



# IEC Aluminum Worm Gearboxes

## Gearbox Overview

Gearboxes, also known as enclosed gear drives or speed reducers, are mechanical drive components that can control a load at a reduced fixed ratio of the motor speed. The output torque is also increased by the same ratio, while the horsepower remains the same (less efficiency losses.) For example, a 10:1 ratio gearbox outputs approximately the same motor output horsepower, motor speed divided by 10, and motor torque multiplied by 10.

Worm gearboxes contain a worm (gear type) on the input shaft, and a mating gear on the output shaft. Worm gearboxes also change the drive direction by 90°.

IronHorse worm gearboxes are manufactured in an ISO9001 certified plant by one of the leading gearbox manufacturers in the world today. Only the highest quality materials are tested, certified, and used in the manufacturing process. Strict adherence to and compliance with the toughest international and U.S. testing standards and manufacturing procedures assure you the highest quality products.

We also offer optional single and double output shafts, output flanges, torque arms, and output covers.



**IronHorse Aluminum Worm Gearbox Accessories**

## Features

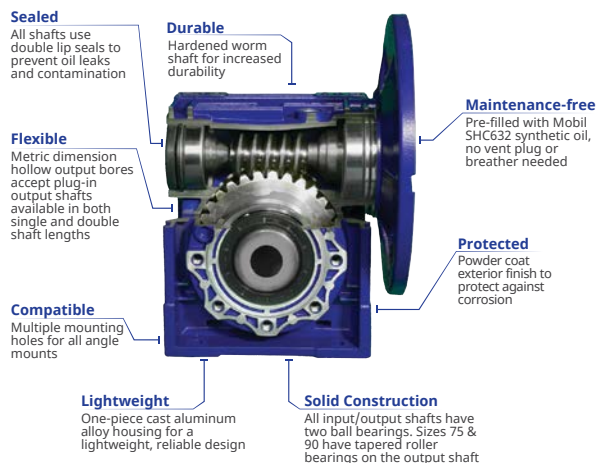
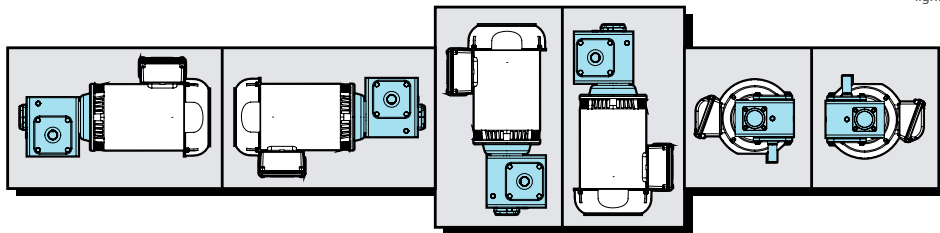
- 10:1 to 100:1 ratios
- Frame sizes 30, 40, 50, 63, and 75 mm
- Compatible with IEC motor face types B5 & B14 (IEC motor frame sizes 63, 71, 80 and 90)
- Cast aluminum alloy housing for lightweight design and optimal heat dissipation
- Hardened worm shaft for increased durability
- Two bearings on input and output shafts (Size 75 gearboxes have tapered roller bearings on the output shaft)
- All units filled with Mobil SHC632 synthetic oil
- No breather/vent plug needed; maintenance-free reducer
- Double lip oil seals prevent leakage
- Multiple mounting holes for any mounting orientation
- Gearbox outer finish: Powder Coat
- Hollow output bores

## Applications

- Use with electric motors for reducing output speed, increasing torque, changing drive direction, or running two loads from one motor.
- Use for conveyors, packaging machines, rotary tables, etc.

## Mounting Orientation

IronHorse IEC aluminum gearboxes can be mounted in any orientation (see diagram below).



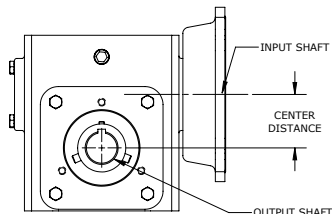


# IEC Aluminum Worm Gearboxes

## Glossary of Terms

### Frame Size or Center Distance

Distance between the axes of rotation of the input and output shafts.

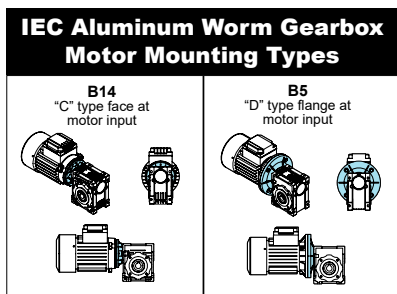


### IEC Sizes

Input Flanges sized for International Electromechanical Commission (IEC) motor Frames:

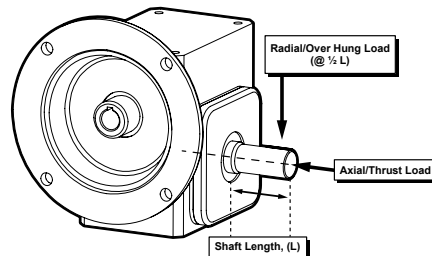
- 63
- 71
- 80
- 90

In both "C" type face (B14) and "D" typed flange (B5).



### Thrust and Radial Loads

Loads applied to the output shaft during operation. See Diagram below.



### Nominal Motor HP

Nominal Motor HP is the highest hp, 1800rpm motor (service factor 1.0) to be used with the gearbox. Gearbox input power capacity decreases as motor speed decreases and service factor increases.

### Mechanical Ratings

Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

### Thermal Ratings

Maximum Thermal Ratings are limits for gearbox continuous use without overheating. Mechanical and Thermal Ratings are the same for Aluminum gearboxes because the aluminum housing is designed for optimal heat dissipation.

### CAUTION:

1. Worm gear reducers are not to be considered fail safe or self-locking devices. If these features are required, a properly sized independent holding device should be utilized.
2. Depending upon gear geometry and operating conditions, worm gear reducers may or may not backdrive. Special consideration should be given to high inertia loads connected to the reducer output shaft.
3. Reducers driven by brake motors must be sized to accommodate motor driving, brake, and inertia loads to prevent the braking torque or inertia loads from exceeding the motor rating.



## Gearbox Selection Factors

| Overhung Load K Factors for Various Drive Types |      |
|-------------------------------------------------|------|
| Chain & Sprocket                                | 1.00 |
| Gear                                            | 1.25 |
| V-belt                                          | 1.50 |
| Flat Belt                                       | 2.50 |
| Variable Pitch Belt                             | 3.50 |

Divide gearbox Overhung Load (OHL) ratings by the applicable OHL K factors.

| Service Factors for Selecting Gearboxes (when used with electric motors) |                      |                 |              |                |
|--------------------------------------------------------------------------|----------------------|-----------------|--------------|----------------|
| Service Continuity (per day)                                             | Load Characteristics |                 |              |                |
|                                                                          | Uniform              | Moderate Shock* | Heavy Shock* | Extreme Shock* |
| Occasional 1/2 hour                                                      | 1.00                 | 1.00            | 1.00         | 1.25           |
| Less than 3 hours                                                        | 1.00                 | 1.00            | 1.25         | 1.50           |
| 3-10 hours                                                               | 1.00                 | 1.25            | 1.50         | 1.75           |
| More than 10 hours                                                       | 1.25                 | 1.50            | 1.75         | 2.00           |

\* Shock results from sudden increases in the torque demand of the load, such as: sudden stopping, restarting, and/or reversing; significantly heavy loads dropped onto a moving conveyor; impact loads such as punch press operations.

