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## INSTALLATION INSTRUCTIONS

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Original Issue Date: **10/94**

Model: **125 kW (John Deere Powered)**

Market: **Standby**

Subject: **Emission Kit PA-336528, Best Available Control Technology (B.A.C.T.)**

This kit provides the necessary components to satisfy emission standards in certain localities requiring generator sets over 50 hp to be both aftercooled and turbocharged. This kit includes an aftercooler and necessary mounting hardware.

### NOTE

This kit is compatible with other installed accessories. No modification or changes are required to other installed accessories.



**Accidental starting.**  
**Can cause severe injury or death.**

Disconnect battery cables before working on generator set (negative lead first and reconnect it last).

**Accidental starting can cause severe injury or death.** Turn generator set master switch to OFF position, disconnect power to battery charger, and remove battery cables (remove negative lead first and reconnect it last) to disable generator set before working on any equipment connected to generator set. The generator set can be started by automatic transfer switch or remote start/stop switch unless these precautions are followed.

**Hot parts can cause severe injury or death.** Do not touch hot engine parts. An engine gets hot while running and exhaust system components get extremely hot.

### INSTALLATION

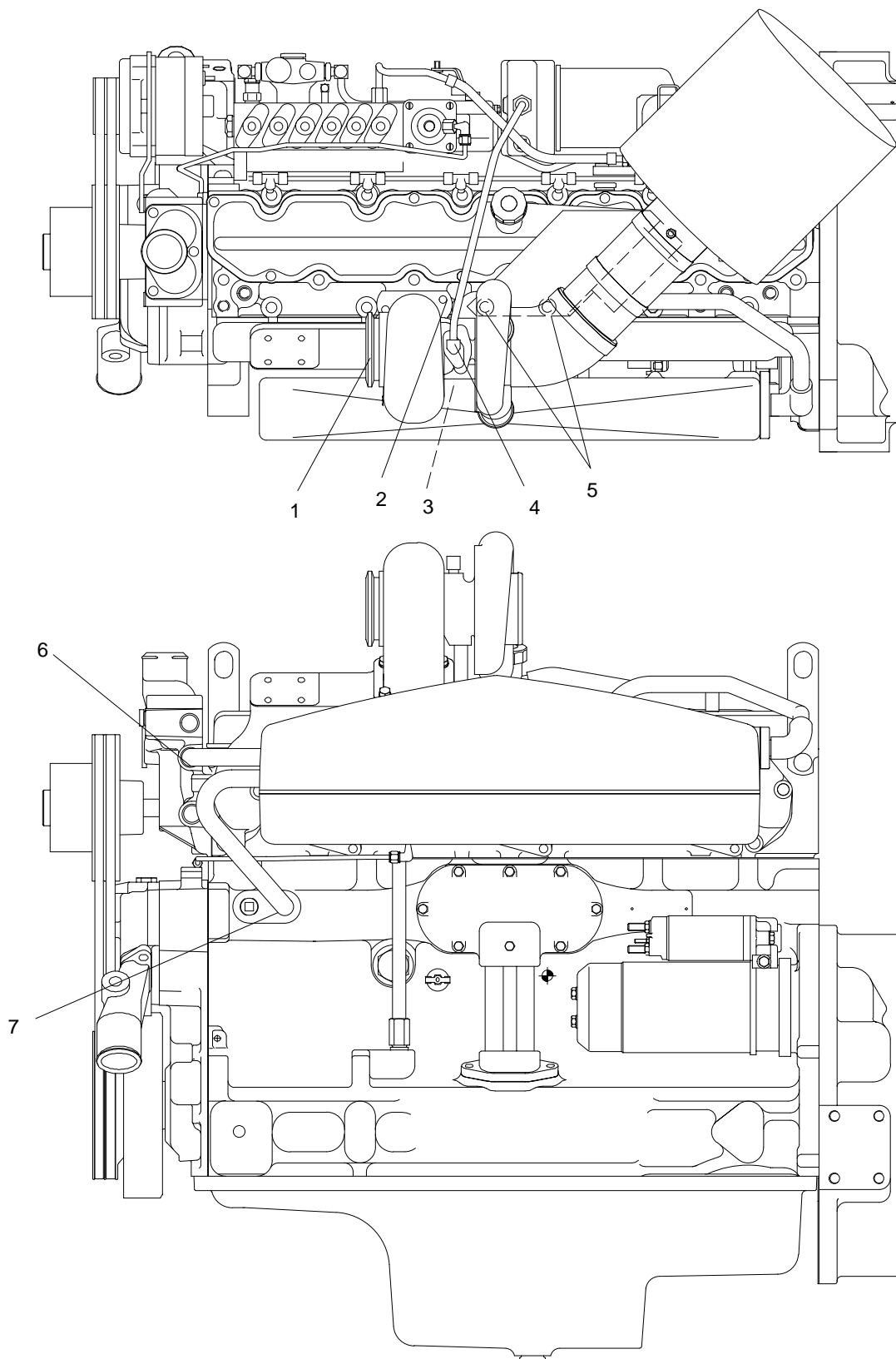
1. Place generator master switch in OFF position. Disconnect battery of generator set, negative lead first. Disconnect battery charger leads, if equipped.
2. Remove turbocharger assembly by removing clamp between turbocharger and exhaust elbow, two bolts and spacers between air cleaner bracket and engine, two turbocharger oil drain bolts, and four bolts attaching turbocharger to exhaust manifold. Remove gasket between turbocharger and exhaust manifold. Remove oil drain gasket. These gaskets will not be reused. Do not remove turbocharger oil supply line. See Figure 1.

