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Title: Hood Gap and Alignment Tolerances

Applies To: ProStar/LT, 7000 Series, 9000 Series, HX, HV, MV.

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

06/22/2018 - French and Spanish translation added
06/13/2018 - Initial Article Release

DESCRIPTION

This document will guide the user through what the allowable gaps should be between the hood and the surrounding body parts once the hood has been properly installed as recieved from the factory or after being serviced in the field. The gaps are an important part of the overall vehicle appearance and should be maintained as outlined in this article.

Reference other iKnow articles that may be helpful when verifying the hood gaps are IK1600071 for 4000 Series, IK1600108 for LoneStar, and IK1600189 for 9000 Series.

SYMPTOM(s)

1. Hood Gaps are too big or too tight.
2. The gap is not consistant from left to right or from top to bottom.
3. Body panels on either side of the gap are not flush.
4. A misaligned hood may cause unwanted rubbing and/or wear between body parts that will lead to damage to top coat finish.
5. A misaligned hood or improper gap may cause excessive noise/clapping during vehicle operation under certain conditions.

Diagnostic Trouble Code(s) & Dashboard Indicator Light(s)

Not Applicable

Customer Observations or Concerns

Hood gap & alignment to body panels are important for overall appearance and proper performance of the vehicle.

SPECIAL TOOL(s) / SOFTWARE

| Tool Description | Tool Number | Comments | Instructions |
|------------------------|----------------|--|--------------------|
| Tape Measure | obtain locally | | |
| Wood/Plastic Block | obtain locally | Used to extend edges when measuring gap. | As shown in photos |
| Cotton or Latex Gloves | obtain locally | Use to protect top coat finish | |

SERVICE PARTS INFORMATION

Not Applicable

DIAGNOSTIC STEP(s)

Not Applicable

HOOD GAP INSPECTION STEP(s)

| |
|---|
| CAUTION: |
| Wear soft gloves and take care not to scratch or damage top coat finish. |

LT/ProStar/8000 - Review and Inspection of Hood Gap & Alignment Tolerances:

| Gap Location | Requirement | Comments |
|----------------------------|-------------|---------------------------------------|
| A | 17mm - 29mm | See Figure 1, photos 1-2 |
| B | 17mm - 29mm | See Figure 1, photos 1-3 |
| A to B Paralleism | 4mm Max | Difference between A & B |
| Lt Side Gap vs Rt Side Gap | 6mm Max | Difference between left & right sides |

Measuring the hood to door gap. (Right side is shown, Left side is the same but opposite)
 Measure at both Point A and Point B as shown in Figure1. Refer to Photos 2 & 3 in Figure 1 for measurement technique.

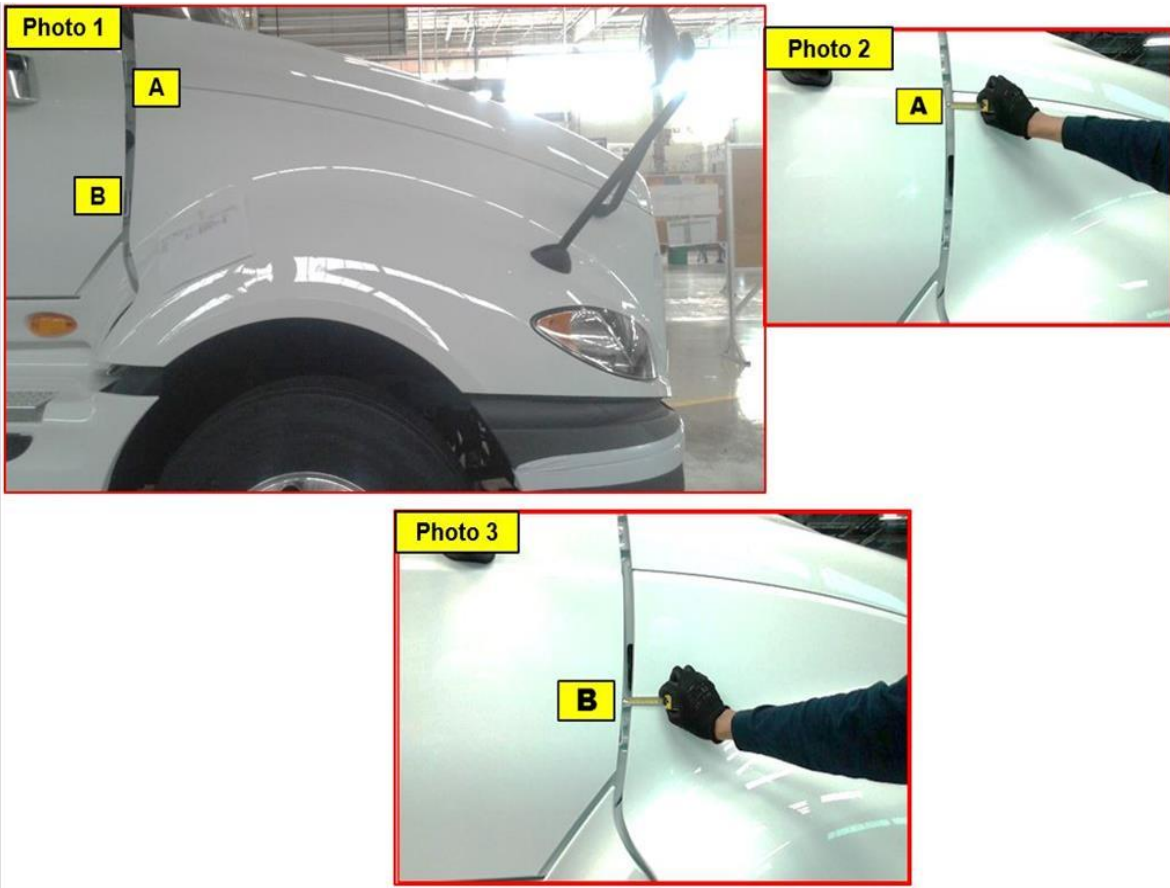
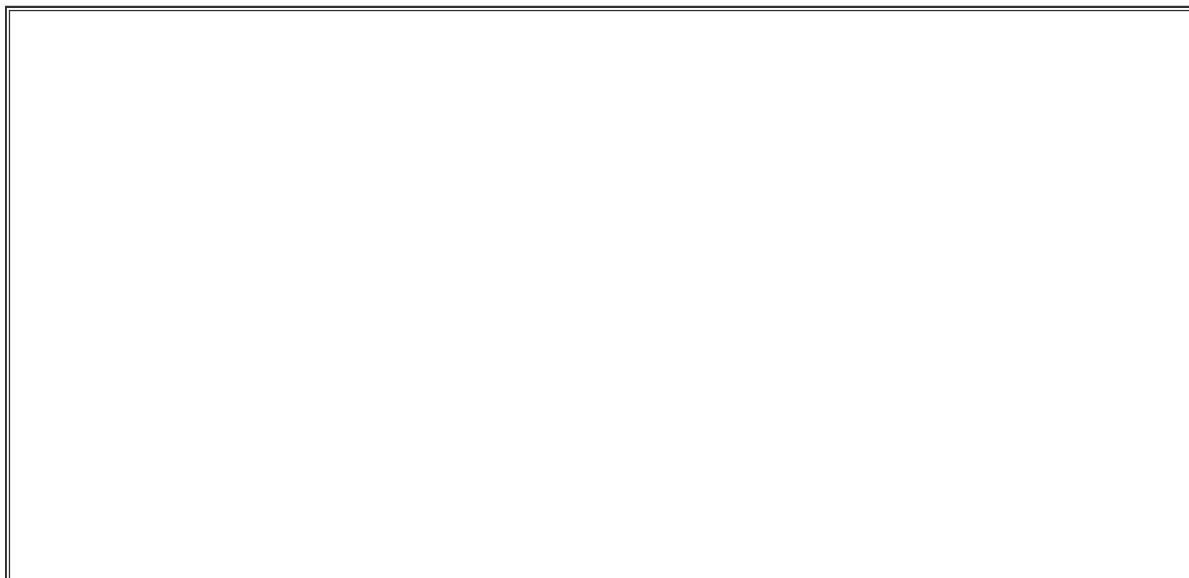


