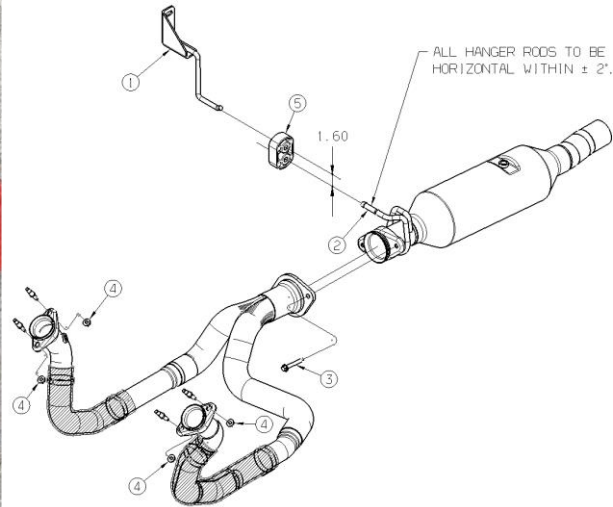
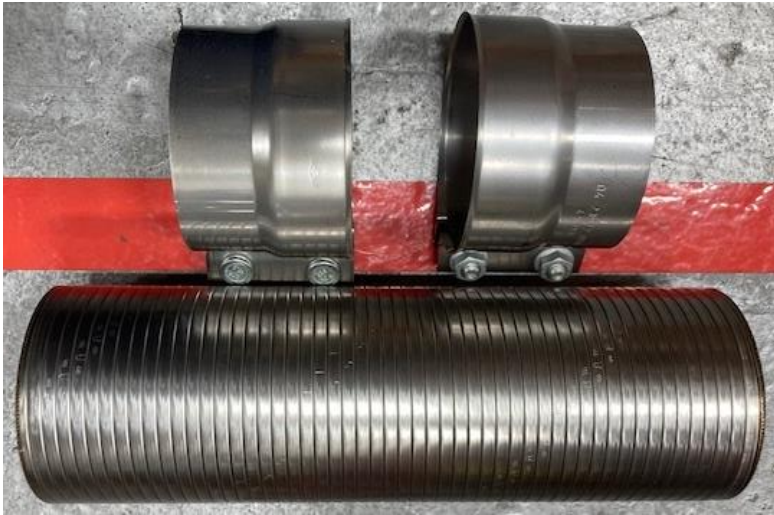


## Exhaust Interlock Pipe on Ford/Roush 6.8L

### Service Update #21-1011



### IT'S MORE THAN JUST EXHAUST "FLEX" TUBING

Recently we have had calls concerning distorted "Y"-pipes as well as an uptick in the number of units experiencing broken exhaust manifold studs.

While these were both issues which we experienced early on with the introduction of the 6.8L Roush product, once there was a better understanding, Blue Bird was able to address both issues with the addition of their "Interlock" pipe. Part #10047199.

Working with customers who recently had reoccurring issues, we were able to determine that the customers had replaced the "Interlock" pipe with a piece of standard rolled flex tubing. Upon further investigation we learned that while to Blue Bird interlock pipe expanded 3-1/2" from it's collapsed state, standard flex tubing did not have the same range.

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Or at the [New York Head Mechanic website](#)

The other issue we found in some instances was that when replacing the interlock pipe, a shorter length of tubing was being used.....Both these issues compromised the ability of the system to work as designed.

Our recommendation is to use the Blue Bird interlock pipe to ensure the exhaust system is working as designed.

Attached you will find Blue Bird Service Instruction #SI 35-300-136 and #SI 35-300-139 concerning Y-pipe/Catalyst inspection and Interlock Pipe installation.

PLEASE NOTE: Further indication these are not regular rolled flex pipe...As noted in the final numbered step for the installation of the interlock pipe for each wheelbase, they refer to arrows (FIGURE #1) which need to be pointed to the rear of the unit.



