

Tool Instruction Navistar® Leak Locator

4328229R1

Tool Number: 19-700-01



0000311221

Figure 1. Navistar® Leak Locator.

NOTE: Due to size of some engine components, and to wide temperature ranges encountered during normal operation, tiny “pinhole” leaks can occur at some sealing surfaces. In general, pinhole-sized leaks do not result in unwanted cabin odors, frequent regeneration of the aftertreatment system, or performance issues. For best results, focus on more substantial leaks when using this apparatus.

NOTE: Do not exceed 5 psi system pressure. Higher smoke pressures can obscure test results, because fast-moving smoke can be much harder to see. Smoke trails ‘curl’ out smoothly and remain visible much longer at lower pressures.

NOTE: Smoke from the Navistar® Leak Locator cannot pass through a properly operating Diesel Particulate Filter (DPF). To properly test the aftertreatment system, test areas before and after the DPF separately.

Purpose

The 19-700-01 Navistar® Leak Locator Kit provides a smoke machine and adapters to inspect for leaks in air intake, exhaust, and aftertreatment systems.

Application(s)

NOTE: While this procedure provides instructions on the use of the 19-700-01 Navistar® Leak Locator on the MaxxForce® 7, DT, 9, 10, 11, and 13, this kit is designed to be used on any model.

All



GOVERNMENT REGULATION: Engine fluids (oil, fuel, and coolant) may be a hazard to human health and the environment. Handle all fluids and other contaminated materials (such as filters or rags) in accordance with applicable regulations. Recycle or dispose of engine fluids, filters, and other contaminated materials according to applicable regulations.



WARNING: Read all safety instructions in the “Safety Information” section of the *Engine Service Manual* or *Engine Diagnostic Manual* to prevent personal injury or death.





WARNING: Park vehicle on hard flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in either direction. Failure to comply may result in property damage, personal injury, and / or death.



WARNING: Always wear safe eye protection when performing vehicle maintenance. Failure to comply may result in personal injury and / or death.

Tool Contents

Table 1

Image	Tool Number	Qty	Description
 <p>0000311222</p>	19-700-01	1	Navistar® Leak Locator Kit
 <p>0000160075</p>		1	Tool Instruction

NOTE: Refer to Navistar® Leak Locator operator manual for setup of Navistar® Leak Locator.

Instructions

MaxxForce® 11 and 13 Air Intake Leak Test Tool Installation

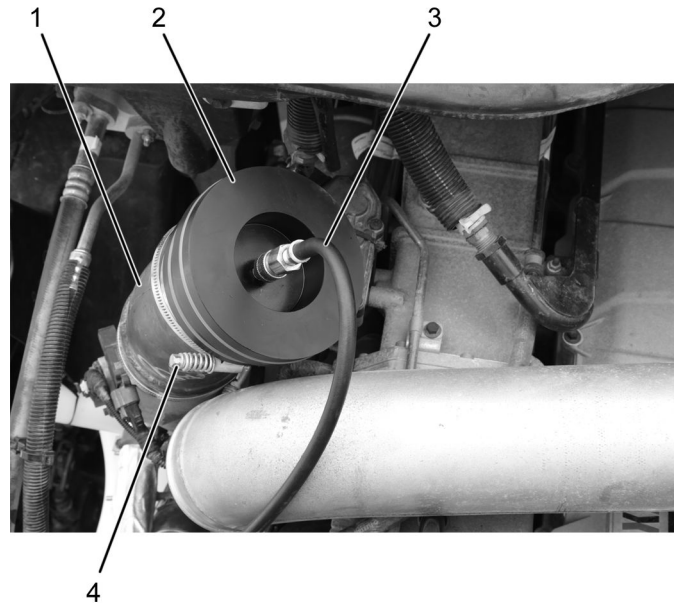


Figure 2. Navistar® Fixed Graduated Intake Adapter.

1. Air intake piping
2. Navistar® fixed graduated intake adapter
3. Navistar Leak Locator line
4. Air cleaner clamp

NOTE: Backpressure from Diesel Oxidation Catalyst (DOC) / Diesel Particulate Filter (DPF) should prevent loss of pressure through exhaust.

1. Install Navistar® fixed graduated intake adapter (Figure 2, Item 2) into air intake piping (Figure 2, Item 1) with clamp (Figure 2, Item 4) removed from air cleaner.
2. Connect Navistar® Leak Locator line (Figure 2, Item 3) to Navistar® fixed graduated intake adapter (Figure 2, Item 2).