Figure 1: LT/ProStar/8000

Photo 1: Overall view of right side gap showing Point A & Point B.
 Photo 2: Measurement at Point A.
 Photo 3: Measurement at Point B.

| LT Gaps Only | Requirement | Comments |
|-----------------------|-------------|-------------------------------|
| Cab to Hood Flushness | 0 - 5mm | See Photo 1 in Figure 2 below |



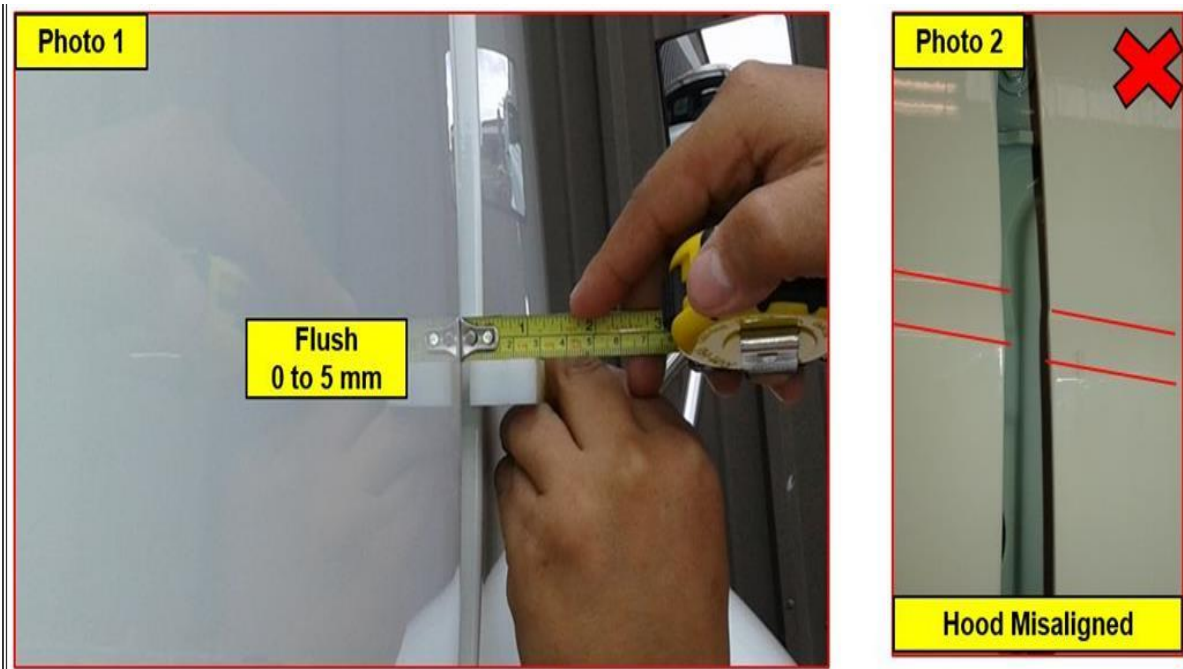


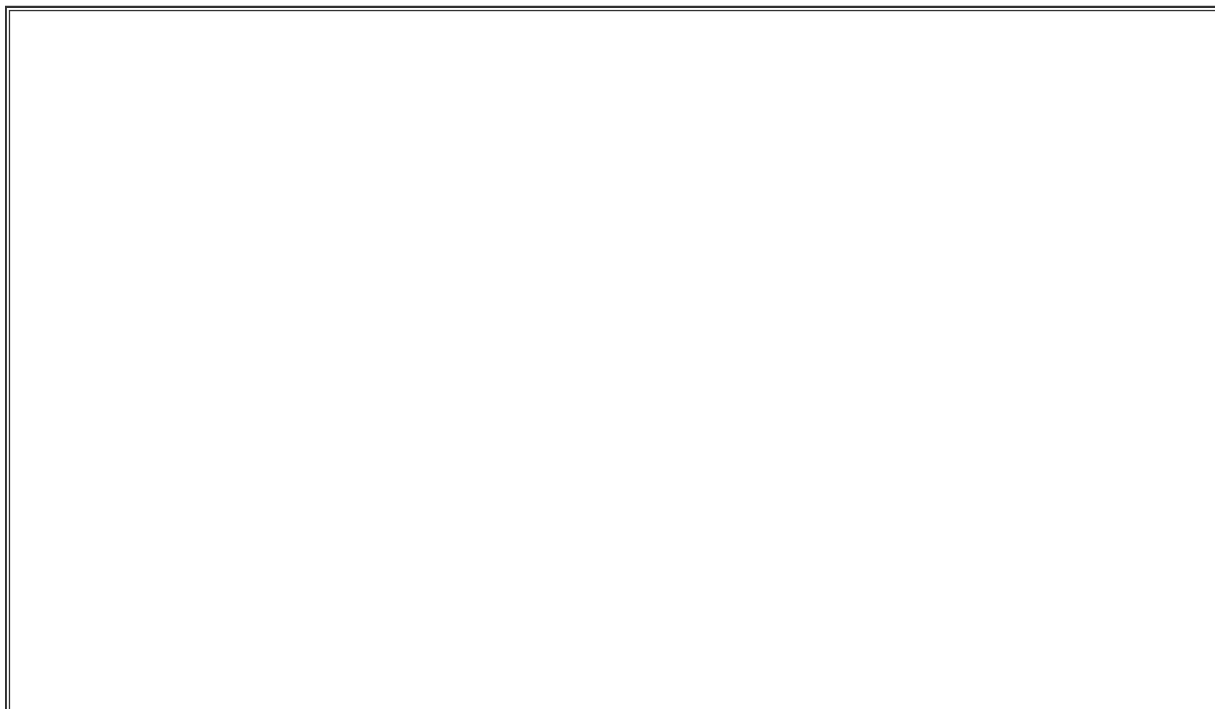
Figure 2: LT Only - Flushness & Character Line

Photo 1: Measuring Hood Flushness to Cab Door using plastic block & Tape Measure
 Photo 2: Example of a misaligned hood. **(This photo depicts an unacceptable condition.)**

Eagle/9000 Series with Dual DEACs (Air Filters) - Review and Inspection of Hood Gap & Alignment Tolerances:

| Gap Location | Requirement | Comments |
|----------------|-------------|--------------------------|
| Horizontal Gap | 32mm - 42mm | Reference Figure 3 below |
| Vertical Gap | 14mm - 24mm | Reference Figure 3 below |

Measuring the hood to cab gaps. (Right side is shown, Left side is the same but opposite)
 Measure both Horizontal & Vertical gaps as shown in Figure 3. Refer to Photos 2-5 in Figure 3 for measurement technique.