Move turbocharger to a location which provides adequate working room.

3. Remove six intake manifold bolts, intake manifold, and gaskets. Intake manifold with coupling, original gaskets, and hardware will not be reused.
4. Apply pipe sealant to threads of 1/8 NPT pipe plug (item 19) and install in bottom of intake manifold (item 12). Apply pipe sealant to threads of 3/8 NPT pipe plug (item 18) and install in top of aftercooler cover (item 1). See Figure 2.
5. Insert two bolts (item 15) and flat washers (item 14) from the bottom into intake manifold center holes nearest to engine (location marked AA). These bolts must be installed in holes prior to mounting intake manifold. Use masking tape on threads if necessary to keep bolts and washers in place.

Install intake manifold (item 12), six bolts (item 17), flat washers (item 16), and new gaskets (item 13) to engine. Torque bolts to 28 ft. lbs. (38 Nm).

6. Place rubber gasket (item 7) over hose connections on aftercooler (item 6). Place gasket (item 5b) on intake manifold mounting surface and install aftercooler on intake manifold with hose connections toward radiator end. Be careful not to damage gasket.



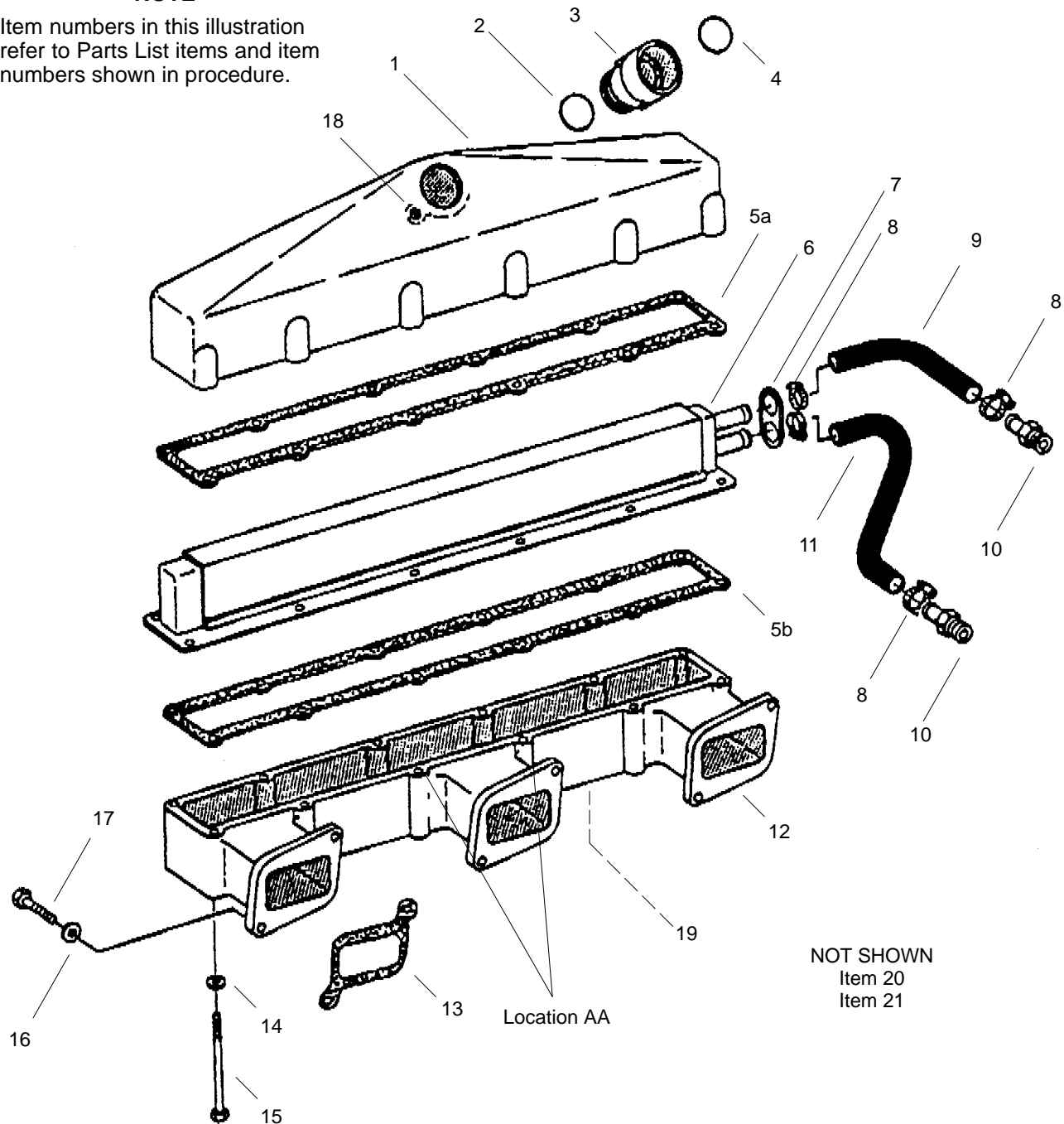
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1. Clamp location between turbocharger and exhaust elbow
2. Four bolts attaching turbocharger to exhaust manifold
3. Oil drain location (bottom of turbocharger)
4. Turbocharger oil supply line (do not disconnect during installation of kit)
5. Two bolts and spacers attaching air cleaner bracket to engine
6. Hose connection at thermostat housing location
7. Hose connection at engine block bottom location (second hole from engine pulleys)