MaxxForce® 11 and 13 Air Intake Leak Test Tool Removal

1. Disconnect Navistar® Leak Locator line (Figure 2, Item 3) from Navistar® fixed graduated intake adapter (Figure 2, Item 2).
2. Remove clamp (Figure 2, Item 4) and Navistar® fixed graduated intake adapter (Figure 2, Item 2) from air intake piping (Figure 2, Item 1).
3. Clean tools and store in case.

Instructions (cont.)

MaxxForce® 7, DT, 9, and 10 Air Intake Leak Test Tool Installation

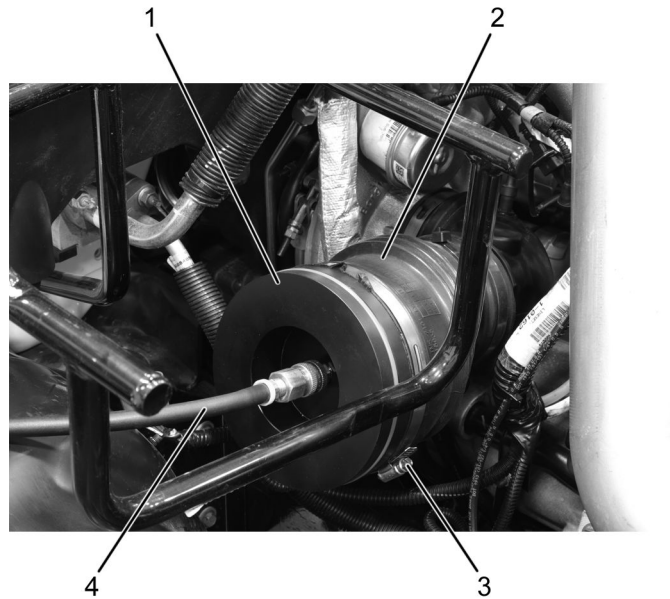


Figure 3. Navistar® Fixed Graduated Intake Adapter.

1. Navistar® fixed graduated intake adapter
2. Air intake piping
3. Air cleaner clamp
4. Navistar® Leak Locator line

NOTE: Backpressure from Diesel Oxidation Catalyst (DOC) / Diesel Particulate Filter (DPF) should prevent loss of pressure through exhaust.

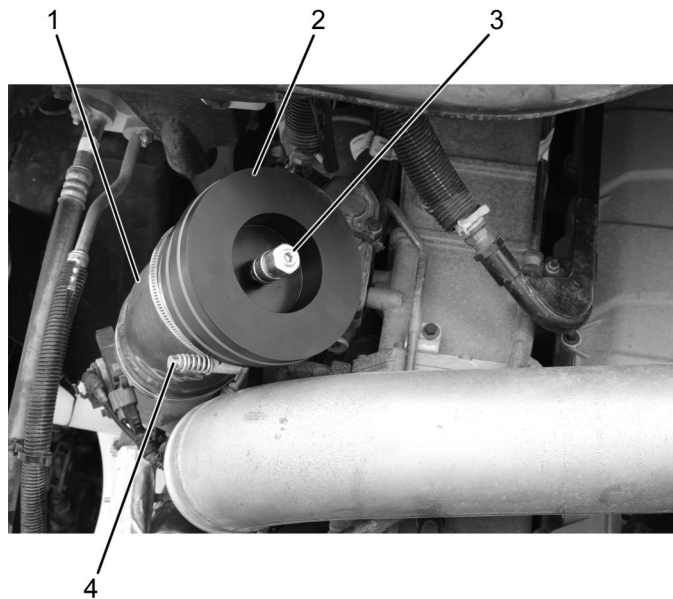
1. Install Navistar® fixed graduated intake adapter (Figure 3, Item 1) into air intake piping (Figure 3, Item 2) with clamp (Figure 3, Item 3) removed from air cleaner.
2. Connect Navistar® Leak Locator line (Figure 3, Item 4) to Navistar® fixed graduated intake adapter (Figure 3, Item 1).

MaxxForce® 7, DT, 9, and 10 Air Intake Leak Test Tool Removal

1. Disconnect Navistar® Leak Locator line (Figure 3, Item 4) from Navistar® fixed graduated intake adapter (Figure 3, Item 1).
2. Remove clamp (Figure 3, Item 3) and Navistar® fixed graduated intake adapter (Figure 3, Item 1) from air intake piping (Figure 3, Item 2).
3. Clean tools and store in case.

Instructions (cont.)