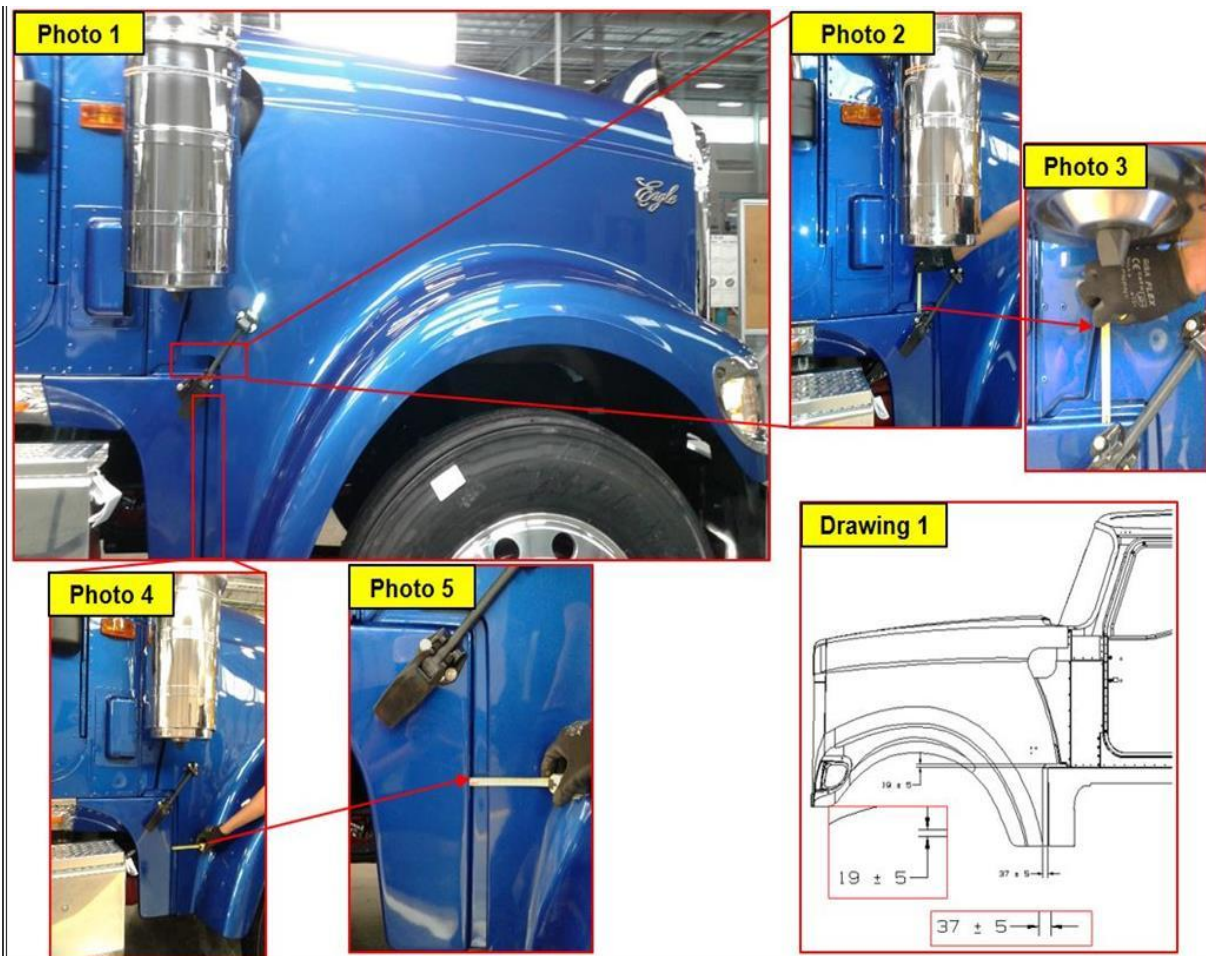


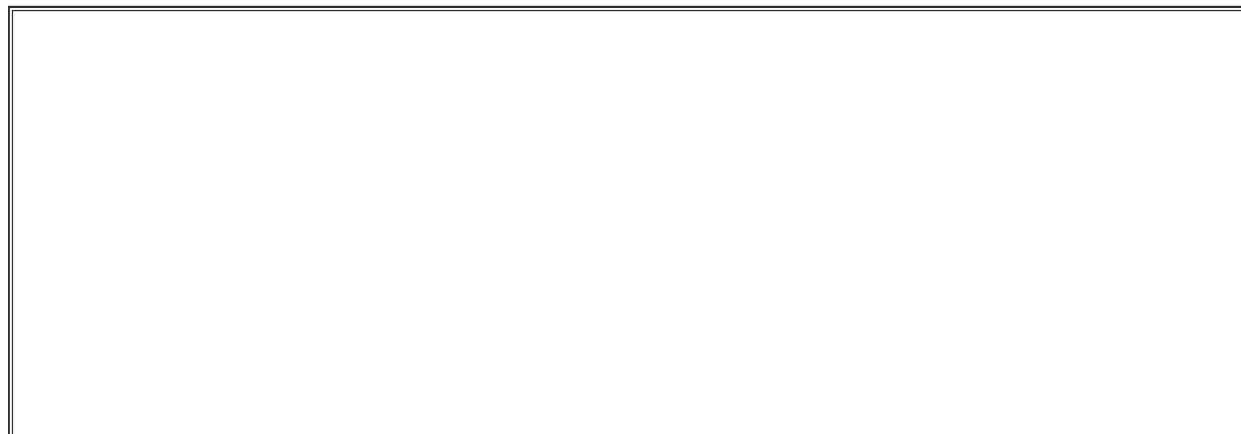
Figure 3: Eagle & 9000 Series Hood Gap & Alignment

Photo 1: Overall view of right side gap. Left side is the same but opposite.
 Photo 2-3: Measurement of Horizontal Gap.
 Photo 4-5: Measurement of Vertical Gap.
 Drawing 1: Reference Only

9000 Series without Dual DEACs (Air Filters) - Review and Inspection of Hood Gap & Alignment Tolerances:

| Gap Location | Requirement | Comments |
|---------------------------|-------------------|-----------------------------|
| Vertical Gap at Hood Seam | 15.08mm - 20.32mm | Reference Figure 4, photo 3 |

Measuring the hood to cab gap. (Left side is shown, Right side is the same but opposite)
 Measure both Horizontal & Vertical gaps as shown in Figure 4. Refer to Photos 2-5 in Figure 4 for measurement technique.



