:1 (reduction ratios are available from 2.5 to 5:1) with power ratings from 8 to 220 HP. Speed shift is made by an externally operated dog-clutch slider, remotely actuated by a servo motor, pneumatic or hydraulic actuator. Shift detection is determined by proximity switches.

## E. RAM-MSD 2-speed Gearboxes

RAM-MSD is Andantex's response to evolving spindle-drive motor technology. Mounted inline between motor and spindle, these units provide a hollow-through bore, enhance performance and simplify engineering for high quality machine tools. The RAM-MSD develops full power at 300 rpm for rough tasks like hogging out steel with a top speed of 12,000 rpm.



# Web Tension Control Systems

A.



## A. New DGT 300

The latest generation Merobel digital controller has been updated in a small, smart package that makes tension control as easy as child's play. DGT 300 is a user-friendly, compact package that also includes the power supply to directly control EMP brakes and clutches. A new feature is an analog DC output -10/+10V DC to control drives.

B.



## B. Load Cells

Modular designed, cartridge style load cells are designed to detect loads from 0.1 to 35,000 lbs. The load cells are the transducer that measures the tension in the Andantex closed loop tension control system. The information is given to the DGT 300 to control the brake.

C.



## C. Ultrasonic & Laser Sensors

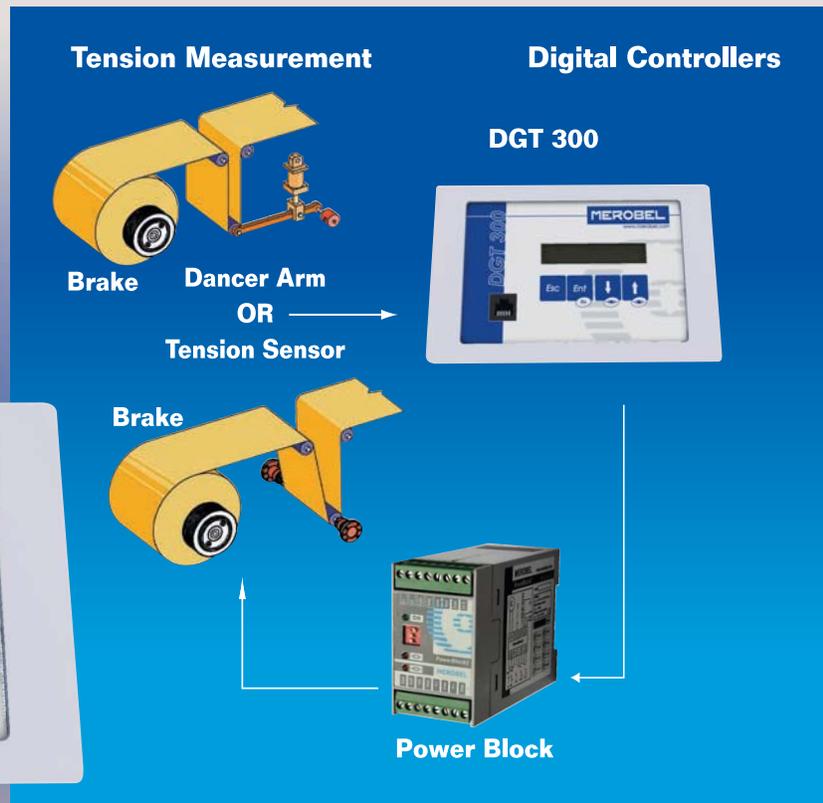
D.



Ultrasonic and Laser Sensors are used to measure the diameter of a roll of material. The diameter information is used by the controller in open loop mode to vary the tension based on the changing diameter of the roll. Ultrasonic sensors can be used on rolls of wide width. Laser sensors are used for rolls with very narrow widths of an inch or less. Sensors are selected to perfectly match the application.

## D. Power Supplies

Merobel Power Supplies provide the current needed to generate the required torque in the brakes and clutches. They are DC, closed loop controlled supplies with constant current outputs. Merobel Power supplies maintain constant current and thus constant torque regardless of temperature variations in the brake or clutch coil.



A.