MaxxForce® 11 and 13 Exhaust System Leak Test Tool Installation

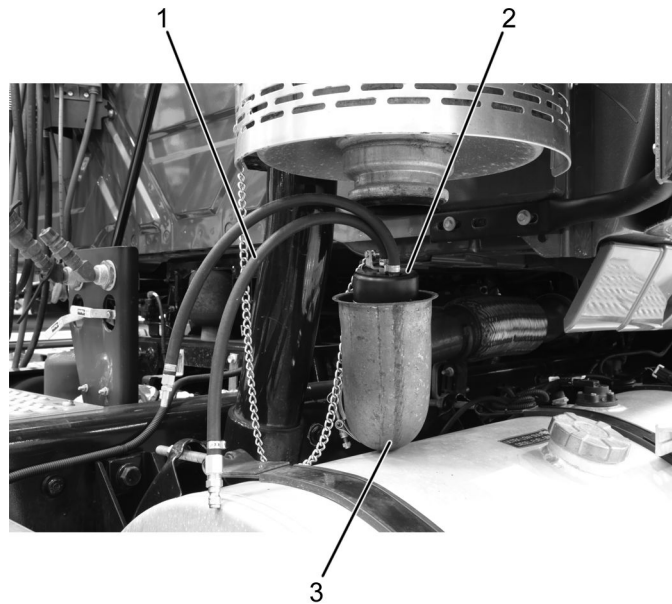


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Figure 4. Navistar® Fixed Graduated Intake Adapter.

1. Air intake piping
 2. Navistar® fixed graduated intake adapter
 3. Block-off coupler
 4. Air cleaner clamp
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1. Install Navistar® fixed graduated intake adapter (Figure 4, Item 2) into air intake piping (Figure 4, Item 1) with clamp (Figure 4, Item 4) removed from air cleaner.
 2. Install block-off coupler (Figure 4, Item 3) onto Navistar® fixed graduated intake adapter (Figure 4, Item 2).

Instructions (cont.)



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Figure 5. Powersmoke™ Adapter 2.9 In.

1. Navistar® Leak Locator supply line
2. Powersmoke™ adapter 2.9 in
3. DOC inlet exhaust piping

⚠ WARNING: Connect chain on Powersmoke™ Adapter to a secure location. Failure to comply may result in property damage, personal injury, and / or death.

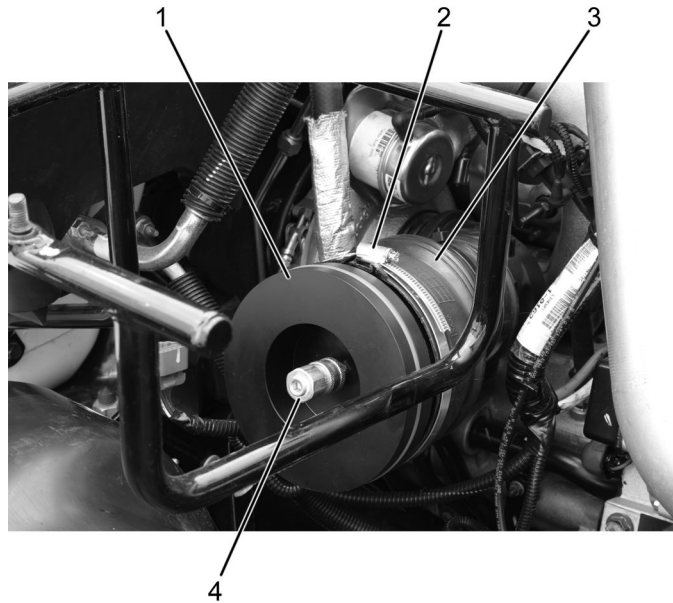
3. Install Powersmoke™ adapter 2.9 in (Figure 5, Item 2) into end of DOC inlet exhaust piping (Figure 5, Item 3) and inflate per Navistar® Leak Locator Operation Manual.
4. Connect Navistar® Leak Locator supply line (Figure 5, Item 1) to Powersmoke™ adapter (Figure 5, Item 2).

MaxxForce® 11 and 13 Exhaust System Leak Test Tool Removal

1. Disconnect Navistar® Leak Locator supply line (Figure 5, Item 1) from Powersmoke™ adapter (Figure 5, Item 2).
2. Deflate and remove Powersmoke™ adapter 2.9 in (Figure 5, Item 2) from DOC inlet exhaust piping (Figure 5, Item 3) per Navistar® Leak Locator Operation Manual.
3. Remove block-off coupler (Figure 4, Item 3) from Navistar® fixed graduated intake adapter (Figure 4, Item 2).
4. Loosen clamp (Figure 4, Item 4) and remove Navistar® fixed graduated intake adapter (Figure 4, Item 2) from air intake piping (Figure 4, Item 1).
5. Clean tools and store in case.

Instructions (cont.)

