



VIN: 1XPBDP9X3KD632958

Vehicle type: MX_EPA17-MX-13 USA

P 1413 441399 001 000

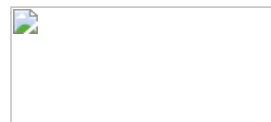
replace steering pump (Steering pump)



The job step warnings are numbered, referring to the concerning warning information at the end of the document.



The second time an "instruction" or "technical data" topic ID is linked, the icon refers to the job step where the topic is shown.



replace steering pump (Steering pump)

1 replace steering pump (Steering pump)

1.1 remove steering pump (Steering pump)

1.1.1 disconnect battery clamp, negative pole



1.1.2 drain fuel filtration module (Fuel system)

Draining fuel filtration module



1. Open the filler screw cap of the fuel tank to prevent overpressure in the fuel system.
2. Thoroughly clean the fuel filter screw cap and the area.



Prevent dirt from entering the fuel system.

3. Unscrew the fuel filter cap a few turns until the O-ring is fully visible and wait until the filtration module is fully drained.



Use only a socket or box wrench.

Do not further unscrew the fuel filter cap until the module is drained.

4. Remove the fuel filter screw cap with fuel filter element from the filtration module.
5. Remove the O-ring and clean the recess of the fuel filter screw cap.
6. Lubricate the recess and install a new O-ring on the fuel filter screw cap.



- The fuel filter element may be blackened. Darkening of diesel fuel and fuel system components can occur due to the mixing of lubricating oil and/or due to running at high fuel pressures and temperatures. The effect can be that fuel in the fuel tank is darkened and fuel filters appear to be blackened. This does not indicate a defect and is a function of normal operation.

- Lubricate the new O-ring with clean engine oil.

7. Install and tighten the fuel filter screw cap to the specified torque.



Make sure that the filtration module is **drained** before installing the filter element.

8. Close the filler screw cap of the fuel tank.



Always bleed the fuel system after draining the fuel filtration module.

M058970 - 08/05/2017

Tightening torque, fuel filter screw cap

Screw cap

40 Nm [354 lb-in]⁽¹⁾⁽²⁾

- (1) Only use a hexagonal socket or hexagonal ring wrench.
- (2) Always use a new O-ring.

Lubricant:

Sealing ring fuel filter element	clean diesel fuel
O-ring fuel filter screw cap	clean engine oil

M030405 - 22/10/2019

1.1.3 get oil bin

1.1.4 disconnect crankcase pressure sensor (Sensors el.syst.eng.)

1.1.5 loosen fuel lift pump (Steering pump)

Loosening fuel lift pump



- 1. Clean the tandem pump (2 & 4) and the surrounding area.
- 2. Remove the attachment bolts (1) from the fuel lift pump (2).

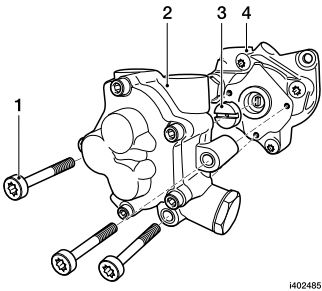


Collect the leaking fuel.

- 3. Loosen the fuel lift pump (2).



The driver disc (3) between the steering pump (4) and the fuel lift pump (2) is loose inside the housing.



i402485



M037013 - 04/07/2013

1.1.6 remove steering pump (Steering pump)



1.2 install steering pump (Steering pump)

1.2.1 install steering pump (Steering pump)

Tightening torque, steering pump

Steering pump attachment bolts

60 Nm [531 lb-in]

M028476 - 14/01/2013

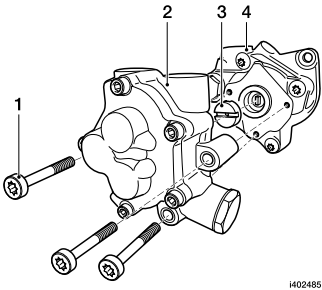
1.2.2 fix fuel lift pump (Steering pump)

Fixing fuel lift pump

- 1. Position the driver disc (3) between the steering pump (4) and the fuel lift pump (2).
- 2. Install the fuel lift pump (2) with a new O-ring and tighten the attachment bolts (1) to the specified torque.



Make sure that the area is clear of any debris.



i402485



M037014 - 28/03/2015

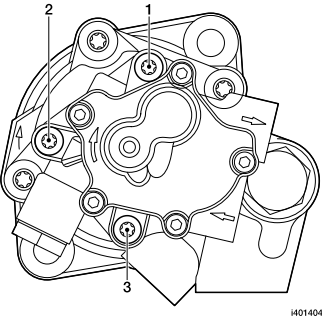
Tightening torque, fuel lift pump

Tightening order sequence

1, 2, 3

Attachment bolts

9 Nm [80 lb-in]



i401404



M032301 - 17/07/2024

1.2.3 connect crankcase pressure sensor (Sensors eL.syst.eng.)

1.2.4 connect battery clamp, negative pole



1.2.5 bleed (Fuel system)

Prime fuel system



If the fuel injection pipes have been removed:

- Visually check both injection pipe connections for leakage during priming the fuel system.
- Immediately stop the engine if fuel leakage occurs and replace the leaking fuel injection pipe.

After performing fuel system service, prime the fuel system to remove air from fuel system lines and components. Three priming options are available; however, hand priming should only be performed as a last resort when recommended tooling is not available. After priming, and before releasing the truck, check the dash for residual DTCs.



The engine must idle for five minutes after priming with the optional blender bypassed to prevent air entrained in the fuel lines from damaging the fuel injection system.

If the optional fuel blender is not bypassed, it can take up to 30 minutes of idle time to purge air from the fuel system.