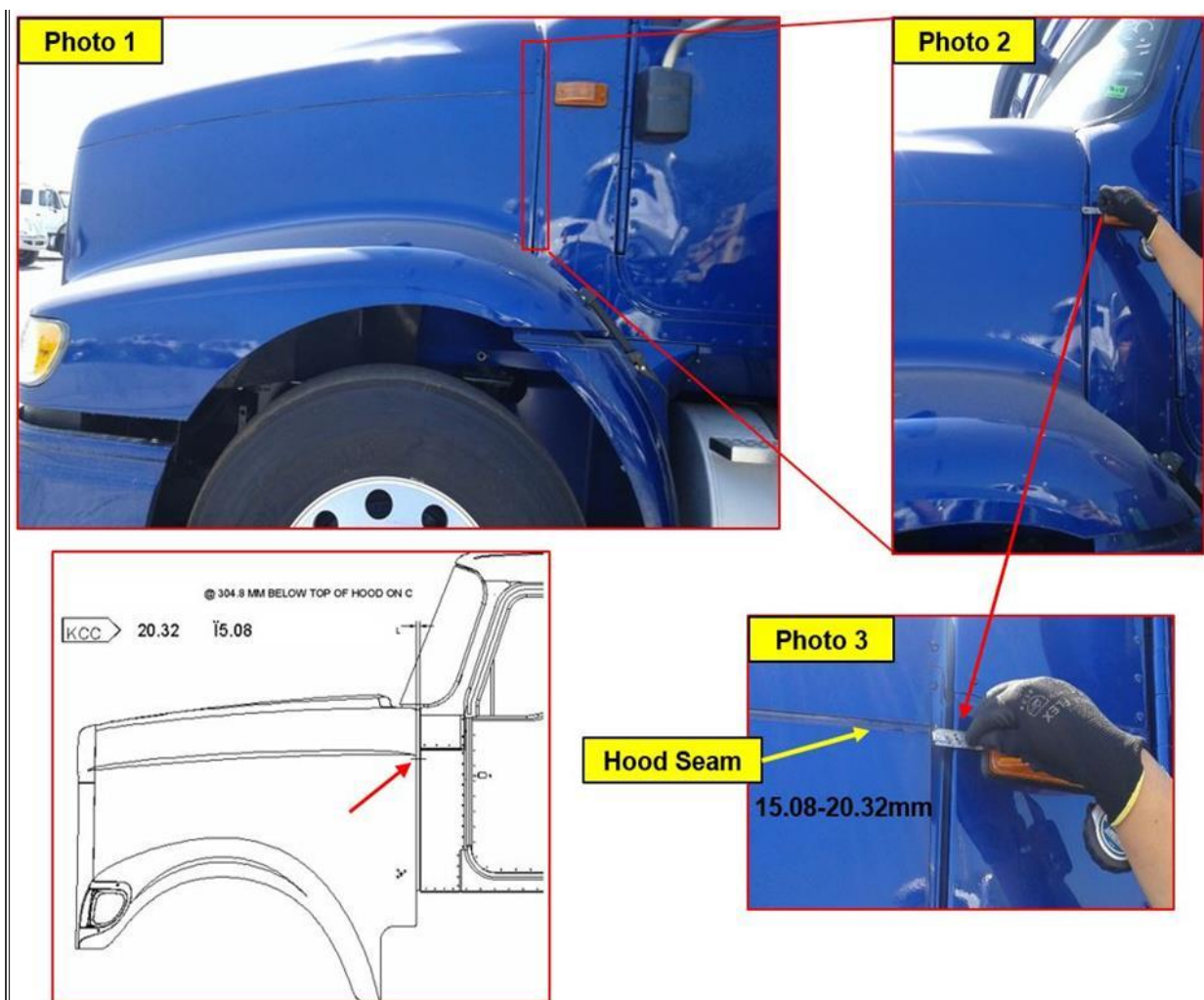


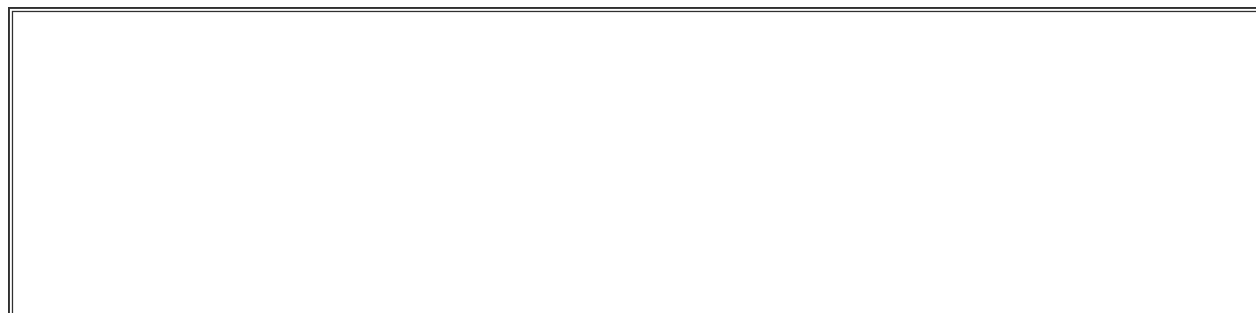
Figure 4: 9000 Series Hood Gap & Alignment

Photo 1: Overall view of left side hood to cab gap. Right side is the same but opposite.
 Photo 2-3: Measurement of hood to cab verticle gap at hood seam location.

HV/WorkStar/7000 Series- Review and Inspection of Hood Gap & Alignment Tolerances:

| Gap Location | Requirement | Comments |
|----------------------------|-------------|---|
| A | 17mm - 29mm | See Figure 5, photos 1 & 2 |
| B | 17mm - 29mm | See Figure 5, photos 1 & 2 |
| A to B Paralleism | 4mm Max | Difference between A & B (both sides) |
| Lt Side Gap vs Rt Side Gap | 6mm Max | Difference between left & right side of truck |

Measuring the hood to door gap. (Right side is shown, Left side is the same but opposite)
 Measure at both Point A and Point B as shown in Figure5. Refer to Photo 2 in Figure 5 for measurment technique.