MaxxForce® 7, DT, 9, and 10 Exhaust System Leak Test Tool Installation

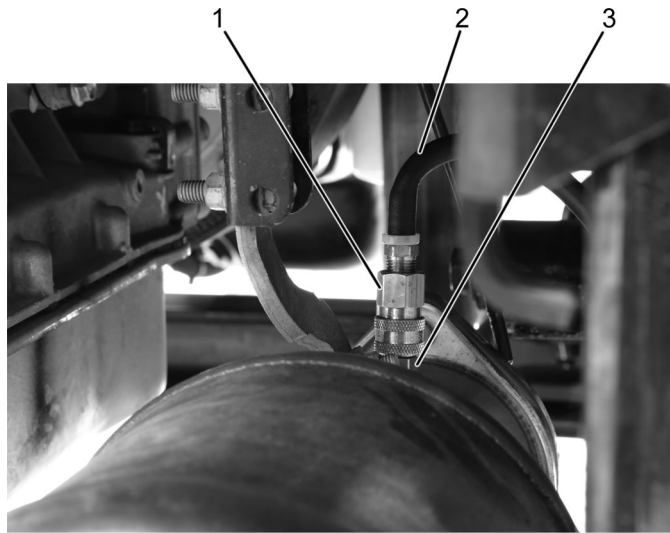


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Figure 6. Navistar® Fixed Graduated Intake Adapter.

1. Navistar® fixed graduated intake adapter
 2. Air cleaner clamp
 3. Air intake piping
 4. Block-off coupler
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1. Install Navistar® fixed graduated intake adapter (Figure 6, Item 1) into air intake piping (Figure 6, Item 3) with clamp (Figure 6, Item 2) removed from air cleaner.
 2. Install block-off coupler (Figure 6, Item 4) onto Navistar® fixed graduated intake adapter (Figure 6, Item 1).

Instructions (cont.)



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Figure 7. Temperature Sensor Port Adapter.

1. Temperature sensor port adapter
 2. Navistar® Leak Locator supply line
 3. Temperature sensor port
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3. Install temperature sensor port adapter (Figure 7, Item 1) into temperature sensor port (Figure 7, Item 3).
 4. Connect Navistar® Leak Locator supply line (Figure 7, Item 2) to temperature sensor port adapter (Figure 7, Item 1).

Instructions (cont.)

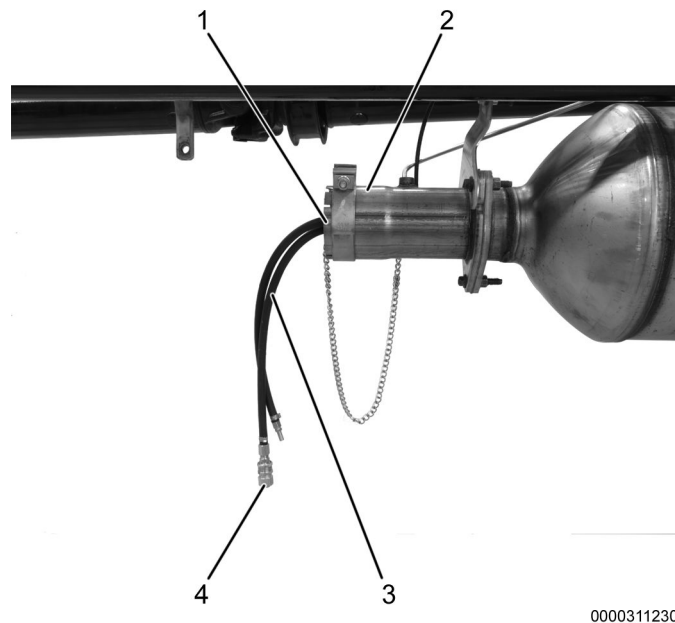


Figure 8. Powersmoke Adapter 2.9 In.

1. Powersmoke™ adapter 2.9 in
2. Tailpipe
3. Navistar® Leak Locator supply line
4. Block-off coupler

! WARNING: Connect chain on Powersmoke™ Adapter to a secure location. Failure to comply may result in property damage, personal injury, and / or death.

5. Install Powersmoke™ Adapter 2.9 in (Figure 8, Item 1) into end of tailpipe (Figure 8, Item 2) and inflate per Navistar® Leak Locator Operation Manual.
6. Install block-off coupler (Figure 8, Item 4) onto Navistar® Leak Locator supply line (Figure 8, Item 3).