FIGURE #1

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# SI 35-300-136 Vision Propane 6.8L Y-Pipe/Catalyst Inspection

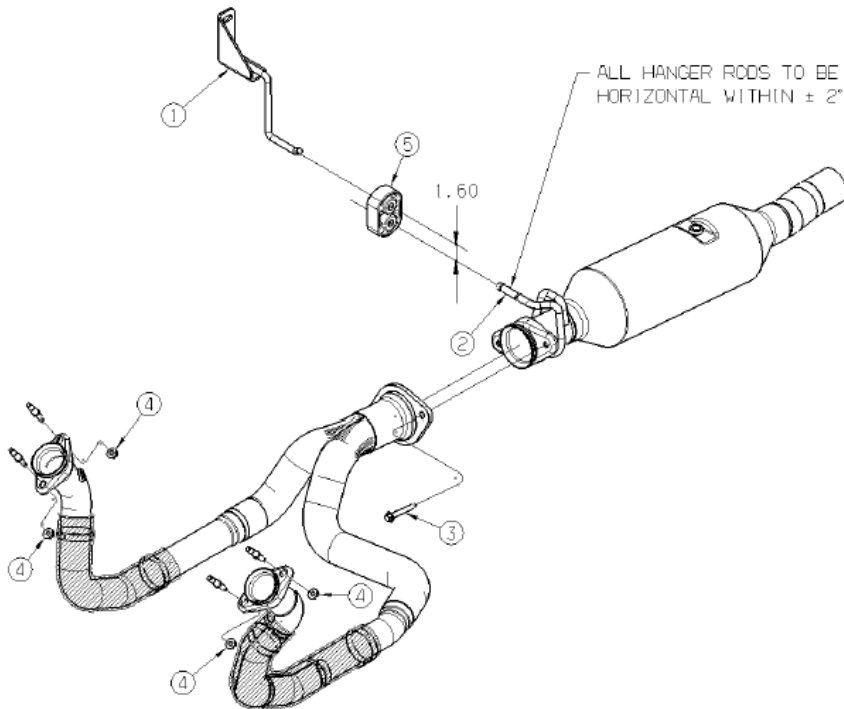
**WARNING:** Always follow all Federal, State, Local and Shop safety standards and use proper safety equipment when performing these procedures. Observe all safety precautions to secure the bus from rolling. Allow the exhaust to cool before inspection.

Note: Warranty claims for repairs made during the vehicle warranty period shall be submitted using component '35-300-136', cause 'Misaligned/Not Aligned', and only one of the 2 following corrective actions: 1) 'Inspect', if no defect is found or 2) 'Adjust' if making adjustments and/or replacing isolator.

To insure proper installation position of the 6.8L Y-Pipe and Catalyst, perform the following inspection.

Measure from the center rod of the exhaust mount bracket assembly (Item 1) to the center rod of the catalyst muffler (item 2). The dimension should be 1.60 +/- .125

If the measurement is not 1.60 +/- .125, support the catalyst muffler (item 2), loosen the collectors and manifold flanges fasteners (items 3 & 4) and raise or lower the catalyst muffler as necessary to obtain the 1.6 +/- .125 dimension. Re-tighten and torque flanges and collector fasteners per torque sequence 1 and 2, then install new isolator 10034521 (item 5).



S E R V I C E I N S T R U C T I O N



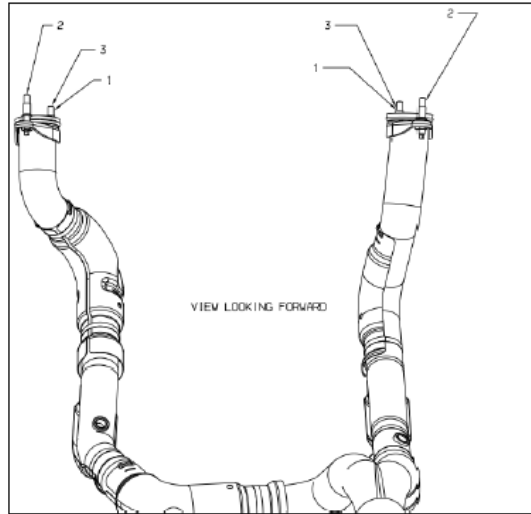


# SI 35-300-136 Vision Propane 6.8L Y-Pipe/Catalyst Inspection

## Torque Sequence 1

Perform the tightening sequence on the left and right pipes simultaneously as shown below

