

Tool Instruction Medium Duty Induction Cleaning System

4328240R1

Tool Number: 12-544-02



0000322721

Figure 1. Induction Cleaning System – 12-544-02.

Purpose

Essential tools to remove material buildup on turbocharger impeller caused by oil carryover in the intake system. Medium to light coking does NOT affect engine performance.

Application(s)

MaxxForce[®] 7 (EPA 10)

Application(s) (cont.)



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: To prevent personal injury and / or death, read all safety instructions in the “Safety Information” section of the *Engine Service Manual* or *Engine Diagnostic Manual*.



WARNING: To prevent property damage, personal injury, and / or death, 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.



WARNING: To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.








WARNING: To prevent personal injury and / or death, install crankcase breather tube into shop exhaust vent.



WARNING: To prevent personal injury and / or death, install turbocharger down pipe vent tube into shop exhaust hose.

Tool Contents

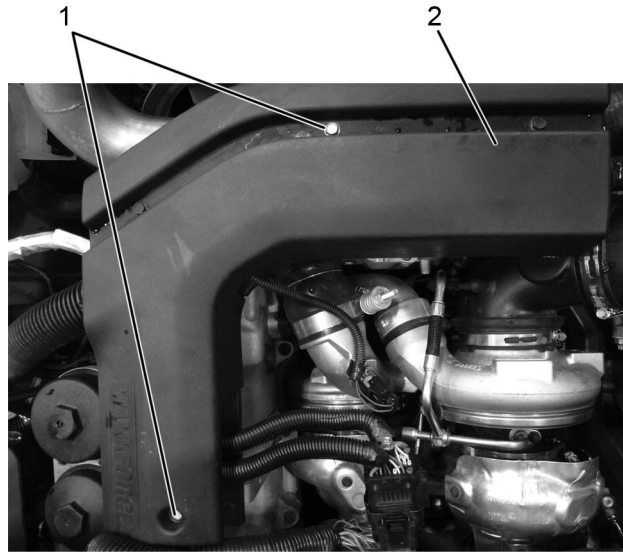
Table 1

Image	Tool Number	Qty	Description
 <p>0000297495</p>	<p>Refer to SERVICE REPLACEMENT PARTS at End of Document</p>	<p>1</p>	<p>Pressure Tank Assembly</p>
 <p>0000297494</p>	<p>12-544-01-17</p>	<p>1</p>	<p>Crankcase Breather Redirect Tube</p>
 <p>0000322441</p>	<p>12-544-01-19</p>	<p>1</p>	<p>Adapter, Turbo Inlet</p>
 <p>0000299023</p>	<p>Obtain Locally</p>	<p>As Required</p>	<p>Filter</p>
 <p>0000160075</p>	<p>4328240R1</p>	<p>1</p>	<p>Tool Instruction</p>

Instructions

Tool Installation

1. Bring vehicle into shop and park on flat surface.
2. Shift transmission to Park or Neutral, set parking brake, and install wheel chocks.
3. Unlatch and open hood.



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Figure 2. Engine Layover Harness Cover.

1. Bolt (2)
 2. Engine layover harness cover
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4. If necessary, remove two bolts (Figure 2, Item 1) and reposition engine layover harness cover (Figure 2, Item 2).

Instructions (cont.)

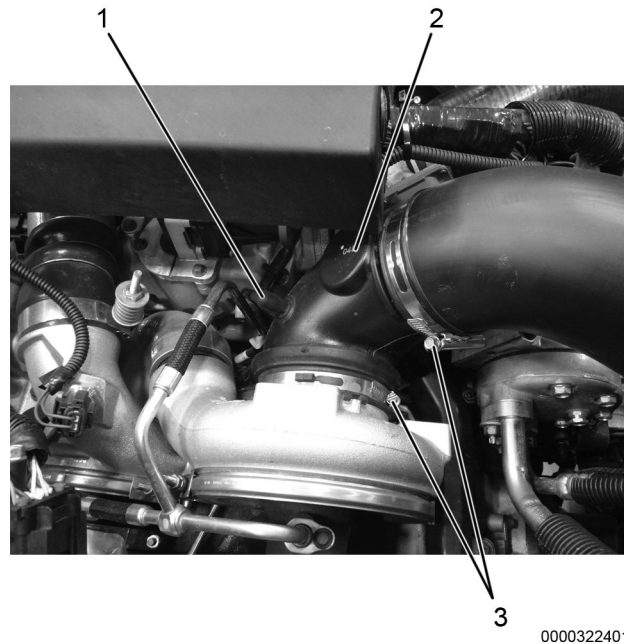


Figure 3. Turbo Inlet Elbow.