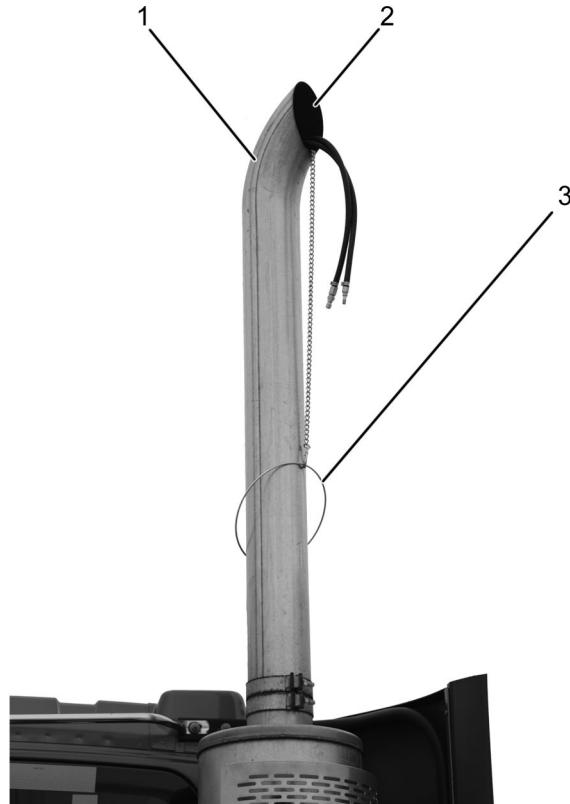
Instructions (cont.)

MaxxForce® 7, DT, 9, and 10 Exhaust System Leak Test Tool Removal – Test 1

1. Remove block-off coupler (Figure 8, Item 4) from Navistar® Leak Locator supply line (Figure 8, Item 3).
2. Deflate and remove Powersmoke™ adapter 2.9 in (Figure 8, Item 1) from end of tailpipe (Figure 8, Item 2) per Navistar® Leak Locator Operation Manual.
3. Disconnect Navistar® Leak Locator supply line (Figure 7, Item 2) from temperature sensor port adapter (Figure 7, Item 1).
4. Remove temperature sensor port adapter (Figure 7, Item 1) from temperature sensor port (Figure 7, Item 3).
5. Remove block-off coupler (Figure 6, Item 4) from Navistar® fixed graduated intake adapter (Figure 6, Item 1).
6. Loosen clamp (Figure 6, Item 2) and remove Navistar® fixed graduated intake adapter (Figure 6, Item 1) from air intake piping (Figure 6, Item 3).
7. Clean tools and store in case.

Instructions (cont.)

MaxxForce® 11 and 13 Aftertreatment Leak Test Tool Installation – Test 1



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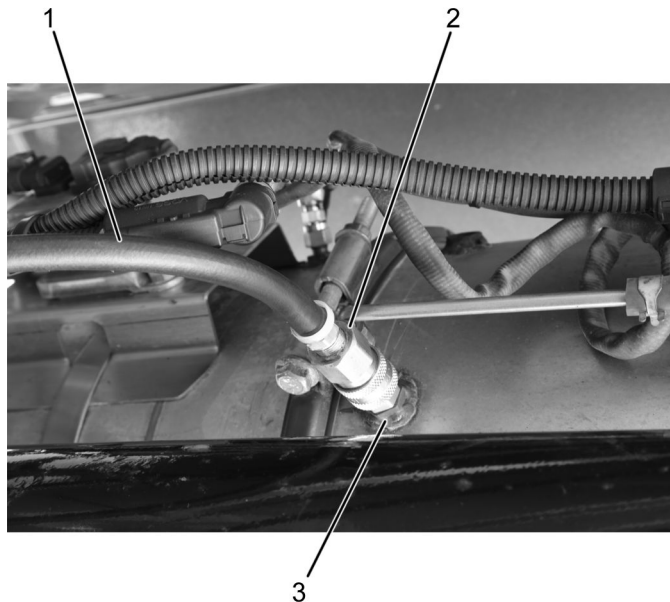
Figure 9. Powersmoke™ Adapter 3.9 In.

1. Tailpipe
2. Powersmoke™ Adapter 3.9 in
3. Exhaust stack retention hoop

⚠ WARNING: Connect chain on Powersmoke™ Adapter to a secure location. Failure to comply may result in property damage, personal injury, and / or death.

1. Install Powersmoke™ Adapter 3.9 in (Figure 9, Item 2), with exhaust stack retention hoop attached to chain (Figure 9, Item 3) and around tailpipe (Figure 9, Item 1), into tailpipe and inflate per Navistar® Leak Locator Operation Manual.

Instructions (cont.)



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Figure 10. Pressure Sensor Port Adapter.