1. Run down until the loose flange seats
2. Run down to full torque (29 +/- 5 FT-LBS)
3. Tighten to full torque (29 +/- 5 FT-LBS)

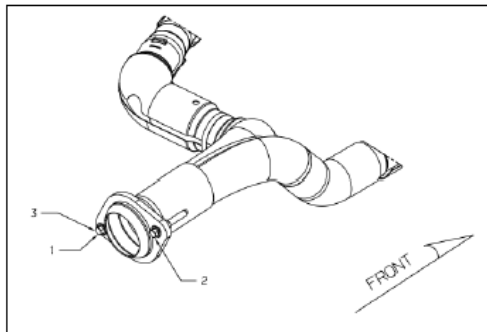


Torque Sequence 1

## Torque Sequence 2

Perform the tightening sequence below

1. Run down until the loose flange seats
2. Run down to full torque (29 +/- 5 FT-LBS)
3. Tighten to full torque (29 +/- 5 FT-LBS)



Torque Sequence 2

SERVICE INSTRUCTION



# SI 35-300-139

## Vision Propane 6.8L

### Interlock Pipe Installation

**WARNING:** Always follow all Federal, State, Local and Shop safety standards and use proper safety equipment when performing these procedures. Observe all safety precautions to secure the bus from rolling. Allow the exhaust system to cool before attempting this procedure.

This repair procedure is only applicable to Propane 6.8L units with a factory installed rear exhaust system. Perform the Y-Pipe and Catalyst Inspection to determine if Y-Pipe replacement and Interlock Pipe Installation is necessary.

Note: Warranty claims for repairs made during the vehicle warranty period shall be submitted using component '35-300-139', cause 'Dimensional Error/Incorrect Dimensions', and only one of the 3 following corrective actions: 1) 'Inspect', if no defect is found or 2) 'Install' if installing the interlock pipe or 3) 'Remove & Install' if y-pipe had to be replaced.

#### Y-pipe and Catalyst Inspection (All Wheelbase Models)

Perform the following to determine if the Y-pipe needs to be replaced due to deformation or if there is movement in the exhaust system causing exhaust pipe separation.

- Confirm a deformed Y-pipe by measuring between the y-pipe cross tube and the transmission pan. If the measurement is less than 1.00", Y-pipe replacement is recommended.
- Check each pipe joint at y-pipe, catalyst and muffler for gaps and/or pipe movement