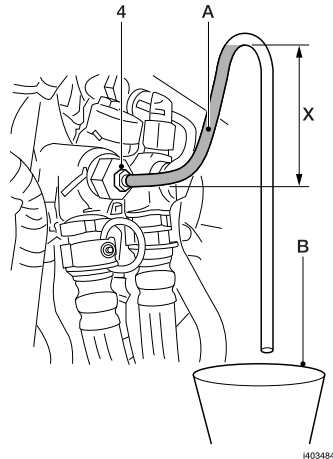
1. ["Priming with DAVCO Shop Pro MX 40/80 \(Base Unit\)"](#)
2. ["Priming with Mityvac MV7430"](#)
3. ["Hand priming"](#)

M057901 - 28/11/2019

Tightening torque, breather plug

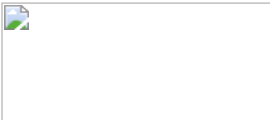
Bleeding nipple (4)
Bleeding assembly

6 Nm [53 lb-in]
18 Nm [159 lb-in]



M040565 - 06/06/2014

1.2.6 bring back oil bin



replace steering pump (Steering pump)

#	MPA Number	Optional	Exchange Part	Interchange part	Description	Component Group	Description	Bulletin	Supersession
1 PCE	*				O-ring	1410	Fuel system		
1 PCE	1939436		X	X	steering pump	1413	Steering pump		
1 PCE	*				O-ring	1413	Steering pump		

WARNINGS

Warning, battery clamp and negative terminal



(1)

- Do not disconnect the vehicle batteries until the DEF dosing system has completed the purge cycle.
- Before beginning to remove and/or disconnect any components, wait at least 5 minutes after the key switch is turned OFF for the aftertreatment DEF dosing system to purge DEF from the system.
- The purge cycle is an automatic process and does not require active intervention. The aftertreatment DEF dosing unit creates an audible pumping noise during the purging process.



- Electrical shock hazard: Never disconnect the battery clamp when the engine is running.
- Disconnecting the battery clamps while the engine is running may result in death, personal injury, or equipment damage from electrical arcing or damage to electronic components.
- Turn off the engine and place the ignition switch in the OFF position before disconnecting the battery clamps.
- Do not place tools or other materials on top of or close to the batteries. This can cause a dangerous high-current short circuit and, in the worst case, a battery explosion. Keep all objects away from the battery terminals.
- Always break the contact between the battery clamp and the negative terminal before working on the vehicle. Working on a vehicle while the battery is connected may result in electrical injury or damage.
- Always disconnect the battery at the negative terminal when performing service procedures.



- Battery acid can cause chemical burns.
- If you come into contact with battery acid: flush your skin with water and/or apply baking soda or lime to help neutralize the acid.
- If battery acid comes into contact with the eyes, flush immediately with water and seek medical attention.
- Wear protective clothing when handling any part of the battery.

M024327 - 15/12/2023

Warning, Fuel System



(2)

- Eye contact: Rinse immediately with plenty of water, including under the eyelids, for at least 15 minutes. Consult a doctor.
- Skin contact: Wash off immediately with plenty of water. If symptoms persist, consult a doctor.
- Inhalation: Get some fresh air. If symptoms persist, consult a doctor.
- Ingestion: Wash mouth with water and then drink plenty of water. Do not induce vomiting. Consult a doctor.



- Fuel vapors and spills are potential fire hazards.
- When opening a fuel system, fuel can escape. Collect the fuel during servicing and dispose of it properly to avoid the risk of fire.
- Mixing other fuels, such as gasoline, alcohol or gasohol with diesel can produce an explosive mixture.



To avoid injury from fuel while performing service on any fuel-system-related component(s):

- Prevent fuel from leaking or dripping onto the starter motor.
- Check the fuel components for leakage very carefully.
- Clean spilled or leaked fuel.
- Keep people who are not directly involved in the servicing away from the immediate area.
- Wear protective clothing (including face shield, insulated gloves and apron).
- Keep the work area well ventilated to prevent build-up of volatile fuel vapors.
- Keep all potential ignition sources away from the fuel. This includes: excessive heat, open flames, cigarettes, sparks and electrical sources.



- Do not touch any of the fluoroelastomer seals or O-rings if they have been exposed to a temperature of 315°C or higher. The material of this product does not burn but decomposes into a charred, black, sticky substance. This decomposition may contain hydrofluoric acid. This is very aggressive and difficult to remove once it has contaminated the skin. Use PVC or rubber gloves until the decomposed material has been identified and/or removed. If the substance makes contact with the skin, contact a doctor immediately.

See also [Fuel System Cleanliness](#) for a step-by-step on cleaning the fuel system.



- Blocking and/or clamping the fuel pipes can lead to severe engine damage.
- Never block or plug the common rail release valve output, as this can lead to severe rail and common rail pressure release valve damage.



Always work clean according to the ["Cleanliness procedures"](#)

- Clean the area before performing repairs.
- The smallest amount of dirt, debris and other contamination can cause serious damage to systems and/or the engine.
- Immediately plug the openings of the fuel system.



M035658 - 22/09/2025

Warning, steering oil



(3)

- To prevent skin injury, avoid unnecessary contact with the steering oil.
- Drained steering oil must not be reused. Store this hydraulic oil separately from the other drained oils. Make sure that the oil is collected by a waste removal company authorized to do so.
- To prevent foaming, make sure that the oil reservoir always stays filled while bleeding.
- Air in the hydraulic system may seriously damage the steering pump. It can cause the steering gear to jam occasionally.
- If the hydraulic system contains air, the steering wheel is turned and pressure is built up, a squealing sound can be heard.
- If there is serious foaming in the system, drain the steering oil fully. Trace and repair the leak; subsequently the system can be filled again and bled.

M016767 - 11/07/2023

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