

## DESCRIPTION AND OPERATION

### Transmission Cooling

#### Automatic Transmission — Early Build

The automatic transmission fluid cooling system consists of the following:

- Rear transmission fluid cooler tube, rear of transmission to remote filter
- Rear transmission fluid cooler tube, front of transmission to remote filter
- Remote filter under bellhousing
- Quick connect secondary latches
- Remote transmission filter bracket (model dependent)
- Middle transmission fluid cooler tube assembly, remote filter quick connects
- Front transmission fluid cooler tube assembly
- In-tank transmission fluid cooler
- Auxiliary Oil-To-Air (OTA) transmission fluid cooler
- Hose clamps

The transmission fluid flows from the front transmission fluid fitting on the transmission to the remote filter, to the in-tank transmission fluid cooler, to the OTA transmission fluid cooler, back to the remote filter and returns to the rear transmission fluid fitting on the transmission.

#### Automatic Transmission — Late Build

The automatic transmission fluid cooling system consists of the following:

- Rear transmission fluid cooler tube, rear of transmission to quick connect
- Rear transmission fluid cooler tube, front of transmission to quick connect
- Quick connect secondary latches
- Front transmission fluid cooler tube assembly
- In-tank transmission fluid cooler
- Auxiliary OTA transmission fluid cooler
- Hose clamps

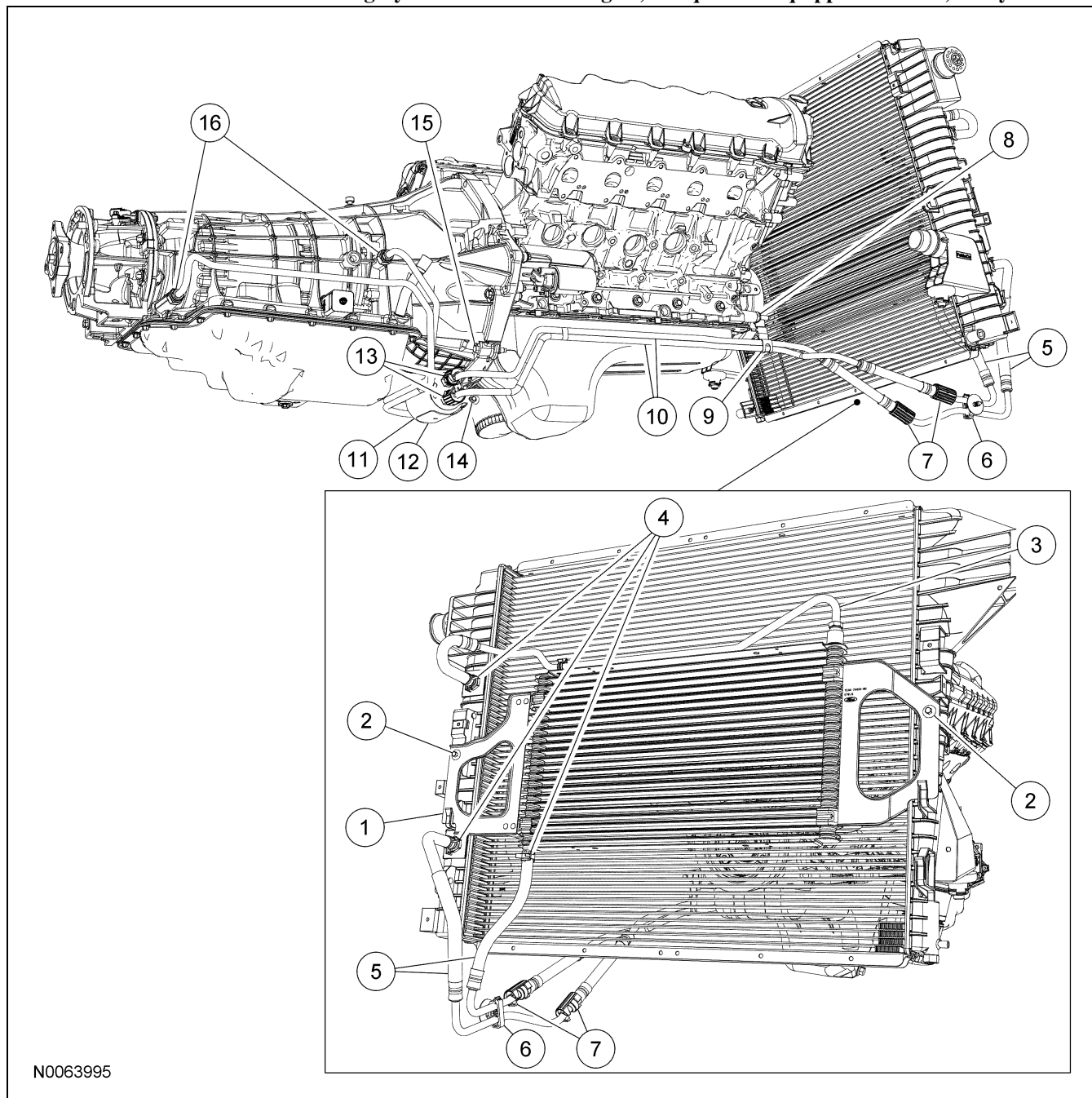
The transmission fluid flows from the front transmission fluid fitting on the transmission, through the rear transmission fluid cooler tube assembly, through the front transmission fluid cooler tube assembly, to the in-tank transmission fluid cooler, to the OTA transmission fluid cooler and returns to the rear transmission fluid fitting on the transmission.