**If either of the conditions above is present, interlock pipe installation is required.**

**IMPORTANT – If Y-pipe replacement is not required, verify Y-pipe outlet is properly positioned per step 4 below.**

S E R V I C E I N S T R U C T I O N





# SI 35-300-139

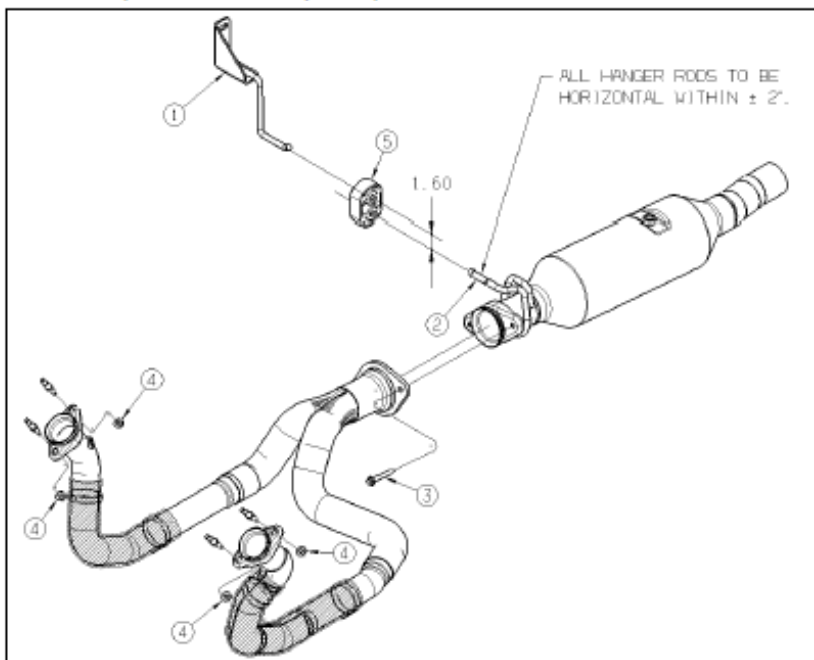
## Vision Propane 6.8L

### Interlock Pipe Installation

#### Y-pipe Replacement (All Wheelbase Models)

**NOTE:** Support catalyst prior to disassembly

1. Remove Y-pipe by removing fasteners (items 3 and 4)
2. Install new heat sleeves, securing with clamps onto new Y-pipe
3. Loosely install new Y-pipe, do not torque
4. Locate the Y-pipe outlet in the proper position
  1. Measure from the center rod of the exhaust mount bracket assembly (Item 1) to the center rod of the catalyst muffler (item 2). The dimension should be  $1.60 \pm .125$
  2. Retain this position thru torque sequence 1



**NOTE:** In the event the isolator (item 5) is deformed, replacement is required.

#### Parts Required

- 10019615 – 1 – Pipe, Exhaust, Y
- 10027500 – 2 – Sleeve, Heat
- 00569095 – 4 – Clamp
- 10034251 – 1 – Isolator, Exhaust, Muffler

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# SI 35-300-139

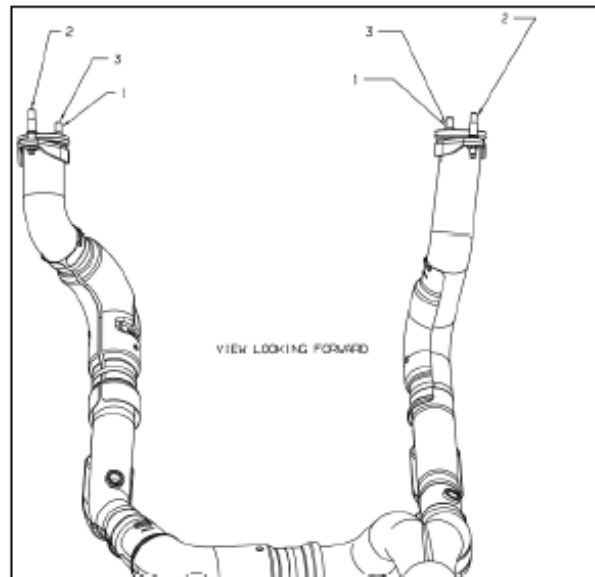
## Vision Propane 6.8L

### Interlock Pipe Installation

#### Torque Sequence 1

Perform the tightening sequence on the left and right pipes simultaneously as shown below

1. Run down until the loose flange seats
2. Run down to full torque (29 +/- 5 FT-LBS)
3. Tighten to full torque (29 +/- 5 FT-LBS)