## Magnetic Particle Brakes & Clutches

## A. Electromagnetic Particle Brakes & Clutches

These brakes and clutches provide a torque range from 0.005 to 1,000 lb. ft., proportional to the electric current, independent of the slipping speed, with low residual torque and power consumption. They are easy to integrate into any type of system, providing linear, smooth, clean/dust free, silent operation with low wear, long life and reduced maintenance.

All Merobel brakes and clutches can be adapted with a cooling fin (radiator), blower kit or water cooling to meet the thermal dissipation requirement.

## B. Torque Limiters

The torque adjustment is accomplished by the displacement of an iron ring, which modulates the flux of a permanent magnet. These units are easily integrated into any type of system,

achieving linear, smooth, silent operation with low wear and long life-reduced maintenance. They are lubricated for life and are designed for horizontal and vertical shaft orientation.

**The New LC CS/CSM Series for Capping Applications** features low inertia and a wide range of torque adjustment with torque capacity from 0.77 to 54 Lb.In.

## C. Electronic Boards & Accessories

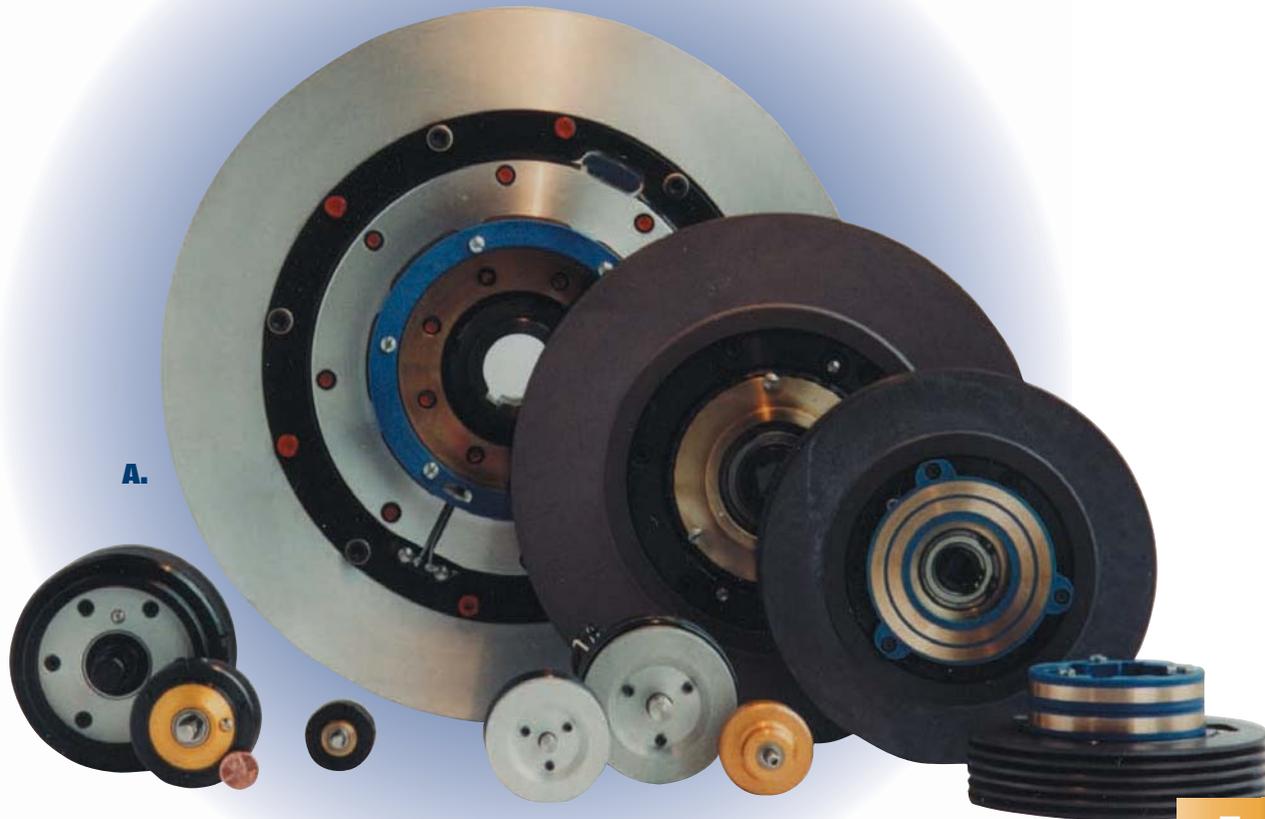
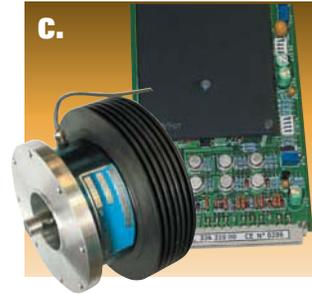
Merobel modular electronic boards can be used alone or combined depending on the function required for the application. The available boards are: Powerblock, current regulated power supply, PLP05, analog PID with power supply, and amplifier boards for transducers.