**NOTICE: Do not attempt to backflush and clean the Oil-To-Air (OTA) transmission fluid cooler. Install a new OTA transmission fluid cooler as part of a transmission overhaul or exchange. Failure to follow these directions may result in transmission damage.**

For transmission fluid cooler flow testing and backflushing and cleaning procedures, refer to Section 307-01.

**DESCRIPTION AND OPERATION (Continued)**

Automatic Transmission Fluid Cooling System — Gasoline Engine, TorqShift® Equipped Vehicles, Early Build



N0063995

Item	Part Number	Description
1	7H189	Oil-To-Air (OTA) transmission fluid cooler assembly
2	N808441	OTA transmission fluid cooler bolts
3	7C410	Fluid cooler tube (part of 7H189)
4	—	Hose clamps
5	7H420	Front fluid cooler tube assembly

(Continued)

Item	Part Number	Description
6	—	Front fluid cooler tube assembly-to-frame retainer (part of 7H420)
7	7J081	Secondary latches
8	—	Fluid cooler tube bracket nut
9	—	Fluid cooler tube bracket (part of 7H420)
10	7H420	Middle fluid cooler tube assembly

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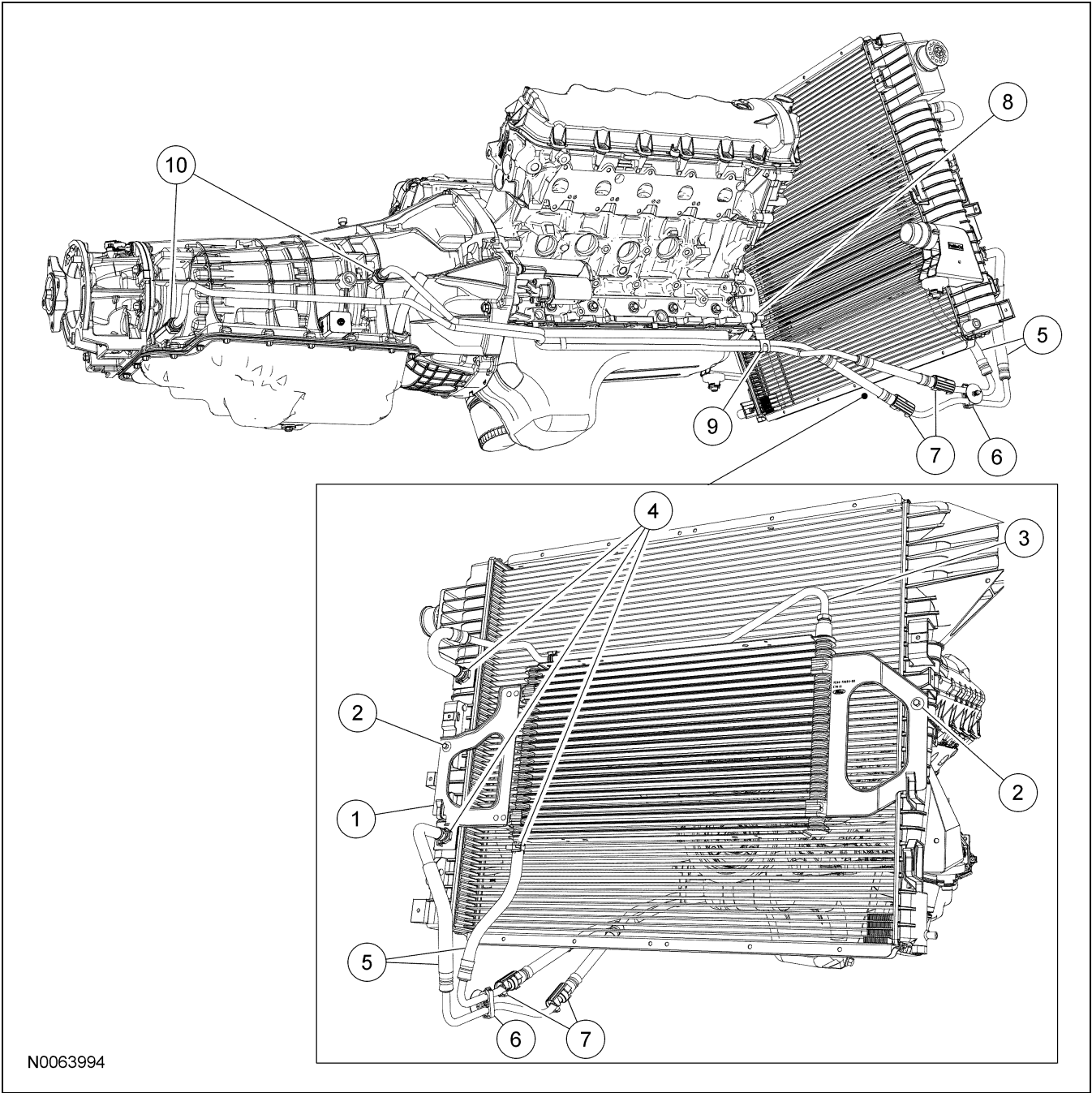
DESCRIPTION AND OPERATION (Continued)

Item	Part Number	Description
11	7B155	Remote mount filter
12	7N291	Remote mount filter bracket
13	7J081	Secondary latches
14	W712583	Remote mount filter-to-bracket bolt

Item	Part Number	Description
15	W707410	Remote mount filter bracket bolt (2 required)
16	7H420	Rear fluid cooler tube assembly

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Automatic Transmission Fluid Cooling System — Gasoline Engine, TorqShift® Equipped Vehicles, Late Build