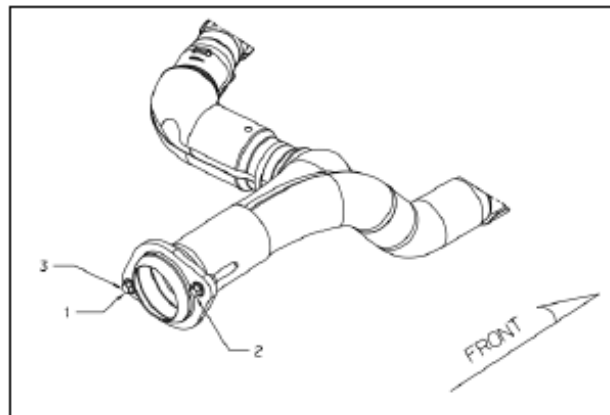


Torque Sequence 1

#### Torque Sequence 2

Perform the tightening sequence below

1. Run down until the loose flange seats
2. Run down to full torque (29 +/- 5 FT-LBS)
3. Tighten to full torque (29 +/- 5 FT-LBS)



Torque Sequence 2

SERVICE INSTRUCTION





BLUE BIRD

SI 35-300-139

# Vision Propane 6.8L Interlock Pipe Installation

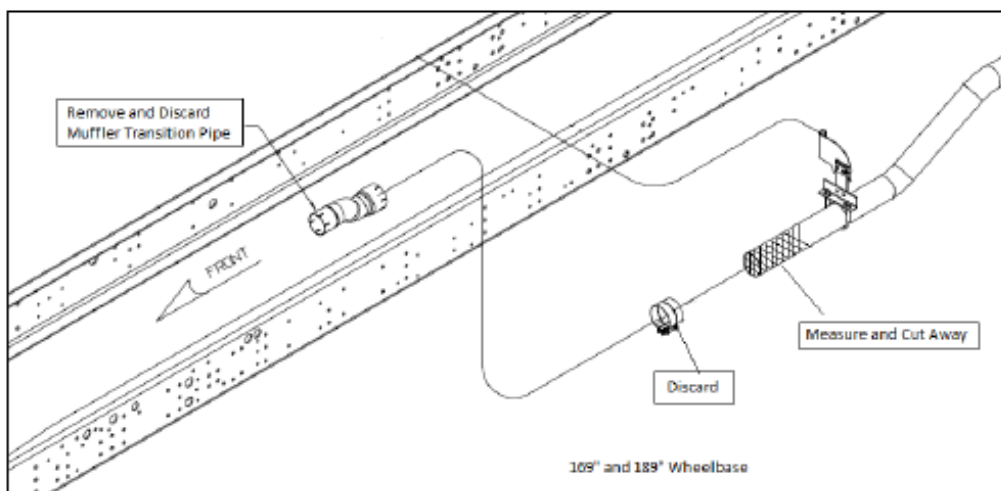
## Interlock Pipe Installation

Use the appropriate instructions per your wheelbase

### 169" & 189" Wheelbase Units

1. Remove and discard transition pipe and clamp from muffler to exhaust pipe ( A new transition pipe is required)
2. Loosely install new transition pipe (per chart below) onto muffler, do not install onto exhaust pipe.
3. Prepare new Interlock pipe
  - a. *Using tin snips, remove the metal banding strap from the interlock pipe. Expand and contract the pipe several times prior to installation. Be sure to remove any labels that may be affixed to the pipe that would prevent complete expansion of the interlock pipe to 16.5".*
4. Using the extended interlock pipe as a reference, overlay the front of the interlock pipe by 1.25" (minimum) onto the transition pipe
5. Mark where the interlock pipe ends on the exhaust pipe
6. Measure forward from the mark 1.25" (minimum), this is the cut line
7. Cut the exhaust pipe
8. Install the interlock pipe with the arrows facing the rear of the bus, using clamp set within the kit.