A complete range of force transducers, torque transducers, ultrasonic, and laser sensors are available to sense the products being controlled.

B.

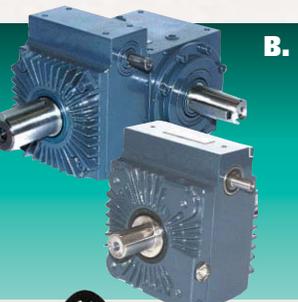


C.



A.

# Differential Drives



B.

## A. Planetary Epicyclic Drives – Type SA

Employing the latest generation of Rotomission® technology, this versatile and compact shaft-mounted gearbox can be used as a differential, reducer, or increaser. Differential applications include balance speed and torque, tension control by precise speed adjustment, automatic 2-speed, and position (register) control. The SA product range consists of 10 standard sizes with torque capacities from 2 lb. ft. to 208,000 lb. ft. and reduction ratios between 2:1 and 260:1.

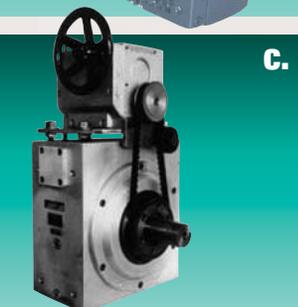
## B. Differential Phase-Shifters

The DLO and DR series of differential phase shifters allow precise angular adjustment of the output shaft, relative to the input shaft, while the machine is at rest or in motion. Five sizes and five models including DLO (inline) and DR (Right Angle) with ratios of 1:1, 1.5:1, 2:1 and 3:1 make up the standard product line. These precision units have extremely low backlash, minimum transmission error, accept input speeds up to 3000 rpm, and can deliver output torque up to 950 lb. ft.

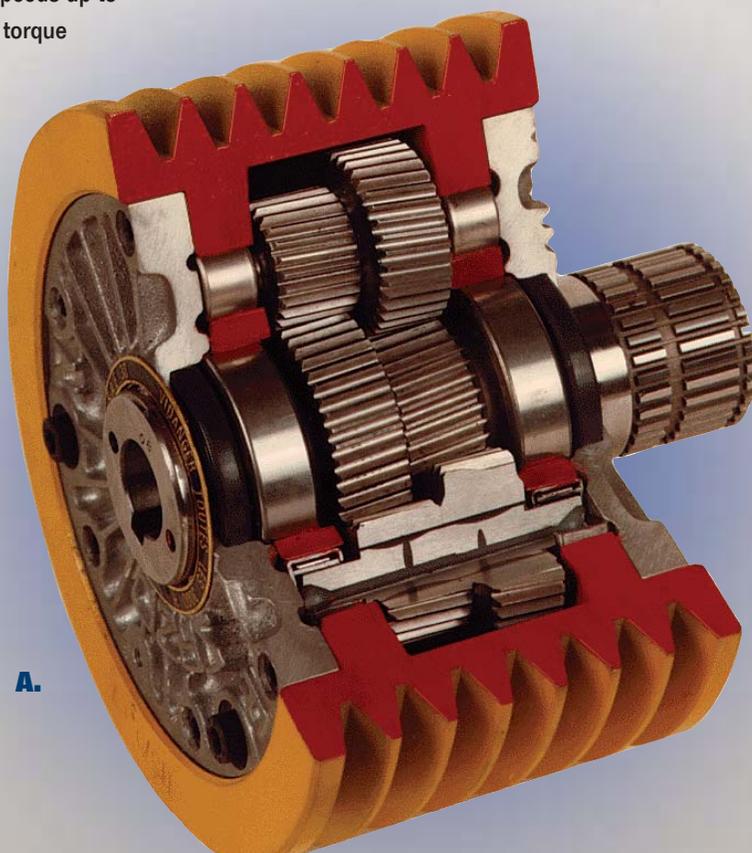
## C. Narrow Band Speed-Control Differentials

