



# Heavy Duty Worm Gear Products



 **Delroyd**<sup>®</sup>  
Worm Gear

An Altra Industrial Motion Company

# Worm Gear Products

## Applications

- Hoists, mechanical jack and screw drives
- Log handling and debarking machines
- Grinding and threading machines
- Steel and paper mill machinery
- Sewage treatment equipment
- Chemical processing equipment
- Machine tools, elevators and pumps
- Mining machinery
- Drilling equipment
- Coal handling and pulverizers
- Cement mixers
- Winch drives
- Mixers and agitator drives
- Cable tensioners

## Advantages of Delroyd® Worm Gearing Compactness and High Ratio Reduction

Single reduction worm gearing offers high ratio reduction with few moving parts in a close-coupled compact drive. Compact right angle input and output shaft arrangements can be extended in horizontal or vertical arrangements adaptable to any mounting requirement.

Double reduction units give a wider ratio range beyond practical single reduction limits. Compact right angle or parallel shaft arrangements are provided with the same versatility of shaft extensions.

Triple reduction units provide ultra-slow output speeds and high torques.

- Helical Worm Gear Speed Reducers
- Worm Gear Speed Reducers
- Worm Gear Sets

## Long, Quiet Life

All worm gears incorporated in DELROYD® reducers are made from phosphor bronze. They also incorporate a hardened, ground and polished alloy steel worm which develops a smooth, work hardened surface on the bronze. For this reason worm gears wear in and improve with prolonged service versus other gear configurations which wear out with prolonged service.

Two or more teeth are in contact with the worm at all times, transmitting power by a continuous, quiet and shockless action. As a result, the flow of torque is smooth and free from angular velocity changes, thus eliminating vibration, pulsation, chatter, and other customary gear noises.

## High Shock Load Capacity

The DELROYD® worm gear tooth form is designed such that the gear teeth operate under a crushing, rather than a bending load. For this reason, extremely high momentary and shock loads, damaging to many forms of gearing, can be successfully withstood. Also high momentary overloads will seldom cause failure, as worm gear ratings are figured on the wear resistance of the gear teeth.

## Safety and Ease of Maintenance

The few moving components are completely enclosed, thus avoiding the hazards of exposed parts. Reducers operate with minimum attention even under the most adverse conditions.

## Interchangeability of Components

All parts are manufactured to be interchangeable by the use of limit gages retained as reference standards to assure precision and uniformity. The need for matched gearing is thus avoided. Worms and gears of different ratios can be readily interchanged if revision of speeds becomes necessary.

**For whatever the application, DELROYD® has the model, configuration, size, ratio, input and output to meet your power transmission need reliably and efficiently**

## Worm Gear Sets

### Standard Components

The lowest cost and shortest delivery schedule are normally achieved through the use of standard worm and gear described in this catalog.

In addition to using standard shaft center distances, ratios and bearing mounting parts, designs should also include standard bores, flanges and bolt circles where possible. Since the use of non-standard hubs is not uncommon to the worm gear industry, DELROYD® provides for this by having a flanged rim design available for mounting on any adaptable center.



Refer to DELROYD® Worm and Gear Set Catalog P-7001-DWG for complete selection, ratings and dimensions. \*\*Additional ratios available

### CATALOG MODELS AVAILABLE\*

Center Distance	GEAR	FAN
2"	Shafted	With or without
2.5"	Shafted	With or without
3"	Shafted or shaft mount	With or without
3.5"	Shafted or shaft mount	With or without
4"	Shafted or shaft mount	With or without
5"	Shafted or shaft mount	With or without
6"	Shafted or shaft mount	With or without
7"	Shafted or shaft mount	With or without
8"	Shafted or shaft mount	With or without
9"	Shafted or shaft mount	With or without
10"	Shafted or shaft mount	With or without
12"	Shafted or shaft mount	With or without
14"	Shafted or shaft mount	With or without
17"	Shafted or shaft mount	With or without
18"	Shafted or shaft mount	With or without
20"	Shafted or shaft mount	With or without
21.837"	Shafted or shaft mount	Without
24"	Shafted or shaft mount	Without
26.5"	Shafted or shaft mount	Without
27"	Shafted or shaft mount	Without
28"	Shafted or shaft mount	Without
30"	Shafted or shaft mount	Without
36"	Shafted or shaft mount	Without
42"	Shafted or shaft mount	Without
48"	Shafted or shaft mount	Without



