

SPECIFICATIONS > FASTENER SPECIFICATIONS

Application	Specification	
	Metric	English
Front Propeller Shaft Heat Shield Bolts	9 N.m	80 lb in
Front Propeller Shaft Bolts	90 N.m	66 lb ft
Propeller Shaft Bearing Bolts	50 N.m	37 lb ft
Rear Propeller Shaft Bolts	90 N.m	66 lb ft

SPECIFICATIONS > ADHESIVES, FLUIDS, LUBRICANTS, AND SEALERS

Application	Type of Material	GM Part Number	
		United States	Canada
Propeller Shaft Coupler to Drive Flange	Lubricant	1052949	-
Propeller Shaft-to-Flange Bolts	Threadlocker	89021297	10953488

DIAGNOSTIC INFORMATION AND PROCEDURES > SYMPTOMS - PROPELLER SHAFT

Step	Action	Yes	No
1	Were you sent here from Symptoms or another diagnostic table?	Go to Step 2	Go to Symptoms - HVAC Systems - Automatic
2	1. A/C system noises can be generally categorized into 3 areas: 1. Screeching, squealing, chirping noises 2. Moaning noises 3. Vibration/rattle noises 2. Start the engine. 3. Ensure that the A/C is ON. Is a screeching, squealing noise heard when the A/C is	Go to Step 3	Go to Step 9

	engaged?		
3	With the engine OFF, inspect the drive belt for excessive wear. Drive Belt Falls Off and Excessive Wear Diagnosis , or Drive Belt Falls Off and Excessive Wear Diagnosis Is the drive belt excessively worn?	Go to Step 18	Go to Step 4
4	Inspect the drive belt tension. Drive Belt Tensioner Diagnosis , or Drive Belt Tensioner Diagnosis Is the drive belt tension correct?	Go to Step 19	Go to Step 5
5	Inspect the drive belt for excessive oil coverage. Is the drive belt covered with oil?	Go to Step 17	Go to Step 6
6	1. Start the engine. 2. Ensure that the A/C is ON. 3. Inspect the compressor and the clutch. Is the compressor locked up?	Go to Step 24	Go to Step 7
7	Is the A/C compressor clutch slipping?	Go to Step 23	Go to Step 8
8	Using a stethoscope, listen to the A/C compressor for any abnormal noises. Is the compressor causing an abnormal noise?	Go to Step 15	Go to Step 10
9	Does a moaning noise exist when the A/C clutch is engaged?	Go to Step 10	Go to Step 12
10	Listen to the A/C compressor components and mounting for noise concerns using a stethoscope. Are any of these components loose, damaged or excessively worn?	Go to Step 20	Go to Step 11
11	1. Idle the engine. 2. Engage the A/C compressor clutch. 3. Using a stethoscope, move around the entire refrigerant plumbing system, inspecting for any abnormal noises caused by component ground-out. Are any of the A/C components grounding out and causing a noise?	Go to Step 22	Go to Step 13
12	Does a vibration or rattle noise exist when the A/C clutch is engaged?	Go to Step 13	Go to Step 14
13	Does the noise stop when the A/C clutch is disengaged?	Go to Step 15	Go to Step 14

14	1. Idle the engine in PARK with the A/C compressor clutch engaged. 2. Using a stethoscope, move around the entire A/C system testing for any abnormal noises caused by a component. Do any of the A/C components cause an abnormal noise?	Go to Step 21	Go to Step 25
15	Verify that the A/C system is properly charged. Approximate Fluid Capacities Is the A/C system properly charged?	Go to Step 26	Go to Step 16
16	Recharge the A/C system to specification. Refrigerant Recovery and Recharging (R-134a)Refrigerant Recovery and Recharging (R-1234yf) Is the abnormal compressor noise still present?	Go to Step 25	Go to Step 26
17	Repair the oil leak. Refer to the appropriate repair procedure in Engine Mechanical. Is the repair complete?	Go to Step 26	-
18	Replace the A/C drive belt. Drive Belt Replacement , or Drive Belt Replacement Is the replacement complete?	Go to Step 26	-
19	Replace the A/C drive belt tensioner. Drive Belt Tensioner Replacement , or Drive Belt Tensioner Replacement Is the replacement complete?	Go to Step 26	-
20	Repair or replace the A/C compressor mounting component. Is the repair complete?	Go to Step 26	-
21	Repair or replace the component which is causing the moaning concern as needed. Is the repair complete?	Go to Step 26	-
22	Correctly route or insulate the A/C component. Is the repair complete?	Go to Step 26	-
23	Replace the A/C compressor clutch. Air Conditioning Clutch Assembly Replacement Is the replacement complete?	Go to Step 26	-
24	Replace the A/C compressor. Air Conditioning Compressor Replacement (LGX)Air Conditioning Compressor Replacement (LT1)Air Conditioning Compressor Replacement (LTG) Is the replacement complete?	Go to Step 26	-
25	The concern may be caused by an engine related component. Vibration Analysis - Engine Did you find and correct the condition?	Go to Step 26	-