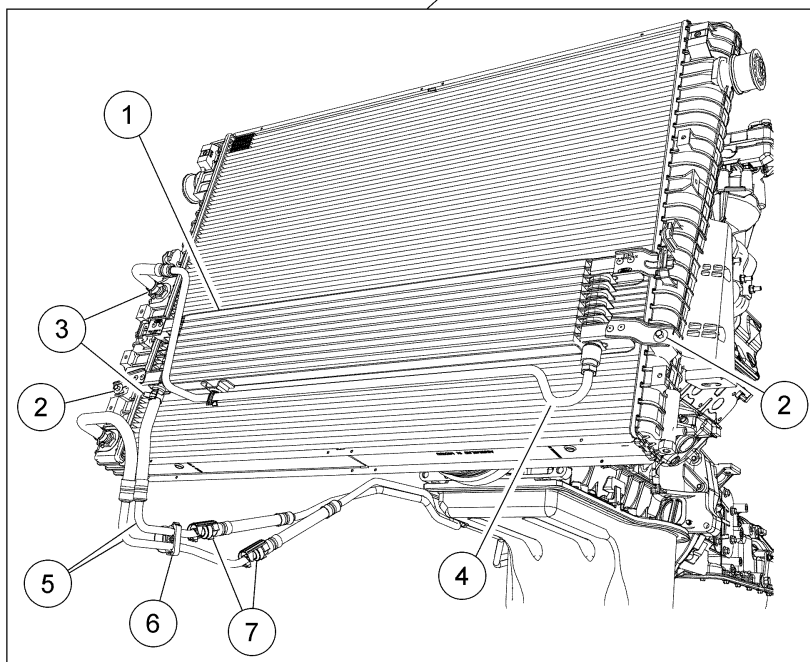
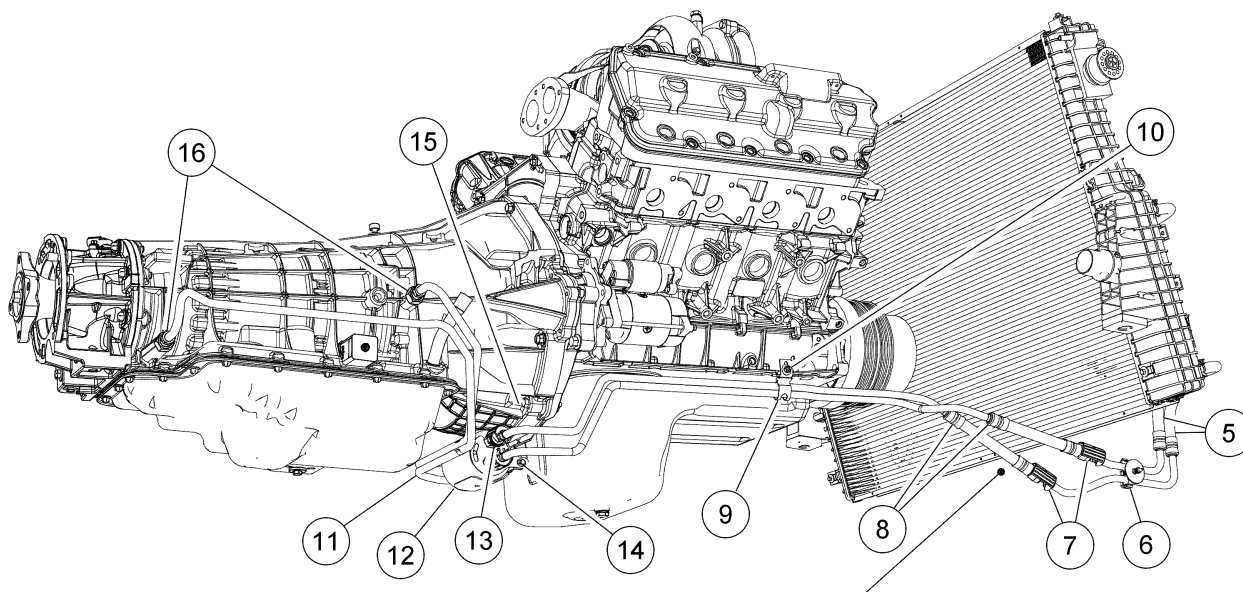


**DESCRIPTION AND OPERATION (Continued)**

Item	Part Number	Description
1	7H189	Oil-To-Air (OTA) transmission fluid cooler assembly
2	N808441	OTA transmission fluid cooler bolts
3	7C410	Transmission fluid cooler tube (part of 7H189)
4	—	Hose clamps
5	7H420	Front transmission fluid cooler tube assembly

Item	Part Number	Description
6	—	Front transmission fluid cooler tube assembly-to-frame retainer (part of 7H420)
7	7J081	Secondary latches
8	—	Transmission fluid cooler tube bracket nut
9	—	Transmission fluid cooler tube bracket (part of 7H420)
10	7H420	Rear transmission fluid cooler tube assembly