Depending upon the load characteristics, divide the gearbox HP, Overhung Load, and Maximum Mechanical Capacity ratings by the applicable service factor.



# 10:1 IEC Aluminum Worm Gearboxes

## IronHorse IEC Aluminum Worm Gearbox Specifications

| Part Number                       | Price    | Nominal/<br>Actual Ratio | Center<br>Distance<br>(mm) | Input Sized<br>for IEC Motor<br>Frame | IEC Motor<br>Face Type | Input Bore<br>Diameter<br>(mm) | Output Bore<br>Diameter<br>(mm) | Approx<br>Weight (lb) | Drawing<br>Links    |
|-----------------------------------|----------|--------------------------|----------------------------|---------------------------------------|------------------------|--------------------------------|---------------------------------|-----------------------|---------------------|
| <a href="#">WGA-30M-010-63B14</a> | \$118.00 | 10:1                     | 30                         | 63                                    | B14                    | 11                             | 14                              | 3                     | <a href="#">PDF</a> |
| <a href="#">WGA-30M-010-63B5</a>  | \$118.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-40M-010-63B14</a> | \$148.00 |                          | 40                         | 63                                    | B14                    | 11                             | 18                              | 5                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-010-63B5</a>  | \$148.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-40M-010-71B14</a> | \$148.00 |                          | 40                         | 71                                    | B14                    | 14                             | 18                              | 5                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-010-71B5</a>  | \$148.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-50M-010-71B14</a> | \$203.00 |                          | 50                         | 71                                    | B14                    | 14                             | 25                              | 8                     | <a href="#">PDF</a> |
| <a href="#">WGA-50M-010-71B5</a>  | \$203.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-50M-010-80B14</a> | \$203.00 |                          | 50                         | 80                                    | B14                    | 19                             | 25                              | 8                     | <a href="#">PDF</a> |
| <a href="#">WGA-50M-010-80B5</a>  | \$203.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-010-80B14</a> | \$261.00 |                          | 63                         | 80                                    | B14                    | 19                             | 25                              | 13                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-010-80B5</a>  | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-010-90B14</a> | \$261.00 |                          | 63                         | 90                                    | B14                    | 24                             | 25                              | 13                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-010-90B5</a>  | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |

## IronHorse IEC Aluminum Worm Gearbox Ratings

| Part Number                       | Maximum Ratings @ 1750 RPM Input<br>(Mechanical/Thermal) |                      |                          | Nominal<br>Motor HP<br>@ 1800 RPM | Output RPM<br>@ 1750<br>RPM Input | Overhung<br>Load (lb) | Efficiency (%) | Thrust Load<br>(lb) | Maximum<br>Backlash<br>(arc-minute) |
|-----------------------------------|----------------------------------------------------------|----------------------|--------------------------|-----------------------------------|-----------------------------------|-----------------------|----------------|---------------------|-------------------------------------|
|                                   | Input Power<br>(hp)                                      | Output Power<br>(hp) | Output Torque<br>(lb-in) |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-30M-010-63B14</a> | 0.54                                                     | 0.45                 | 160                      | 0.54                              | 175                               | 157                   | 83             | 31                  | 29                                  |
| <a href="#">WGA-30M-010-63B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-010-63B14</a> | 1.21                                                     | 1.03                 | 370                      | 1.21                              |                                   | 302                   | 85             | 60                  | 24                                  |
| <a href="#">WGA-40M-010-63B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-010-71B14</a> | 2.12                                                     | 1.84                 | 664                      | 2.12                              |                                   | 415                   | 87             | 83                  | 19                                  |
| <a href="#">WGA-40M-010-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-010-71B14</a> | 2.12                                                     | 1.84                 | 664                      | 2.12                              |                                   | 415                   | 87             | 83                  | 19                                  |
| <a href="#">WGA-50M-010-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-010-80B14</a> | 3.52                                                     | 3.06                 | 1108                     | 3.52                              |                                   | 542                   | 87             | 108                 | 17                                  |
| <a href="#">WGA-50M-010-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-010-80B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-010-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-010-90B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-010-90B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |



# 20:1 IEC Aluminum Worm Gearboxes

## IronHorse IEC Aluminum Worm Gearbox Specifications

| Part Number                       | Price    | Nominal/<br>Actual Ratio | Center<br>Distance<br>(mm) | Input Sized<br>for IEC Motor<br>Frame | IEC Motor<br>Face Type | Input Bore<br>Diameter<br>(mm) | Output Bore<br>Diameter<br>(mm) | Approx<br>Weight (lb) | Drawing<br>Links    |                     |
|-----------------------------------|----------|--------------------------|----------------------------|---------------------------------------|------------------------|--------------------------------|---------------------------------|-----------------------|---------------------|---------------------|
| <a href="#">WGA-30M-020-63B14</a> | \$118.00 | 20:1                     | 30                         | 63                                    | B14                    | 11                             | 14                              | 3                     | <a href="#">PDF</a> |                     |
| <a href="#">WGA-30M-020-63B5</a>  | \$118.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-40M-020-63B14</a> | \$148.00 |                          | 40                         |                                       | 63                     |                                | B14                             | 18                    | 5                   | <a href="#">PDF</a> |
| <a href="#">WGA-40M-020-63B5</a>  | \$148.00 |                          |                            |                                       |                        |                                | B5                              |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-020-71B14</a> | \$148.00 |                          |                            | 71                                    |                        | 14                             | B14                             |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-020-71B5</a>  | \$148.00 |                          |                            |                                       |                        |                                | B5                              |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-50M-020-71B14</a> | \$203.00 |                          | 50                         |                                       | 14                     |                                | B14                             | 8                     | <a href="#">PDF</a> |                     |
| <a href="#">WGA-50M-020-71B5</a>  | \$203.00 |                          |                            |                                       |                        |                                | B5                              |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-50M-020-80B14</a> | \$203.00 |                          |                            | 80                                    |                        | 19                             | B14                             |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-50M-020-80B5</a>  | \$203.00 |                          |                            |                                       |                        |                                | B5                              |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-63M-020-80B14</a> | \$261.00 |                          | 63                         |                                       | 24                     |                                | B14                             | 13                    | <a href="#">PDF</a> |                     |
| <a href="#">WGA-63M-020-80B5</a>  | \$261.00 |                          |                            |                                       |                        |                                | B5                              |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-63M-020-90B14</a> | \$261.00 |                          |                            | 90                                    |                        | 24                             | B14                             |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-63M-020-90B5</a>  | \$261.00 |                          |                            |                                       |                        |                                | B5                              |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-75M-020-80B14</a> | \$380.00 |                          | 75                         |                                       | 19                     |                                | B14                             | 28                    | 19                  | <a href="#">PDF</a> |
| <a href="#">WGA-75M-020-80B5</a>  | \$380.00 |                          |                            |                                       |                        |                                | B5                              |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-75M-020-90B14</a> | \$380.00 |                          |                            | 90                                    |                        | 24                             | B14                             |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-75M-020-90B5</a>  | \$380.00 |                          |                            |                                       |                        |                                | B5                              |                       |                     | <a href="#">PDF</a> |

