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Coding Information

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Title: Installing and Servicing the Rear Sump Stainless Steel Oil Pan on N13 Engines

Applies To: N13 Engines

CHANGE LOG

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

09/22/2017 - Updated Part Number for Pan Hardware Kit
 03/27/2017 - Initial Article Release

DESCRIPTION

This document will guide the user through the installation of the Stainless Steel REAR sump oil pan used on the N13 engine.

CAUTION:

If the Stainless Steel oil pan has already been previously installed, **PLEASE NOTE** that there are two versions of the Stainless Steel oil pan that may be present. Each pan has very different installation instructions that need to be followed depending on what you have. Please see below for identification.

STAINLESS STEEL OIL PAN VERSION IDENTIFICATION

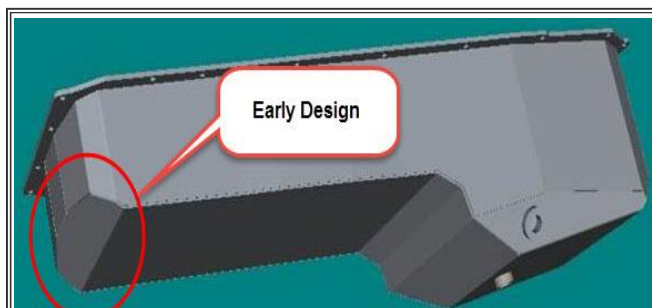


Figure #1: Early Design Pan

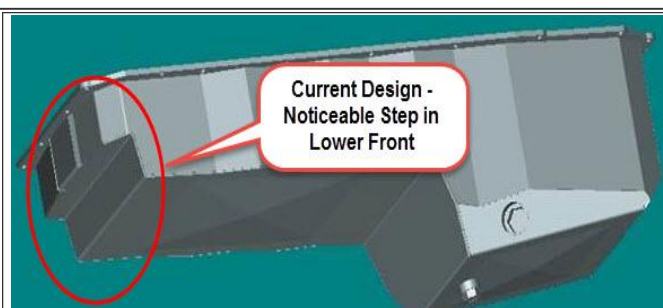


Figure #2: Current Design Pan

If you are servicing this pan, please follow the installation instructions in [IK1201352](#).
DO NOT continue through this article.

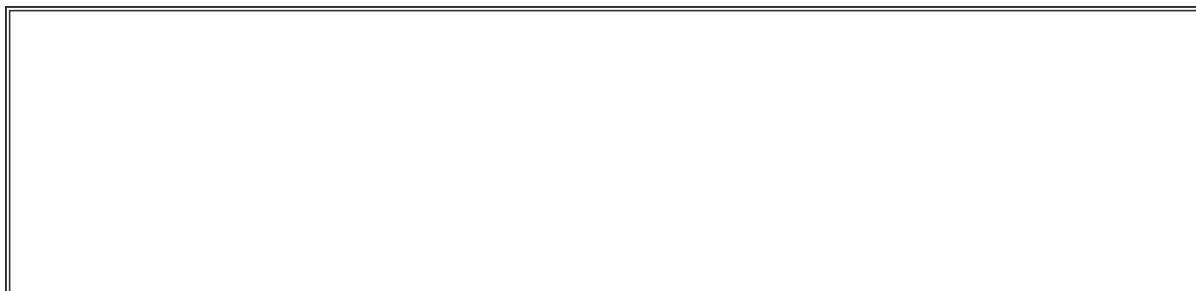
If you are installing or servicing the pan shown above, please continue through the steps below.

SERVICE PARTS INFORMATION

Description	Part Number	Quantity	Notes
Kit, Stainless Steel Oil Pan Installation	2517660C91	1	Includes Stainless Mounting Hardware and Gasket - Used For a New Installation.
N13 Stainless Steel Rear Sump Oil Pan	7099563C91	1	Replaces the Navistar 3005821C91 Rear Sump Oil Pan.
Stainless Steel Oil Pan Gasket*	7099256C1	1	
Bolt, M8 X 20mm Stainless Steel*	7099168C1	16	
Bolt, M8 X 40mm Stainless Steel*	7099566C1	6	
Spacer*	7099567C1	6	
L Bracket, Tube Cooling*	3018577C2	5	
Extension Clip with Stud*	3814208C2	1	
Stainless Oil Pan Drain Plug (7/8-14)	7098599C1	1	Included with the oil pan
Stainless Heater Port Plug (M27x2)	7099565C1	1	Included with the oil pan

Items with an asterisk (*) are included in the kit.