1. Boost line
 2. Inlet elbow
 3. Clamp (2)
-
5. Disconnect boost line (Figure 3, Item 1) from turbo inlet elbow (Figure 3, Item 2).
 6. Loosen hose clamps (Figure 3, Item 3) from inlet elbow. Remove inlet elbow.

Instructions (cont.)

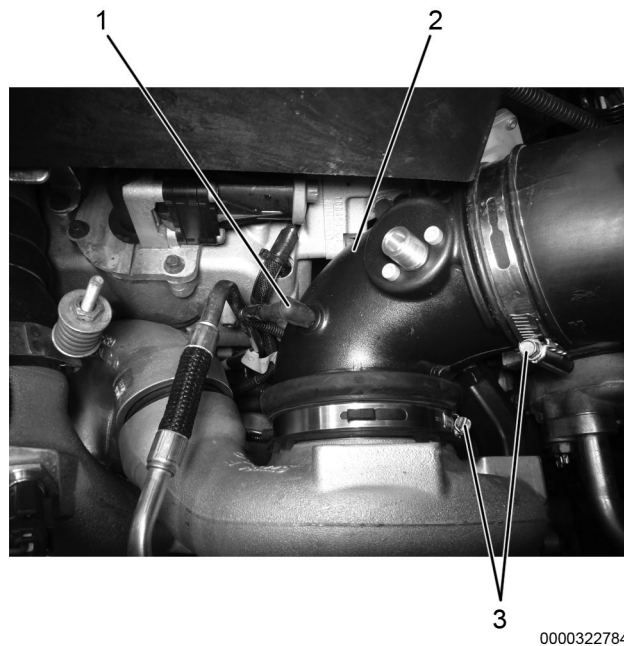
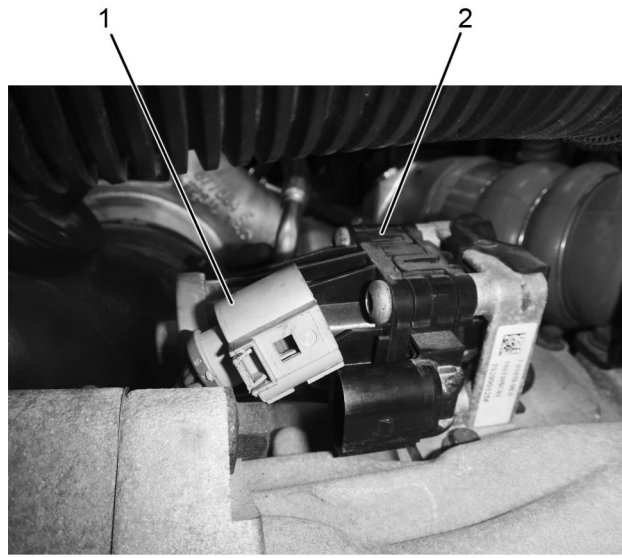


Figure 4. Kit Supplied Turbo Inlet Adapter.

1. Boost line
 2. 12-544-01-19 Turbo Inlet Adapter
 3. Clamp (2)
-
7. Install turbo inlet adapter (Figure 4, Item 2). Tighten clamps (Figure 4, Item 3) securely.
 8. Install boost line (Figure 4, Item 1) to turbo inlet adapter.

Instructions (cont.)



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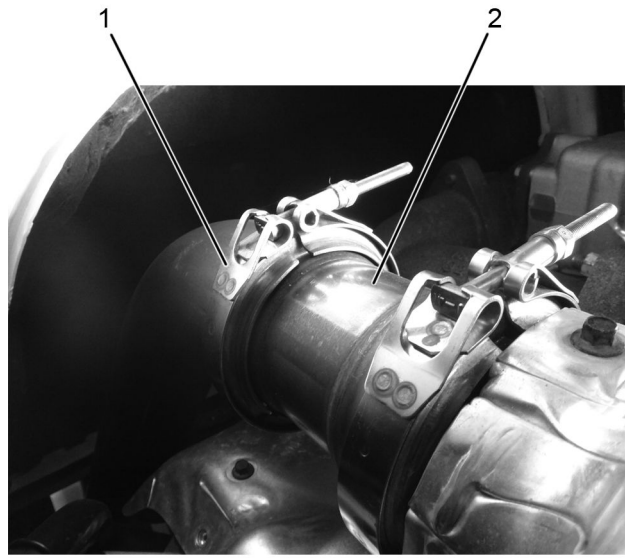
Figure 5. EGR Valve.