## Helical Worm Speed Reducer



### Ratios 15:1 to 355:1\*\*

- Hardened, shaved or ground helical gears
- Hollow & solid output shafts
- Vertical & horizontal mountings
- Fan cooled (standard)
- Motor mounts
- Cast iron or steel housings available

#### CATALOG MODELS AVAILABLE\*

UNIT SIZE	CENTER DISTANCE			
	CAST IRON		STEEL	
	PRIMARY	SECONDARY	PRIMARY	SECONDARY
35	2.5"	3.5"	-	-
40	3"	4"	-	-
50	3.5"	5"	3.5"	5"
60	4"	6"	4"	6"
70	4.5"	7"	4.5"	7"
80	5"	8"	5"	8"
90	5.5"	9"	5.5"	9"
100	6"	10"	6"	10"
120	7"	12"	7"	12"
140	7"	14"	7"	14"
170	10"	17"	10"	20"
200	10"	20"	10"	20"
218	-	-	10"	21.837"
240	-	-	12"	24"
270	-	-	12"	27"
300	-	-	15"	30"
360	-	-	15"	36"
420	-	-	17"	42"
480	-	-	17"	48"

## Single Worm Speed Reducers



### Ratios 5:1 to 70:1\*\*

- Hollow & solid output shafts
- Vertical & horizontal mountings
- Fan cooled (standard)
- Motor mounts
- Motorized version
- Cast iron or steel housing available

#### CATALOG MODELS AVAILABLE\*

UNIT SIZE	CENTER DISTANCE	
	CAST IRON	STEEL
20	2"	-
25	2.5"	-
30	3"	-
35	3.5"	-
40	4"	-
50	5"	5"
60	6"	6"
70	7"	7"
80	8"	8"
90	9"	9"
100	10"	10"
120	12"	12"
140	14"	14"
170	17"	17"
200	20"	20"
218	-	21.837"
240	-	24"
270	-	27"
300	-	30"
360	-	36"
420	-	42"
480	-	48"

## Double Worm Speed Reducers



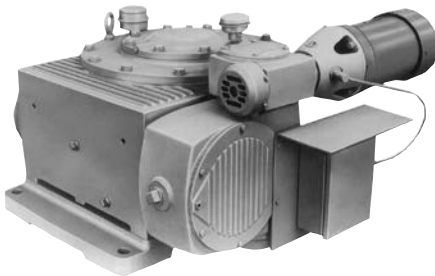
### Ratios 75:1 to 4900:1\*\*

- Right angle & parallel shaft arrangement
- Hollow & solid output shafts
- Vertical & horizontal mountings
- Fan cooled (standard)
- Motor mounts
- Cast iron or steel housings available

#### CATALOG MODELS AVAILABLE\*

UNIT SIZE	CENTER DISTANCE			
	CAST IRON		STEEL	
	PRIMARY	SECONDARY	PRIMARY	SECONDARY
35	2.5"	3.5"	-	-
40	3"	4"	-	-
50	2.5"	5"	2.5"	5"
60	3"	6"	3"	6"
70	3.5"	7"	3.5"	7"
80	4"	8"	4"	8"
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480	-	-	17"	48"

## Triple Worm Speed Reducer



### Ratios 5000:1 to 175,000:1\*\*

- HP from 0.09 to 6.25
- Output torque to 583,000 in. lbs.
- Output RPM as low as 0.01 with a 1750 RPM input
- Ideal for ultra-slow speed, high torque application

DELROYD® DDVM series triple-reduction worm gear speed reducers are available in ratios from 5000:1 to 175,000:1 and center distance from 7 to 20in. (larger sizes are available on request). Output torque ranges from 33,000 in. lbs. for the 7-in. CD DDVM-70 to 582,900 in. lbs. for the 175,000:1 7-in. CD reducer to 6.24s for the 5000:1 20-in. CD unit.

