



# PRODUCT RANGE

Precision. Motion Control. Technology.





Cone Drive is a world leader in precision motion control technology.

We work with our customers every step of the way – from design specs to the final solution – to create highly precise, highly specific products that keep our customers' technology at the forefront of their industry. Cone Drive offers engineering support, unique solutions, and innovative technology across a breadth of markets and products to drive your company forward.



# TABLE OF CONTENTS

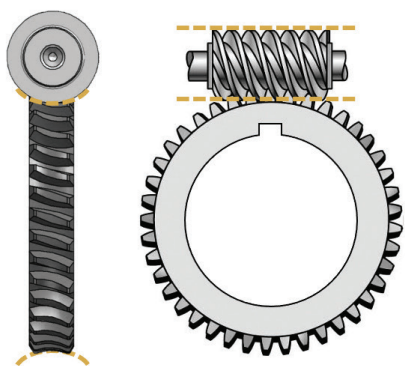
## PRODUCT RANGE

### INTRO

THE CONE DRIVE ADVANTAGE	4-5
ONLINE CONFIGURATOR	6-8
SERVICE CENTER	9
PRODUCT RANGE	10-11
CONE DRIVE HARMONIC SOLUTIONS®	12
CYCLOIDAL SOLUTIONS	13
SERVO DRIVEN POWER	
PRODUCT COMPARISON MATRIX	14
SERIES FS STAINLESS STEEL	15
SERIES W	16
SERIES S	17
SERIES RG	18
SERIES HP	19
NEMA DRIVEN POWER	
PRODUCT COMPARISON MATRIX	20
SERIES F STAINLESS STEEL	21
SERIES B	22
SERIES HP	23
SERIES RG	24
DUODRIVE	25
SERIES HP-A	26
GEARSETS	27
SLEWING SOLUTIONS	28
SOLAR TRACKING & POSITIONING	29
PLANETARY GEARING	30
STAINLESS STEEL NEMA MOTORS	31

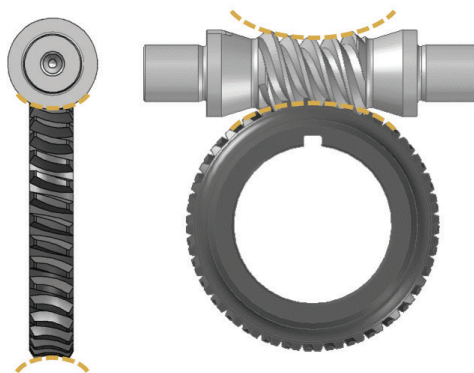
# The Double-Enveloping Worm

A better choice for so many reasons.



## STANDARD CYLINDRICAL GEAR

Total load is concentrated to  
only one or two teeth



## CONE DRIVE DOUBLE-ENVELOPING GEAR

Total load is distributed to more teeth  
along a greater surface area

## CONE DRIVE DOUBLE-ENVELOPING TECHNOLOGY

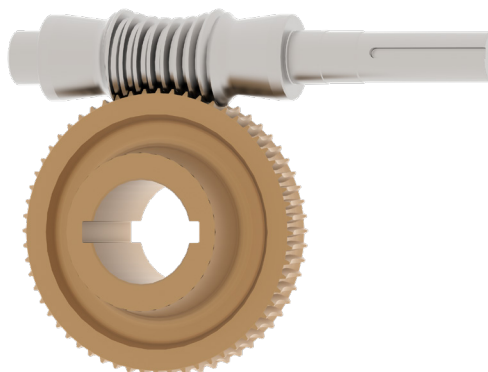
In 1925, Samuel I. Cone developed a method to machine the double-enveloping worm gear. With Cone Drive's double-enveloping technology, the worm 'hugs' the gear creating greater surface contact, higher load capacity, lower contact stress, and greater shock capacity. This gives you the flexibility to decrease the size of a worm drive gearbox to save space or increase the motor to get more power.

## EFFICIENCY WITH A POWERFUL DESIGN

Greater surface area contact means the load is distributed across more teeth allowing the worm gear reducer to run cooler, quieter, and more efficiently. Cone Drive worms are through hardened to further provide additional strength. An efficient design without sacrificing power means cost savings with no loss of performance.

## SERVICE FACTOR SAVINGS

Cone Drive worm drive gearboxes allow you to maintain service factor levels in a smaller package. The ability to down size equates to space savings in your system and cost savings in your pocket. We publish ratings you can rely on, Cone Drive tests their ratings in accordance with the American Gear Manufacturers Association (AGMA) standards.





## PRODUCT VARIETY

Cone Drive worm gearboxes cover a diverse spectrum of markets. We offer a wide range of hollow output bore options, including industry leading large bore sizes. If you are looking for a solution to a gearing application, Cone Drive has the answer and the product range to back it up.

## LET'S TALK BEARINGS

We use two heavy duty roller bearings to provide dual support for the worm. The additional support increases the longevity of the worm gearbox which means less down time. Heavy duty bearings are used on the output shafts, which is excellent for applications that require high overhung loads. This not only simplifies the design, but lowers your cost.

## WORM DRIVE GEARBOXES WITH POWER AND ACCURACY

The inherent accuracy and torsional stiffness of double-enveloping worm gearing keeps the deflection and torsional displacement low, which is exactly what you need for your most critical timing and indexing applications. For even further control, Cone Drive worm gears provide you with exact ratios, eliminating the problems posed by fractional units. We offer solutions with standard, low, and zero backlash worm gearsets.



## CONE DRIVE QUALITY

- **QUALITY ENGINEERING:** We will design the right gearbox for your application and build it with the finest materials and components.
- **QUALITY MANUFACTURING:** We operate with a strict attention to detail and manufacture to exact tolerances and dimensions. Your gearbox will be built with precision and accuracy.
- **QUALITY SERVICE:** When you need assistance with installation, Cone Drive will be there to support you. We are fully committed to offering you service before and after the sale.

## WE HAVE STOOD THE TEST OF TIME

For nearly 100 years, we have been making quality, durable worm gears. Our double-enveloping worm gearboxes drive equipment in mining, steel, aerospace, automotive, printing, packaging, and solar power world-wide. When you choose Cone Drive, you have the confidence of knowing that our many years of experience are behind every unit that we build.

## OUR TEAM

Cone Drive has a team of highly qualified, high character individuals to help if you have questions at any time throughout the purchasing process. Give us a call and we will offer dedicated, personal support to help get you started and identify what product will best fit your application.

## CUSTOM IS OUR SPECIALTY

Our experienced team of customer service representatives, application engineers, design engineers and manufacturing engineers are ready and willing to take on a challenge. Let us put our expertise to work and develop a solution customized to fit your needs. We can design and manufacture any type of worm drive gearbox application that you require.





# Configure Your Cone Drive Product Online


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


Cone Drive's Product Configurator provides multiple tools and resources to offer guidance throughout your product selection process.