1. Connector
2. EGR valve

CAUTION: To prevent property damage, position Exhaust Gas Recirculation (EGR) valve connector away from EGR valve.

9. Disconnect connector (Figure 5, Item 1) from EGR valve (Figure 5, Item 2).

Instructions (cont.)



0000323042

Figure 6. Turbocharger Down Pipe.

1. Clamp
2. Turbocharger down pipe

10. Loosen clamp (Figure 6, Item 1) from turbocharger down pipe (Figure 6, Item 2).

Instructions (cont.)

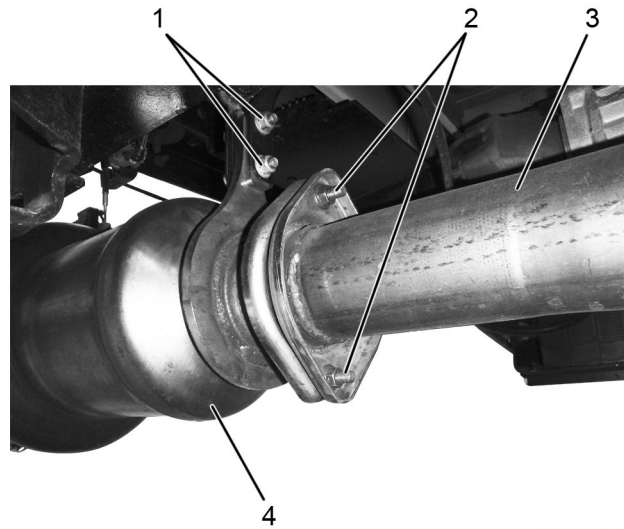


Figure 7. Diesel Oxidation Catalyst (DOC) Inlet Pipe.

1. Bolt / nut assembly (2)
 2. Nut (2)
 3. Turbocharger down pipe
 4. DOC inlet pipe
-
11. Remove two nuts (Figure 7, Item 2) securing turbocharger down pipe (Figure 7, Item 3) to DOC inlet (Figure 7, Item 4).
 12. Remove two bolt / nut assemblies (Figure 7, Item 1) from DOC hanger bracket.

Instructions (cont.)