## IronHorse IEC Aluminum Worm Gearbox Ratings

| Part Number                       | Maximum Ratings @ 1750 RPM Input<br>(Mechanical/Thermal) |                      |                          | Nominal<br>Motor HP<br>@ 1800 RPM | Output RPM<br>@ 1750<br>RPM Input | Overhung<br>Load (lb) | Efficiency (%) | Thrust Load<br>(lb) | Maximum<br>Backlash<br>(arc-minute) |
|-----------------------------------|----------------------------------------------------------|----------------------|--------------------------|-----------------------------------|-----------------------------------|-----------------------|----------------|---------------------|-------------------------------------|
|                                   | Input Power<br>(hp)                                      | Output Power<br>(hp) | Output Torque<br>(lb-in) |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-30M-020-63B14</a> | 0.28                                                     | 0.21                 | 151                      | 0.28                              | 88                                | 198                   | 74             | 40                  | 28                                  |
| <a href="#">WGA-30M-020-63B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-020-63B14</a> | 0.63                                                     | 0.5                  | 361                      | 0.63                              |                                   | 381                   | 79             | 76                  | 24                                  |
| <a href="#">WGA-40M-020-63B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-020-71B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-020-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-020-71B14</a> | 1.14                                                     | 0.91                 | 656                      | 1.14                              |                                   | 522                   | 80             | 104                 | 17                                  |
| <a href="#">WGA-50M-020-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-020-80B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-020-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-020-80B14</a> | 2.06                                                     | 1.71                 | 1225                     | 2.06                              |                                   | 683                   | 83             | 137                 | 16                                  |
| <a href="#">WGA-63M-020-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-020-90B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-020-90B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-020-80B14</a> | 3.24                                                     | 2.72                 | 1953                     | 3.24                              |                                   | 806                   | 84             | 161                 | 14                                  |
| <a href="#">WGA-75M-020-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-020-90B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-020-90B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |



# 30:1 IEC Aluminum Worm Gearboxes

## IronHorse IEC Aluminum Worm Gearbox Specifications

| Part Number                       | Price    | Nominal/<br>Actual Ratio | Center<br>Distance<br>(mm) | Input Sized<br>for IEC Motor<br>Frame | IEC Motor<br>Face Type | Input Bore<br>Diameter<br>(mm) | Output Bore<br>Diameter<br>(mm) | Approx<br>Weight (lb) | Drawing<br>Links    |                     |
|-----------------------------------|----------|--------------------------|----------------------------|---------------------------------------|------------------------|--------------------------------|---------------------------------|-----------------------|---------------------|---------------------|
| <a href="#">WGA-30M-030-63B14</a> | \$118.00 | 30:1                     | 30                         | 63                                    | B14                    | 11                             | 14                              | 3                     | <a href="#">PDF</a> |                     |
| <a href="#">WGA-30M-030-63B5</a>  | \$118.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-40M-030-63B14</a> | \$148.00 |                          | 40                         |                                       | 63                     |                                | B14                             | 18                    | 5                   | <a href="#">PDF</a> |
| <a href="#">WGA-40M-030-63B5</a>  | \$148.00 |                          |                            |                                       |                        |                                | B5                              |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-030-71B14</a> | \$148.00 |                          |                            | 71                                    |                        | 14                             | B14                             |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-030-71B5</a>  | \$148.00 |                          |                            |                                       |                        |                                | B5                              |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-50M-030-71B14</a> | \$203.00 |                          | 50                         |                                       | 19                     |                                | B14                             | 8                     | <a href="#">PDF</a> |                     |
| <a href="#">WGA-50M-030-71B5</a>  | \$203.00 |                          |                            |                                       |                        |                                | B5                              |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-50M-030-80B14</a> | \$203.00 |                          |                            | 80                                    |                        | 25                             | B14                             |                       | 13                  | <a href="#">PDF</a> |
| <a href="#">WGA-50M-030-80B5</a>  | \$203.00 |                          |                            |                                       |                        |                                | B5                              |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-63M-030-80B14</a> | \$261.00 |                          | 63                         |                                       | 24                     |                                | B14                             | 19                    |                     | <a href="#">PDF</a> |
| <a href="#">WGA-63M-030-80B5</a>  | \$261.00 |                          |                            |                                       |                        |                                | B5                              |                       |                     | <a href="#">PDF</a> |
| <a href="#">WGA-63M-030-90B14</a> | \$261.00 |                          |                            | 90                                    |                        | 28                             | 19                              |                       | 19                  | <a href="#">PDF</a> |
| <a href="#">WGA-63M-030-90B5</a>  | \$261.00 |                          |                            |                                       |                        |                                |                                 |                       |                     | B5                  |
| <a href="#">WGA-75M-030-80B14</a> | \$380.00 |                          | 75                         | 80                                    | B14                    | 24                             | 28                              | 19                    | <a href="#">PDF</a> |                     |
| <a href="#">WGA-75M-030-80B5</a>  | \$380.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-75M-030-90B14</a> | \$380.00 |                          |                            | 90                                    | B14                    | 24                             |                                 |                       | <a href="#">PDF</a> |                     |
| <a href="#">WGA-75M-030-90B5</a>  | \$380.00 |                          |                            |                                       |                        |                                |                                 |                       | B5                  | <a href="#">PDF</a> |