The DLA line of differential transmissions ensure excellent speed, draw or tension control by providing a narrow band of variable output speed ( $\pm 0.50$  to 10% of input speed) while at the same time ensuring that any speed set within this band will hold nearly as well as fixed gearing (i.e. less than  $\pm 0.005\%$  deviation). Therefore, the DLA provides the accurate speed setting and precise speed holding required to ensure web or strip tension control.

Three standard sizes can offer maximum torque capacity in minimum space, up to 12,400 Lb. In. This closed loop mechanical system, including the variator, typically drives infeeds, chill stands or folder draw rolls in the printing industry. It is also possible to replace the mechanical variator with a variable speed electric motor.



C.



A.

## A. AnglGear Right-Angle Drives

Available from stock in both Inch and Metric series, all ANGLgear units employ completely enclosed and sealed ball bearings and are lubricated for life. Ratings from 1/3 to 10 HP, 1:1 and 2:1 ratios. Standard models available with one or two output shafts. Specials and modified units available upon request. Contact your local distributor or Andantex for engineering assistance.

## B. Z-Series Spiral-Bevel Gearboxes

The new Z-Series precision spiral-bevel gearboxes feature Klingelnberg spiral-bevel gears made of case-hardened alloy steel. These versatile units can be used as reducers or increasers with ratios from 0.5:1 to 6:1. Efficiency of the units is from 95 to 98%.

Features include low backlash (three arc-minutes), high input speeds (3,000 rpm) and horsepower ratings from 2 HP to 540 HP. The series consists of six model types, including forward, neutral and reverse.

These gearboxes can now be offered with labyrinth seals instead of radial shaft seals. Speeds up to 3,000 rpm can be obtained without the need for pumps, heat exchangers and reservoirs normally required.

## C. R-Series Spiral-Bevel Gearboxes

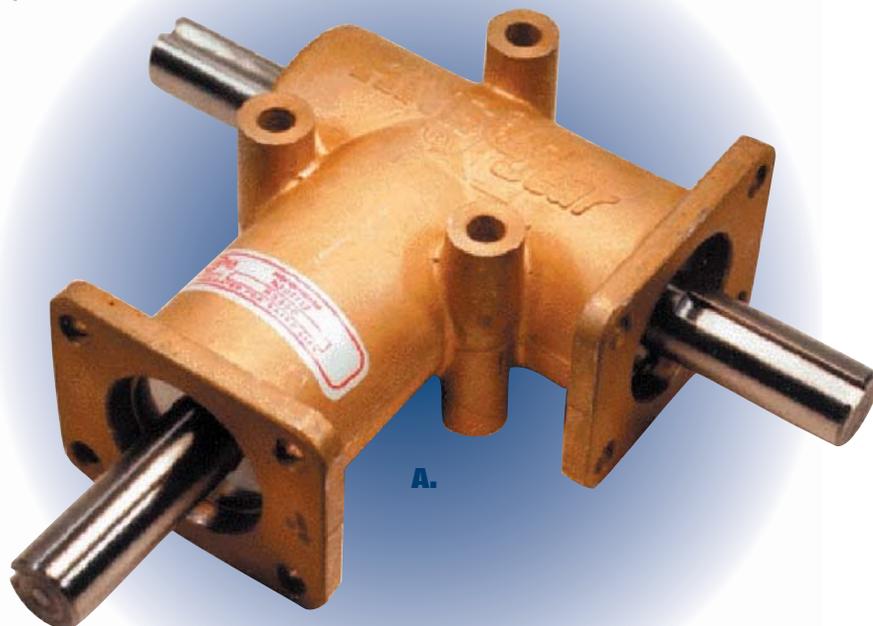
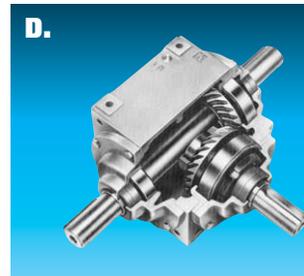
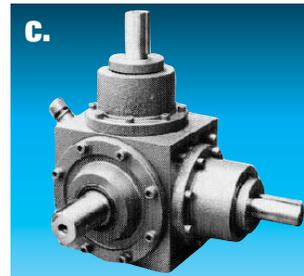
These rugged units take over for the Z-Series in high power requirement applications, with ratings from 600 HP to 1,700 HP. They are available in three sizes with ratios from 1:1 to 6:1.