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**Automatic Transmission Fluid Cooling System — Diesel Engine, TorqShift® Equipped Vehicles, Early Build**

N0064067

**DESCRIPTION AND OPERATION (Continued)**

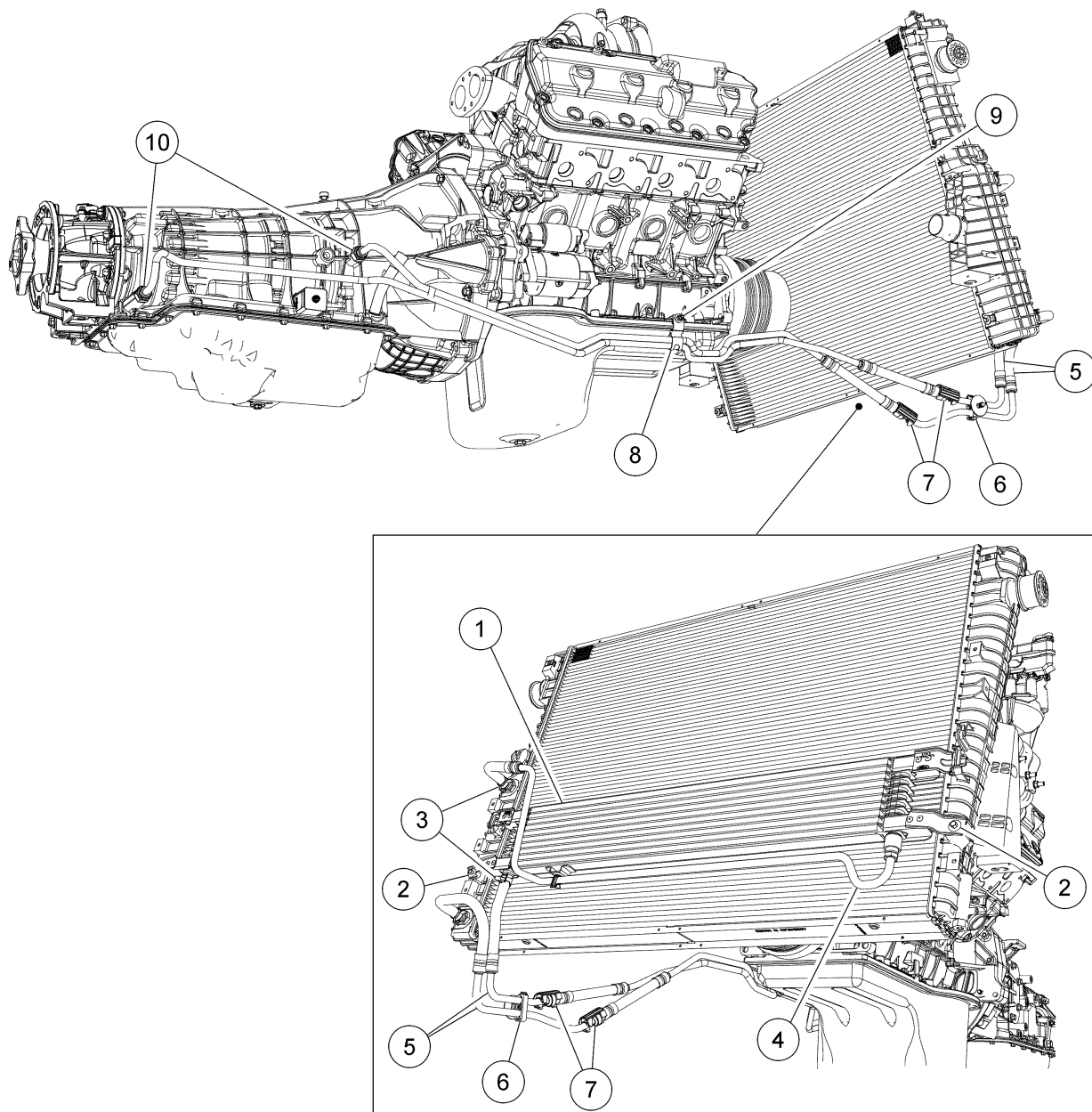
Item	Part Number	Description
1	7H189	Oil-To-Air (OTA) transmission fluid cooler assembly
2	N808441	OTA transmission fluid cooler bolts
3	—	Hose clamps
4	7C410	Fluid cooler tube (part of 7H189)
5	7H420	Front fluid cooler tube assembly
6	—	Front cooler tube assembly-to-frame retainer (part of 7H420)
7	7J081	Secondary latches
8	7H420	Middle fluid cooler tube assembly

