



SPICER®
Off-Highway Products

Product Information Bulletin

PIB-0021E
January 2015

RE: Product Storage & Shipment Preservation of Axles, Gear Boxes, and Transmissions*

Duration:

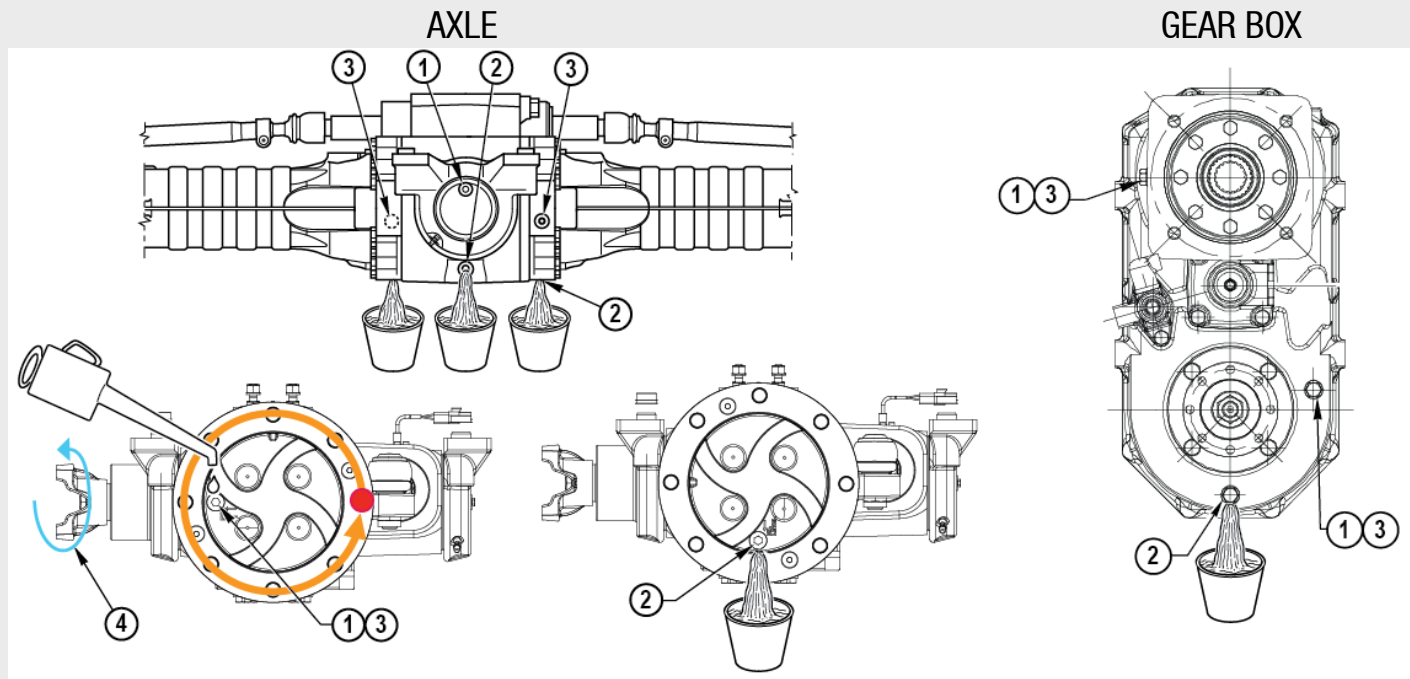
Product stored or held in overseas transport is to be put into service within 12 months from the Dana invoice date. After this time the product will no longer be covered by its original warranty terms and conditions.

Requirements:

- Product must be in an indoor, dry storage environment with an ambient temperature range between 14 to 104°F [-10 to 40°C] and with humidity less than 55%.
- Product must be protected from inclement weather and mud during any / all handling.
- All original packaging material received with the product should be retained during storage.
- Products shipped in sealed VCI (Volatile Corrosion Inhibitor) packaging with preservation agent (anti-humidity) added to the bag to capture moisture must be stored in original packaging. If opened during storage time, the packaging must be returned to the original state and new preservation agent needs to be added.
For products with such packaging, the humidity limit stated above does not apply and it is not necessary to execute the procedure described below.
- If product is stored in excess of 60 days from the shipping date from the plant before being put into service, follow the Storage Maintenance Procedure below, in order to ensure that the product will keep its original characteristics and will be covered by its original warranty terms and conditions.

Storage Maintenance Procedure:

MAINTENANCE POINTS



1. Oil filling plug
2. Oil drain plug
3. Check level plug
4. Rotate flange

Axles and Gear Boxes¹:

a. Some products are shipped with oil while others are shipped without oil, based on customer requirements. If the product has been shipped without oil and it is 60 days passed the Dana shipping date from the plant, fill product with OE recommended lubricant.

- See the applicable Service Manual for process to add and check oil level.
- See PSB-0279 – Recommended Lubricants for Axles for oil recommendations.

NOTE: If axle is stored for an extended period of time, change the oil inside the product per the oil manufacturer's time frequency, which is typically every 3-5 years.