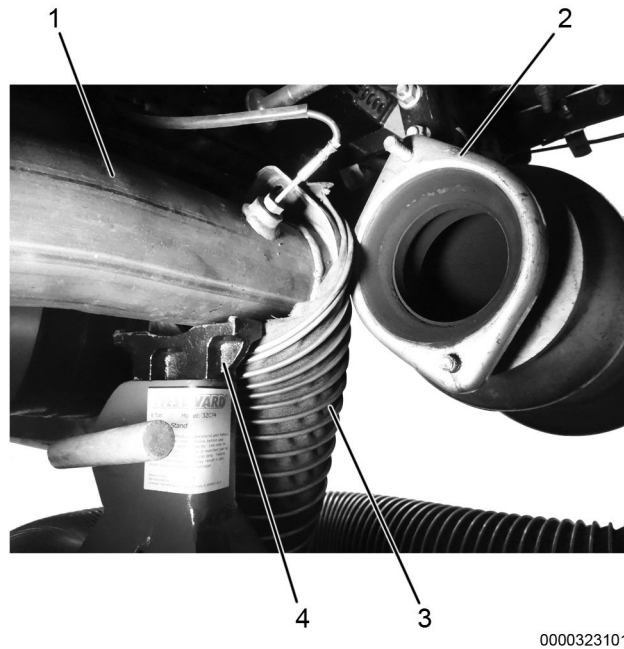


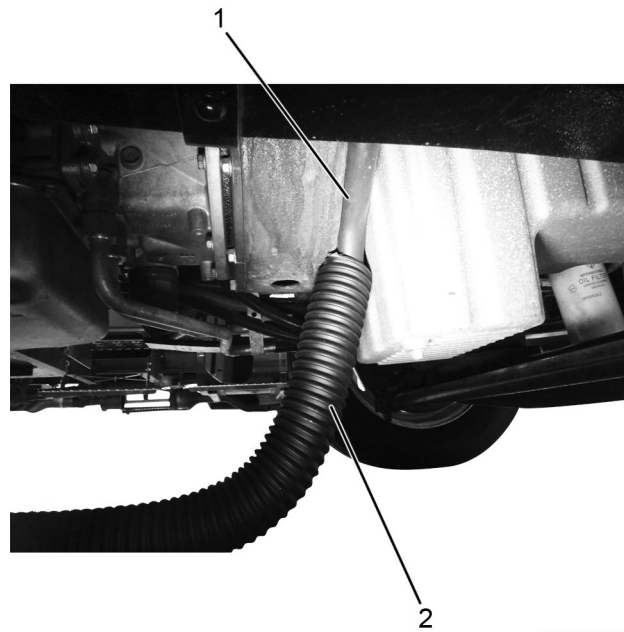
Figure 8. Repositioned Turbocharger Down Pipe.

1. Turbocharger down pipe
2. DOC
3. Turbocharger down pipe vent hose
4. Jack stand

CAUTION: To prevent property damage, redirect the exhaust flow to avoid entry into DOC.

13. Using a jack stand (Figure 8, Item 4), reposition turbocharger down pipe (Figure 8, Item 1) away from DOC (Figure 8, Item 2).
14. Install turbocharger down pipe vent hose (Figure 8, Item 3).
15. Using torque wrench, tighten turbocharger down pipe clamp (Figure 6, Item 1) to 124 -168 lb-in (14 - 19 N•m).

Instructions (cont.)



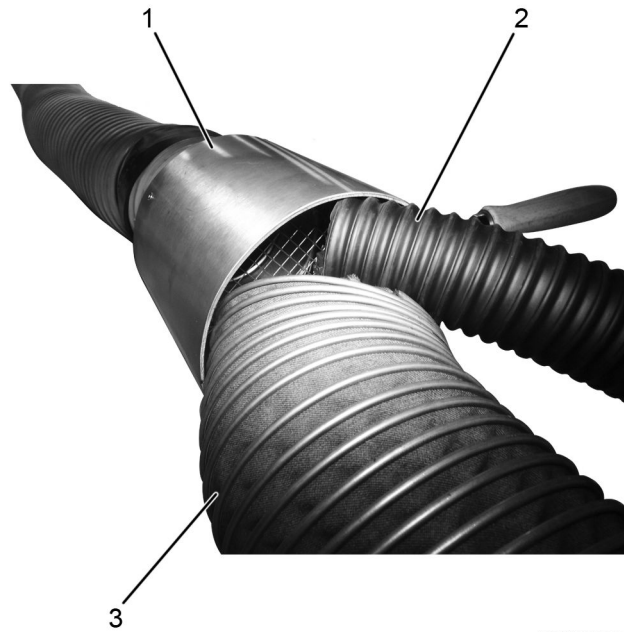
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Figure 9. Crankcase Breather Redirect Tube.

1. Crankcase breather tube
2. Breather redirect tube

16. Install breather redirect tube (Figure 9, Item 2) onto crankcase breather tube (Figure 9, Item 1).

Instructions (cont.)



0000323241

Figure 10. Exhaust Vent Hose.

1. Shop exhaust vent hose
2. Breather redirect tube
3. Turbocharger down pipe vent hose

⚠ WARNING: To prevent personal injury and / or death, install crankcase breather redirect tube and turbocharger down pipe vent hose into shop exhaust vent hose.

17. Connect breather redirect tube (Figure 10, Item 2) and turbocharger down pipe vent hose (Figure 10, Item 3) to shop exhaust vent hose (Figure 10, Item 1).

Instructions (cont.)

