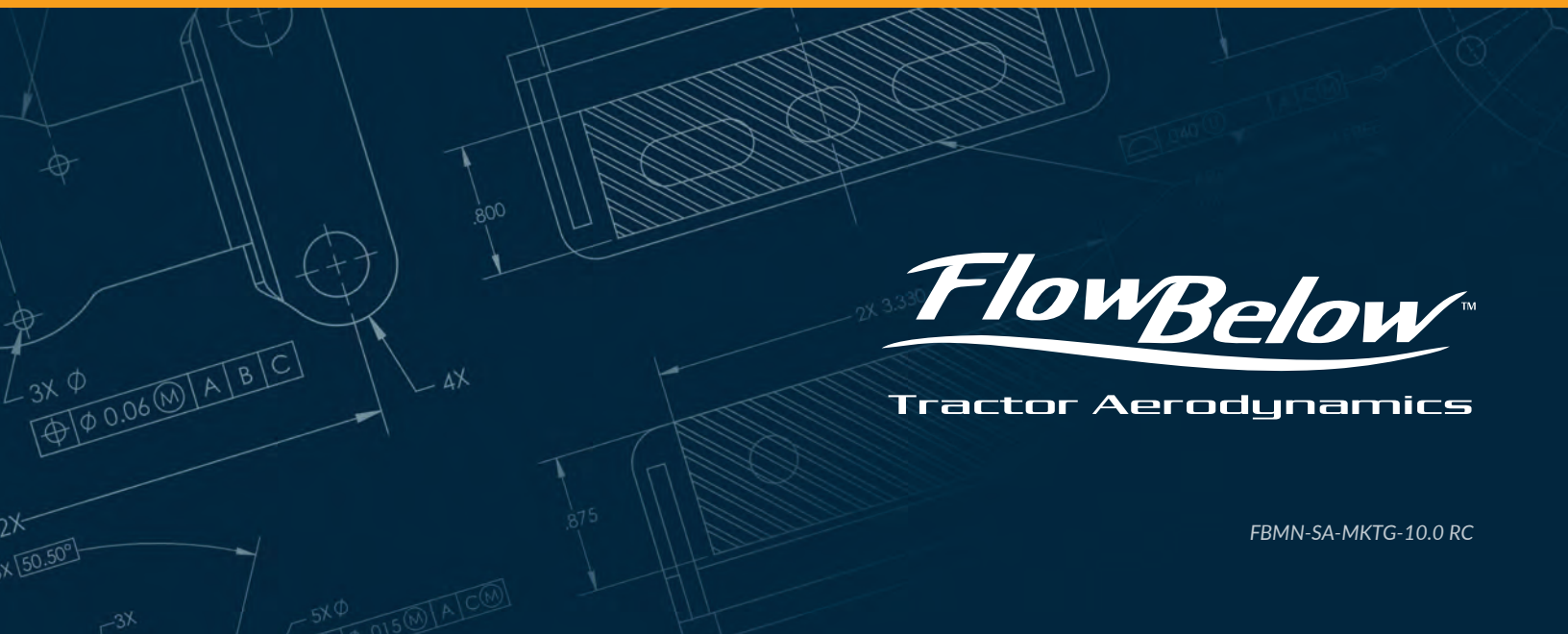




Tractor AeroKit™ Installation Guide

Fixed Configuration



FlowBelow™
Tractor Aerodynamics



Thank you for purchasing an aerodynamic product from FlowBelow. Our engineers have created a product that is proven effective, durable, easy to install and simple to maintain. We are always available to answer any questions about the installation process.

Important Notes Before You Begin

All Tractor AeroKit installations should be performed by a properly trained technician using the recommended tools and following all federal and state safety laws, as defined by OSHA (Occupational Safety and Health Act). Failure to follow the recommended installation instructions and safety precautions may result in product damage and/or safety concerns. Please follow our step-by-step installation manual and check your work at the end.

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Wheel Cover Components

Before beginning the installation process, please inspect your Tractor AeroKit for damaged and/or missing parts. If parts are damaged or missing, FlowBelow Aero, Inc. can be reached via email at support@flowbelow.com or by phone at 512-520-5350.