¹ Axles with Liquid-Cooled Brakes (LCB) or Posi-Stop Brakes with hub isolation seals must also have the brakes filled. Brakes must be 90% full (to the highest external cooling port on the brake) with hydraulic oil or UTF per PSB-0287 - Lubricant Recommendations in Severe Applications for Axles & Transmissions. Axles with SAHR (Posi-Stop) brakes must have hydraulic pressure applied to both brakes before the input flange can be rotated. For service procedures, see the applicable Service Manual.

b. While seals are sufficiently greased during production, axles need to be moved in order to allow the oil to fully lubricate the bearings and the gears. Every 60 days starting from the shipping date from the plant, the components must be rotated (see blue arrow in the maintenance points illustration).

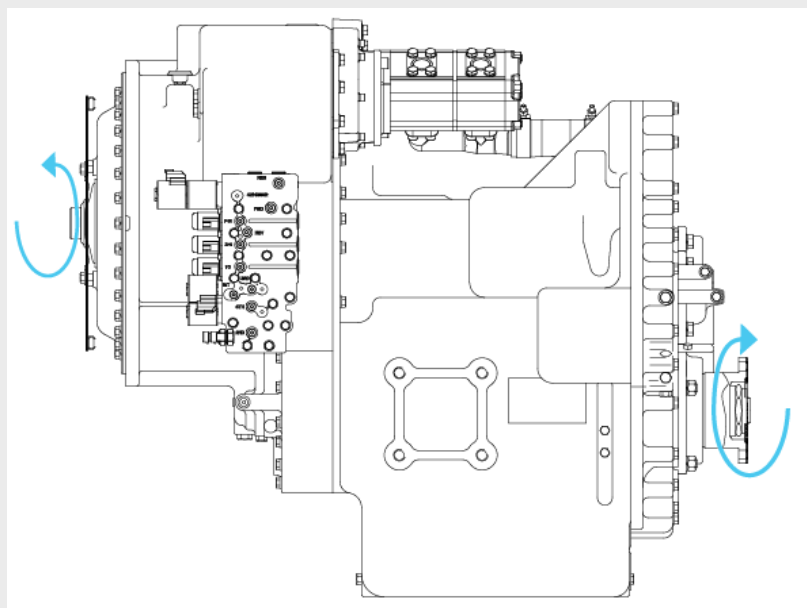
I) Mark the wheel ends (see red dot the maintenance points illustration) to observe wheel end rotation.

II) Rotate the input flange until the wheel end completes one 360° revolution (see orange arrow in the maintenance points illustration). The rotation process can be done by hand with a simple lever attached to the flange, if necessary, to create rotational torque manually. No special racks or fixtures are necessary, but the product must be properly secured to enable proper torque application.

III) Record the serial number and date.



MAINTENANCE POINTS



Transmissions*:

a. If product is not stored in original sealed packing, rotate** all flanges (see blue arrows in the above illustration).

b. Before final installation, also turn flanges softly to ensure nothing is sticking.

* If stored in original sealed packaging, rotation of the flange is not necessary since the seals are sufficiently greased during product's assembly.

** Rotation process can be done by hands with a simple lever attached to the flange, if necessary to create a rotational torque manually. No special racks or fixture are necessary, but product must be proper fixed to enable proper torque application.

**WARNING:**

If the above requirements are not met, any Product installed after a maximum of 12 months from Dana invoice date must be returned (at customer expense) to an authorized Dana Service Center for a complete overhaul (requiring complete resealing) at expense of Customer. If the overhaul requirement is not met, or other requirements for warranty in other agreements with Dana are not satisfied, no warranties to the Products shall apply and they will be terminated. Dana will evaluate, upon Customer's request (and at Customer's costs and expenses) the execution of the overhaul on the Products, without any guarantee of the results.

If the processes above have been executed and documented by a Dana Service Center, Storage Service Provider, or Customer, with proper records and evidence as applicable, an additional 12 months of product warranty will be provided. This additional warranty period will only cover parts and labor costs, as outlined in PSM-0001 – Standard Repair Time Service Manual.

Safety Precautions:

1. During all operations described in this document, ensure product is securely supported.
2. Do not admit any other person inside the work area; mark off the area, hang warning signs and remove the ignition key from the machine, if applicable.
3. Use only clean, quality tools; discard all worn, damaged, low quality or improvised wrenches and tools. Ensure all tools have been checked and calibrated.
4. Always wear gloves and non-slip rubber shoes when performing repair work.
5. Should you stain a surface with oil, remove marks immediately.
6. Dispose of all lubricants, seals, rags and solvents once work has been completed. Treat them as special waste and dispose of them according to the relative law provisions obtaining in the country where the axles are being overhauled.
7. Make sure that only weak solvents are used for cleaning purposes; avoid using turpentine, dilutants and toluol, xylol based or similar solvents; use light solvents such as Kerosene, mineral spirits or water-based, environment friendly solvents.
8. After any repair work has been completed, accurately touch up any coated part that may have been damaged.

For Additional Information, please refer to your Dana Off-Highway contact or send an email to pss.arco@dana.com

NOTE: This bulletin replaces all previously published storage guidelines.