OIL PAN MOUNTING HARDWARE LOCATION IDENTIFICATION



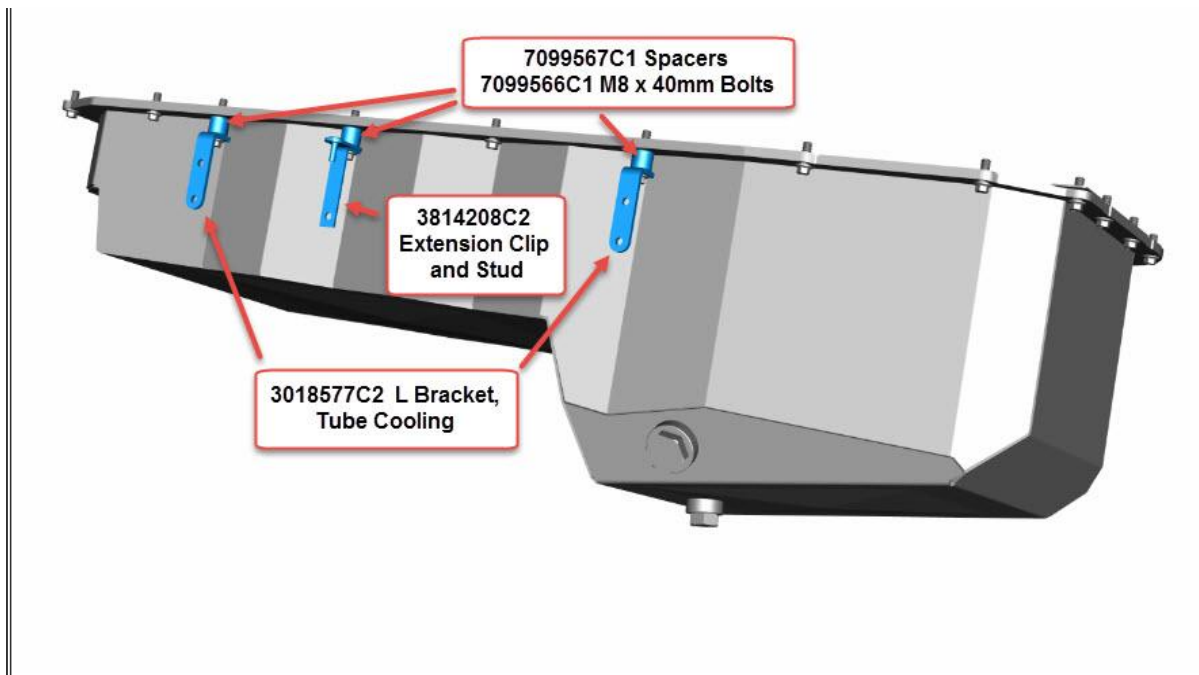


Figure #3: Stainless Rear Sump Pan - Left Side View

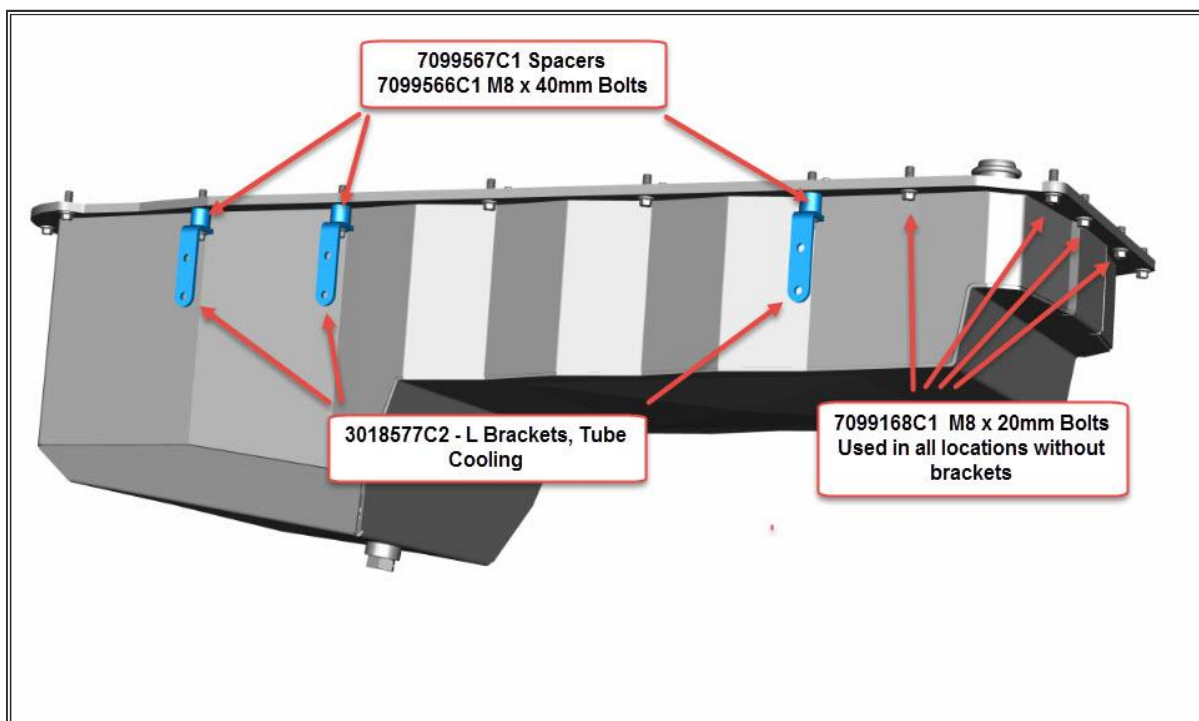


Figure #4: Stainless Rear Sump Pan - Right Side View

REPAIR STEP(s)

WARNING! To prevent property damage, personal injury, and / or death, park vehicle on a 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 property damage, personal injury, and / or death, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

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

WARNING! To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

1. Bring vehicle into shop and park on a flat surface
2. Shift transmission into park or neutral, set parking brake, and install wheel chocks.

 WARNING:	To prevent personal injury or death, make sure the engine has cooled before draining the oil and removing components.
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REMOVAL PROCEDURE:

3. Drain the engine oil into a suitable container, and remove the oil pan per the standard procedure outlined in the [Service Manual](#).

NOTE: The original bolts and clamps will NOT be used for installation of the new pan.