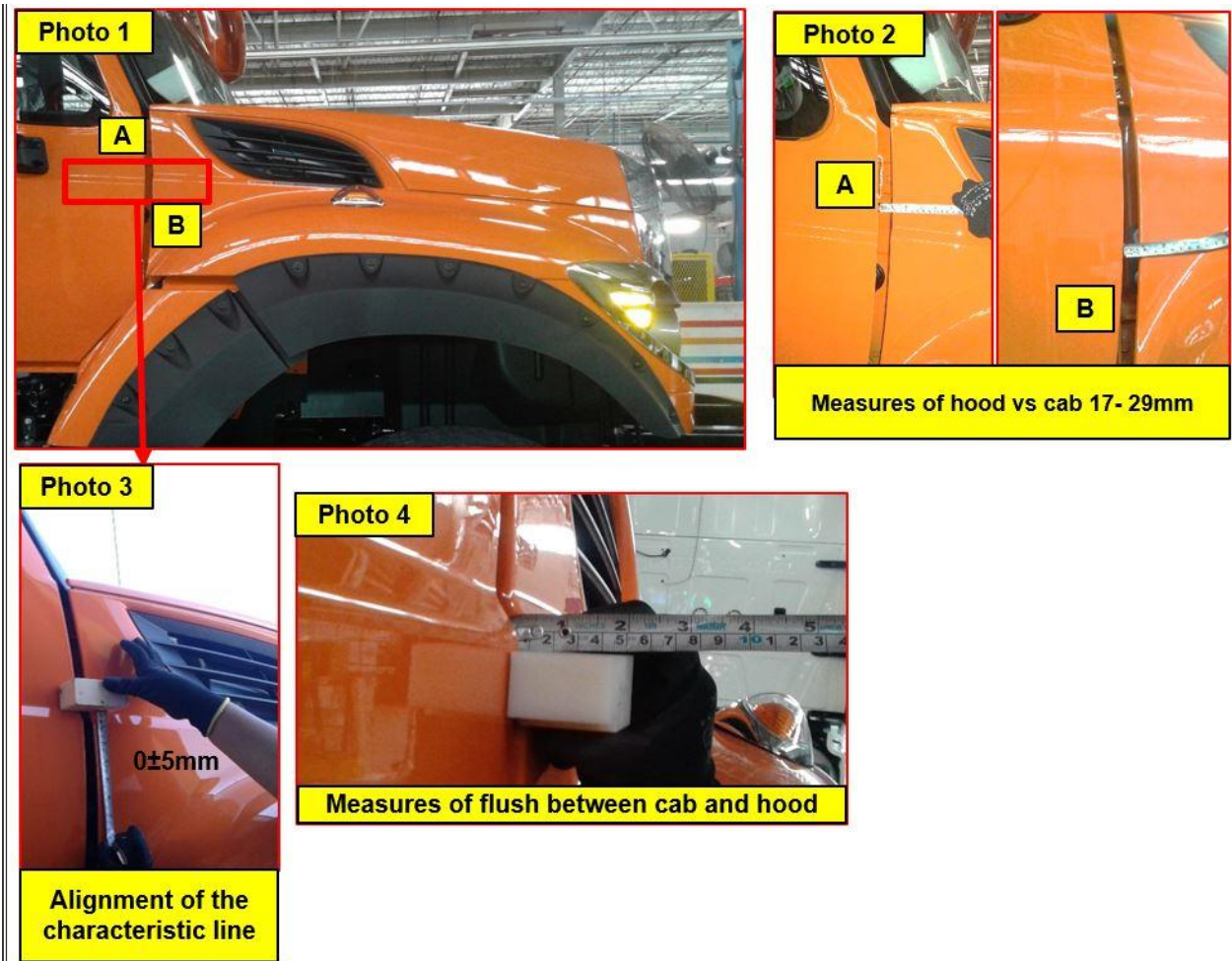


Figure 5: HV/WorkStar/7000 Series Hood & Gap Alignment

Photo 1: Overall view of right side gap showing Point A & Point B.
 Photo 2: Measurement at Point A & Point B.
 Photo 3 & 4: Measurement of Characteristic Line.

| Gaps | Requirement | Comments |
|-----------------------|-------------|--|
| Characteristic Line | 0 +/- 5mm | See Figure 5, photo 3. Check both sides of truck |
| Cab to Hood Flushness | 0 - 5mm Max | See Figure 5, photo 4. Check both sides of truck |

HX 515 without DEACs (Air Filters) - Review and Inspection of Hood Gap & Alignment Tolerances:

| Gap Location | Requirement | Comments |
|------------------------------|-------------|--|
| A | 16mm - 26mm | See Figure 6, photos 1 & 2 |
| B | 17mm - 25mm | See Figure 6, photos 1 & 3 |
| A to B Paralleism | 5mm Max | Difference between A & B (both sides) |
| Flushness Cab to Hood | 4mm Max | See Figure 6, Photo 4 |
| Left Side Gap vs Rt Side Gap | 4mm Max | Difference between the gaps from the left & right side of truck. |

Measuring the hood to cab gap. (Left side is shown, Right side is the same but opposite)
 Measure both Horizontal & Vertical gaps as shown in Figure 6. Refer to Photos 1-3 in Figure 6 for measurement technique.