1. Navistar® Leak Locator supply line
 2. Pressure sensor port adapter
 3. Pressure sensor port
2. Install pressure sensor port adapter (Figure 10, Item 2) into pressure sensor port (Figure 10, Item 3).
 3. Connect Navistar® Leak Locator supply line (Figure 10, Item 1) to pressure sensor port adapter (Figure 10, Item 2).

MaxxForce® 11 and 13 Aftertreatment Leak Test Tool Removal – Test 1

1. Disconnect Navistar® Leak Locator supply line (Figure 10, Item 1) from pressure sensor port adapter (Figure 10, Item 2).
2. Remove pressure sensor port adapter (Figure 10, Item 2) from pressure sensor port (Figure 10, Item 3).
3. Deflate and remove Powersmoke™ Adapter 3.9 in (Figure 9, Item 2), and exhaust stack retention hoop (Figure 9, Item 3) from around tailpipe (Figure 9, Item 1), from tailpipe per Navistar® Leak Locator Operation Manual.
4. Clean tools and store in case.

Instructions (cont.)

MaxxForce® 7, DT, 9, and 10 Aftertreatment Leak Test Tool Installation – Test 1

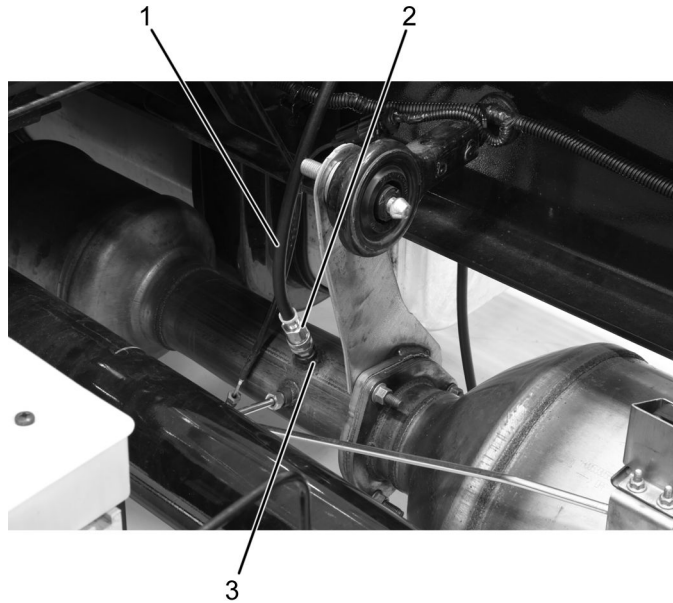


Figure 11. Pressure Sensor Port Adapter.

1. Navistar® Leak Locator supply line
 2. Pressure sensor port adapter
 3. Pressure sensor port
-
1. Install pressure sensor port adapter (Figure 11, Item 2) into pressure sensor port (Figure 11, Item 3).
 2. Connect Navistar® Leak Locator supply line (Figure 11, Item 1) onto pressure sensor port adapter (Figure 11, Item 2).

Instructions (cont.)

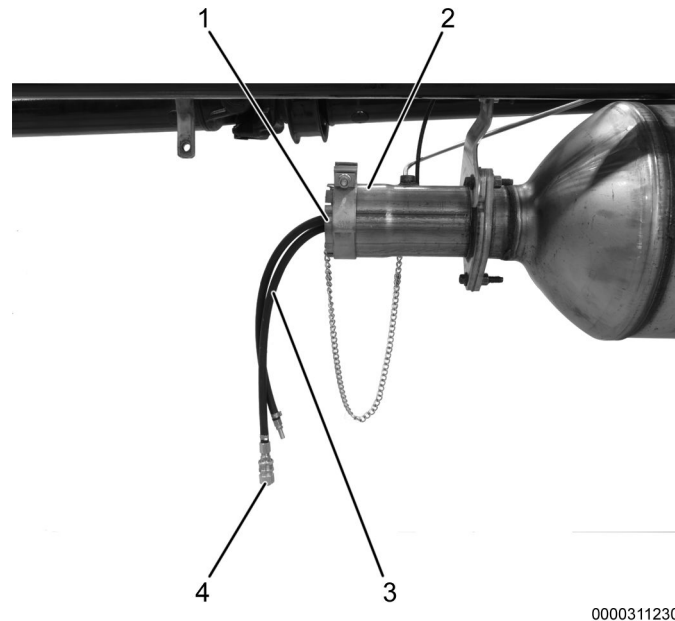


Figure 12. Powersmoke™ Adapter 2.9 In.

1. Powersmoke™ adapter 2.9 in
2. Tailpipe
3. Navistar® Leak Locator supply line
4. Block-off coupler

⚠ WARNING: Connect chain on Powersmoke™ Adapter to a secure location. Failure to comply may result in property damage, personal injury, and / or death.