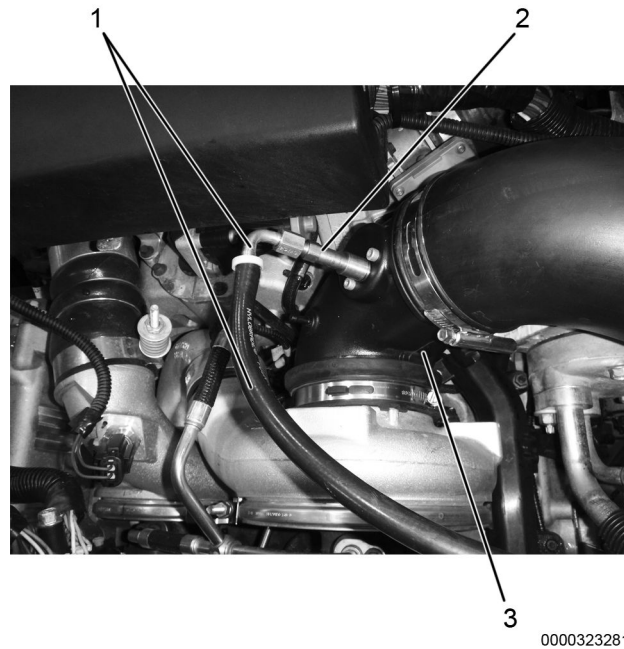


Figure 11. Injector Assembly.

1. Cleaning solution supply line
 2. Injector assembly
 3. Turbo inlet adapter
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18. Install injector assembly (Figure 11, Item 2) onto turbo inlet adapter (Figure 11, Item 3). Tighten injector assembly securely.
 19. Install cleaning solution supply line (Figure 11, Item 1) onto injector. Tighten supply line securely.
 20. Refer to appropriate service manual, service bulletin, or equivalent for detailed instruction.

Instructions (cont.)

Tool Removal

1. Disconnect breather redirect tube (Figure 10, Item 2) and turbocharger down pipe vent hose (Figure 10, Item 3) from shop exhaust vent hose (Figure 10, Item 1).
2. Remove breather redirect tube (Figure 9, Item 2) from crankcase breather tube (Figure 9, Item 1).
3. Remove cleaning solution supply line (Figure 11, Item 1) from injector.
4. Remove injector assembly (Figure 11, Item 2) from turbo inlet adapter (Figure 11, Item 3).
5. Loosen clamp (Figure 6, Item 1) from turbocharger down pipe (Figure 6, Item 2).

NOTE: If necessary, replace gaskets.





6. Position and install DOC inlet pipe (Figure 7) onto turbocharger outlet with gaskets, spacers, and bolts. Refer to appropriate service manual, service bulletin, or equivalent for detailed instruction.
7. Position and install hanger bracket to DOC inlet pipe (Figure 7). Refer to appropriate service manual, service bulletin, or equivalent for detailed instruction.
8. Using torque wrench, tighten turbocharger down pipe clamp (Figure 6, Item 1) to 124 - 168 lb-in (14 - 19 N•m).
9. Connect connector (Figure 5, Item 1) to EGR valve (Figure 5, Item 2).
10. Disconnect boost line (Figure 4, Item 1) from turbo inlet adapter (Figure 4, Item 2).
11. Loosen clamps (Figure 4, Item 3) and remove turbo inlet adapter.
12. Install inlet elbow (Figure 3, Item 2) to turbocharger and inlet duct. Tighten clamps (Figure 3, Item 3) securely.
13. Connect boost line (Figure 3, Item 1) to turbo inlet elbow.
14. If necessary, reposition engine layover harness cover (Figure 2, Item 2) and install bolts (Figure 2, Item 1). Refer to appropriate service manual, service bulletin, or equivalent for detailed instruction.
15. Close and latch hood.
16. Remove wheel chocks.

CAUTION: To prevent property damage, flush tank with clean water until no soap residue is evident. Failure to comply may result in a contaminated hose assembly, a restricted injector, and poor overall tool performance.

17. Rinse tank of all soap residue and refill with at least 1 liter of clean water. Seal and pressurize tank and spray clean water to flush hose and injector. Continue spraying for at least 30 seconds to 1 minute after water is exhausted to air-dry injector.

SERVICE REPLACEMENT PARTS

Table 2 SERVICE REPLACEMENT PARTS

Image	Replacement Part Number	Description
 <p>0000298022</p>	12-544-01-01	5 Gallon Stainless Pressure Tank
 <p>0000298023</p>	12-544-01-02	Gauge / Air Regulator Assembly
 <p>0000298021</p>	12-544-01-05	Cleaning Solution Supply Line
 <p>0000298024</p>	12-544-01-06	Air Shutoff Valve
 <p>0000298026</p>	12-544-01-07	Injector

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).