## NEMA DRIVEN: RIGHT ANGLE WORM GEARBOX SOLUTIONS


**GETTING STARTED:**  
COMPARE NEMA DRIVEN PRODUCT SPECIFICATIONS


**NEMA COMPETITOR INTERCHANGE:**  
INTERCHANGE COMPETITOR UNIT WITH SERIES B OR SERIES F

**Series HP**  
[CONFIGURE](#)


**Series RG**  
[CONFIGURE](#)


**Series HP-A**  
[CONFIGURE](#)


**Series B**  
[CONFIGURE](#)


**Series F  
Stainless Steel**  
[CONFIGURE](#)


## SERVO DRIVEN: RIGHT ANGLE WORM GEARBOX SOLUTIONS


**GETTING STARTED:**  
COMPARE SERVO DRIVEN PRODUCT SPECIFICATIONS


**SERVO SELECTOR:**  
BUILD GEARBOX BASED ON SERVO MOTOR SELECTION

**Series W**  
[CONFIGURE](#)


**Series RG**  
[CONFIGURE](#)


**Series HP**  
[CONFIGURE](#)

**Series S**  
[CONFIGURE](#)


**Series FS  
Stainless Steel**  
[CONFIGURE](#)

## INLINE SOLUTIONS


**Harmonic Solutions**  
[CONFIGURE](#)


**Planetary Drives**  
[CONFIGURE](#)


## CYCLOIDAL SOLUTIONS

**SPINEA**  
[CONFIGURE](#)

## SLEWING SOLUTIONS

**SLEW COMPETITOR INTERCHANGE**

**Slew Drives**  
[CONFIGURE](#)

**Slew Bearings**  
[CONFIGURE](#)

# Available Tools

View comparison chart of high level specs for NEMA driven products



**GETTING STARTED:**  
COMPARE NEMA DRIVEN PRODUCT SPECIFICATIONS

					
Product	Series HP	Series HP-A	Series B	Series RC	Series F
Size	150-28 in	100-200 mm	1.33-3.54 in	1.5-3.5 in	39-76 mm
Construction	Cast Iron	Cast Iron	Aluminum	Cast Iron	316 Stainless Steel
Ratio	51-343,000:1	51-70:1	51-3,600:1	51-600:1	51-600:1
Output Torque (ConstantSpeed)	<= 2,900,000 lb-in	<= 88,100 lb-in	<= 6,370 lb-in	<= 10,800 lb-in	<= 5,950 lb-in
Shock Load Capacity	High	High	Moderate	High	Moderate
IP Rating	N/A	N/A	IP 55	IP 65	IP 69k
Warranty	5 Year	5 Year	2 Year	5 Year	5 Year

View comparison chart of high level specs for Servo driven products



**GETTING STARTED:**  
COMPARE SERVO DRIVEN PRODUCT SPECIFICATIONS

					
Product	Series W	Series HP	Series S	Series RC	Series FS
Size	38-89 mm	3.0-8.0 in	1.33-3.54 in	1.5-3.5 in	39-76 mm
Construction	Aluminum	Cast Iron	Aluminum	Cast Iron	316 Stainless Steel
Nominal Backlash Range	0-24 arcmin	2-35 arcmin	12-41 arcmin	4-27 arcmin	4-27 arcmin
Ratio	51-60:1	51-70:1	51-60:1	51-60:1	51-60:1
Output Torque (ConstantSpeed)	<= 10,800 lb-in	<= 97,100 lb-in	<= 6,370 lb-in	<= 10,800 lb-in	<= 5,950 lb-in
Output Torque (Acceleration)	<= 11,700 lb-in	<= 121,000 lb-in	<= 7,540 lb-in	<= 11,700 lb-in	<= 6,380 lb-in
IP Rating	IP 65	N/A	IP 55	IP 65	IP 69k
Warranty	5 Year	5 Year	2 Year	5 Year	5 Year

Select a Cone Drive replacement for competitor unit



➔ NEMA COMPETITOR INTERCHANGE:  
INTERCHANGE COMPETITOR UNIT WITH SERIES B OR SERIES F

## Competitor Interchange Tool

To determine the interchange, select your Boston model number from the drop down boxes.

Reducer Material/Paint:

Output Shaft Style:

Input Shaft Style:

Size:

Base/Mounting Attachment:

Reducer Material/Paint:  
Blank - Cast Iron, Std. Grey Paint  
DRC - Cast Iron, White Boost/Seal Paint  
DRC - Cast Iron, Stainless Boost/Seal Paint  
SS - Stainless Steel

Output Shaft Style:  
Blank - Solid Output Shaft  
H - Boost/Mount Hollow Output (setscrews both sides)  
S - Hollow Output (setscrews one side)

Input Shaft Style:  
Blank - Solid Projecting Input Shaft  
F - Quill Style Motor Flange  
BF - Coupling Style Motor Flange

Lubrication:  
Blank - No Lubrication  
K - Fluoropolymer Grease  
S - Mobil DRC68  
X - Mobil 600W

Endcap:  
Blank - No Endcap or Fan  
E - Endcap  
F - Fan

Vent:  
Blank - Standard Vent  
P - Pressure Vent (3 psi)  
Z - Positive (Sealed)  
DR Seal

➔ SLEW COMPETITOR INTERCHANGE

## Competitor Interchange Tool

To determine the interchange, select your Dodge model number from the drop down boxes.

Reducer Material/Paint:

Size:

Input Shaft Style:

Washdown Option:

Ratio:

Output:

Motor Frame:

Special Options:

Size (KOD)  
13 - 1.33"  
15 - 1.5"  
17 - 1.75"  
20 - 2.00"  
21B - 2.00"  
23 - 2.31"  
25 - 2.62"  
30 - 3.00"  
32 - 3.00"  
35 - 3.50"  
38 - 3.50"  
40 - 4.00"  
47 - 4.75"

Output:  
L - Single Extended Left  
R - Single Extended Right  
LR - Double Extended  
H - Hollow  
HA - Hollow Alternative

Motor Frame:  
56 - 56C  
14 - 140TC  
18 - 180TC  
23 - 230TC  
25 - 250TC

Input Shaft Style:  
Q - Quill  
E - Extended Endcap

Ratio:  
10  
17  
23  
25

Filter available Cone Drive units by servo motor selection




➔ SERVO SELECTOR:  
BUILD A GEARBOX BASED ON SERVO MOTOR SELECTION

Servo Motor

Brand:

Model:



Reducer Selection

Selected Reducer:

Reducer Size

Selected Reducer Size:

Selected Ratio:

Selected Input Speed:

Reducer Features

Specifications and 3D



# Build a Gearbox to Fit Your Specific Needs

CONFIGURE

← → cone-tools.com/Stainless/Stainless/Direct

**Cone Drive**  
BY TIMKEN

Cone Drive Cone Tools Contact

### Configure your Stainless product

Direct Code Entry Box (if product code is known)

**F044115.AWHT5L-**


Column Selection Buttons

F	0	4	4	1	1	5	.	A	W	H	T	5	L	-
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Select Input Speed

☐ Input Speed - 1150

☐ Input Speed - 1750



← → cone-tools.com/Stainless/Stainless/Direct

**Cone Drive**  
BY TIMKEN

Cone Drive Cone Tools Contact

### Configure your Stainless product

Direct Code Entry Box (if product code is known)

**F044115.AWHT5L-**

Column Selection Buttons

F	0	4	4	1	1	5	.	A	W	H	T	5	L	-
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15


Gearbox Specifications	Imperial	Metric
Size of Unit	F044	F044
Ratio	15.	15.
Nominal Input Speed	1150 RPM	1150 RPM
Mechanical input power rating: SF = 1.0	1.56 HP	1.17 kW
Continuous average thermal input power rating	1.56 HP	1.17 kW
Mechanical output torque rating: SF = 1.0	1130 lb-in	128 Nm
Efficiency	88 %	88 %

Code	Values
F	Series
044	Size of unit
1	Revision
15.	Ratio
A	Unit to Allow Fitting of Motor
W	Standard Unit (No Attachments)
H	Metric Hollow Shaft - 20mm
T	NEMA 56C Motor Flange
5L	Hollow Shaft With Cover- Left
-	None