## IronHorse IEC Aluminum Worm Gearbox Ratings

| Part Number                       | Maximum Ratings @ 1750 RPM Input<br>(Mechanical/Thermal) |                      |                          | Nominal<br>Motor HP<br>@ 1800 RPM | Output RPM<br>@ 1750<br>RPM Input | Overhung<br>Load (lb) | Efficiency (%) | Thrust Load<br>(lb) | Maximum<br>Backlash<br>(arc-minute) |
|-----------------------------------|----------------------------------------------------------|----------------------|--------------------------|-----------------------------------|-----------------------------------|-----------------------|----------------|---------------------|-------------------------------------|
|                                   | Input Power<br>(hp)                                      | Output Power<br>(hp) | Output Torque<br>(lb-in) |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-30M-030-63B14</a> | 0.25                                                     | 0.17                 | 177                      | 0.25                              | 58                                | 226                   | 66             | 45                  | 29                                  |
| <a href="#">WGA-30M-030-63B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-030-63B14</a> | 0.53                                                     | 0.38                 | 403                      | 0.53                              |                                   | 436                   | 71             | 87                  | 24                                  |
| <a href="#">WGA-40M-030-63B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-030-71B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-030-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-030-71B14</a> | 0.94                                                     | 0.69                 | 740                      | 0.94                              |                                   | 598                   | 73             | 120                 | 19                                  |
| <a href="#">WGA-50M-030-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-030-80B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-030-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-030-80B14</a> | 1.64                                                     | 1.25                 | 1345                     | 1.64                              |                                   | 782                   | 76             | 156                 | 17                                  |
| <a href="#">WGA-63M-030-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-030-90B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-030-90B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-030-80B14</a> | 2.41                                                     | 1.88                 | 2028                     | 2.41                              |                                   | 923                   | 78             | 185                 | 16                                  |
| <a href="#">WGA-75M-030-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-030-90B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-030-90B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |



# 40:1 IEC Aluminum Worm Gearboxes

## IronHorse IEC Aluminum Worm Gearbox Specifications

| Part Number                       | Price    | Nominal/<br>Actual Ratio | Center<br>Distance<br>(mm) | Input Sized<br>for IEC Motor<br>Frame | IEC Motor<br>Face Type | Input Bore<br>Diameter<br>(mm) | Output Bore<br>Diameter<br>(mm) | Approx<br>Weight (lb) | Drawing<br>Links    |
|-----------------------------------|----------|--------------------------|----------------------------|---------------------------------------|------------------------|--------------------------------|---------------------------------|-----------------------|---------------------|
| <a href="#">WGA-30M-040-63B14</a> | \$118.00 | 40:1                     | 30                         | 63                                    | B14                    | 11                             | 14                              | 3                     | <a href="#">PDF</a> |
| <a href="#">WGA-30M-040-63B5</a>  | \$118.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-40M-040-71B14</a> | \$148.00 |                          | 40                         | 71                                    | B14                    | 14                             | 18                              | 5                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-040-71B5</a>  | \$148.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-50M-040-71B14</a> | \$203.00 |                          | 50                         | 71                                    | B14                    | 14                             | 25                              | 8                     | <a href="#">PDF</a> |
| <a href="#">WGA-50M-040-71B5</a>  | \$203.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-040-71B14</a> | \$261.00 |                          | 63                         | 71                                    | B14                    | 14                             | 25                              | 13                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-040-71B5</a>  | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-040-80B14</a> | \$261.00 |                          | 63                         | 80                                    | B14                    | 19                             | 28                              | 19                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-040-80B5</a>  | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-75M-040-80B14</a> | \$380.00 |                          | 75                         | 80                                    | B14                    | 19                             | 28                              | 19                    | <a href="#">PDF</a> |
| <a href="#">WGA-75M-040-80B5</a>  | \$380.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-75M-040-90B14</a> | \$380.00 |                          | 75                         | 90                                    | B14                    | 24                             | 28                              | 19                    | <a href="#">PDF</a> |
| <a href="#">WGA-75M-040-90B5</a>  | \$380.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |

## IronHorse IEC Aluminum Worm Gearbox Ratings

| Part Number                       | Maximum Ratings @ 1750 RPM Input<br>(Mechanical/Thermal) |                      |                          | Nominal<br>Motor HP<br>@ 1800 RPM | Output RPM<br>@ 1750<br>RPM Input | Overhung<br>Load (lb) | Efficiency (%) | Thrust Load<br>(lb) | Maximum<br>Backlash<br>(arc-minute) |
|-----------------------------------|----------------------------------------------------------|----------------------|--------------------------|-----------------------------------|-----------------------------------|-----------------------|----------------|---------------------|-------------------------------------|
|                                   | Input Power<br>(hp)                                      | Output Power<br>(hp) | Output Torque<br>(lb-in) |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-30M-040-63B14</a> | 0.19                                                     | 0.11                 | 160                      | 0.19                              | 44                                | 249                   | 60             | 50                  | 28                                  |
| <a href="#">WGA-30M-040-63B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-040-71B14</a> | 0.4                                                      | 0.26                 | 378                      | 0.4                               |                                   | 479                   | 66             | 96                  | 24                                  |
| <a href="#">WGA-40M-040-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-040-71B14</a> | 0.7                                                      | 0.48                 | 689                      | 0.7                               |                                   | 658                   | 68             | 132                 | 17                                  |
| <a href="#">WGA-50M-040-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-040-71B14</a> | 1.21                                                     | 0.87                 | 1261                     | 1.21                              |                                   | 860                   | 72             | 172                 | 16                                  |
| <a href="#">WGA-63M-040-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-040-80B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-040-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-040-80B14</a> | 1.9                                                      | 1.41                 | 2029                     | 1.9                               |                                   | 1015                  | 74             | 203                 | 14                                  |
| <a href="#">WGA-75M-040-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-040-90B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-040-90B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |



# 50:1 IEC Aluminum Worm Gearboxes

## IronHorse IEC Aluminum Worm Gearbox Specifications

| Part Number                       | Price    | Nominal/<br>Actual Ratio | Center<br>Distance<br>(mm) | Input Sized<br>for IEC Motor<br>Frame | IEC Motor<br>Face Type | Input Bore<br>Diameter<br>(mm) | Output Bore<br>Diameter<br>(mm) | Approx<br>Weight (lb) | Drawing<br>Links    |
|-----------------------------------|----------|--------------------------|----------------------------|---------------------------------------|------------------------|--------------------------------|---------------------------------|-----------------------|---------------------|
| <a href="#">WGA-30M-050-63B14</a> | \$118.00 | 50:1                     | 30                         | 63                                    | B14                    | 11                             | 14                              | 3                     | <a href="#">PDF</a> |
| <a href="#">WGA-30M-050-63B5</a>  | \$118.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-40M-050-63B14</a> | \$148.00 |                          | 40                         | 63                                    | B14                    | 11                             | 18                              | 5                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-050-63B5</a>  | \$148.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-50M-050-71B14</a> | \$203.00 |                          | 50                         | 71                                    | B14                    | 14                             | 25                              | 8                     | <a href="#">PDF</a> |
| <a href="#">WGA-50M-050-71B5</a>  | \$203.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-050-71B14</a> | \$261.00 |                          | 63                         | 71                                    | B14                    | 14                             | 25                              | 13                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-050-71B5</a>  | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-050-80B14</a> | \$261.00 |                          | 63                         | 80                                    | B14                    | 19                             | 25                              | 13                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-050-80B5</a>  | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-75M-050-80B14</a> | \$380.00 |                          | 75                         | 80                                    | B14                    | 19                             | 28                              | 19                    | <a href="#">PDF</a> |
| <a href="#">WGA-75M-050-80B5</a>  | \$380.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |

