



IronHorse® Stainless Steel Worm Gearboxes



**IronHorse 304 Stainless Steel
Hollow Bore
Worm Gearbox**



Features

- Available ratios – 5:1 to 60:1
- Available housing sizes – 1 3/4" to 2 5/8" (center distance)
- BEAG (formerly BISSC) certified (Bakery Equipment Assessment Group)
- IP69K rated
- Housing, covers, & flange – 304 stainless steel
- External surfaces – polished smooth
- Nameplate – laser etched
- Breather vent – sealed internal bladder functions as a breather vent
- Input flange – includes O-ring to prevent moisture intrusion
- Input quill – 15CrMo4 with carburizing heat treatment
- Worm wheel – CuSn12Ni2 bronze alloy with high efficiency tooth profile
- Output seals – double lipped, VITON
- Top mounting holes – removable plastic plugs installed
- Side mounting holes – removable silicone plugs installed
- Lubrication – prefilled* with Mobil CIBUS 460 H1 food grade lubricant
- Performance – equivalent to other major brands
- Includes – 1 O-Ring and 2 stainless steel keys
- Warranty – 1 year



*NOTE: Prefilled for mounting position 'A'. Other mounting positions may require addition or subtraction of oil. Please refer to the User Manual for proper oil volume for each mounting position.

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.

The IronHorse® Stainless Steel (WGSS) series of heavy duty, right angle worm gear reducers offer exceptional value for applications where food-grade or corrosion resistant equipment is required. These BEAG (formerly BISSC) Certified reducers offer IP69K Protection for close-range high pressure, high temperature spray downs. We also offer optional gearbox accessories.

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.



**Dual Output Shaft Accessories
WGSS-175-DS**



**Single Output Shaft Accessories
WGSS-175-S**



**Output Cover Accessories
WGSS-175-OC**



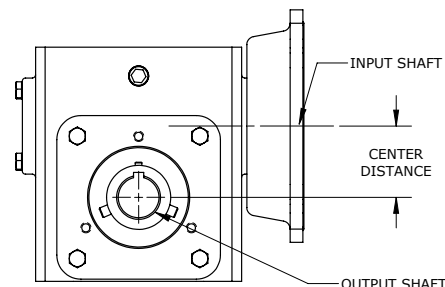
**Output Flange Accessories
WGSS-175-OF**