Select format to create the CAD files for download

3D CAD file format:

2D CAD file format:



**Cone Drive**  
BY TIMKEN

Download Specifications

Imperial	Metric
Size of Unit	F044
Ratio	15.
Nominal Input Speed	1150 RPM
Mechanical input power rating: SF = 1.0	1.56 HP
Continuous average thermal input power rating	1.56 HP
Mechanical output torque rating: SF = 1.0	1130 lb-in
Efficiency	88 %

Download Specifications

Imperial	Metric
Size of Unit	F044
Ratio	15.
Nominal Input Speed	1150 RPM
Mechanical input power rating: SF = 1.0	1.56 HP
Continuous average thermal input power rating	1.56 HP
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Efficiency	88 %

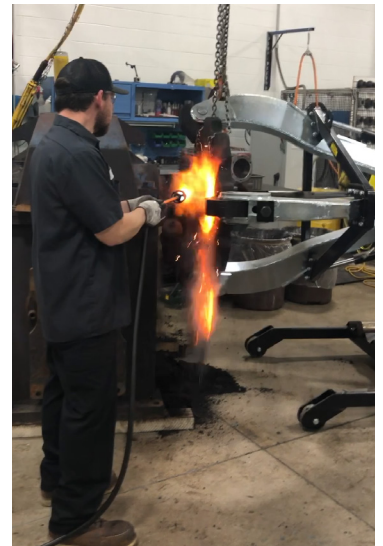
Download specifications, models, and submit your customized unit to Cone Drive for a quote.

# Cone Drive **Service Center**

Whether you are interested in a partial or complete rebuild, extended service contract, or on-site service, we are ready to answer your call. Rebuild it with the people who know it best. It doesn't matter if your gearbox has been in service for 5 years or 25 years, we will rebuild it with Cone Drive approved parts and workmanship that you have come to trust.

## SERVICES WE PROVIDE

- Remanufacturing and Repair
- Preventative Maintenance Plans
- Video Scope Inspection
- Inspection Reports
- Oil Analysis
- Technical Assistance
- Spare Parts Sales
- Rebuilds with Warranty
- Reverse Engineering & Manufacture
- Field Service



FIND MORE INFORMATION AT [www.ConeTools.com](http://www.ConeTools.com)

SERVICE CENTER

## — C A P A B I L I T I E S —

- Storage maintenance of customer transmissions
- Complete test facility, with bearing & sump temperature monitoring
- Inspection and reverse engineering services, using the latest technology provided by the FARO Edge portable CMM





# SERVO DRIVEN POWER PRECISION MOTION CONTROL

Cone Drive's precision gearing solutions exceed the most demanding needs in motion control applications. Available in both right angle and in-line configurations, we have a variety of products to fit your precision and power needs.

## RIGHT ANGLE, DOUBLE ENVELOPING WORM GEAR



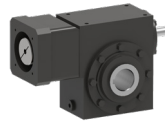
### SERIES FS

- Low or standard backlash
- IP69k
- 316 stainless steel adapter and housing
- Viton™ output seals
- 5 year warranty



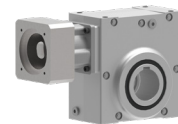
### SERIES W

- Zero, low, or standard backlash
- Aluminum housing
- Angular contact ball bearings (worm shaft)
- Zero backlash bellows style coupling
- 5 year warranty



### SERIES RG

- Low or standard backlash
- Cast iron housing
- White epoxy or stainless steel paint available
- 5 year warranty



### SERIES S

- Conex proprietary worm gearing
- Aluminum housing
- USDA white epoxy paint available
- Optional wash down design
- 2 year warranty



### SERIES HP

- Low or standard backlash
- Vented, cast iron housing
- Bellows or jaw style coupling
- 5 year warranty

## IN-LINE PRECISION



### CONE DRIVE HARMONIC SOLUTIONS®

- Low to zero backlash
- High transmission accuracy
- Customizations available upon request
- 1 year warranty



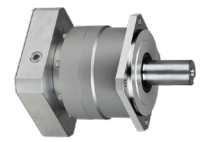
### **SPINEA** BY TIMKEN CYCLOIDAL TWINSPIN®

- Low backlash
- High reduction ratio
- High kinematic accuracy
- High moment capacity and stiffness
- Compact and lightweight



### **SPINEA** BY TIMKEN CYCLOIDAL DRIVESPIN®

- Zero backlash
- Dynamic, high performance actuator
- Compact design
- High torsional and tilting stiffness



### PLANETARY SOLUTIONS

- Quiet operation
- Low backlash, high efficiency
- Stainless steel option
- Competitive interchanges available
- 5 year warranty



# NEMA DRIVEN POWER INDUSTRIAL MOTION CONTROL

Cone Drive's industrial gearboxes are built to control motion and deliver torque. Our right angle worm solutions are available in a wide variety of sizes and ratios and feature customizations sure to adapt to a variety of applications.

## RIGHT ANGLE, DOUBLE ENVELOPING WORM GEAR



### SERIES HP

- Single, double, or triple reduction
- Vented, cast iron construction
- Fan or water cooling available
- Wide range of sizes
- 5 year warranty



### SERIES HP-A

- Universal housing
- Cast iron construction
- Fan cooling available
- Viton™ seals available
- Optional drywell feature
- 5 year warranty



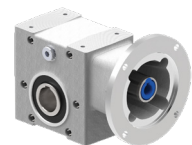
### SERIES RC

- Single or in-line double reduction
- Cast iron housing
- Optional low backlash
- White epoxy or stainless steel paint available
- 5 year warranty



### SERIES F

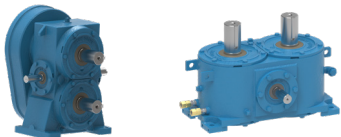
- IP69k rated
- 316 stainless steel adapter and housing
- Viton™ output seals
- Single or in-line double reduction
- Optional low backlash
- 5 year warranty



### SERIES B

- Conex proprietary worm gearing
- Aluminum housing
- Single or double reduction
- Optional wash down design
- 2 year warranty

## PINCH ROLLING



### DUODRIVE

- Designed for pinch rolling applications
- One input shaft powering two output gears
- Unequal ratio configurations available
- Cast iron housing
- Water or fan cooled
- 5 year warranty

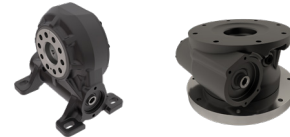
## SLEWING



### SLEW DRIVES & SLEW BEARINGS

- Select sizes available from stock
- Low profile
- Sealed drive options available
- Capable of combined tilting, radial, and axial loads
- Strong shock resistance
- Long life performance
- 2 year warranty

## SOLAR & TRACKING



### SLEW DRIVES & SLEW BEARINGS

- Select sizes available from stock
- Low profile
- Sealed drive options available
- Capable of combined tilting, radial, and axial loads
- Strong shock resistance
- Long life performance
- 2 year warranty

# CONE DRIVE HARMONIC SOLUTIONS®

Cone Drive's harmonic gearing is zero to low backlash by design. It provides high transmission accuracy and can support a high ratio reduction in a single stage with low inertia. The highly accurate, torque dense design makes harmonic gearing the perfect solution for ultimate precision motion control applications.