**Figure 1. Turbocharger Components and Hose Connections on Engine Block**

# **NOTE**

Item numbers in this illustration refer to Parts List items and item numbers shown in procedure.



NOT SHOWN  
Item 20  
Item 21

RGP3792

**Figure 2. Installing B.A.C.T. Emission Kit**

7. Place gasket (item 5a) on aftercooler mounting surface. Install aftercooler cover (item 1) onto aftercooler starting at hose connection end. Be careful not to damage gaskets. Use bolts (item 15) and washers (item 14) to secure assembly.

The rubber gasket (item 7) used to seal aftercooler hose connections requires compression between aftercooler and aftercooler cover for bolt holes to align correctly. This may require applying some force to the aftercooler cover at the hose connection end to attain correct bolt hole alignment. If difficulty occurs aligning holes, start

first bolt on aftercooler cover at end opposite of hose connections. Lift aftercooler housing just enough to check alignment—about 1/4 in. (6 mm) to start first bolt. Install remaining bolts and washers (items 15 and 14). Tighten each bolt slightly and continue in a rotation to gradually tighten all bolts. This procedure allows the gaskets and mounting surfaces to seal evenly.

8. Remove pipe plug from engine block bottom location. See Figure 1. If two plugs are available, use the location farthest from the radiator. Pipe plug will not be reused.

9. Remove pipe plug from thermostat housing location. Pipe plug will not be reused.
10. Apply pipe sealant to hose connectors (item 10) and install in each location. See Figure 1.
11. Slide two hose clamps (item 8) over each end of hose (item 11) and attach hose to lower aftercooler connector and hose connection on engine block bottom location. Locate a hose clamp 1/4 in. (6 mm) from end of hose and tighten. See Figure 2.
12. Slide two hose clamps (item 8) over each end of hose (item 9) and attach to upper aftercooler connector and hose connection on engine thermostat housing location. Locate a hose clamp 1/4 in. (6 mm) from end of hose and tighten.
13. Install new o-ring (item 4) on turbocharger outlet. Lubricate o-ring with lubriplate or equivalent.
14. Install new o-ring (item 2) on coupling (item 3). Lubricate o-ring with lubriplate or equivalent.
15. Install new coupling with o-ring (items 2 and 3) to turbocharger outlet.
16. Install new gasket (item 21). Install turbocharger assembly to exhaust manifold and intake manifold by aligning coupling with intake manifold and securing with bolts.
17. Install new turbocharger oil drain gasket (item 20) to turbocharger and attach oil drain tube using two bolts.
18. Secure air cleaner bracket to engine using two bolts and spacers. Reinstall clamp between turbocharger and exhaust elbow.
19. Reconnect battery, negative lead last.

Parts List			
KITS PA-336528			
Item	Qty.	Description	Part No.
1	1	Cover, Aftercooler	223903
2	1	O-ring, Coupling To Intake Manifold	223780
3	1	Coupling	223883
4	1	O-ring, Coupling to Turbo	223885
5a	1	Gasket, Aftercooler to Aftercooler to Cover	223893
5b	1	Gasket, Aftercooler to Intake Manifold	223893
6	1	Aftercooler	223967
7	1	Seal, Rubber	223736
8	4	Clamp, Hose	336516
9	1	Hose, Upper	223894
10	2	Connector, Hose	223733
11	1	Hose, Lower	223909
12	1	Manifold, Intake	223904
13	3	Gasket, Intake Manifold	223888
14	12	Washer, 11/32 x 11/16 x 0.065 in.	336522
15	12	Screw, 5/16-18 x 3 3/4 in.	336523
16	6	Washer, 3/8 in. Lock	336526
17	6	Screw, 3/8-16 x 1 1/2 in.	336527
18	1	Plug, 3/8 NPT pipe	X-75-10
19	1	Plug, 1/8 NPT pipe	X-75-1
20	1	Gasket, Oil Drain	223757
21	1	Gasket, Turbocharger	223898