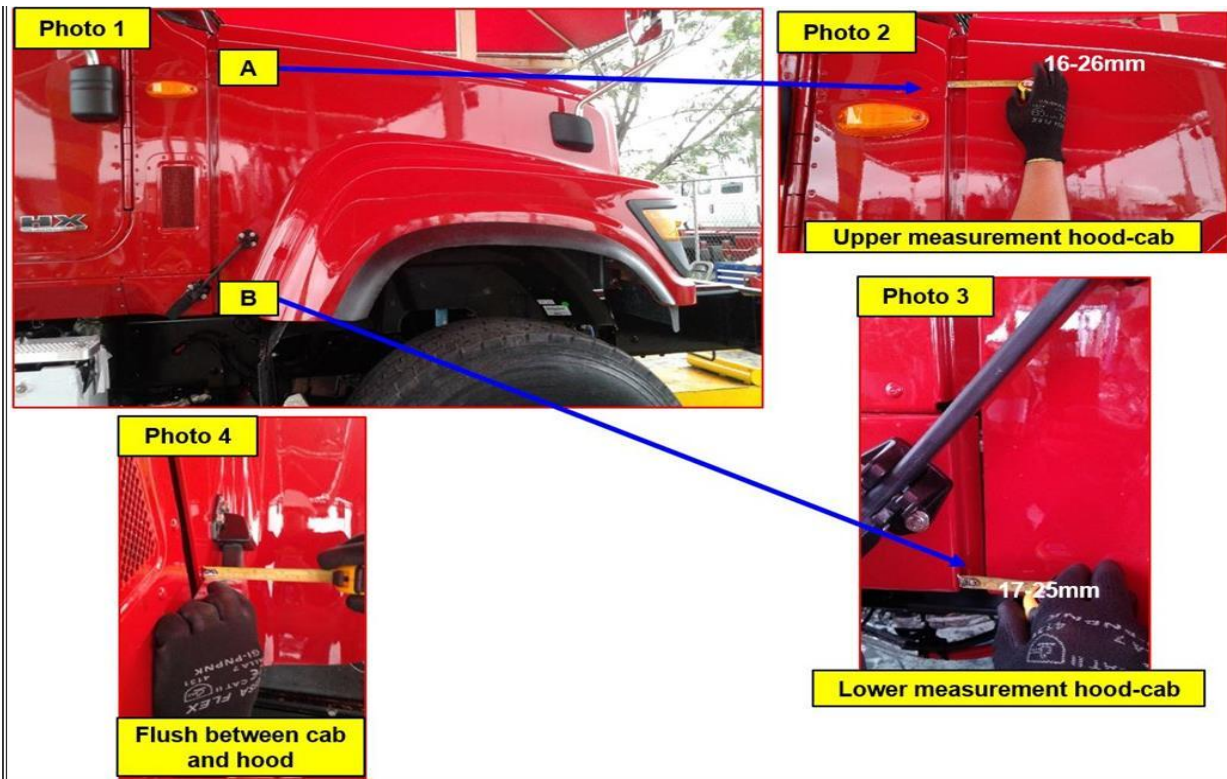


Figure 6: HX 515 Hood Gap & Alignment

Photo 1: Overall view of right side hood to cab gap. Left side is the same but opposite.
 Photo 2-3: Measurement of hood to cab verticle gap at hood seam location.
 Photo 4: Gap flushness.

HX 620 with DEACs (Air Filters) - Review and Inspection of Hood Gap & Alignment Tolerances:

| Gap Location | Requirement | Comments |
|----------------------------|-------------|--|
| A | 18mm - 30mm | See Figure 7, photos 1 & 2 |
| B | 22mm - 34mm | See Figure 7, photos 1 & 3 |
| C | 17mm-29mm | See Figure 7, photo 4 |
| A to B Paralleism | 5mm Max | Difference between A & B (both sides) |
| Lt Side Gap vs Rt Side Gap | 4mm Max | Difference between the gaps from the left & right side of truck. |

Measuring the hood to cab gap. (Left side is shown, Right side is the same but opposite)
 Measure both Horizontal & Verticle gaps as shown in Figure 7. Refer to Photos 1-4 in Figure 7 for measurment technique.



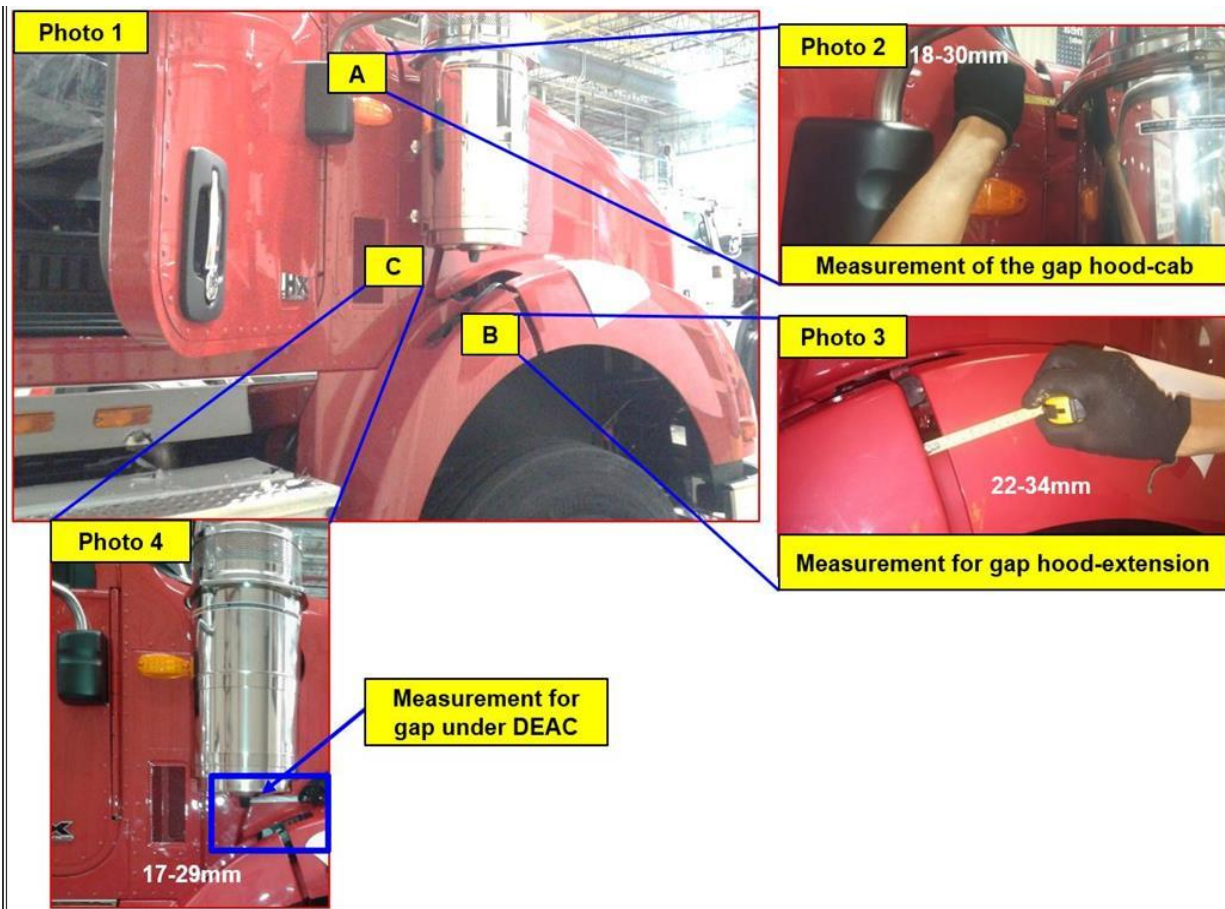


Figure 7: HX 620 with DEACs Hood Gap & Alignment

Photo 1: Overall view of right side hood to cab gap. Left side is the same but opposite.
 Photo 2-3: Measurement of hood to cab verticle gap at hood seam location.
 Photo 4: Gap flushness.