LATCH HARDWARE (x1)



WHEEL COVERS (x4)

Tools Required

- + Air or Electric 1/2" Impact
- + Torque Wrench
- + Sockets (1/2" drive, 1 1/8" or 15/16")
- + Straight Edge



LATCH ASSEMBLY (x4)

A Install Latch Assembly

1. Place each latch bracket over axle studs; the base of the latch bracket should rest on top of the axle stud nuts. (**Note: Removal of the existing axle stud nut is not required**)
2. Orient the latch bracket so the latch assembly does not overlap the axle plate notch.
3. Install a lock nut onto each axle stud. Torque the lock nuts (in a star pattern) based upon axle stud size (5/8" studs torqued to 50 ft-lbs. ± 10%, 3/4" studs torqued to 90 ft-lbs. ± 10%).
4. Place a straight edge across the latch face to ensure it is flush with the wheel face.



B Attach Wheel Covers

1. Orient the wheel cover so that the wheel cover plate fits over the latch.
2. Push the center of the wheel cover into the latch and rotate the wheel cover until the latch snaps closed and the cover is held securely in place.



C Remove Wheel Covers

1. Push and hold the latch button located in the center of the bracket.
2. Rotate the wheel cover until the cover is ejected from the latch. Removal of the wheel cover is now complete.



D Check Your Work

- The wheel cover edges should never touch any part of the wheel rim.
- The wheel cover should have equal spacing distance of wheel cover to wheel rim between $\frac{3}{8}$ " to $\frac{1}{2}$ ".
- If there is an uneven gap between the wheel cover and wheel rim, it will be necessary to remove the wheel cover and verify the latch is installed correctly and is level.



E Maintenance and Inspection Areas

Warning: if the Wheel Covers are not properly secured, components may detach from the truck while driving.

As part of routine pre-trip inspections or at least once per month, inspect the Wheel Covers for the following:

- 1 Inspect lock nuts and verify the nuts are secure
- 2 Inspect latch assembly bracket for cracks, breakage or corrosion
- 3 Inspect latch assembly for cracks, breakage or corrosion
- 4 Inspect wheel cover; verify the cover is centered within the rim and has the minimum required spacing of $\frac{3}{8}$ " to $\frac{1}{2}$ "
- 5 Inspect wheel cover ring for cracks or corrosion; verify the cover ring is free from damage and ring hardware is secure
- 6 Inspect locking mechanism of each latch assembly; verify the wheel cover is firmly held in place when installed



TIME SAVING TIP

Complete the wheel cover installations on all wheels before proceeding to the fairing installation process. Once you complete the first wheel, the remaining wheels proceed much quicker.



Center Fairing Components

Before beginning the installation process, please inspect your Tractor AeroKit for damaged and/or missing parts. If parts are damaged or missing, FlowBelow Aero, Inc. can be reached via email at support@flowbelow.com or by phone at 512-520-5350.



OUTBOARD MOUNTING BRACKET (x2)



CENTER FAIRING (x2)



FAIRING ADAPTER PLATE (x2)



FAIRING MOUNTING BAR (x2)

Tools Required

- + 7/32" Hex Key (Allen)
- + Wrenches (3/4", 9/16", and 15/16")
- + Torque Wrench
- + Sockets (3/4", 9/16", and 15/16")
- + Tape Measure



HARDWARE KIT - 3/8" FASTENERS (x1)
HWK-001



HARDWARE KIT - 1/2" FASTENERS (x1)
HWK-002



5th WHEEL OUTBOARD MOUNTING BRACKET BOLT HARDWARE (x1)

Will include one of the following based on your configuration:

- HWK-003-225
- HWK-003-275
- HWK-003-325



TIME SAVING TIP

Perform the following installation steps to completion on one side of the truck. By doing so, the installer will already be familiar with the adjustments required on the second side.

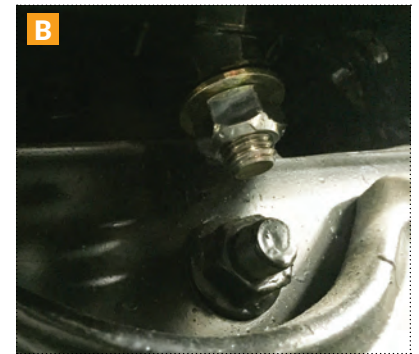


A Pre-Installation

- Inspect center fairing and mounting components; verify all parts and tools needed are present
- Fully inflate truck air bag system
- Locate the two 5th wheel rail mounting bolt holes that are approximately centered between the drive axles

B Install Outboard Mounting Bracket

1. Position the Mounting Bracket underneath the 5th wheel rail; align the bracket to the centered rail holes. Remove original nuts and discard. Original bolts may be re-used, depending on AeroKit configuration.
2. Based on configuration, use either the original bolts or HWK-003 bolts, as well as the flat washers and nuts supplied by FlowBelow to install the Mounting Bracket; torque the mounting bolts to 150 ft.-lbs.
3. After the Outboard Mounting Bracket has been installed, inspect underneath the bracket; verify bolt is protruding 3 threads past the nut and the outboard is centered with the frame.