## IronHorse IEC Aluminum Worm Gearbox Ratings

| Part Number                       | Maximum Ratings @ 1750 RPM Input<br>(Mechanical/Thermal) |                      |                          | Nominal<br>Motor HP<br>@ 1800 RPM | Output RPM<br>@ 1750<br>RPM Input | Overhung<br>Load (lb) | Efficiency (%) | Thrust Load<br>(lb) | Maximum<br>Backlash<br>(arc-minute) |
|-----------------------------------|----------------------------------------------------------|----------------------|--------------------------|-----------------------------------|-----------------------------------|-----------------------|----------------|---------------------|-------------------------------------|
|                                   | Input Power<br>(hp)                                      | Output Power<br>(hp) | Output Torque<br>(lb-in) |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-30M-050-63B14</a> | 0.15                                                     | 0.08                 | 151                      | 0.15                              | 35                                | 268                   | 56             | 54                  | 27                                  |
| <a href="#">WGA-30M-050-63B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-050-63B14</a> | 0.31                                                     | 0.2                  | 353                      | 0.31                              |                                   | 517                   | 63             | 103                 | 21                                  |
| <a href="#">WGA-40M-050-63B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-050-71B14</a> | 0.56                                                     | 0.36                 | 647                      | 0.56                              |                                   | 709                   | 64             | 142                 | 17                                  |
| <a href="#">WGA-50M-050-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-050-71B14</a> | 0.99                                                     | 0.67                 | 1208                     | 0.99                              |                                   | 927                   | 68             | 185                 | 14                                  |
| <a href="#">WGA-63M-050-71B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-050-80B14</a> |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-050-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-050-80B14</a> | 1.47                                                     | 1.04                 | 1881                     | 1.47                              |                                   | 1094                  | 71             | 219                 | 13                                  |
| <a href="#">WGA-75M-050-80B5</a>  |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |



# 60:1 IEC Aluminum Worm Gearboxes

| IronHorse IEC Aluminum Worm Gearbox Specifications |          |                          |                            |                                       |                        |                                |                                 |                       |                     |
|----------------------------------------------------|----------|--------------------------|----------------------------|---------------------------------------|------------------------|--------------------------------|---------------------------------|-----------------------|---------------------|
| Part Number                                        | Price    | Nominal/<br>Actual Ratio | Center<br>Distance<br>(mm) | Input Sized<br>for IEC Motor<br>Frame | IEC Motor<br>Face Type | Input Bore<br>Diameter<br>(mm) | Output Bore<br>Diameter<br>(mm) | Approx<br>Weight (lb) | Drawing<br>Links    |
| <a href="#">WGA-40M-060-63B14</a>                  | \$148.00 | 60:1                     | 40                         | 63                                    | B14                    | 11                             | 18                              | 5                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-060-63B5</a>                   | \$148.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-50M-060-71B14</a>                  | \$203.00 |                          | 50                         | 71                                    | B14                    | 14                             | 25                              | 8                     | <a href="#">PDF</a> |
| <a href="#">WGA-50M-060-71B5</a>                   | \$203.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-060-71B14</a>                  | \$261.00 |                          | 63                         | 71                                    | B14                    | 14                             | 25                              | 13                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-060-71B5</a>                   | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-060-80B14</a>                  | \$261.00 |                          | 63                         | 80                                    | B14                    | 19                             | 25                              | 13                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-060-80B5</a>                   | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-75M-060-80B14</a>                  | \$380.00 |                          | 75                         | 80                                    | B14                    | 19                             | 28                              | 19                    | <a href="#">PDF</a> |
| <a href="#">WGA-75M-060-80B5</a>                   | \$380.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |

| IronHorse IEC Aluminum Worm Gearbox Ratings |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
|---------------------------------------------|----------------------------------------------------------|----------------------|--------------------------|-----------------------------------|-----------------------------------|-----------------------|----------------|---------------------|-------------------------------------|
| Part Number                                 | Maximum Ratings @ 1750 RPM Input<br>(Mechanical/Thermal) |                      |                          | Nominal<br>Motor HP<br>@ 1800 RPM | Output RPM<br>@ 1750<br>RPM Input | Overhung<br>Load (lb) | Efficiency (%) | Thrust Load<br>(lb) | Maximum<br>Backlash<br>(arc-minute) |
|                                             | Input Power<br>(hp)                                      | Output Power<br>(hp) | Output Torque<br>(lb-in) |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-060-63B14</a>           | 0.25                                                     | 0.15                 | 319                      | 0.25                              | 29                                | 549                   | 59             | 110                 | 22                                  |
| <a href="#">WGA-40M-060-63B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-060-71B14</a>           | 0.47                                                     | 0.28                 | 605                      | 0.47                              |                                   | 753                   | 60             | 151                 | 16                                  |
| <a href="#">WGA-50M-060-71B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-060-71B14</a>           | 0.82                                                     | 0.52                 | 1135                     | 0.82                              |                                   | 985                   | 64             | 197                 | 14                                  |
| <a href="#">WGA-63M-060-71B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-060-80B14</a>           |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-060-80B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-060-80B14</a>           | 1.22                                                     | 0.82                 | 1778                     | 1.22                              | 1162                              | 67                    | 232            | 13                  |                                     |
| <a href="#">WGA-75M-060-80B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |



# 80:1 IEC Aluminum Worm Gearboxes

| IronHorse IEC Aluminum Worm Gearbox Specifications |          |                          |                            |                                       |                        |                                |                                 |                       |                     |
|----------------------------------------------------|----------|--------------------------|----------------------------|---------------------------------------|------------------------|--------------------------------|---------------------------------|-----------------------|---------------------|
| Part Number                                        | Price    | Nominal/<br>Actual Ratio | Center<br>Distance<br>(mm) | Input Sized<br>for IEC Motor<br>Frame | IEC Motor<br>Face Type | Input Bore<br>Diameter<br>(mm) | Output Bore<br>Diameter<br>(mm) | Approx<br>Weight (lb) | Drawing<br>Links    |
| <a href="#">WGA-40M-080-63B14</a>                  | \$148.00 | 80:1                     | 40                         | 63                                    | B14                    | 11                             | 18                              | 5                     | <a href="#">PDF</a> |
| <a href="#">WGA-40M-080-63B5</a>                   | \$148.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-50M-080-71B14</a>                  | \$203.00 |                          | 50                         | 71                                    | B14                    | 14                             | 25                              | 8                     | <a href="#">PDF</a> |
| <a href="#">WGA-50M-080-71B5</a>                   | \$203.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-080-71B14</a>                  | \$261.00 |                          | 63                         | 71                                    | B14                    | 14                             | 25                              | 13                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-080-71B5</a>                   | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-63M-080-80B14</a>                  | \$261.00 |                          | 63                         | 80                                    | B14                    | 19                             | 25                              | 13                    | <a href="#">PDF</a> |
| <a href="#">WGA-63M-080-80B5</a>                   | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |
| <a href="#">WGA-75M-080-80B14</a>                  | \$380.00 |                          | 75                         | 80                                    | B14                    | 19                             | 28                              | 19                    | <a href="#">PDF</a> |
| <a href="#">WGA-75M-080-80B5</a>                   | \$380.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |