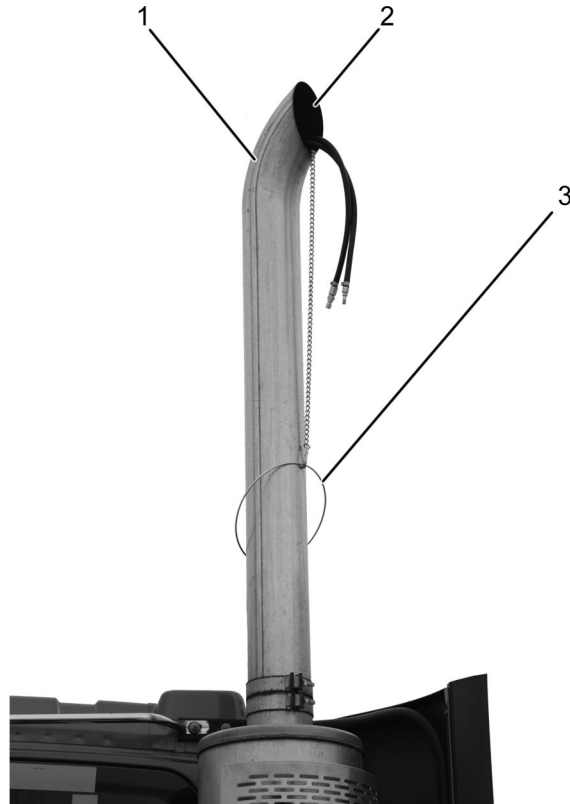
3. Install Powersmoke™ Adapter 2.9 in (Figure 12, Item 1) into end of tailpipe (Figure 12, Item 2) and inflate per Navistar® Leak Locator Operation Manual.
4. Install block-off coupler (Figure 12, Item 4) onto Navistar® Leak Locator supply line (Figure 12, Item 3).

MaxxForce® 7, DT, 9, and 10 Aftertreatment Leak Test Tool Removal – Test 1

1. Remove block-off coupler (Figure 12, Item 4) from Navistar® Leak Locator supply line (Figure 12, Item 3).
2. Deflate and remove Powersmoke™ Adapter 2.9 in (Figure 12, Item 1) from end of tailpipe (Figure 12, Item 2) per Navistar® Leak Locator Operation Manual.
3. Disconnect Navistar® Leak Locator supply line (Figure 11, Item 1) from pressure sensor port adapter (Figure 11, Item 2).
4. Remove pressure sensor port adapter (Figure 11, Item 2) from pressure sensor port (Figure 11, Item 3).
5. Clean tools and store in case.

Instructions (cont.)

MaxxForce® 11 and 13 Aftertreatment Leak Test Tool Installation – Test 2



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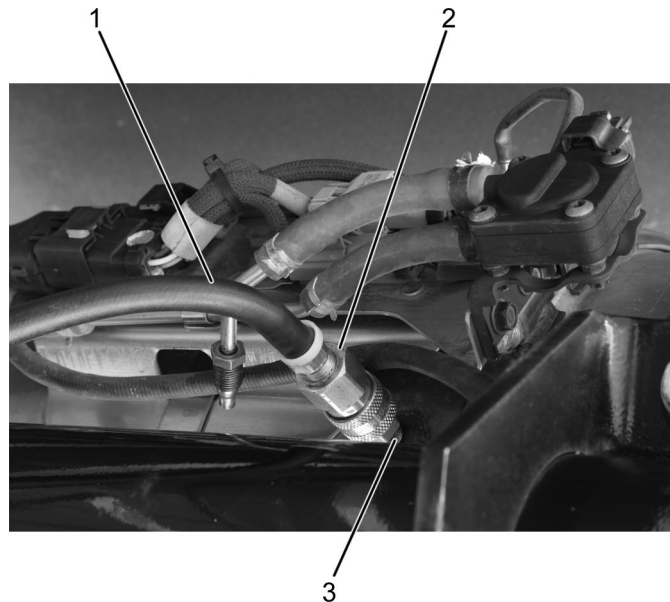
Figure 13. Powersmoke™ Adapter 3.9 In.

1. Tailpipe
2. Powersmoke™ Adapter 3.9 in
3. Exhaust stack retention hoop

⚠ WARNING: Connect chain on Powersmoke™ Adapter to a secure location. Failure to comply may result in property damage, personal injury, and / or death.