AUTOMATION & ROBOTICS | MEDICAL | SATELLITE COMMUNICATION | MILITARY & DEFENSE

MADE IN  
USA

## ULTIMATE PRECISION

- Ring, cup, and hat styles available
- Component sets and gearheads
- Low to zero backlash
- High transmission accuracy
- Customizations available upon request
- Manufactured and assembled in controlled environment
- Competitive lead times
- 1 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

HARMONIC SOLUTIONS

## — S P E C I F I C A T I O N S —

**Sizes:** 11 thru 32

**Ratio:** 50:1 thru 160:1

**Nominal Backlash:**  $\leq 1$  mRad

**Continuous Output Torque:**  $\leq 172$  Nm

**Peak Output Torque:**  $\leq 824$  Nm

**Standard Input Options:** Keyed or set screws (including Oldman style coupling)


**Custom Input Options:** Throughbore, solid input, dowel pins, tapped holes, piloted stepper/servo motor ready, special materials and coatings

**Configurations:** Component gasket or gearhead, sealed, throughbore, lightweight, and other options available

**Custom solutions for your applications.**



# SPINEA CYCLOIDAL SERIES

 **SPINEA** BY TIMKEN TwinSpin® and DriveSpin® cycloidal reducers are designed for high precision, torque density, and weight reduction. The G & GH series provide high tilting stiffness, low friction, and high torque overload capacity with a high precision output bearing. In addition the DS & DSH series provide rotary motion and transfer output torque with high radial-axial load capacity.

AUTOMATION & ROBOTICS | MEDICAL | SATELLITE COMMUNICATION | MILITARY | MACHINE TOOLS

## HIGH TORQUE PRECISION

### TwinSpin®

- High reduction ratio and high kinematic accuracy
- Low lost motion
- High moment capacity and stiffness
- Compact and lightweight

### DriveSpin®

- Dynamic, high performance actuator
- Compact design
- High torsional and tilting stiffness
- Zero backlash



## DEDICATED NORTH AMERICAN STOCKING PROGRAMS



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

CYCLOIDAL SERIES

# — S P E C I F I C A T I O N S —

### TwinSpin®

Sizes: 065 thru 285

Ratio: 35:1 thru 137:1

Lost Motion: < 1 arc min

Rated Output Torque:  $\leq 1,700$  Nm

Max. Accel./Decel. Torque:  $\leq 4,250$  Nm

### DriveSpin®

Sizes: 050 thru 170

Rated Output Torque:  $\leq 460$  Nm

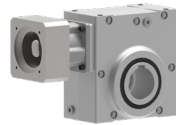
Max. Acceleration Torque:  $\leq 1,150$  Nm

*(ratings vary by size and style)*



# SERVO DRIVEN POWER PRECISION MOTION CONTROL

Cone Drive offers a wide selection of right angle gearing solutions adaptable to a variety of servo style motors. We have motor adapters designed for the most common servo motors. Our team of skilled application engineers can design an adapter to fit your specific needs.



PRODUCT	SERIES FS (Page 15)	SERIES W (Page 16)	SERIES S (Page 17)	SERIES RG (Page 18)	SERIES HP (Page 19)
Size	39 - 76 mm	38 - 89 mm	1.33 - 3.54 in	1.5 - 3.5 in	3.0 - 8.0 in
Construction	316 Stainless Steel	Aluminum	Aluminum	Cast Iron	Cast Iron
Nominal Backlash Range	4 - 27 arcmin	0 - 24 arcmin	12 - 41 arcmin	4 - 27 arcmin	2 - 35 arcmin
Ratio	5:1 - 60:1	5:1 - 60:1	5:1 - 60:1	5:1 - 60:1	5:1 - 70:1
Output Torque (Constant Speed)	≤ 5,950 lb-in	≤ 10,800 lb-in	≤ 6,370 lb-in	≤ 10,800 lb-in	≤ 97,100 lb-in
Output Torque (Acceleration)	≤ 6,380 lb-in	≤ 11,700 lb-in	≤ 7,540 lb-in	≤ 11,700 lb-in	≤ 121,000 lb-in
IP Rating	IP 69k	IP 65	IP 55	IP 65	N/A
Warranty	5 Year	5 Year	2 Year	5 Year	5 Year

# SERVO DRIVEN POWER SERIES FS STAINLESS STEEL

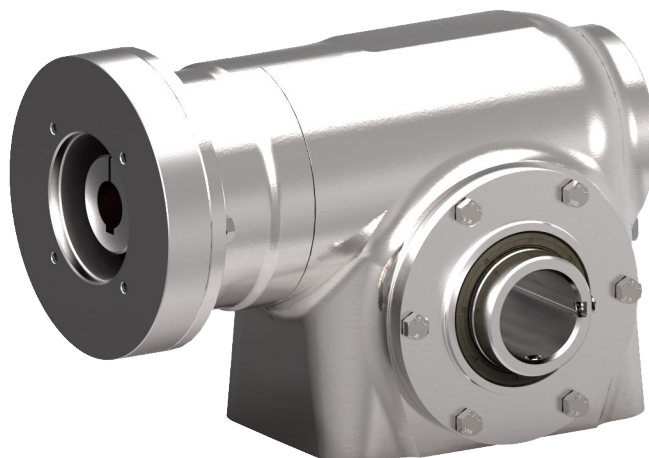
The Series FS Stainless Steel-Servo gearbox provides servo motion control in a stainless steel package. The smooth contours of the housing allow fluids to wick away preventing bacteria from forming on the surface. When your application demands strict hygienic performance, look no further than Cone Drive's Series F Stainless Steel gearbox.

FOOD & BEVERAGE | PACKAGING | PHARMACEUTICAL | MEAT & DAIRY | MIXERS

MADE IN  
USA

## HYGIENIC PRECISION

- Double-enveloping worm gearing supported with two input bearings
- Low or standard backlash
- 316 stainless steel adapter and housing
- Viton™ output seals
- Adheres to strict NSF and A3 hygienic standards and carries an ingress protection rating of IP69k
- Optional torque arm, flange, or side mounting available
- Best in class lead times
- 5 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

SERIES FS

## — S P E C I F I C A T I O N S —

**Center Distance:** 39 thru 76 mm

**Ratio:** 5:1 thru 60:1

**Nominal Backlash:** 4 - 27 arcmin

**Output Torque** (ConstantSpeed): < 5,950 lb-in

**Output Torque** (Acceleration): < 6,380 lb-in

**Input Shaft:** Single or double extended

**Output Shaft:** Inch or metric, solid (single or double extended), hollow, shrink disc

**Lubricant:** Factory filled with food grade lubricant

**I.P. Rating:** IP 69K

## SERVO DRIVEN POWER SERIES W

The Series W is Cone Drive's highest precision right angle solution. The Series W has a compact, anodized aluminum housing. The design offers high torsional rigidity and is capable of speeds of up to 6,000 rpm. Quiet and smooth running, the Series W features Cone Drive's double enveloping worm gear technology with optional zero backlash.