| IronHorse IEC Aluminum Worm Gearbox Ratings |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
|---------------------------------------------|----------------------------------------------------------|----------------------|--------------------------|-----------------------------------|-----------------------------------|-----------------------|----------------|---------------------|-------------------------------------|
| Part Number                                 | Maximum Ratings @ 1750 RPM Input<br>(Mechanical/Thermal) |                      |                          | Nominal<br>Motor HP<br>@ 1800 RPM | Output RPM<br>@ 1750<br>RPM Input | Overhung<br>Load (lb) | Efficiency (%) | Thrust Load<br>(lb) | Maximum<br>Backlash<br>(arc-minute) |
|                                             | Input Power<br>(hp)                                      | Output Power<br>(hp) | Output Torque<br>(lb-in) |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-080-63B14</a>           | 0.18                                                     | 0.1                  | 277                      | 0.18                              | 22                                | 604                   | 53             | 121                 | 22                                  |
| <a href="#">WGA-40M-080-63B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-50M-080-71B14</a>           | 0.35                                                     | 0.19                 | 546                      | 0.35                              |                                   | 829                   | 54             | 166                 | 16                                  |
| <a href="#">WGA-50M-080-71B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-080-71B14</a>           | 0.6                                                      | 0.35                 | 1027                     | 0.6                               |                                   | 1084                  | 59             | 217                 | 14                                  |
| <a href="#">WGA-63M-080-71B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-080-80B14</a>           |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-080-80B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-080-80B14</a>           | 0.91                                                     | 0.56                 | 1632                     | 0.91                              |                                   | 1279                  | 62             | 256                 | 13                                  |
| <a href="#">WGA-75M-080-80B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |



# 100:1 IEC Aluminum Worm Gearboxes

## IronHorse IEC Aluminum Worm Gearbox Specifications

| Part Number                       | Price    | Nominal/<br>Actual Ratio | Center<br>Distance<br>(mm) | Input Sized<br>for IEC Motor<br>Frame | IEC Motor<br>Face Type | Input Bore<br>Diameter<br>(mm) | Output Bore<br>Diameter<br>(mm) | Approx<br>Weight (lb) | Drawing<br>Links    |  |  |
|-----------------------------------|----------|--------------------------|----------------------------|---------------------------------------|------------------------|--------------------------------|---------------------------------|-----------------------|---------------------|--|--|
| <a href="#">WGA-40M-100-63B14</a> | \$148.00 | 100:1                    | 40                         | 63                                    | B14                    | 11                             | 18                              | 5                     | <a href="#">PDF</a> |  |  |
| <a href="#">WGA-40M-100-63B5</a>  | \$148.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |  |  |
| <a href="#">WGA-63M-100-71B14</a> | \$261.00 |                          | 63                         | 71                                    | B14                    | 14                             | 25                              | 13                    | <a href="#">PDF</a> |  |  |
| <a href="#">WGA-63M-100-71B5</a>  | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |  |  |
| <a href="#">WGA-63M-100-80B14</a> | \$261.00 |                          |                            | 80                                    | B14                    | 19                             |                                 |                       | <a href="#">PDF</a> |  |  |
| <a href="#">WGA-63M-100-80B5</a>  | \$261.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |  |  |
| <a href="#">WGA-75M-100-80B14</a> | \$380.00 |                          | 75                         | 80                                    | B14                    | 19                             | 28                              | 19                    | <a href="#">PDF</a> |  |  |
| <a href="#">WGA-75M-100-80B5</a>  | \$380.00 |                          |                            |                                       | B5                     |                                |                                 |                       | <a href="#">PDF</a> |  |  |

## IronHorse IEC Aluminum Worm Gearbox Ratings

| IronHorse IEC Aluminum Worm Gearbox Ratings |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
|---------------------------------------------|----------------------------------------------------------|----------------------|--------------------------|-----------------------------------|-----------------------------------|-----------------------|----------------|---------------------|-------------------------------------|
| Part Number                                 | Maximum Ratings @ 1750 RPM Input<br>(Mechanical/Thermal) |                      |                          | Nominal<br>Motor HP<br>@ 1800 RPM | Output RPM<br>@ 1750<br>RPM Input | Overhung<br>Load (lb) | Efficiency (%) | Thrust Load<br>(lb) | Maximum<br>Backlash<br>(arc-minute) |
|                                             | Input Power<br>(hp)                                      | Output Power<br>(hp) | Output Torque<br>(lb-in) |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-40M-100-63B14</a>           | 0.14                                                     | 0.07                 | 244                      | 0.14                              | 17.5                              | 651                   | 48             | 130                 | 22                                  |
| <a href="#">WGA-40M-100-63B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-100-71B14</a>           | 0.51                                                     | 0.28                 | 992                      | 0.51                              |                                   | 1168                  | 54             | 234                 | 14                                  |
| <a href="#">WGA-63M-100-71B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-100-80B14</a>           |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-63M-100-80B5</a>            | 0.74                                                     | 0.42                 | 1517                     | 0.74                              |                                   | 1378                  | 57             | 276                 | 13                                  |
| <a href="#">WGA-75M-100-80B14</a>           |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |
| <a href="#">WGA-75M-100-80B5</a>            |                                                          |                      |                          |                                   |                                   |                       |                |                     |                                     |



# IEC Aluminum Worm Gearbox Output Shafts

## Features

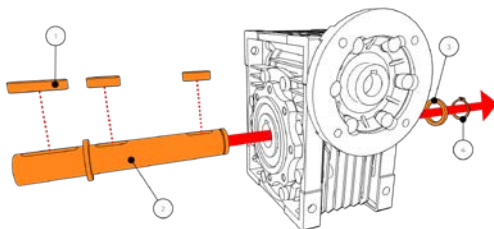
- Shaft Material: Carbon Steel
- Keys and installation hardware included