The R-Series features carburized alloy steel spiral-bevel gears that are lapped and installed in matched sets to ensure low backlash and quiet operation. Backlash of ten arc-minutes is standard, with the option for <6 arc-minutes available on request. These units are 96 to 99% efficient.

## D. AnglCube Right-Angle Drives

These spiral-bevel gearboxes offer a unique universal mounting arrangement, allowing for extremely wide design flexibility. All AnglCube units feature case-hardened spiral-bevel gears in an **aluminum alloy housing**. This reduces the overall weight of the units to 50% of the Z-Series.

Ratios 1:1 and 2:1 are available with power ratings from 7.5 to 70 HP. Units are splash lubricated with synthetic oil and sealed with Viton® seals.



# Mechanical Speed Control Units

**B.**



**C.**



## **A. Catep Multispeed Transmissions**

This line of multispeed transmissions features 2, 3, 4, 6 or 9 speeds in one gearbox housing, and from 12 to 288 speeds by coupling up to 4 boxes. Available in 7 sizes over the entire ratio range, with ratings from 5 to 800 hp at 1,500 rpm. Reversing gearboxes are available that can change the direction of rotation either manually or electrically. Applications include wire stranding, wire cabling, take-ups, payoffs, capstans, caterpillar drives, test benches, multi-spindle drilling machines and textile processing.

## **B. BD Series Single-Position Jaw Clutches**

These clutches are used wherever different sections of a machine need to be first disengaged from the drive train and then re-engaged while maintaining the same phase or angular relationship which existed prior to disengagement. They are often used in a line-shaft, between printing units on an offset-printing press, and to disconnect certain units on a finishing line.

## **C. Reversing Gearboxes**

Andantex offers a range of in-line and right angle reversing gearboxes that provide forward, neutral and reverse rotation of the output shaft with respect to the input shaft. Shifting is done by a mechanical slide-dog mechanism so the unit must be at rest to change directions of rotations. Powers range from 3 HP up to 350 HP.



## **A. 2SR “Correctable Backlash” Servo-Reducers**

In a compact package these Servo-Reducers feature <1 arc-minute backlash, low input inertia, high torsional stiffness, precise repeatability, and reduction ratios from 12:1 to 100:1. A unique wear compensation design enables “in-the-field” backlash correction, so that minimum backlash is maintained for the life of the unit. Available in five sizes, with input speeds up to 5,000 rpm with efficiencies greater than 80%. Output torque capacities to 2,800 Lb. Ft.