**NOTE:** there should be a minimum of 13.75" between interlock pipe clamps after installation



### Parts Required

- 10047458 – 1 – Pipe, Exhaust, Muffler Transition, 169" Wheelbase
- 10047457 – 1 – Pipe, Exhaust, Muffler Transition, 189" Wheelbase
- 10047199 – 1 – Pipe, Interlock w/clamps **Torque 37-45 ft-lbs**

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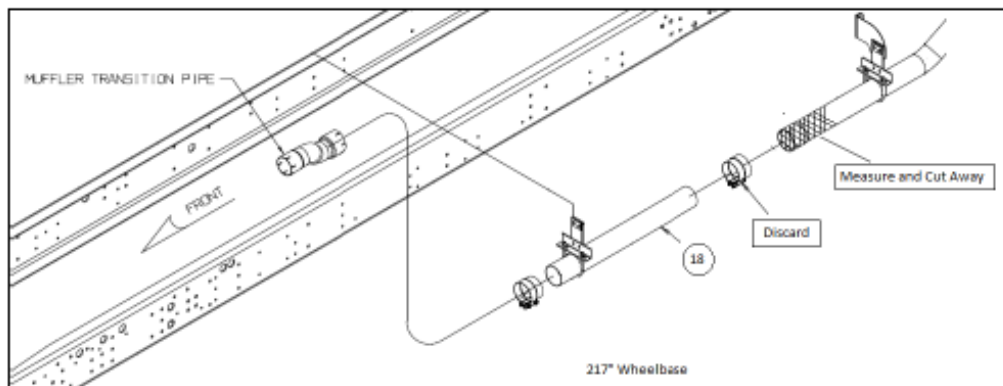


# SI 35-300-139 Vision Propane 6.8L Interlock Pipe Installation

## 217" Wheelbase Units

1. Locate the rearmost end of pipe #18, remove and discard clamp
2. Prepare new Interlock pipe  
*Using tin snips, remove the metal banding strap from the interlock pipe. Expand and contract the pipe several times prior to installation. Be sure to remove any labels that may be affixed to the pipe that would prevent complete expansion of the interlock pipe to 16.5".*
3. Using the extended interlock pipe as a reference, overlay the front of the interlock pipe by 1.25" (minimum) onto exhaust pipe #18
4. Mark where the interlock pipe ends on the exhaust pipe
5. Measure forward from the mark 1.25" (minimum), this is the cut line
6. Cut the exhaust pipe
7. Install the interlock pipe with the arrows facing the rear of the bus, using clamp set within the kit.