PACKAGING | FOOD & BEVERAGE | SATELLITE COMMUNICATION | AUTOMATION & ROBOTICS

MADE IN  
USA

### ULTIMATE PRECISION

- Double-enveloping worm gearing supported with two input bearings
- Zero, low, or standard backlash
- Aluminum housing
- Angular contact ball bearings (worm shaft)
- Zero backlash bellows style coupling
- Best in class lead times
- 5 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

SERIES W

## — S P E C I F I C A T I O N S —

**Center Distance:** 38 thru 89 mm

**Ratio:** 5:1 thru 60:1

**Nominal Backlash:** 0 - 24 arcmin

**Output Torque** (ConstantSpeed):  $\leq 10,800$  lb-in

**Output Torque** (Acceleration):  $\leq 11,700$  lb-in

**Input Shaft:** Single or double extended

**Output Shaft:** Solid (single or double extended), Hollow, Shrink Disc

**Lubricant:** Factory filled with synthetic lubricant

**I.P. Rating:** IP 65



# SERVO DRIVEN POWER SERIES S

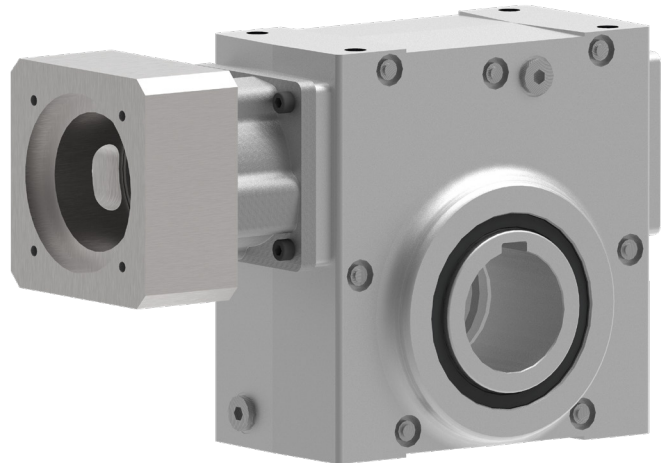
The Series S gearbox is highly a flexible and economical servo reducer. Directly interchangeable with the competition, the Series S features a lightweight, aluminum housing which provides improved thermal performance. No other gearboxes offer the flexibility, performance, and reliability that you have come to expect from Cone Drive.

PACKAGING | AUTOMATION & ROBOTICS | CONVEYOR | SATELLITE COMMUNICATION

MADE IN  
USA

## ADAPTABLE PRECISION

- Conex proprietary worm gearing supported with two input bearings
- Lightweight, aluminum construction
- USDA white epoxy paint available
- Optional washdown design
- Best in class lead times
- 2 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

SERIES S

## — S P E C I F I C A T I O N S —

**Center Distance:** 1.33 thru 3.54 in

**Ratio:** 5:1 thru 60:1

**Nominal Backlash:** 12 - 41 arcmin

**Output Torque** (ConstantSpeed):  $\leq 6,370$  lb-in

**Output Torque** (Acceleration):  $\leq 7,540$  lb-in

**Input Shaft:** Solid, single extended

**Output Shaft:** Inch or metric, solid (single or double extended), hollow

**Lubricant:** Factory filled with synthetic lubricant

**I.P. Rating:** IP 55

## SERVO DRIVEN POWER SERIES RG

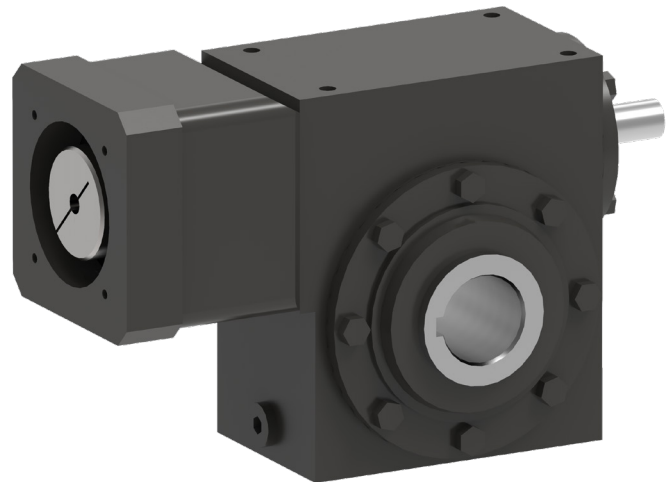
The Series RG-Servo gearbox is an adaptable solution for your motion control needs. Designed for various servo motors, the Series RG-Servo provides you with Cone Drive's double-enveloping worm gear technology and offers multiple output options. Tapered roller output bearings provide the capacity required to handle heavy overhung loads.

PACKAGING | AUTOMATION & ROBOTICS | CONVEYOR | SATELLITE COMMUNICATION

MADE IN  
USA

### POWERFUL PRECISION

- Double-enveloping worm gearing supported with two input bearings
- Low or standard backlash
- Cast iron construction
- White epoxy or stainless steel paint available
- Competitive pricing
- Best in class lead times
- 5 year warranty



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SERIES RG

## — S P E C I F I C A T I O N S —

**Center Distance:** 1.5 thru 3.5 in

**Ratio:** 5:1 thru 60:1

**Nominal Backlash:** 4 - 27 arcmin

**Output Torque** (ConstantSpeed):  $\leq 10,800$  lb-in

**Output Torque** (Acceleration):  $\leq 11,700$  lb-in

**Input Shaft:** Single or double extended

**Output Shaft:** Inch or metric, solid (single or double extended), hollow, shrink disc, mounting flange

**Lubricant:** Factory filled with synthetic lubricant

**I.P. Rating:** IP 65



## SERVO DRIVEN POWER SERIES HP

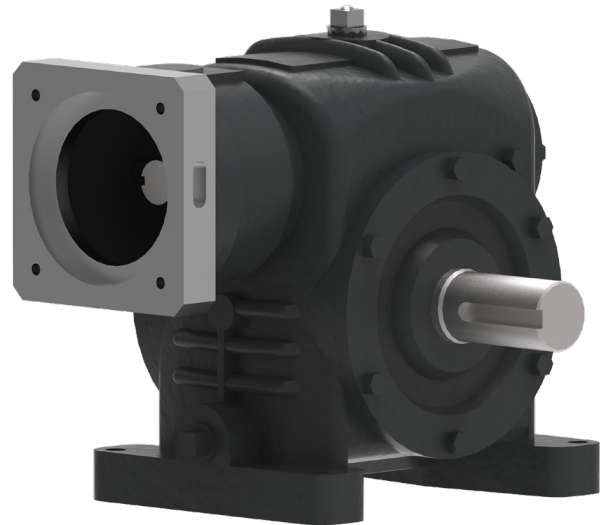
The Series HP - Servo gearbox is designed with power and precision in mind. Cone Drive's industry leading right angle, double-enveloping gearboxes are made for applications that require high torque and motion control in a quiet, compact package. The Series HP - Servo is ready to deliver the performance and accuracy you need.

FOOD & BEVERAGE | PACKAGING | AUTOMATION & ROBOTICS | AEROSPACE | DEFENSE

MADE IN  
USA

### HIGH POWER PRECISION

- Double-enveloping worm gearing supported with two input bearings
- Low or standard backlash
- Vented, cast iron housing
- Bellows or jaw style coupling
- Best in class lead times
- 5 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

SERIES HP

## — S P E C I F I C A T I O N S —

**Center Distance:** 3.0 thru 8.0 in

**Ratio:** 5:1 thru 70:1

**Nominal Backlash:** 2 - 35 arcmin

**Output Torque** (ConstantSpeed):  $\leq 97,100$  lb-in

**Output Torque** (Acceleration):  $\leq 121,000$  lb-in

**Input Shaft:** Single or double extended

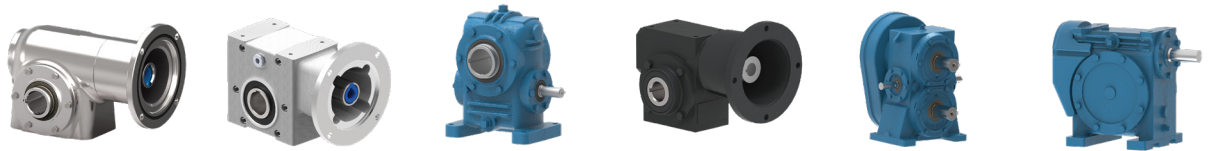
**Output Shaft:** Solid (single or double extended), Hollow, Shrink Disc

**Cooling:** Optional fan cooling



# NEMA DRIVEN POWER INDUSTRIAL MOTION CONTROL

Cone Drive offers a wide selection of right angle gearing solutions adaptable to a variety of NEMA motor sizes. In addition to our standard product offerings, we can develop custom solutions to meet your needs across single, double, and triple reduction configurations.