HX 615 & 620 with Extention without DEACs (Air Filters) - Review and Inspection of Hood Gap & Alignment Tolerances:

| Gap Location | Requirement | Comments |
|----------------------------|-------------|--|
| A | 18mm - 30mm | See Figure 8, photos 1 & 2 |
| B | 21mm - 33mm | See Figure 8, photos 1 & 3 |
| Vertical Gap Paralleism | 5mm Max | Difference between A & B (both sides) |
| Lt Side Gap vs Rt Side Gap | 4mm Max | Difference between the gaps from the left & right side of truck. |

Measuring the hood to cab gap. (Left side is shown, Right side is the same but opposite)
 Measure both Horizontal & Verticle gaps as shown in Figure 8. Refer to Photos 1-3 in Figure 8 for measurment technique.



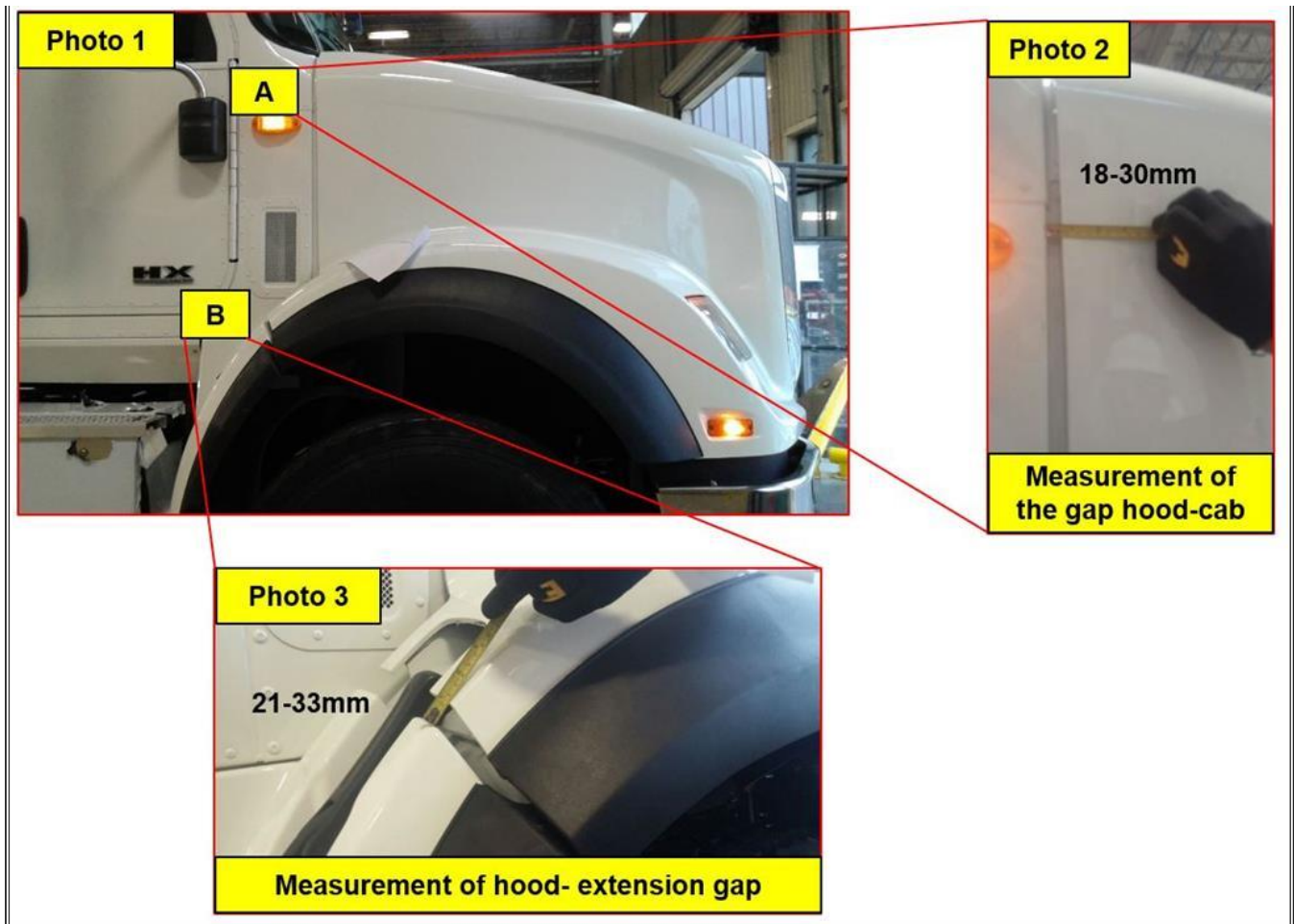


Figure 8: HX 615 & 620 with Extension without DEACs Hood Gap & Alignment

Photo 1: Overall view of right side hood to cab gap. Left side is the same but opposite.
 Photo 2-3: Measurement of hood to cab verticle gap & Fender seam location.

REMOVAL/ INSTALLATION PROCEDURE

Refer to appropriate service manual

WARRANTY INFORMATION

Warranty Claim Coding:

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

STANDARD REPAIR TIME

Refer to the [SRT Manual](#) for Repair Times

OTHER RESOURCES

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