**NOTE:** there should be a minimum of 13.75" between interlock pipe clamps after installation



### Parts Required

10047199 – 1 – Pipe, Interlock w/clamps    **Torque 37-45 ft-lbs**

S E R V I C E I N S T R U C T I O N





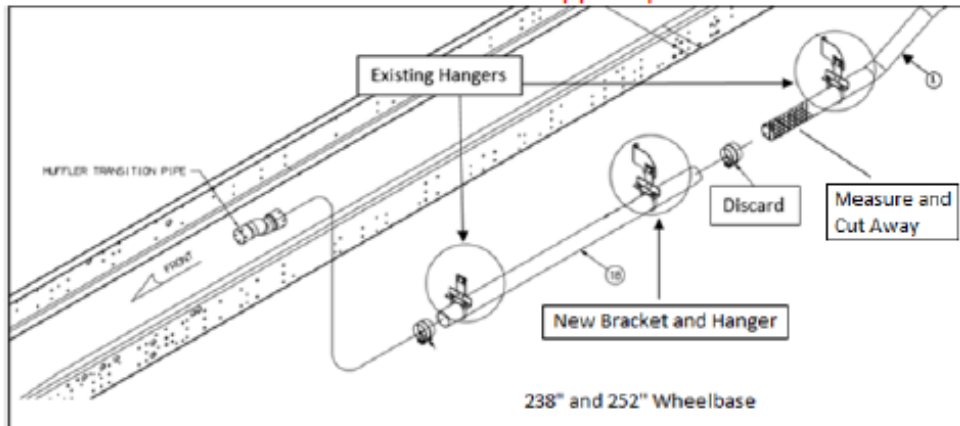
BLUE BIRD

# SI 35-300-139 Vision Propane 6.8L Interlock Pipe Installation

## 238" & 252" Wheelbase Units

1. Locate the rearmost end of pipe #18, remove and discard clamp
2. The addition of a bracket and hanger is necessary. Locate the new bracket, and install along the right hand framerail so the hanger will be located from 6" to 18" of the rear of the pipe.
3. The use of existing holes in the framerail is acceptable; they need to be 0.506" in diameter and measure from the bottom of the framerail, up 2.62" and 5.62". If no holes are available, locate and drill to the previous dimensions.
4. Complete installation of bracket, hanger, U-bolt and torque
5. Prepare new Interlock pipe  
*Using tin snips, remove the metal banding strap from the interlock pipe. Expand and contract the pipe several times prior to installation. Be sure to remove any labels that may be affixed to the pipe that would prevent complete expansion of the interlock pipe to 16.5".*
6. Using the extended interlock pipe as a reference, overlay the front of the interlock pipe by 1.25" (minimum) onto exhaust pipe #18
7. Mark where the interlock pipe ends on the exhaust pipe
8. Measure forward from the mark 1.25" (minimum), this is the cut line
9. Cut the exhaust pipe
10. Install the interlock pipe with the arrows facing the rear of the bus, using clamp set within the kit.

**NOTE:** there should be a minimum of 13.75" between interlock pipe clamps after installation



### Parts Required

- 10011526 – 1 – Bracket, MTG, Exhaust Hanger **Torque 5-10 ft-lbs**
- 10040844 – 1 – Bracket Assy, Hanger
- 00815621 – 1 – U-Bolt, 4 in
- 00819359 – 1 – Clamp, Saddle, 4 in
- 10047199 – 1 – Pipe, Interlock w/clamps **Torque 37-45 ft-lbs**
- 02171809 – 2 – Nut, Hex, 3/8-16 **Torque 5-10 ft-lbs**
- 00803239 – 2 – Capscrew, Hex, 1/4-13 x 1 1/2, GR8
- 01003045 – 2 – Washer, Flat, 17/32, HDN
- 00850800 – 2 – Nut, Hex, 1/2-13, Locking GR8 **Torque 70-80 ft-lbs**