PRODUCT	SERIES F (Page 21)	SERIES B (Page 22)	SERIES HP (Page 23)	SERIES RG (Page 24)	DUODRIVE (Page 25)	SERIES HP-A (Page 26)
Size	39 - 76 mm	1.33 - 3.54 in	1.50 - 28 in	1.5 - 3.5 in	2.0 - 28 in	100 - 200 mm
Construction	316 Stainless Steel	Aluminum	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Ratio	5:1 - 600:1	5:1 - 3,600:1	5:1 - 343,000:1	5:1 - 600:1	Equal: 5:1 - 70:1 Unequal: 1:1 - 4:1	5:1 - 70:1
Output Torque (Constant Speed)	≤ 5,950 lb-in	≤ 6,370 lb-in	≤ 2,900,000 lb-in	≤ 10,800 lb-in	≤ 260,000 lb-in	≤ 88,100 lb-in
Output Torque	≤ 5,950 lb-in	≤ 6,370 lb-in	≤ 2,900,000 lb-in	≤ 10,800 lb-in	≤ 260,000 lb-in	≤ 88,100 lb-in
Shock Load Capacity	Moderate	Moderate	High	High	High	High
IP Rating	IP 69k	IP 55	N/A	IP 65	N/A	N/A
Warranty	5 Year	2 Year	5 Year	5 Year	5 Year	5 Year

# NEMA DRIVEN POWER SERIES F STAINLESS STEEL

The Series F Stainless Steel gearbox provides you Cone Drive's gearing technology in a stainless steel package. The smooth contours of the housing allow fluids to wick away preventing bacteria from forming on the surface. When your application demands strict hygienic performance, look no further than Cone Drive's stainless steel Series F gearbox.

FOOD & BEVERAGE | PACKAGING | PHARMACEUTICAL | MEAT & DAIRY | MIXERS

MADE IN  
USA

## STAINLESS STEEL TORQUE

- Double-enveloping worm gearing supported with two input bearings
- Low or standard backlash
- 316 stainless steel adapter and housing
- Viton™ output seals
- Adheres to strict NSF and A3 hygienic standards and carries an ingress protection rating of IP69k
- High efficiency double reduction in single right angle configuration
- Optional torque arm, flange, or side mounting available
- Best in class lead times
- 5 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

SERIES F

## — S P E C I F I C A T I O N S —

**Center Distance:** 39 thru 76 mm

**Ratio:** 5:1 thru 600:1

**Reductions:** Single or double

**Output Torque** (ConstantSpeed):  $\leq 5,950$  lb-in

**Motor Connection:** Non-fretting bushing

**Input Shaft:** Single or double extended

**Output Shaft:** Inch or metric, solid (single or double extended), hollow, shrink disc

**Lubricant:** Factory filled with food grade lubricant

**I.P. Rating:** IP 69K

# NEMA DRIVEN POWER SERIES B

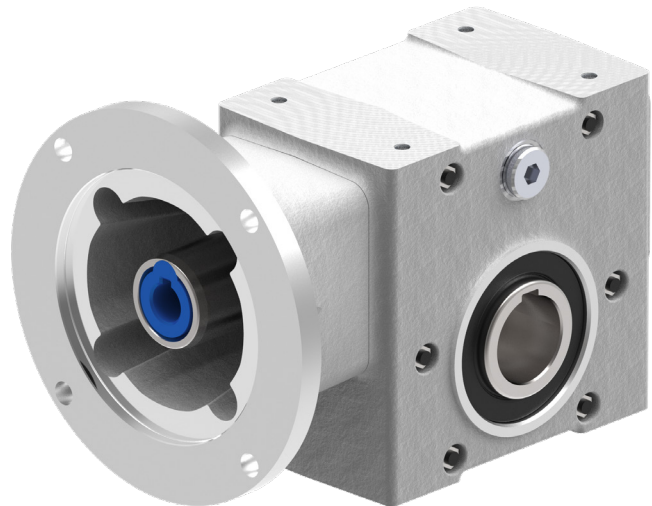
The Series B gearbox is a highly flexible and economical right angle gearing solution. Directly interchangeable with competitor reducers, the Series B features a lightweight aluminum housing which provides improved thermal performance. No other reducers offer the flexibility, performance, and reliability that you expect from Cone Drive.

PACKAGING | PLASTICS & RUBBER | STEEL | CONVEYOR | PULP & PAPER

MADE IN  
USA

## ADAPTABLE POWER

- Conex proprietary worm gearing supported with two input bearings
- Lightweight, aluminum construction
- Non-fretting motor connection
- USDA white epoxy paint available
- Optional washdown design
- Best in class lead times
- 2 year warranty



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SERIES B

## — S P E C I F I C A T I O N S —

**Center Distance:** 1.33 thru 3.54 in

**Ratio:** 5:1 thru 3,600:1

**Reductions:** Single or double

**Output Torque** (ConstantSpeed):  $\leq 6,370$  lb-in

**Available Versions:** Optional horizontal or vertical base, output bracket, torque arm

**Input Shaft:** Solid, single extended

**Output Shaft:** Solid (single or double extended), hollow

**Lubricant:** Factory filled with synthetic lubricant

**I.P. Rating:** IP 55



# NEMA DRIVEN POWER SERIES HP

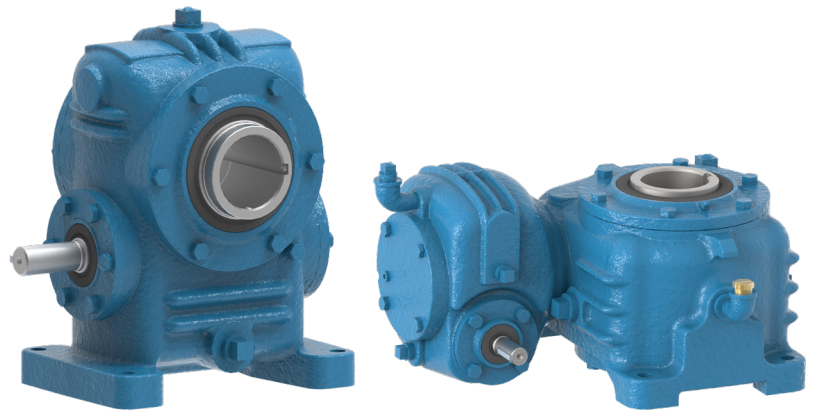
Cone Drive's Series HP is designed with high torque in mind. Our industry leading right angle, double-enveloping worm gear technology is perfect for applications that require extremely high torque and precision in a quiet, compact package. Since 1935, the Cone Drive Series HP has been excelling at meeting our customers' high power needs.