C Install Fairing Mounting Bar

1. Using the flat washers and nuts supplied in the HWK-002 hardware bag, loosely attach the Fairing Mounting Bar to the Outboard Mounting Bracket.
2. Secure the Fairing Mounting Bar to the Outboard Mounting Bracket after the desired tire centerline has been achieved.



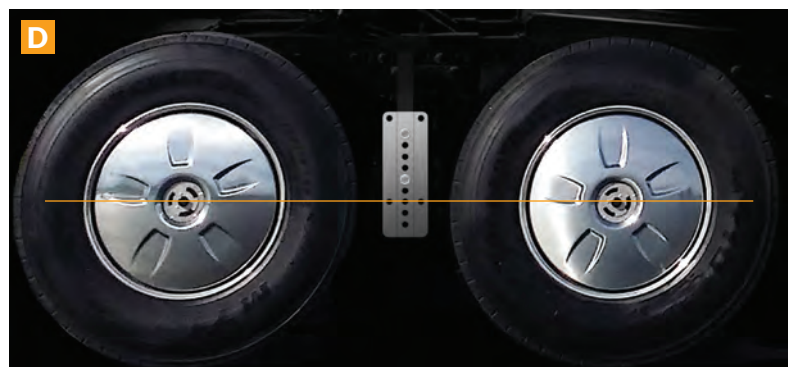
D Align and Attach Fairing Adapter Plate

The Fairing Adapter Plate should be centered between the tractor tires with lower row of fairing mounting holes being centered to wheel axle hub or wheel cover latch if latch is already installed.

Install the Fairing Adapter Plate to the Fairing Mounting Bar using flat washers and nuts supplied in the HWK-002 hardware bag; torque the mounting bolts to 35 ft.-lbs.

The example image at right shows a Fairing Adapter Plate properly set for the wheel configuration.

The Fairing Adapter Plate installation setting determines final Center Fairing height.





TIME SAVING TIP

Prior to securely attaching the center fairing panel, hand tighten a few bolts and assure that the center fairing panel is properly centered before locking down all the nuts and bolts.

E Attach Center Fairing Panel

1. Using the hardware supplied in the HWK-001 hardware bag, attach the Center Fairing to the Fairing Adapter Plate.
2. Torque the mounting bolts to 30 ft.-lbs.
3. Verify that the Fairing is centered between the tires and is flush with the outer sidewall of the tire.
4. Tighten the Fairing Mounting Bar to the Outboard Mounting Bracket.
5. Torque the mounting bolts to 50 ft.-lbs.



E Check Your Work

- After tightening all mounting bolts, verify that the Center Tandem Fairing is centered between the tires and there is at least 2" clearance on all sides.
- To verify fairing alignment, the air bags need to be fully deflated to ensure there is sufficient ($\frac{1}{2}$ " to 1") of fairing-to-wheel and fairing-to-ground clearance.
- Attach tractor to trailer to ensure all final clearances.
- Final adjustments may need to be performed to ensure sufficient clearance is available.

G Maintenance and Inspection Areas

Warning: if the Center Fairing Assembly is not properly secured, components may detach from the truck while driving. As part of routine pre-trip inspections or at least once per month, inspect the Center Fairing Assemblies for the following:

1. Verify that the outboard mounting bracket is firmly secured to the 5th wheel rail
2. Verify that the fairing mounting bar is firmly secured to the outboard mount bracket
3. Inspect the center fairing to ensure it is centered between the tires
4. Verify that the center fairing is not rubbing or showing signs of unique wear
5. Inspect all hardware; verify hardware is secure



Rear Fairing Components

Before beginning the installation process, please inspect your Tractor AeroKit for damaged and/or missing parts. If parts are damaged or missing, FlowBelow Aero, Inc. can be reached via email at support@flowbelow.com or by phone at 512-520-5350.



REAR HANGER ASSEMBLY (x2)

Tools Required

- + $\frac{7}{32}$ " Hex Key (Allen)
- + Wrenches ($\frac{7}{16}$ ", and $\frac{3}{4}$ ")
- + Torque Wrench
- + Sockets ($\frac{7}{16}$ and $\frac{3}{4}$ ")
- + Impact Driver ($\frac{3}{8}$ " or $\frac{1}{2}$ ")



FAIRING ADAPTER PLATE (x2)



REAR FAIRING PANEL (x2)



HARDWARE KIT - $\frac{3}{8}$ " FASTENERS (x1)
HWK-001



HARDWARE KIT - $\frac{1}{2}$ " FASTENERS (x1)
HWK-002



TIME SAVING TIP

Perform the rear fairing installation steps to completion on one side of the truck. By doing so, the installer will already be familiar with the adjustments required on the second side.