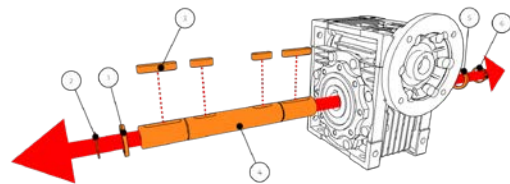
Note: These shafts (WGA-xxx-x-IEC) are designed to only fit WGA-xxx-IEC style Worm Gearboxes



| IronHorse IEC Aluminum Worm Gearbox Output Shaft Kits |         |                              |                   |                       |               |                            |
|-------------------------------------------------------|---------|------------------------------|-------------------|-----------------------|---------------|----------------------------|
| Part Number                                           | Price   | Fits                         | Output Shaft Type | Output Shaft Diameter | Typical Photo | Drawing Links              |
| <a href="#"><u>WGA-30M-S-IEC</u></a>                  | \$14.00 | WGA-30M IEC series gearboxes | Single            | 14mm                  |               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>WGA-40M-S-IEC</u></a>                  | \$16.00 | WGA-40M IEC series gearboxes |                   | 18mm                  |               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>WGA-50M-S-IEC</u></a>                  | \$19.00 | WGA-50M IEC series gearboxes |                   | 25mm                  |               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>WGA-63M-S-IEC</u></a>                  | \$25.00 | WGA-63M IEC series gearboxes |                   | 25mm                  |               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>WGA-75M-S-IEC</u></a>                  | \$33.00 | WGA-75M IEC series gearboxes |                   | 28mm                  |               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>WGA-30M-D-IEC</u></a>                  | \$19.00 | WGA-30M IEC series gearboxes | Double            | 14mm                  |               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>WGA-40M-D-IEC</u></a>                  | \$22.00 | WGA-40M IEC series gearboxes |                   | 18mm                  |               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>WGA-50M-D-IEC</u></a>                  | \$25.00 | WGA-50M IEC series gearboxes |                   | 25mm                  |               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>WGA-63M-D-IEC</u></a>                  | \$34.00 | WGA-63M IEC series gearboxes |                   | 25mm                  |               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>WGA-75M-D-IEC</u></a>                  | \$42.00 | WGA-75M IEC series gearboxes |                   | 28mm                  |               | <a href="#"><u>PDF</u></a> |



Single Shaft



Dual Shaft



# Aluminum Worm Gearbox Accessories

| IronHorse Aluminum Worm Gearbox Accessories |         |                                                                                     |                                                                                     |
|---------------------------------------------|---------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Part Number                                 | Price   | Description                                                                         | Typical Photo                                                                       |
| <a href="#"><u>WGA-30M-ACC1</u></a>         | \$11.00 | Output flange, for aluminum WGA-30M series gearboxes. Includes (4) mounting screws. |  |
| <a href="#"><u>WGA-40M-ACC1</u></a>         | \$12.00 | Output flange, for aluminum WGA-40M series gearboxes. Includes (4) mounting screws. |                                                                                     |
| <a href="#"><u>WGA-50M-ACC1</u></a>         | \$13.00 | Output flange, for aluminum WGA-50M series gearboxes. Includes (4) mounting screws. |                                                                                     |
| <a href="#"><u>WGA-63M-ACC1</u></a>         | \$17.00 | Output flange, for aluminum WGA-63M series gearboxes. Includes (8) mounting screws. |                                                                                     |
| <a href="#"><u>WGA-75M-ACC1</u></a>         | \$26.00 | Output flange, for aluminum WGA-75M series gearboxes. Includes (8) mounting screws. |                                                                                     |
| <a href="#"><u>WGA-30M-ACC2</u></a>         | \$14.00 | Torque arm, for aluminum WGA-30M series gearboxes. Includes (4) mounting screws.    |  |
| <a href="#"><u>WGA-40M-ACC2</u></a>         | \$16.00 | Torque arm, for aluminum WGA-40M series gearboxes. Includes (4) mounting screws.    |                                                                                     |
| <a href="#"><u>WGA-50M-ACC2</u></a>         | \$17.00 | Torque arm, for aluminum WGA-50M series gearboxes. Includes (4) mounting screws.    |                                                                                     |
| <a href="#"><u>WGA-63M-ACC2</u></a>         | \$27.00 | Torque arm, for aluminum WGA-63M series gearboxes. Includes (8) mounting screws.    |                                                                                     |
| <a href="#"><u>WGA-75M-ACC2</u></a>         | \$46.00 | Torque arm, for aluminum WGA-75M series gearboxes. Includes (8) mounting screws.    |                                                                                     |
| <a href="#"><u>WGA-30M-ACC5</u></a>         | \$6.00  | Output cover, for aluminum WGA-30M series gearboxes. Includes (4) mounting screws.  |  |
| <a href="#"><u>WGA-40M-ACC5</u></a>         | \$6.00  | Output cover, for aluminum WGA-40M series gearboxes. Includes (4) mounting screws.  |                                                                                     |
| <a href="#"><u>WGA-50M-ACC5</u></a>         | \$11.00 | Output cover, for aluminum WGA-50M series gearboxes. Includes (4) mounting screws.  |                                                                                     |
| <a href="#"><u>WGA-63M-ACC5</u></a>         | \$11.00 | Output cover, for aluminum WGA-63M series gearboxes. Includes (4) mounting screws.  |                                                                                     |
| <a href="#"><u>WGA-75M-ACC5</u></a>         | \$11.00 | Output cover, for aluminum WGA-75M series gearboxes. Includes (4) mounting screws.  |                                                                                     |

All accessories fit both NEMA and IEC input types.



# IronHorse® Worm Gearboxes

## Gearbox Selection Example (continued)

(Refer to the specifications tables for gearbox specifications, service factors, and K factors.)

Load requirements: Conveyor to run 10 hours/day; moderate shock loading; driven by V-belt @ approx 20 rpm; requires 2700 in-lb of torque. Motor speed 1725 rpm (1800 rpm nominal).

7) Use the gearbox overhung load ratings from the specifications table to determine the minimum allowable pulley diameters.

Select gearbox with **Overhung Load rating > overhung load force**:

Gearbox required OHL rating = (gearbox real torque)(K)(SF)/(gearbox pulley diameter / 2)

Minimum gearbox pulley diameter = (T)(K)(SF)(2)/(OHL rating)

Conveyor pulley diameter = (gearbox pulley diameter)(pulley ratio)

For 10:1, WG-175-010-x gearbox:

Minimum gearbox pulley diameter = (312.86 in-lb)(1.5)(1.25)(2)/(650 lb) = 1.8" [use 2"]

Conveyor pulley diameter = (2")(8.63) = **17.26" [17.26" pulley size is prohibitively large]**

Determine pulley sizes and OHL for next larger gearbox ratio.

For 15:1, WG-206-015-x gearbox:

Minimum gearbox pulley diameter = (469.57 in-lb)(1.5)(1.25)(2)/(700 lb) = 2.5" [use 2.5"]

Conveyor pulley diameter = (2.5")(5.75) = 14.38" [use 14.4"]

Select **WG-206-015-x gearbox, 2.5" gearbox pulley, and 14.4" conveyor pulley.**

For 20:1, WG-206-020-x gearbox:

N/A – larger ratio of same frame size GB is same price, yet provides lower efficiency and power characteristics

For 30:1, WGA-63M-030-H1 gearbox:

Minimum gearbox pulley diameter = (937.50 in-lb)(1.5)(1.25)(2)/(736 lb) = 4.78" [use 5"]

Conveyor pulley diameter = (5")(2.88) = 14.40" [use 14.4"]

N/A – WGA-63M & WG-325 gearboxes costs more than WG-206

For 40:1, N/A – WG-325-xxx gearboxes cost more than WG-206 at any ratio

For 60:1, N/A – WG-325-xxx gearboxes cost more than WG-206 at any ratio

8) **Check results** against original speed and torque requirements:

a) Conveyor speed = (motor speed) / (gearbox ratio)(pulley ratio) = (1725 rpm) / (15)(14.4"/2.5") = 20 rpm

b) Maximum real torque available at conveyor = (gearbox thermal torque)(pulley ratio) = (673 in-lb)(14.4"/2.5") = 3876 in-lb

c) Maximum design torque available at conveyor = (gearbox mechanical torque)(pulley ratio) / (service factor)  
= (1002 in-lb)(14.4"/2.5") / 1.25 = 4617 in-lb

The speed is correct as required, and both maximum torque values are greater than the 2700 in-lb required by the load.