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Item	Part Number	Description
9	—	Fluid cooler tube bracket (part of 7H420)
10	N811309	Fluid cooler tube bracket nut
11	7B155	Remote mount filter
12	7N291	Remote mount filter bracket
13	7J081	Secondary latches
14	W712583	Remote mount filter-to-bracket bolt
15	W707410	Remote mount filter bracket bolt (2 required)
16	7H420	Rear fluid cooler tube assembly

**DESCRIPTION AND OPERATION (Continued)**

Automatic Transmission Fluid Cooling System — Diesel Engine, TorqShift® Equipped Vehicles, Late Build



N0064068

Item	Part Number	Description
1	7H189	Oil-To-Air (OTA) transmission fluid cooler assembly
2	N808441	OTA transmission fluid cooler bolts
3	—	Hose clamps
4	7C410	Transmission fluid cooler tube (part of 7H189)
5	7H420	Front transmission cooler tube assembly

Item	Part Number	Description
6	—	Front transmission cooler tube assembly-to-frame retainer (part of 7H420)
7	7J081	Secondary latches
8	—	Transmission fluid cooler tube bracket (part of 7H420)
9	N811309	Transmission fluid cooler tube bracket nut
10	7H420	Rear transmission fluid cooler tube assembly

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**DESCRIPTION AND OPERATION (Continued)****Manual Transmission**

The manual transmission fluid cooling system consists of the following:

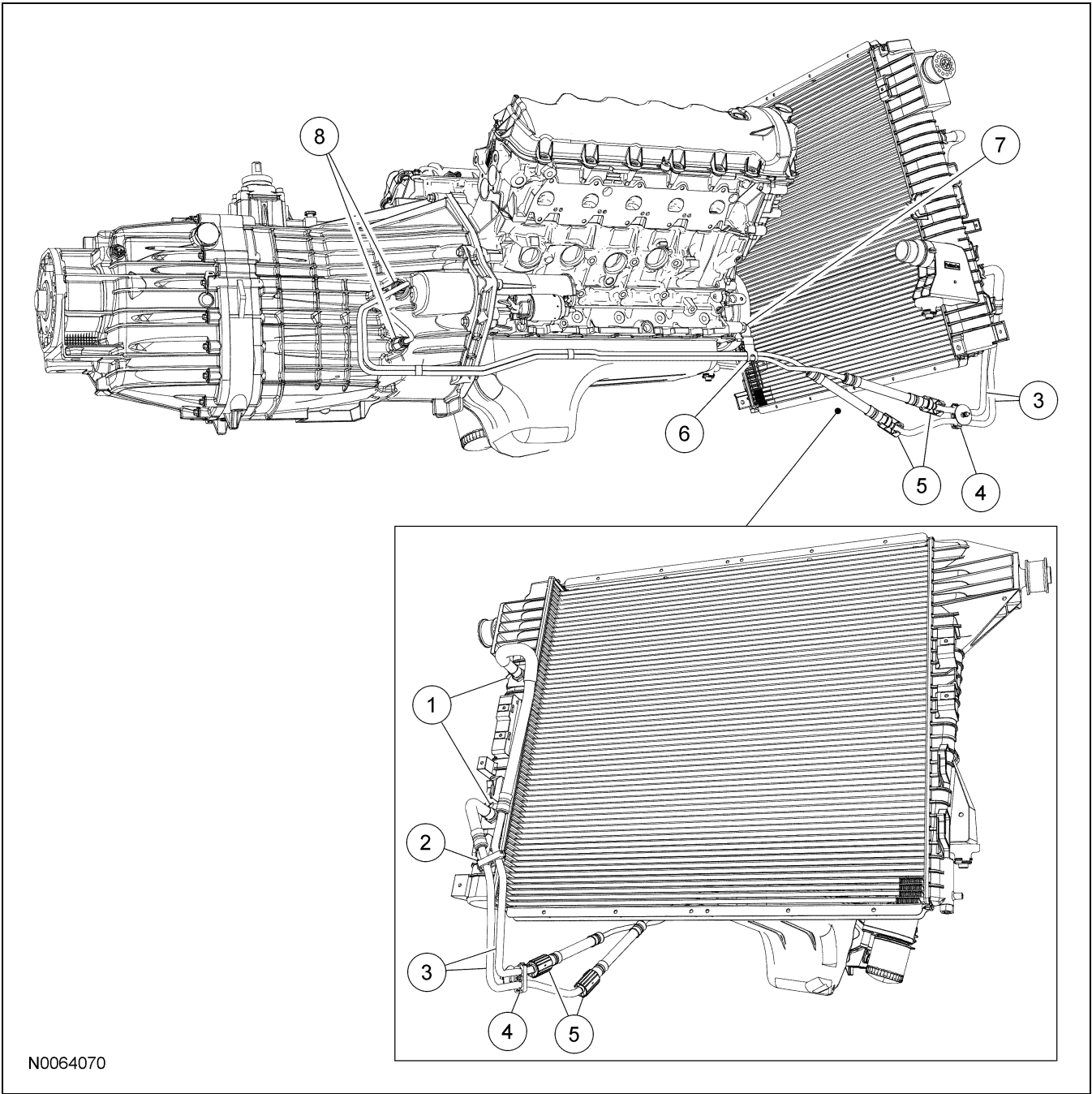
- Rear transmission fluid cooler tube assembly, transmission to quick connect
- Quick connect secondary latches
- Front transmission fluid cooler tube assembly, quick connect to in-tank transmission fluid cooler
- Non-repairable in-tank transmission fluid cooler

The transmission fluid flows from the transmission bottom fitting, through the rear transmission fluid cooler tube assembly, through the front transmission fluid cooler tube assembly, to the in-tank transmission fluid cooler and returns to the transmission through the top fitting.

For transmission fluid cooler flow testing, refer to Transmission Fluid Cooler Flow Test — Manual Transmission in this section. For transmission fluid cooler backflushing and cleaning, refer to Transmission Fluid Cooler Backflushing and Cleaning — Manual Transmission in this section.

DESCRIPTION AND OPERATION (Continued)

Manual Transmission Fluid Cooling System — Gasoline Engine Vehicles



N0064070

Item	Part Number	Description
1	—	Hose clamps
2	—	Front transmission fluid cooler tube assembly retainer (part of 7H420)
3	7H420	Front transmission fluid cooler tube assembly
4	—	Front transmission fluid cooler tube assembly-to-frame retainer (part of 7H420)