4. Clean the oil pan mating surface on the cylinder block making sure it is dry and free of any debris.
5. Clean the new oil pan mating surface (Figure #5) making sure it is also dry and free of debris.



Figure #5: Stainless Rear Sump Oil Pan

INSTALLATION PROCEDURE:

6. Place the new gasket (Figure #6) on the oil pan, and install the oil pan to the block. NOTE: The gasket is intended to be used dry, sealant is not required.

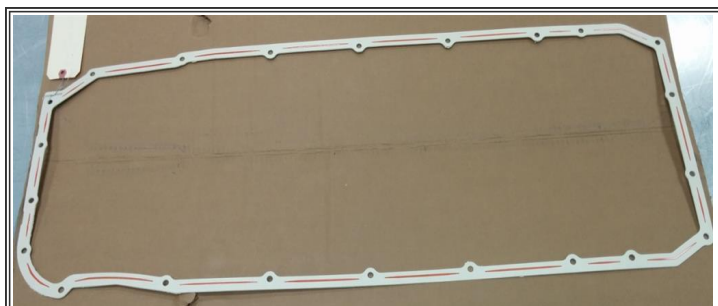


Figure #6: Stainless Oil Pan Gasket

7. If clearance allows, it may help to use a couple long M8 guide studs to aid in guiding the pan against the block without damaging the gasket. Install the four corner bolts by hand to hold the pan in place while starting the other bolts.

8. Using the new stainless bolts (Figure #7), begin threading the new bolts in by hand. **PLEASE NOTE: The new oil pan bolts are one time use only.**



Figure #7: New Stainless Pan Bolts

NOTE: When tightening the mounting bolts, resistance may occur when threads are engaged in the thread lock section of the bolt. Continue to tighten until the bolt heads are flush with the oil pan flange.