9) **Select a motor** and check torque transmitted to the load:

From the gearbox spec tables, WG-206-015-x efficiency = 85%.

maximum thermal input power = 1.40 hp

maximum mechanical input power @ 1.0 SF = 2.09 hp

maximum mechanical input power @ 1.25 SF = (rated max mechanical input power) / (SF) = 2.09 hp / 1.25 = 1.67 hp

maximum allowable motor power = 1.40 hp; select nominal 1hp motor

Select **1hp motor**, and check for adequate torque at the load:

Torque = Power / Speed [conversion factor: (1hp) = (63,025 in-lb-rpm)]

Torque load = (63,025 in-lb-rpm / hp)(gearbox input hp)(gearbox efficiency) / (motor rpm / (gearbox ratio)(pulley ratio))  
= (63,025)(1)(0.85) / (1725 / (15/1)(14.4/2.5)) = **2683 in-lb [insufficient torque at load]**

This torque value is less than the 2700 in-lb required by the load.

So, select and check the next larger nominal motor size, which is 1-1/2 hp.

Since the 206 frame size 15 ratio gearboxes do not meet the 1-1/2 hp thermal rating, choose the WG-237-015-x gearbox.

Select **1-1/2 hp motor** and **WG-237-015-x gearbox**, and check for adequate torque:

WG-237-015-x gearbox efficiency = 84%

maximum thermal input power = 1.55 hp

maximum mechanical input power @ 1.25 SF = 2.64 hp / 1.25 = 2.11 hp

maximum allowable motor power = 1.55 hp; select nominal 1-1/2 hp motor

gearbox ratio is still 15:1, and OHL rating is increased to 900 lb, so the previous pulley calculations [step 7] remain sufficient [smaller pulleys can be calculated and selected for this gearbox, if desired]

Tload = (63,025 in-lb-rpm/hp) (1.5hp) (84%) / (1725 rpm / (15/1)(14.4/2.5)) = 3977 in-lb > 2700 in-lb; sufficient torque at load

Final gearbox and motor selection: 1-1/2 hp motor WG-237-015-x gearbox

## IronHorse® Worm Gearboxes

### Gearbox Selection Example (continued)

(Refer to the specifications tables for gearbox specifications, service factors, and K factors.)

[Load requirements: Conveyor to run 10 hours/day; moderate shock loading; driven by V-belt @ approx 20 rpm; requires 2700 in-lb of torque. Motor speed 1725 rpm (1800 rpm nominal).]

7) Use the gearbox overhung load ratings from the specifications table to determine the minimum allowable pulley diameters.

Select gearbox with **Overhung Load rating > overhung load force**:

Gearbox required OHL rating = (gearbox real torque)(K)(SF)/(gearbox pulley diameter / 2)

Minimum gearbox pulley diameter = (T)(K)(SF)(2)/(OHL rating)

Conveyor pulley diameter = (gearbox pulley diameter)(pulley ratio)

For 10:1, WG-175-010-x gearbox:

Minimum gearbox pulley diameter = (312.86 in-lb)(1.5)(1.25)(2)/(650 lb) = 1.8" [use 2"]

Conveyor pulley diameter = (2")(8.63) = ~~17.26"~~ **[17.26" pulley size is prohibitively large]**

Determine pulley sizes and OHL for next larger gearbox ratio.

For 15:1, WG-206-015-x gearbox:

Minimum gearbox pulley diameter = (469.57 in-lb)(1.5)(1.25)(2)/(700 lb) = 2.5" [use 2.5"]

Conveyor pulley diameter = (2.5")(5.75) = 14.38" [use 14.4"]

Select **WG-206-015-x gearbox, 2.5" gearbox pulley, and 14.4" conveyor pulley.**

For 20:1, WG-206-020-x gearbox:

N/A – larger ratio of same frame size GB is same price, yet provides lower efficiency and power characteristics

For 30:1, WGA-63M-030-H1 gearbox:

Minimum gearbox pulley diameter = (937.50 in-lb)(1.5)(1.25)(2)/(736 lb) = 4.78" [use 5"]

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N/A – WGA-63M & WG-325 gearboxes costs more than WG-206

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8) **Check results** against original speed and torque requirements:

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= (1002 in-lb)(14.4"/2.5") / 1.25 = 4617 in-lb

The speed is correct as required, and both maximum torque values are greater than the 2700 in-lb required by the load.

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From the gearbox spec tables, WG-206-015-x efficiency = 85%.

maximum thermal input power = 1.40 hp

maximum mechanical input power @ 1.0 SF = 2.09 hp

maximum mechanical input power @ 1.25 SF = (rated max mechanical input power) / (SF) = 2.09 hp / 1.25 = 1.67 hp

maximum allowable motor power = 1.40 hp; select nominal 1hp motor

Select **1hp motor**, and check for adequate torque at the load:

Torque = Power / Speed

**[conversion factor: (1hp) = (63,025 in-lb-rpm)]**

Torque load = (63,025 in-lb-rpm / hp)(gearbox input hp)(gearbox efficiency) / (motor rpm / (gearbox ratio)(pulley ratio))

= (63,025)(1)(0.85) / (1725 / (15/1)(14.4/2.5)) = ~~2683 in-lb~~ **[insufficient torque at load]**

This torque value is less than the 2700 in-lb required by the load.

So, select and check the next larger nominal motor size, which is 1-1/2 hp.

Since the 206 frame size 15 ratio gearboxes do not meet the 1-1/2 hp thermal rating, choose the WG-237-015-x gearbox.

Select **1-1/2 hp motor and WG-237-015-x gearbox**, and check for adequate torque:

WG-237-015-x gearbox efficiency = 84%

maximum thermal input power = 1.55 hp

maximum mechanical input power @ 1.25 SF = 2.64 hp / 1.25 = 2.11 hp

maximum allowable motor power = 1.55 hp; select nominal 1-1/2 hp motor

gearbox ratio is still 15:1, and OHL rating is increased to 900 lb, so the previous pulley calculations [step 7] remain sufficient

[smaller pulleys can be calculated and selected for this gearbox, if desired]

Tload = (63,025 in-lb-rpm/hp) (1.5hp) (84%) / (1725 rpm / (15/1)(14.4/2.5)) = 3977 in-lb > 2700 in-lb; sufficient torque at load

Final gearbox and motor selection: 1-1/2 hp motor WG-237-015-x gearbox