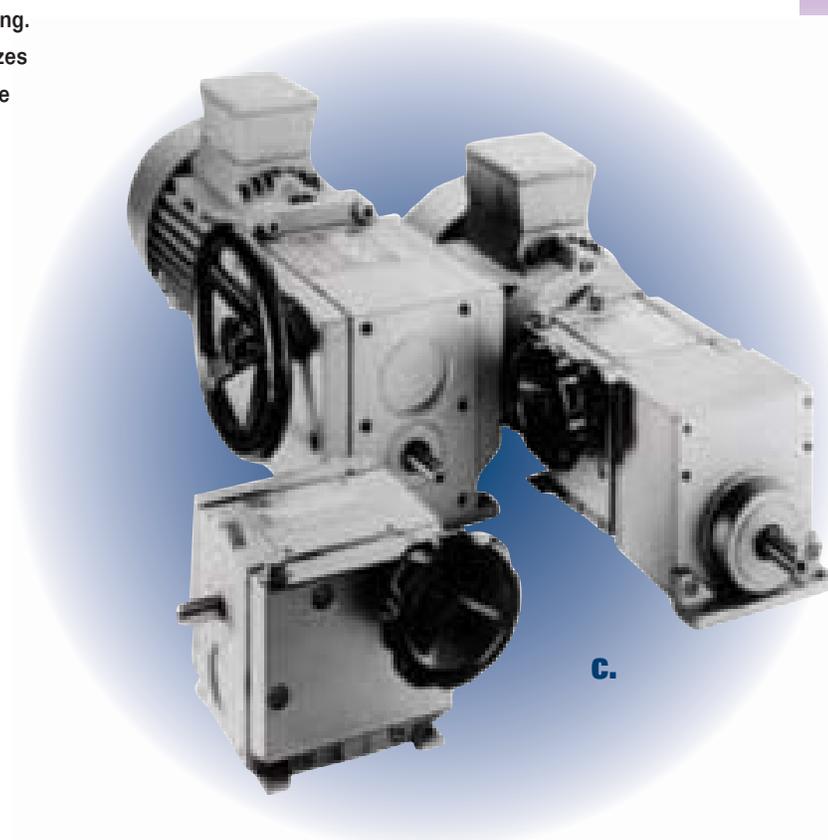
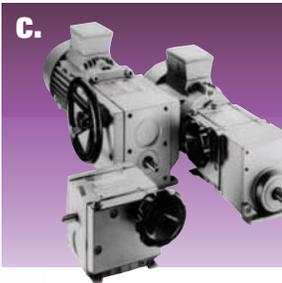
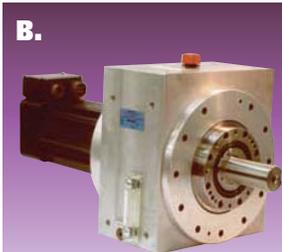
## **B. Cycloidal Differentials**

Differential series 2SRD and DLS combine the reliability of mechanics with the precision of servo electronics. These gearboxes offer minimum backlash (<1 arc-minute), low inertia, high torsional stiffness and precise repeatability in order to provide dynamic motion profiles including high-speed and rapid acceleration rates.

The 2SRD is a shaft mounted unit and the DLS comes complete in a gearbox housing. Each design comes in three standard sizes with ratios from 12:1 to 100:1 and torque capacities to 1,180 lb. ft..

## **C. Heynau Variable-Speed Drives**

The Heynau H-Drive is one of the most well known mechanical variable speed drives. The simple construction of this all-steel drive meets the highest requirements for quiet operation, precise speed holding, high efficiency and durability. The drives utilize a set of cones which transmit power via an encapsulating steel ring. By adjusting these cones in relation to the steel ring, a speed adjustment range of 6:1 or 9:1 can be achieved. This speed range can be realized while the machine is at rest or in motion. These drives can be arranged with input and output reducers and motors to achieve hundreds of speed and power ratings.



**C.**

# Global Sales Network

United States

Netherlands

England

Germany

France

Switzerland

Italy



Redex-Andantex  
Zone Industrielle - BP - 79  
45210 Ferrieres - France  
Tel: 33/02 38 94 42 00  
Fax: 33/02 38 94 41 99



Andantex Italy  
Via F.lli Di Dio  
2/a - 20063 Cernusco  
Naviglio - Milan - Italy  
Tel: 39/02 91 17 09 12  
Fax: 39/02 92 10 04 55



Andantex Kinematic  
Rowley Drive  
Coventry - England  
CV 3 4LS  
Tel: 44/024 7630 7722  
Fax: 44/024 7630 4499



Gudel AG  
Industrie Nord  
CH-4900 Langenthal  
Switzerland  
Tel: 41/62 916 9191



WMH Herion Antriebstechnik GmbH  
Antriebstechnik GmbH  
Stanglmuhle 9-11  
D-85283 Wolnzach  
Tel: 49/08442-9699-0



## Anglgear

Actra B.V.  
Industrieterrein Isselt  
Havenweg 10, 3812  
PR Amersfoort - Holland  
Tel: 31/33 422 58 22



Varatio  
640 Ajax Avenue  
Trading Estate Slough  
Berkshire SL1 4DH - England  
Tel: 44/175 3 526 655

**ANDANTE**  
USA Inc.



1705 Valley Road, Wanamassa, NJ 07712

800/713-6170 • Fax 732/493-2949 • E-mail [info@andantex.com](mailto:info@andantex.com)

[www.andantex.com](http://www.andantex.com)