**Output Bore Accessories
WGSS-175-158-OB**



IronHorse® Stainless Steel Worm Gearboxes



| IronHorse Stainless Steel Worm Gearbox Specifications | | | | | | | | | | | | | | | | | | | |
|---|------------|---------------|--------------|--------------------------------|---|------------------|----------------------|---------------------------------|-------------------------------|----------------|--------------------|-------------------------------------|----------------------|--------------------------|----------------------|----------------------|--------------------------|----------------------------------|---------------------|
| Part Number | Price | Nominal Ratio | Actual Ratio | Output RPM @ 1750 RPM Input | Nominal Motor HP ¹ @ 1800 RPM | NEMA Motor Frame | Center Distance (in) | Overhung Load ² (lb) | Thrust Load ³ (lb) | Efficiency (%) | Approx Weight (lb) | Maximum Ratings @ 1750 RPM Input | | | | | | Maximum Backlash (arc-minute) | Drawing Links |
| | | | | | | | | | | | | Mechanical ⁴ | | | Thermal ⁵ | | | | |
| | | | | | | | | | | | | Input Power (hp) | Output Power (hp) | Output Torque (lb-in) | Input Power (hp) | Output Power (hp) | Output Torque (lb-in) | | |
| WGSS-175-005-HA | \$956.00 | 5:1 | 5.25:1 | 350 | 2.36 | 56C | 1 3/4 | 650 | 550 | 93.2 | 16 | 2.36 | 2.2 | 416 | 1.99 | 1.85 | 350 | 20 | PDF |
| WGSS-175-010-HA | \$893.00 | 10:1 | 10:1 | 175 | 1.52 | | | | | 90.5 | | 1.52 | 1.38 | 495 | 1.43 | 1.3 | 467 | | PDF |
| WGSS-175-015-HA | \$893.00 | 15:1 | 15:1 | 116 | 1.09 | | | | | 85.9 | | 1.09 | 0.94 | 506 | 0.96 | 0.83 | 448 | | PDF |
| WGSS-175-020-HA | \$893.00 | 20:1 | 20.5:1 | 87 | 0.85 | | | | | 84 | | 0.85 | 0.71 | 527 | 0.85 | 0.71 | 514 | | PDF |
| WGSS-175-030-HA | \$893.00 | 30:1 | 30:1 | 58 | 0.65 | | | | | 75.8 | | 0.65 | 0.49 | 532 | 0.56 | 0.43 | 460 | | PDF |
| WGSS-175-040-HA | \$893.00 | 40:1 | 40:1 | 44 | 0.57 | | | | | 72.9 | | 0.57 | 0.42 | 599 | 0.5 | 0.37 | 527 | | PDF |
| WGSS-175-050-HA | \$893.00 | 50:1 | 50:1 | 35 | 0.44 | | | | | 71.7 | | 0.44 | 0.32 | 568 | 0.44 | 0.32 | 568 | | PDF |
| WGSS-175-060-HA | \$893.00 | 60:1 | 60:1 | 29 | 0.31 | | | | | 68.3 | | 0.31 | 0.21 | 457 | 0.31 | 0.21 | 457 | | PDF |
| WGSS-206-005-HA | \$978.00 | 5:1 | 5.25:1 | 350 | 3.62 | 56C | 2 1/16 | 700 | 750 | 93.5 | 22 | 3.62 | 3.38 | 640 | 3.04 | 2.84 | 538 | 17 | PDF |
| WGSS-206-010-HA | \$978.00 | 10:1 | 10:1 | 175 | 2.47 | | | | | 89.8 | | 2.47 | 2.22 | 799 | 1.94 | 1.74 | 627 | | PDF |
| WGSS-206-015-HA | \$978.00 | 15:1 | 15:1 | 116 | 1.8 | | | | | 87.4 | | 1.8 | 1.57 | 850 | 1.57 | 1.37 | 741 | | PDF |
| WGSS-206-020-HA | \$978.00 | 20:1 | 20.5:1 | 87 | 1.48 | | | | | 83 | | 1.48 | 1.23 | 907 | 1.16 | 0.97 | 713 | | PDF |
| WGSS-206-030-HA | \$978.00 | 30:1 | 30:1 | 58 | 0.95 | | | | | 78.1 | | 0.95 | 0.74 | 802 | 0.9 | 0.71 | 762 | | PDF |
| WGSS-206-040-HA | \$978.00 | 40:1 | 40:1 | 44 | 0.76 | | | | | 70.7 | | 0.76 | 0.54 | 774 | 0.67 | 0.48 | 687 | | PDF |
| WGSS-206-050-HA | \$978.00 | 50:1 | 50:1 | 35 | 0.6 | | | | | 71.4 | | 0.6 | 0.43 | 771 | 0.6 | 0.43 | 771 | | PDF |
| WGSS-206-060-HA | \$978.00 | 60:1 | 60:1 | 29 | 0.52 | | | | | 69.2 | | 0.52 | 0.36 | 777 | 0.52 | 0.36 | 777 | | PDF |
| WGSS-237-005-HA | \$1,275.00 | 5:1 | 5.25:1 | 350 | 4.32 | | 2 3/8 | 900 | 900 | 93.9 | 28 | 4.32 | 4.06 | 767 | 3.91 | 3.67 | 693 | | PDF |
| WGSS-237-010-HA | \$1,190.00 | 10:1 | 10:1 | 175 | 3.23 | | | | | 90.7 | | 3.23 | 2.93 | 1055 | 2.56 | 2.32 | 837 | | PDF |
| WGSS-237-015-HA | \$1,190.00 | 15:1 | 15:1 | 116 | 2.36 | | | | | 86.9 | | 2.36 | 2.05 | 1108 | 1.82 | 1.58 | 854 | | PDF |
| WGSS-237-020-HA | \$1,190.00 | 20:1 | 20.5:1 | 87 | 2.01 | | | | | 83.8 | | 2.01 | 1.68 | 1243 | 1.47 | 1.23 | 910 | | PDF |
| WGSS-237-030-HA | \$1,190.00 | 30:1 | 30:1 | 58 | 1.33 | | | | | 76.9 | | 1.33 | 1.02 | 1105 | 1.03 | 0.79 | 857 | | PDF |
| WGSS-237-040-HA | \$1,190.00 | 40:1 | 40:1 | 44 | 1.07 | | | | | 75 | | 1.07 | 0.8 | 1156 | 0.95 | 0.71 | 1029 | | PDF |
| WGSS-237-050-HA | \$1,190.00 | 50:1 | 50:1 | 35 | 0.87 | | | | | 70.9 | | 0.87 | 0.62 | 1111 | 0.82 | 0.58 | 1045 | | PDF |
| WGSS-237-060-HA | \$1,190.00 | 60:1 | 60:1 | 29 | 0.71 | | | | | 65.7 | | 0.71 | 0.47 | 1008 | 0.69 | 0.46 | 986 | | PDF |