1. Install Powersmoke™ Adapter 3.9 in (Figure 13, Item 2), with exhaust stack retention hoop attached to chain (Figure 13, Item 3) and around tailpipe (Figure 13, Item 1), into tailpipe and inflate per Navistar® Leak Locator Operation Manual.

Instructions (cont.)



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Figure 14. Pressure Sensor Port Adapter.

1. Navistar® Leak Locator supply line
 2. Pressure sensor port adapter
 3. Diesel Particulate Filter Differential Pressure (DPFDP) sensor port
2. Install pressure sensor port adapter (Figure 14, Item 2) into DPFDP sensor port (Figure 14, Item 3).
 3. Connect Navistar® Leak Locator supply line (Figure 14, Item 1) to pressure sensor port adapter (Figure 14, Item 2).

MaxxForce® 11 and 13 Aftertreatment Leak Test Tool Removal – Test 2

1. Disconnect Navistar® Leak Locator supply line (Figure 14, Item 1) from pressure sensor port adapter (Figure 14, Item 2).
2. Remove pressure sensor port adapter (Figure 14, Item 2) from DPFDP sensor port (Figure 14, Item 3).
3. Deflate and remove Powersmoke™ Adapter 3.9 in (Figure 13, Item 2), and exhaust stack retention hoop (Figure 13, Item 3) from around tailpipe (Figure 13, Item 1), from tailpipe per Navistar® Leak Locator Operation Manual.
4. Clean tools and store in case.

Instructions (cont.)

MaxxForce® 7, DT, 9, and 10 Aftertreatment Leak Test Tool Installation – Test 2

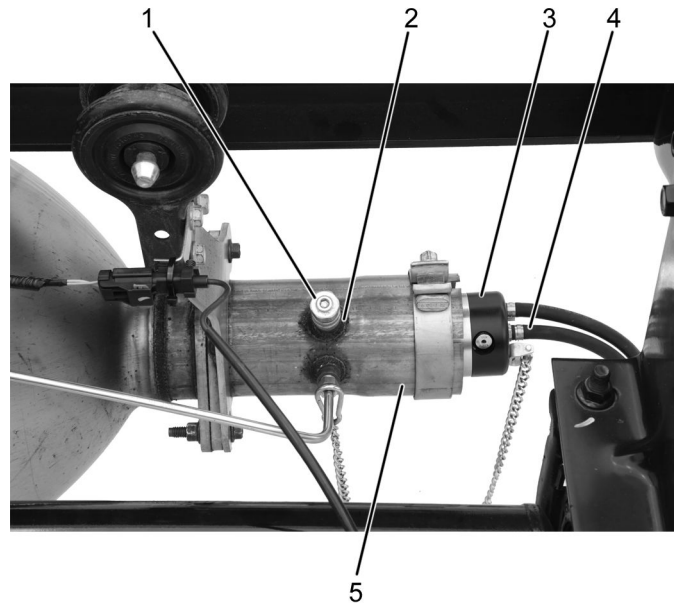


Figure 15. Block-Off Coupler and Powersmoke Adapter 2.9 In.

1. Block-off coupler
2. DPFOT sensor port
3. Powersmoke™ adapter 2.9 in
4. Navistar® Leak Locator supply line
5. Tailpipe

1. Install block-off coupler (Figure 15, Item 1) onto DPFOT sensor port (Figure 15, Item 2).

⚠ WARNING: Connect chain on Powersmoke™ Adapter to a secure location. Failure to comply may result in property damage, personal injury, and / or death.

2. Install Powersmoke™ Adapter 2.9 in (Figure 15, Item 3) into tailpipe (Figure 15, Item 5) and inflate per Navistar® Leak Locator Operation Manual.
3. Connect Navistar® Leak Locator supply line (Figure 15, Item 4) to Powersmoke™ Adapter 2.9 in (Figure 15, Item 3).

MaxxForce® 7, DT, 9, and 10 Aftertreatment Leak Test Tool Removal

1. Disconnect Navistar® Leak Locator supply line (Figure 15, Item 4) from Powersmoke™ Adapter 2.9 in (Figure 15, Item 3).
2. Deflate and remove Powersmoke™ Adapter 2.9 in (Figure 15, Item 3) from tailpipe (Figure 15, Item 5) per Navistar® Leak Locator Operation Manual.
3. Remove block-off coupler (Figure 15, Item 1) from DPFOT sensor port (Figure 15, Item 2).
4. Clean tools and store in case.

Contact Information

If you would like to order additional tools or need replacement parts, please refer to the Navistar Service Tool Catalog. If you have questions, concerns, or feedback, please contact Navistar Service Tool Support Center:

- Submit a Service Tool iKNow Case File.
- Phone: 800-365-0088 (toll free).