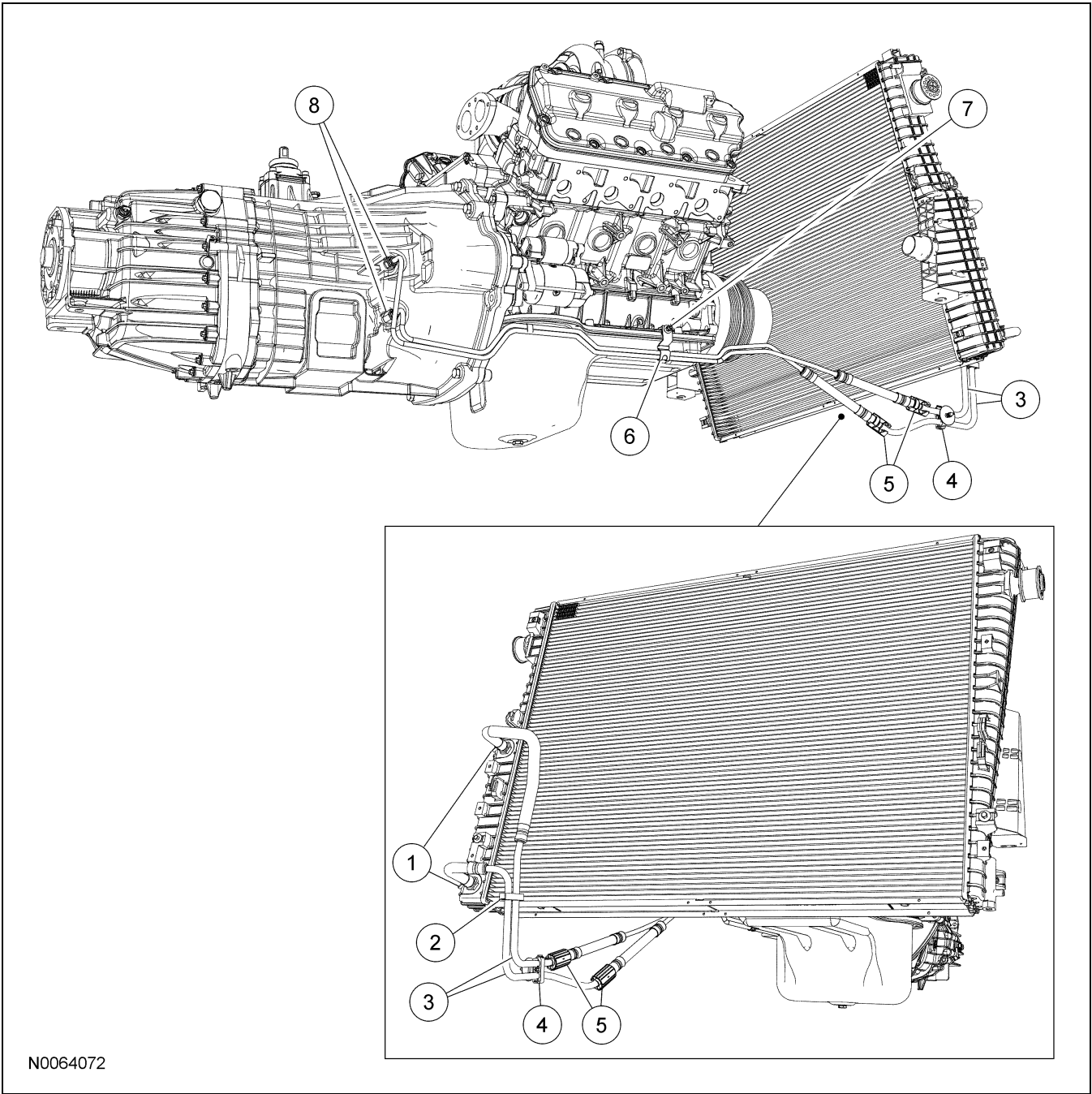
Item	Part Number	Description
5	7J081	Secondary latches
6	—	Transmission fluid cooler tube bracket (part of 7H420)
7	—	Transmission fluid cooler tube bracket nut
8	7H420	Rear transmission fluid cooler tube assembly

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DESCRIPTION AND OPERATION (Continued)

Manual Transmission Fluid Cooling System — Diesel Engine Vehicles



N0064072

Item	Part Number	Description
1	—	Hose clamps
2	—	Front transmission fluid cooler tube assembly retainer (part of 7H420)
3	7H420	Front transmission fluid cooler tube assembly
4	—	Front transmission fluid cooler tube assembly-to-frame retainer (part of 7H420)

(Continued)

Item	Part Number	Description
5	7J081	Secondary latches
6	—	Transmission fluid cooler tube bracket (part of 7H420)
7	N811309	Transmission fluid cooler tube bracket nut

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**DESCRIPTION AND OPERATION (Continued)**

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Item	Part Number	Description
8	7H420	Rear transmission fluid cooler tube assembly

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