These reducers are available in any four configurations: horizontal, vertical, shafted and shaft-mounted.

They are ideal for water/wastewater equipment drive applications such as thickeners and clarifiers which require a vertical downshaft. Other available configurations also make DELROYD® triple reduction reducers perfect for use on mixers, elevators, solar panels, astronomical telescopes, indexing tables, hoist, conveyors or other process or material handling systems where large torques/slow speeds are needed.

These reducers are also available with a helical primary reduction stage and termed the HDVM series.

Refer to DELROYD® Worm and Gear Set Catalog P-7001-DWG for complete selection, ratings and dimensions. \*\*Additional ratios available

**Belted Drives and Sheaves**

**TB Wood's**

*Belted Drives*  
Chambersburg, PA - USA  
**1-888-829-6637** – Press #5  
*For application assistance:*  
1-888-829-6637 – Press #7

**Couplings**

**Ameridrives Couplings**

*Mill Spindles, Ameriflex, Ameridisc*  
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**1-814-480-5000**  
*Gear Couplings*  
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**1-800-458-0887**

**Ameridrives Power Transmission**

*Universal Joints, Drive Shafts, Mill Gear Couplings*  
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*Engineered Flywheel Couplings, Engine Housings and Pump Mounts, Flexible Shaft Couplings*  
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**Huco Dynatork**

*Precision Couplings and Air Motors*  
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**Couplings Cont.**

**Lamiflex Couplings**

*Flexible Couplings, Bearing Isolators, and Coupling Guards*  
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**TB Wood's**

*Elastomeric Couplings*  
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**1-888-829-6637** – Press #5  
*For application assistance:*  
1-888-829-6637 – Press #7  
*General Purpose Disc Couplings*  
San Marcos, TX - USA  
**1-888-449-9439**

**Electromagnetic Clutches and Brakes**

**Inertia Dynamics**

*Spring Set Brakes; Power On and Wrap Spring Clutch/Brakes*  
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**1-800-800-6445**

**Matrix International**

*Electromagnetic Clutches and Brakes, Pressure Operated Clutches and Brakes*  
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**+44 (0) 1356 602000**  
New Hartford, CT - USA  
**1-800-825-6544**

**Warner Electric**

*Electromagnetic Clutches and Brakes*  
New Hartford, CT - USA  
**1-800-825-6544**  
*For application assistance:*  
1-800-825-9050  
Saint Barthélemy d'Anjou, France  
**+33 (0)2 41 21 24 24**  
*Precision Electric Coils and Electromagnetic Clutches and Brakes*  
Columbia City, IN - USA  
**1-260-244-6183**

**Engineered Bearing Assemblies**

**Kilian Manufacturing**

*Engineered Bearing Assemblies*  
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*Geared Motors*  
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*Enclosed and Open Gearing, Electrical and Mechanical P.T. Components*  
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*For application assistance:*  
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**Nuttall Gear and Delroyd Worm Gear**

*Worm Gear and Helical Speed Reducers*  
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**1-716-298-4100**

**Heavy Duty Clutches and Brakes**

**Industrial Clutch**

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**Svendborg Brakes**

*Industrial Brakes and Brake Systems*  
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**Twiflex Limited**

*Caliper Brakes and Thrusters*  
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**Heavy Duty Clutches and Brakes Cont.**

**Wichita Clutch**

*Pneumatic Clutches and Brakes*  
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**1-800-964-3262**  
Bedford, England  
**+44 (0) 1234 350311**

**Linear Products**

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*For application assistance:*  
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**Overrunning Clutches**

**Formsprag Clutch**

*Overrunning Clutches and Holdbacks*  
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**1-800-348-0881** – Press #1  
*For application assistance:*  
1-800-348-0881 – Press #2

**Marland Clutch**

*Roller Ramp and Sprag Type Overrunning Clutches and Backstops*  
South Beloit, IL - USA  
**1-800-216-3515**

**Stieber Clutch**

*Overrunning Clutches and Holdbacks*  
Heidelberg, Germany  
**+49 (0) 6221-30470**

For information concerning our sales offices in Asia Pacific check our website [www.altramotion.com.cn](http://www.altramotion.com.cn)



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