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

2. Overhung Load (OHL) ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

3. Thrust Load ratings are for forces along the axis of the output shaft, usually encountered in vertical-drive applications from agitators, mixers, fans, blowers, etc.

4. 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.

5. Maximum Thermal Ratings are limits for gearbox continuous use without overheating.



IronHorse® Stainless Steel Worm Gearboxes

IronHorse Stainless Steel Worm Gearbox Specifications

| Part Number | Price | Nominal Ratio | Actual Ratio | Output RPM @ 1750 RPM Input | Nominal Motor HP ¹ @ 1800 RPM | NEMA Motor Frame | Center Distance (in) | Overhung Load ² (lb) | Thrust Load ³ (lb) | Efficiency (%) | Approx Weight (lb) | Maximum Ratings @ 1750 RPM Input | | | | | | Maximum Backlash (arc-minute) | Drawing Links | | | | |
|---------------------------------|------------|---------------|--------------|--------------------------------|---|------------------|----------------------|---------------------------------|-------------------------------|----------------|--------------------|-------------------------------------|-------------------|-----------------------|----------------------|-------------------|-----------------------|----------------------------------|---------------------|------|------|------|---------------------|
| | | | | | | | | | | | | Mechanical ⁴ | | | Thermal ⁵ | | | | | | | | |
| | | | | | | | | | | | | Input Power (hp) | Output Power (hp) | Output Torque (lb-in) | Input Power (hp) | Output Power (hp) | Output Torque (lb-in) | | | | | | |
| WGSS-262-005-HB | \$1,658.00 | 5:1 | 5.25:1 | 350 | 5.24 | 145TC | 2 5/8 | 1000 | 1000 | 94.2 | 39 | 5.24 | 4.94 | 933 | 5.17 | 4.87 | 920 | 17 | PDF | | | | |
| WGSS-262-010-HB | \$1,551.00 | 10:1 | 10:1 | 175 | 3.96 | | | | | 91.2 | | 3.96 | 3.61 | 1301 | 3.41 | 3.11 | 1119 | | PDF | | | | |
| WGSS-262-015-HB | \$1,551.00 | 15:1 | 15:1 | 116 | 2.96 | | | | | 88.5 | | 2.96 | 2.62 | 1415 | 2.61 | 2.31 | 1246 | | PDF | | | | |
| WGSS-262-020-HA | \$1,551.00 | 20:1 | 20.5:1 | 87 | 2.36 | 56C | | | | 84.5 | | 2.36 | 1.99 | 1472 | 1.93 | 1.63 | 1206 | | PDF | | | | |
| WGSS-262-020-HB | \$1,551.00 | | | | | 145TC | | | | | | | | | | | | | PDF | | | | |
| WGSS-262-030-HA | \$1,551.00 | 30:1 | 30:1 | 58 | 1.68 | 56C | | | | 79.7 | | 1.68 | 1.34 | 1446 | 1.48 | 1.18 | 1271 | | PDF | | | | |
| WGSS-262-030-HB | \$1,551.00 | | | | | 145TC | | | | | | | | | | | | | PDF | | | | |
| WGSS-262-040-HA | \$1,551.00 | 40:1 | 40:1 | 44 | 1.33 | 56C | | | | | | | | 75.9 | | 1.33 | 1.01 | | 1454 | 1.24 | 0.94 | 1360 | PDF |
| WGSS-262-050-HA | \$1,551.00 | 50:1 | 50:1 | 35 | 1.08 | | | | | | | | | 73.2 | | 1.08 | 0.79 | | 1423 | 1.08 | 0.79 | 1423 | PDF |
| WGSS-262-060-HA | \$1,551.00 | 60:1 | 60:1 | 29 | 0.89 | | | | | | | | | 66.5 | | 0.89 | 0.59 | | 1279 | 0.89 | 0.59 | 1279 | PDF |
| | | | | | | | | | | | | | | | | | | | | | | | |

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

2. Overhung Load (OHL) ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

3. Thrust Load ratings are for forces along the axis of the output shaft, usually encountered in vertical-drive applications from agitators, mixers, fans, blowers, etc.