FOOD & BEVERAGE | PACKAGING | METALS & MINING | OIL & GAS | PAPER & PULP

MADE IN  
USA

## HIGH POWER

- Double-enveloping worm gearing supported with two input bearings
- Low or standard backlash
- Vented, cast iron construction
- Triple reductions can produce almost 3 million lb-in of torque
- Wide range of sizes
- Best in class lead times
- 5 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

SERIES HP

## — S P E C I F I C A T I O N S —

**Center Distance:** 1.50 thru 28 in

**Ratio:** 5:1 thru 343,000:1

**Reductions:** Single, double, triple

**Output Torque** (ConstantSpeed):  $\leq 2,900,000$  lb-in

**Orientation:** Worm over gear, worm under gear, vertical gearshaft

**Input Shaft:** Single or double extended

**Output Shaft:** Solid (single or double extended), hollow

**Cooling:** Fan or water cooled

**Configurations:** Reducer, NEMA flange, D-Flange motor (helical worm)

# NEMA DRIVEN POWER SERIES RG

The Series RG gearbox is an adaptable solution for mid range power applications. Available with single or double reduction, the Series RG is designed with Cone Drive's double-enveloping worm gear technology and offers multiple output options. Tapered roller output bearings provide the capacity required to handle heavy overhung loads.

PACKAGING | PLASTICS & RUBBER | STEEL | CONVEYOR | PULP & PAPER

MADE IN  
USA

## RUGGED PERFORMER

- Double-enveloping worm gearing supported with two input bearings
- Low or standard backlash
- Cast iron construction
- High efficiency double reduction in single right angle configuration
- White epoxy or stainless steel paint available
- Best in class lead times
- 5 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

SERIES RG

## — S P E C I F I C A T I O N S —

**Center Distance:** 1.5 thru 3.5 in

**Ratio:** 5:1 thru 600:1

**Reductions:** Single or double

**Output Torque** (ConstantSpeed):  $\leq 10,800$  lb-in

**Motor Connection:** Integrated spider coupling (single reduction), Non-fretting bushing (double reduction)

**Input Shaft:** Single or double extended

**Output Shaft:** Inch or metric, solid (single or double extended), hollow, shrink disc, mounting flange

**Lubricant:** Factory filled with synthetic lubricant

**I.P. Rating:** IP 65



# NEMA DRIVEN POWER DUODRIVE

The DuoDrive is a torque dense, double enveloping solution that supplies input power to two gears simultaneously. The DuoDrive is designed for pinch rolling applications such as cold-roll forming, tube mills, and wire mills where high torque is needed to smoothly drive metal through high pressure mill rollers.

ROLL FORMING | METAL PROCESSING | FOOD PROCESSING | DUAL SCREW DRIVES

MADE IN  
USA

## PINCH ROLLING TORQUE

- Double-enveloping worm gearing supported with two input bearings
- One input shaft powering two output gears
- Unequal ratio configurations available
- Cast iron housing
- Water or fan cooled
- Best in class lead times
- 5 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

DuoDrive

## — S P E C I F I C A T I O N S —

**Center Distance:** 2.0 thru 28 in

**Exact Ratios:** 5:1 thru 70:1  
(additional ratios available upon request)

**Unequal Ratios:** 1:1 thru 4:1  
(sizes 2.0 thru 12.0 in)

**Reductions:** Single or double

**Output Torque** (ConstantSpeed):  $\leq 260,000$  lb-in

**Input Shaft:** Single or double extended

**Motor Adaptation:** NEMA, IEC, and servo

**Output Shaft:** Solid, hollow, or custom

**Cooling Available:** Fan or internal water



# NEMA DRIVEN POWER SERIES HP-A

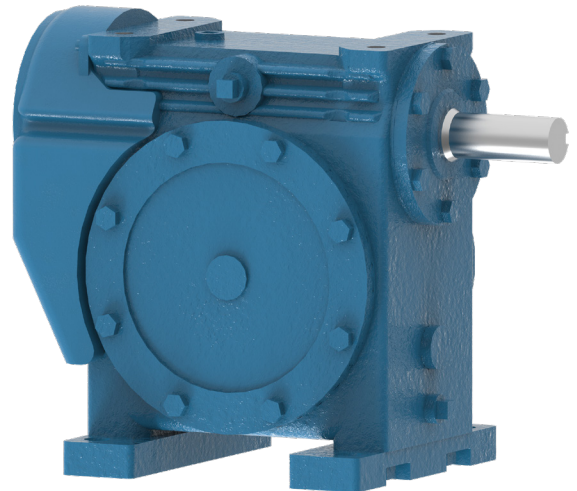
The Series HP-A gearbox features the high performance and dependability of Cone Drive's double enveloping worm gearing in a metric, universal housing. Offering features ideal for the processing and material handling markets, the Cone Drive Series HP-A gearbox provides high torque in a compact package.

FOOD & BEVERAGE | PACKAGING | METALS & MINING | OIL & GAS | PAPER & PULP

MADE IN  
USA

## ALTERNATIVE METRIC DESIGN

- Double-enveloping worm gearing supported with two input bearings
- Low or standard backlash
- Cast iron construction
- Universal housing with optional drywell feature
- Competitive OEM pricing
- Best in class lead times
- 5 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

SERIES HP-A

## — S P E C I F I C A T I O N S —

**Center Distance:** 100 thru 200 mm

**Ratio:** 5:1 thru 70:1

**Reductions:** Single

**Output Torque** (ConstantSpeed):  $\leq 88,100$  lb-in

**Orientation:** Worm over gear, worm under gear, vertical gearshaft

**Input Shaft:** Inch or metric, single or double extended

**Output Shaft:** Inch or metric, solid (single or double extended), hollow

**Additional Options:** Fan cooled, double oil seals, viton seals, drywell feature

# GEARSETS

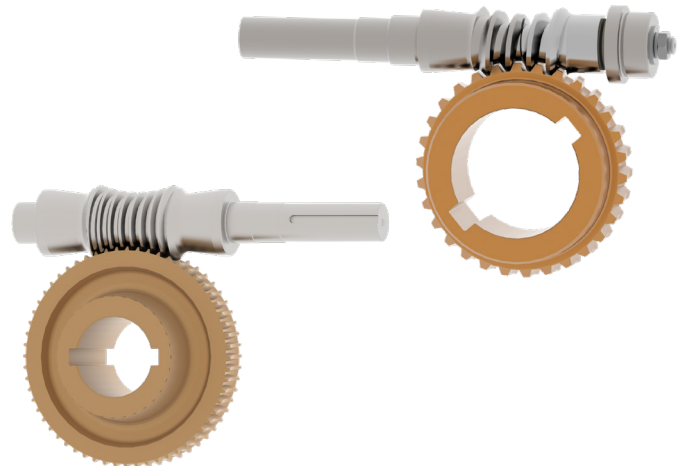
Since 1925, customers have been trusting Cone Drive's double-enveloping worm gearing to provide the power and precision required for various applications. For customers who would like the additional performance of a Cone Drive gear set while maintaining their current housing, Cone Drive can manufacture a gear set to fit into most any application.

FOOD & PACKAGING | AEROSPACE & DEFENSE | PHARMACEUTICAL & MEDICAL | OIL & GAS

MADE IN  
USA

## TRUSTED SINCE 1925

- Zero, low, or standard backlash available
- Supplied as matched sets
- Wide range of exact ratios and sizes
- Adaptable to a multitude of customer specific applications
- Custom ratios available upon request
- Competitive lead times
- 1 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

GEARSETS

## — S P E C I F I C A T I O N S —

**Center Distance:** 1.5 thru 36 in

**Ratio:** 5:1 thru 70:1

**Gear Materials:** Tin + aluminum bronze, ductile iron, steel aluminum, Torlon®

**Worm Materials:** Hardened Steel + Nitride, Stainless Steel

**Modified Output Configuration:**  
Keyways, splines

**Custom Design Options:** Custom center distance, custom ratios

**Special Ratios:** Up to 200:1 single stage (size dependent), sector gears



# SLEWING SOLUTIONS

Cone Drive's slewing technology provides a large ratio in a single stage of gearing. The slew bearing and gears are assembled into a low profile, self-retaining, and ready-to-install housing optimized for weight and performance. Our highly adaptable slew gearing feature strong shock resistance, long life performance and smooth rotation.