A Pre-Installation

- Inspect Rear Fairings and mounting components; verify all parts and tools needed are present
- Fully inflate truck air bag system
- Remove OEM mud flap hanger assembly

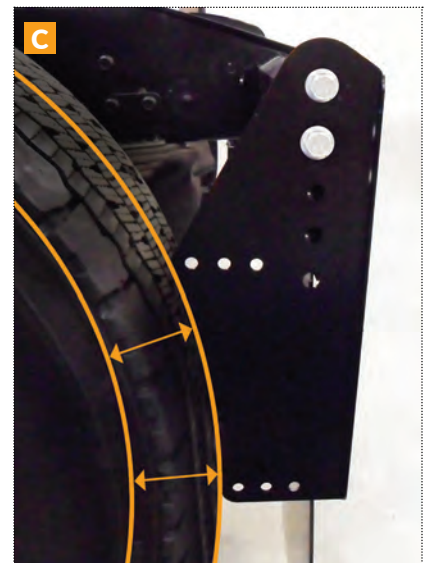
B Install Hanger Assembly

1. Orient through the existing frame holes with reflective tape facing rear of truck.
2. Hand start the $\frac{1}{2}$ " lock nut with washers supplied in HWK-002.
3. Tighten and torque the lock nuts to 50 ft.-lbs.
4. Verify that the end of the hanger assembly is $1\frac{1}{2}$ " to $2\frac{1}{2}$ " behind the sidewall of the outer truck tire.



C Attach Rear Fairing Adapter Plate

1. As a starting point, use the top two vertical mounting holes on the Rear Fairing Adapter Plate, attach the Rear Fairing Adapter Plate to the outer face of the mud flap sleeve using bolts supplied in HWK-002.
2. Before tightening, ensure that the curved edge of the Adapter Plate is concentric with the far outside tire. Torque bolts to 50 ft.-lbs.



D Attach Rear Fairing Panel

1. Attach the panel to the Adapter Plate using bolts, flat washers, and flange nuts supplied in HWK-001.
2. When installing the Rear Fairing, **provide at least 2" of clearance between the tire edge and the inner section of fairing.** Verify that the clearance is even, concentric with the tire and the top edge of the panel is aligned with the top edge of the Center Fairing. Make adjustments if needed.

E Rear Fairing Orientation

1. The leading edge of the fairing should be flush with the outside of the tire.
2. To verify fairing alignment, the air bags need to be fully deflated to ensure there is at least $\frac{1}{2}$ " of fairing-to-wheel clearance.
3. Attach tractor to trailer to ensure all final clearances.
4. If needed, perform adjustments to ensure sufficient clearance is available.
5. After all final adjustments have been made, torque Rear Fairing to Adapter Plate hardware bolts to 30 ft.-lbs.





F Attach Mud Flap

1. Attach the mud flap to the Rear Hanger Assembly using bolts (x4), flat washers (x8), and hex nuts (x4) supplied in HWK-001. Note: a flat washer should be positioned on both sides.
2. There should be a $\frac{1}{2}$ " gap between the outer edge of the mud flap and the back side of the Rear Fairing Adapter Plate.
3. Tighten all hardware in this step using hand tools only.
4. Torque bolts to 12 ft.-lbs.
5. Attach tractor to trailer to ensure all final clearances.



G Check Your Work

- After tightening all mounting bolts, verify that the Rear Fairing barely extends above the top of the tire and there is at least 2" clearance between the tire and fairing.
- To verify fairing alignment, the air bags need to be fully deflated to ensure there is sufficient ($\frac{1}{2}$ " to 1") of fairing-to-wheel and fairing-to-ground clearance.
- Attach tractor to trailer to ensure all final clearances.
- Final adjustments may need to be performed to ensure sufficient clearance is available.

H Maintenance and Inspection Areas

Warning: if the Rear Fairing Assembly is not properly secured, components may detach from the truck while driving.

As part of routine pre-trip inspections or at least once per month, inspect the Rear Fairing Assemblies to ensure the following:

1. The rear fairing is oriented properly
2. No signs of interference or unique wear
3. The hanger assembly and all hardware is secure
4. The hanger assembly springs are tensioned
5. No rust or corrosion events



Need Installation Help?

We are always here to answer any questions or concerns that you might have about your product installation. Should you require immediate help, give us a call at (512) 520-5350.

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