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# SI 35-300-139

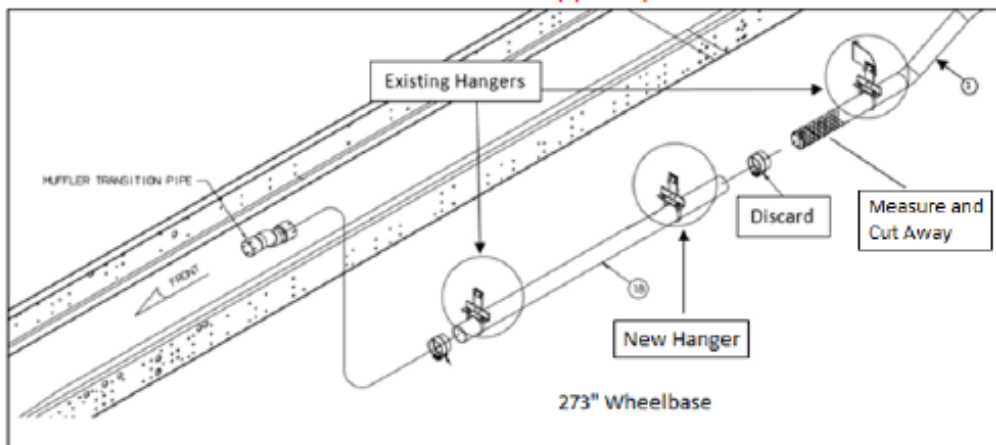
## Vision Propane 6.8L

### Interlock Pipe Installation

#### 273" Wheelbase Units

1. Locate the rearmost end of pipe #18, remove and discard clamp
2. The addition of a hanger is necessary. Locate the hanger and install onto an available crossmember nearest the end of exhaust pipe 18.
3. Complete installation hanger, U-bolt and torque
4. Prepare new Interlock pipe
  - a. *Using tin snips, remove the metal banding strap from the interlock pipe. Expand and contract the pipe several times prior to installation. Be sure to remove any labels that may be affixed to the pipe that would prevent complete expansion of the interlock pipe to 16.5".*
5. Using the extended interlock pipe as a reference, overlay the front of the interlock pipe by 1.25" (minimum) onto exhaust pipe #18
6. Mark where the interlock pipe ends on the exhaust pipe
7. Measure forward from the mark 1.25" (minimum), this is the cut line
8. Cut the exhaust pipe
9. Install the interlock pipe with the arrows facing the rear of the bus, using clamp set within the kit.

**NOTE:** there should be a minimum of 13.75" between interlock pipe clamps after installation



#### Parts Required

- |   |                     |
|---|---------------------|
| 10040844 – 1 – Bracket Assy, Hanger     | Torque 5-10 ft-lbs  |
| 00815621 – 1 – U-Bolt, 4 in             |                     |
| 00819359 – 1 – Clamp, Saddle, 4 in      |                     |
| 10047199 – 1 – Pipe, Interlock w/clamps | Torque 37-45 ft-lbs |
| 02171809 – 2 – Nut, Hex, 3/8-16         | Torque 5-10 ft-lbs  |

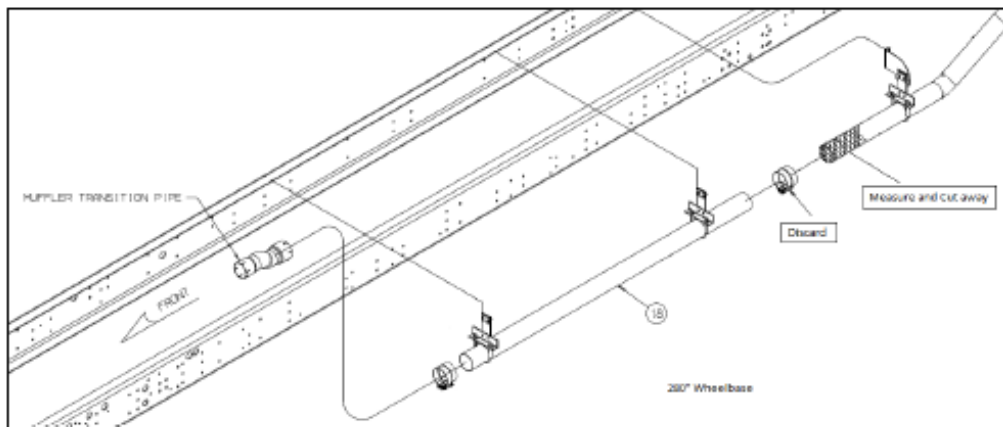


# SI 35-300-139 Vision Propane 6.8L Interlock Pipe Installation

## 280" Wheelbase Units

1. Locate the rearmost end of pipe #18, remove and discard clamp
2. Prepare new Interlock pipe  
*Using tin snips, remove the metal banding strap from the interlock pipe. Expand and contract the pipe several times prior to installation. Be sure to remove any labels that may be affixed to the pipe that would prevent complete expansion of the interlock pipe to 16.5".*
3. Using the extended interlock pipe as a reference, overlay the front of the interlock pipe by 1.25" (minimum) onto exhaust pipe #18
4. Mark where the interlock pipe ends on the exhaust pipe
5. Measure forward from the mark 1.25" (minimum), this is the cut line
6. Cut the exhaust pipe
7. Install the interlock pipe with the arrows facing the rear of the bus, using clamp set within the kit.

**NOTE:** there should be a minimum of 13.75" between interlock pipe clamps after installation



### Parts Required

10047199 – 1 – Pipe, Interlock w/clamps    **Torque 37-45 ft-lbs**

S E R V I C E I N S T R U C T I O N



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