4. 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.

5. Maximum Thermal Ratings are limits for gearbox continuous use without overheating.

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 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.

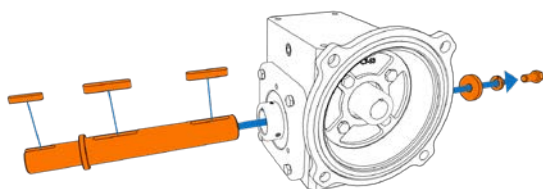
| Gearbox Mounting Orientations | | | | | |
|-------------------------------|---|-------------|---|----------------------|-------------|
| Horizontal Input Shaft | | | | Vertical Input Shaft | |
| A | B | C | D | E | F |
| | | NOT ALLOWED | | | NOT ALLOWED |
| | | | | | |



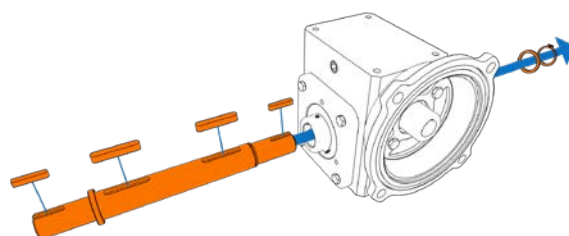
IronHorse[®] Stainless Steel Worm Gearbox Accessories

| IronHorse Stainless Steel Worm Gearbox Output Shaft Kits | | | | | | |
|--|----------|---------------------------|-------------------|-----------------------|---------------|----------------------------|
| Part Number | Price | Fits | Output Shaft Type | Output Shaft Diameter | Typical Photo | Drawing Links |
| <u>WGSS-175-S</u> | \$72.00 | WGSS-175 series gearboxes | Single | 0.875" | | <u>PDF</u> |
| <u>WGSS-206-S</u> | \$77.00 | WGSS-206 series gearboxes | | 1" | | <u>PDF</u> |
| <u>WGSS-237-S</u> | \$94.00 | WGSS-237 series gearboxes | | 1.125" | | <u>PDF</u> |
| <u>WGSS-262-S</u> | \$106.00 | WGSS-262 series gearboxes | | 1.25" | | <u>PDF</u> |
| <u>WGSS-262-S-1125</u> | \$106.00 | WGSS-262 series gearboxes | | 1.125" | | <u>PDF</u> |
| <u>WGSS-175-DS</u> | \$98.00 | WGSS-175 series gearboxes | Double | 0.875" | | <u>PDF</u> |
| <u>WGSS-206-DS</u> | \$106.00 | WGSS-206 series gearboxes | | 1" | | <u>PDF</u> |
| <u>WGSS-237-DS</u> | \$132.00 | WGSS-237 series gearboxes | | 1.125" | | <u>PDF</u> |
| <u>WGSS-262-DS</u> | \$145.00 | WGSS-262 series gearboxes | | 1.25" | | <u>PDF</u> |
| <u>WGSS-262-DS-1125</u> | \$145.00 | WGSS-262 series gearboxes | | 1.125" | | <u>PDF</u> |

Shafts are Stainless Steel. Kit includes Stainless Steel Keys and components.