9. Certain locations will require a spacer be used between the L bracket hangers and the oil pan flange.

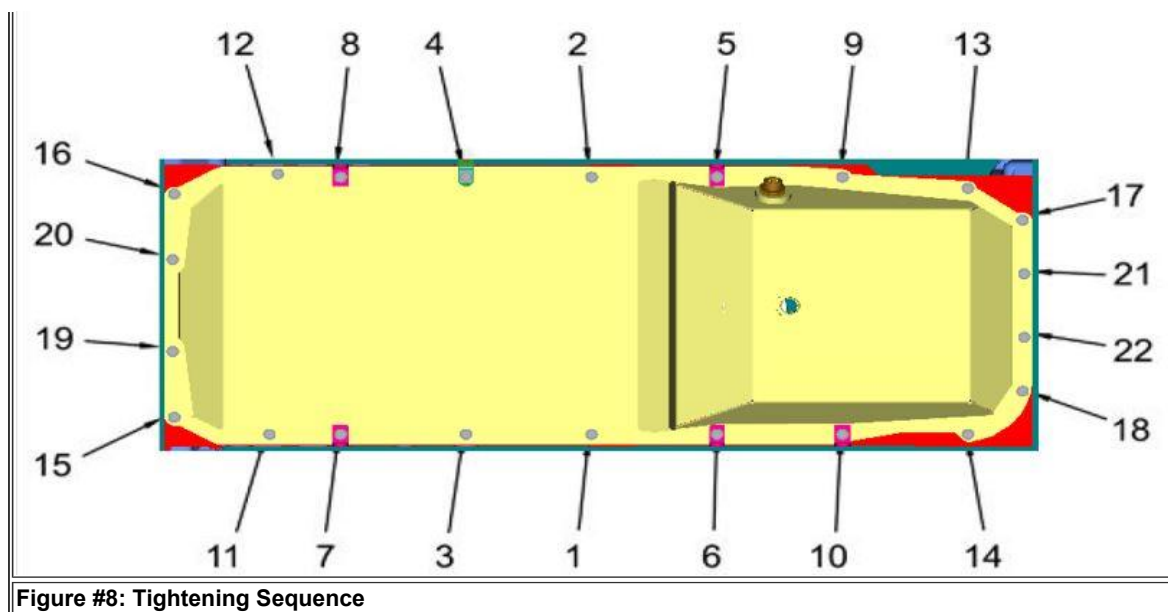
10. Install the spacers at locations 5,6,7,8, and 10 (See Figure #8).

11. Location 4 only, will get the L bracket, spacer, and stud (3814208C2).

12. Using a 1/4" torque wrench, apply an initial torque in sequence (Figure #8) of 10 Nm (7 ft-lbs).

13. Apply a second torque in sequence (Figure #8) of 22 Nm (16 ft-lbs).

14. Apply the final torque in sequence (Figure #8) once more to 22 Nm (16 ft-lbs).



15. On a new oil pan installation the oil drain plug (Figure #9 Item 1), and heater port plug (Figure #9 item 2), will already be installed in the pan.

16. For installation of a NEW plug, apply a light amount of Loctite LB 771 Nickel Anti-Seize to the threads of the plug. Install the plug (Figure #9) and tighten each one by hand to the specifications below.

17. For installation of the plugs (Figure #9) during routine maintenance and the plug is being reused, apply a light coat of oil on the threads and tighten by hand to the specifications below.

- Oil Drain Plug - 64 Nm (47 ft-lbs.).
- Heater Port Plug - 68 Nm (50 ft-lbs.).



Figure #9: Oil Pan Plugs

Item 1: Oil Drain Port Plug

Item 2: Oil Pan Heater Port Plug

NOTE:

The oil drain and heater port plugs are NOT the same thread size. To prevent galling of the threads, use hand tools only to tighten the plugs.

18. If equipped with an optional oil pan heater (3526823C1), install the heater using the guidelines below:

- New heater Installation - Lubricate the threads with a light coat of Loctite LB 771 Nickel Anti-Seize.
- Reusing an existing heater - Lubricate the threads with a light coat of oil.
- Thread the heater into the port, and torque to 75 +/- 7 Nm (55 +/- 5.5 ft-lbs.).

19. Fill the crankcase to the full mark on the dipstick using the recommended oil per the Operation and Maintenance Manual.

20. Run the engine and check for any leaks.

REMOVAL OF THE STAINLESS OIL PAN:

If the oil pan needs to be removed, it is recommended to run a M8x1.25 tap carefully **BY HAND** in the 22 holes in the bottom of the block to remove any residual Loctite from the threads. This will insure proper bolt torque during assembly.

Warranty Claim Coding:

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

Standard Repair Time(s):

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

OTHER RESOURCES

[Master Service Information Site](#)

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