CONSTRUCTION EQUIPMENT

| AERIAL LIFTS

| AERIAL WORK PLATFORMS

## LOW PROFILE POWER

- Select sizes available from stock
- Low profile
- Sealed drive options available
- Capable of combined tilting, radial, and axial loads
- Strong shock resistance
- Long life performance
- Competitive lead times
- 2 year warranty



CONFIGURE & DOWNLOAD YOUR MODEL AT [www.ConeTools.com](http://www.ConeTools.com)

SLEWING SOLUTIONS

## — S P E C I F I C A T I O N S —

### BEARINGS

**Ball Pitch Diameter:** 3.1 thru 49.2 in

**Styles:** No teeth, internal teeth (flanged only), external teeth

**Moment Loads (Standard):**  $\leq 2,400,000$  lb-ft

**Moment Loads (Flanged):**  $\leq 75,500$  lb-ft

### DRIVES

**Sizes:** 3 thru 28 in

**Housing Options:** Open, closed, high strength

**Output Torque:**  $\leq 42,800$  lb-ft

**Holding Torque:**  $\leq 182,300$  lb-ft

**Overturning Moment:**  $\leq 229,000$  lb-ft



# TRACKING & POSITIONING

Cone Drive has a long history of developing solutions for both single-axis and dual-axis tracker drives and positioning systems. As a global manufacturer, we have the experience and the reach to deliver highly effective custom solutions to address azimuth + elevation motion control, capable of meeting the tightest specifications.

SOLAR TRACKING | SATELLITE & ANTENNAE POSITIONING | COMMUNICATION SYSTEMS

## TRACKING PRECISION

- Gated Product Development Process
- Specification Development
- Simulation, FEA
- Engineering Analysis, DFMEA
- Prototyping
- Custom Solar Tracker Test Design & Design Verification
- Custom Solar Drive Manufacturing



ADDITIONAL INFORMATION [www.ConeDrive.com](http://www.ConeDrive.com)

TRACKING & POSITIONING SOLUTIONS

PRODUCT	DESCRIPTION	PRECISION LEVEL	OUTPUT TORQUE	RATIOS
Vertical Slewing Drive (VE)	Foot Mounted Elevation Slewing Drive	$\leq 5.26 \text{ mRad} (\leq 0.3^\circ)$	400 - 28,000	50:1 - 125:1
Dual Axis Drive (DD)	Helical Gear/Output Flange Mounted Dual Axis Drive	$\leq 3.49 \text{ mRad} (\leq 0.2^\circ)$	400 - 28,000	61:1 - 125:1
Slewing Drive (SE)	Housing Mounted Azimuth Slewing Drive	$\leq 3.49 \text{ mRad} (\leq 0.2^\circ)$	400 - 58,000	61:1 - 150:1
Dual Axis Slewing Drive (WD)	Worm Gear/Output Flange Mounted Dual Axis Drive	$\leq 3.49 \text{ mRad} (\leq 0.2^\circ)$	400 - 40,000	28:1 - 105:1
Double Enveloping Worm drive (DW)	Double Enveloping Worm Gear/Output Flange Mounted Azimuth Drive	$\leq 1.5 \text{ mRad} (\leq 0.085^\circ)$	100 - 2,850	60:1

# PLANETARY SERIES

Cone Drive's planetary gearing offers an inline solution to satisfy the most demanding automation application needs. The compact design and universal housing make planetary gearing ideal for multiple applications. The precision bearings and planetary gearing provides high torque density while maintaining positional performance.

SATELLITE COMMUNICATION

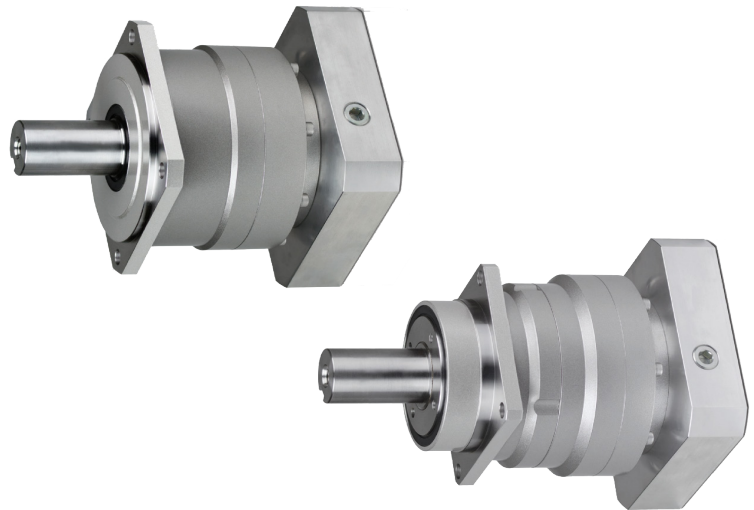
| PACKAGING

| AUTOMATION & ROBOTICS

| AEROSPACE

## INLINE PRECISION

- Multiple versions available (P<sub>S-Type</sub>, P<sub>N-Type</sub>, LE, LS)
- Quiet operation
- Ratios to 10:1 in a single stage
- Low backlash
- High efficiency
- Stainless steel option
- Competitive interchanges available
- Best in class lead times
- 5 year warranty



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PLANETARY SERIES

## — S P E C I F I C A T I O N S —

**Case Size:** 50 thru 240

**Ratio:** 3:1 thru 100:1

**Nominal Backlash:** 3 - 14 arcmin

**Output Torque** (ConstantSpeed):  $\leq 2,400$  Nm

**Output Torque** (Acceleration):  $\leq 3,700$  Nm

**Input Shaft:** Fits servo or stepper motors

**Output Shaft:** Solid shaft (smooth or keyed)

**Lubricant:** Factory filled with synthetic grease

**I.P. Rating:** IP 54, IP 55, IP 65, IP 66



# MOTORS

In addition to ordering your Series F Stainless Steel gearbox, Cone Drive offers the convenience of bundling a stainless steel motor with your purchase. TECO-Westinghouse motors are specifically designed for the rugged and demanding environments required for washdown applications.



FOOD & BEVERAGE | PACKAGING | PHARMACEUTICAL | MEAT & DAIRY | MIXERS

## STAINLESS STEEL POWER

HP	FRAME	PART NUMBER	
		FAN COOLED	NON VENTED
0.5	56C	WFPV0/54C	WFNV0/54C
0.75	56C	WFPV0/74C	WFNV0/74C
1	56C	WFPV0014C	WFNV0014C
1.5	56C	WFPV1/54C	WFNV1/54C
2	56C	WFPV0024C	WFNV0024C
3	182TC	WPV0034C	WNV0034C
5	184TC	WPV0054C	—



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NON VENTED & FAN COOLED

## — SPECIFICATIONS —

Frame Sizes: 56C, 182/184TC

Horsepower: 0.5 - 5.0 hp

Voltage: 230/460 V

Style: C-Face, Non Footed

Phase: 3 Phase

Ingress Protection: IP 66



# GLOBAL LOCATIONS

NORTH AMERICA | EUROPE | ASIA