Single Shaft



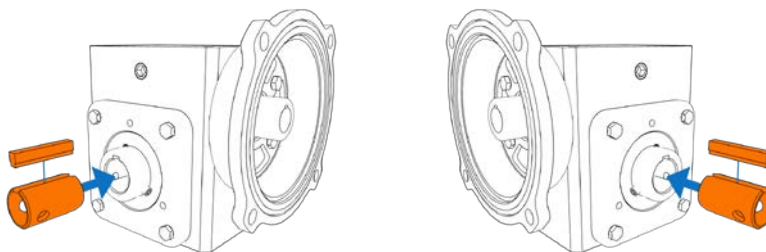
Dual Shaft




IronHorse® Stainless Steel Worm Gearbox Accessories

| IronHorse Stainless Steel Worm Gearbox Output Bushing Kits | | | | | |
|--|----------|--|---------------------------|---|---------------------|
| Part Number | Price | Fits | Bushing Internal Diameter | Typical Photo | Drawing Links |
| <u>WGSS-175-11116-OB</u> | \$72.00 | WGSS-175 series gearboxes | 11/16" |  | PDF |
| <u>WGSS-175-134-OB</u> | \$72.00 | WGSS-175 series gearboxes | 3/4" | | PDF |
| <u>WGSS-175-158-OB</u> | \$72.00 | WGSS-175 series gearboxes | 5/8" | | PDF |
| <u>WGSS-175-178-OB</u> | \$72.00 | WGSS-175 series gearboxes | 7/8" | | PDF |
| <u>WGSS-206-237-114-OB</u> | \$85.00 | WGSS-206 and WGSS-237 series gearboxes | 1-1/4" | | PDF |
| <u>WGSS-206-237-118-OB</u> | \$85.00 | WGSS-206 and WGSS-237 series gearboxes | 1-1/8" | | PDF |
| <u>WGSS-206-237-1316-OB</u> | \$85.00 | WGSS-206 and WGSS-237 series gearboxes | 1-3/16" | | PDF |
| <u>WGSS-206-237-1-OB</u> | \$85.00 | WGSS-206 and WGSS-237 series gearboxes | 1" | | PDF |
| <u>WGSS-262-112-OB</u> | \$111.00 | WGSS-262 series gearboxes | 1-1/2" | | PDF |
| <u>WGSS-262-114-OB</u> | \$111.00 | WGSS-262 series gearboxes | 1-1/4" | | PDF |
| <u>WGSS-262-118-OB</u> | \$111.00 | WGSS-262 series gearboxes | 1-1/8" | | PDF |
| <u>WGSS-262-1316-OB</u> | \$111.00 | WGSS-262 series gearboxes | 1-3/16" | | PDF |
| <u>WGSS-262-1716-OB</u> | \$111.00 | WGSS-262 series gearboxes | 1-7/16" | | PDF |
| <u>WGSS-262-1-OB</u> | \$111.00 | WGSS-262 series gearboxes | 1" | | PDF |

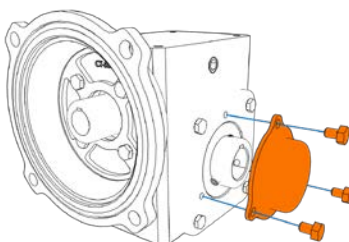
Bushings are Stainless Steel. Kit includes Stainless Steel Keys and components.




IronHorse® Stainless Steel Worm Gearbox Accessories

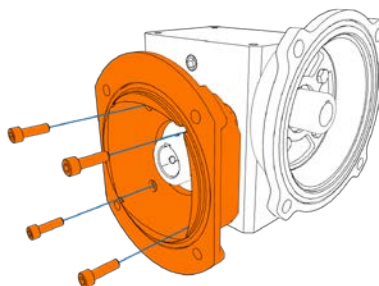
| IronHorse Stainless Steel Worm Gearbox Output Covers | | | | |
|--|--------|---------------------------|---|----------------------------|
| Part Number | Price | Fits | Typical Photo | Drawing Links |
| <u>WGSS-175-OC</u> | \$5.50 | WGSS-175 series gearboxes |  | <u>PDF</u> |
| <u>WGSS-206-OC</u> | \$5.50 | WGSS-206 series gearboxes | | <u>PDF</u> |
| <u>WGSS-237-OC</u> | \$5.50 | WGSS-237 series gearboxes | | <u>PDF</u> |
| <u>WGSS-262-OC</u> | \$5.50 | WGSS-262 series gearboxes | | <u>PDF</u> |

Output Covers are Plastic. Kit includes Stainless Steel fasteners



| IronHorse Stainless Steel Worm Gearbox Output Flanges | | | | |
|---|----------|---------------------------|---|----------------------------|
| Part Number | Price | Fits | Typical Photo | Drawing Links |
| <u>WGSS-175-OF</u> | \$174.00 | WGSS-175 series gearboxes |  | <u>PDF</u> |
| <u>WGSS-206-OF</u> | \$247.00 | WGSS-206 series gearboxes | | <u>PDF</u> |
| <u>WGSS-237-OF</u> | \$281.00 | WGSS-237 series gearboxes | | <u>PDF</u> |
| <u>WGSS-262-OF</u> | \$315.00 | WGSS-262 series gearboxes | | <u>PDF</u> |

Flanges are Stainless Steel. Kit includes Stainless Steel fasteners and 1 O-ring



*NOTE: For detailed assembly instructions, see product manual