26	Operate the system in order to verify the repair. Did you find and correct the condition?	System OK	Go to Step 2
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DIAGNOSTIC INFORMATION AND PROCEDURES > PROPELLER SHAFT DIAGNOSIS

Review the propeller shaft system function. Propeller Shaft Description and Operation

Inspect for loose or missing propeller shaft-to-flange bolts. Tighten or replace as necessary. Two-Piece Propeller Shaft Replacement (Coupe MM6, M13) Two-Piece Propeller Shaft Replacement (Convertible MM6, M13) Two-Piece Propeller Shaft Replacement (Coupe M5T, M5U) Two-Piece Propeller Shaft Replacement (Convertible M5T, M5U)

Inspect for loose center bracket bolts and damaged rubber bushings. Tighten or replace as necessary. Two-Piece Propeller Shaft Replacement (Coupe MM6, M13) Two-Piece Propeller Shaft Replacement (Convertible MM6, M13) Two-Piece Propeller Shaft Replacement (Coupe M5T, M5U) Two-Piece Propeller Shaft Replacement (Convertible M5T, M5U)

The propeller shaft and the joints are not serviceable.

The joint seals should be inspected for the following:

- Tears
 - Cracks
 - Contamination of the lubricating grease
- Carefully pinch the seal and feel for the presence of grit
- Loose or missing seal clamps
 - Leakage of lubricating grease from the seals

The joints should be inspected for the following conditions:

- Binding or impeded motion during axial movement of the front and rear joints
- Binding or impeded motion during lateral movement of the rear joint
- Loose or missing crimped-on end caps
- Leakage of lubricating grease from the end caps

The propeller shaft must be replaced if any of the above conditions exist. This will ensure that the propeller shaft continues to operate as intended, and does not damage the other driveline components.

DIAGNOSTIC INFORMATION AND PROCEDURES > UNIVERSAL JOINT NOISE

Problem	Action
One or more of the universal joints are worn or damaged.	Replace the propeller shaft assembly.

One or more of the universal joints have lost lubricant.	Replace the propeller shaft assembly.
Rubber coupling bolts loose at transmission or axle flange.	Tighten the bolts to specifications. Refer to Fastener Specifications .
Bolts loose at propeller shaft flange and coupling.	Tighten the bolts to specifications. Refer to Fastener Specifications .

DIAGNOSTIC INFORMATION AND PROCEDURES > PING, SNAP, OR CLICK NOISE

Checks	Action
DEFINITION: A ping, snap or click is usually heard on initial load after the transmission is in gear, either in forward or reverse.	
A loose pinion yoke or companion flange	Tighten the bolts and the pinion nut to specified torque. Refer to Fastener Specifications .
Loose rubber coupling	Tighten the bolts to specified torque. Refer to Fastener Specifications .
One or more of the universal joints are worn or damaged	Replace the propeller shaft assembly.
Heat shield interference	Eliminate interference.

DIAGNOSTIC INFORMATION AND PROCEDURES > KNOCK OR CLUNK NOISE

Cause	Correction
DEFINITION: Knocking or clunking noise occurs when operating the vehicle in high gear or coasting in neutral at 16 km/h (10 mph).	
C/V joint worn or loose/ripped boot	Replace the propeller shaft assembly. Two-Piece Propeller Shaft Replacement (Coupe MM6, M13) Two-Piece Propeller Shaft Replacement (Convertible MM6, M13) Two-Piece Propeller Shaft Replacement (Coupe M5T, M5U) Two-Piece Propeller Shaft Replacement (Convertible M5T, M5U)
The side gear hub counterbore in the differential is worn oversize.	Replace the differential case and/or the side gears. Differential Carrier Assembly Replacement (with KNR) Differential Carrier Assembly Replacement (without KNR)

DIAGNOSTIC INFORMATION AND PROCEDURES > SCRAPING NOISE

Checks	Action
DEFINITION: A scraping noise occurs when driving the vehicle at various speeds.	

The pinion flange deflector or the center bearing is rubbing.	Correct the interference as necessary.
Center bearing heat shield	Correct the interference as necessary.
Exhaust pipe contact	Correct the interference as necessary.

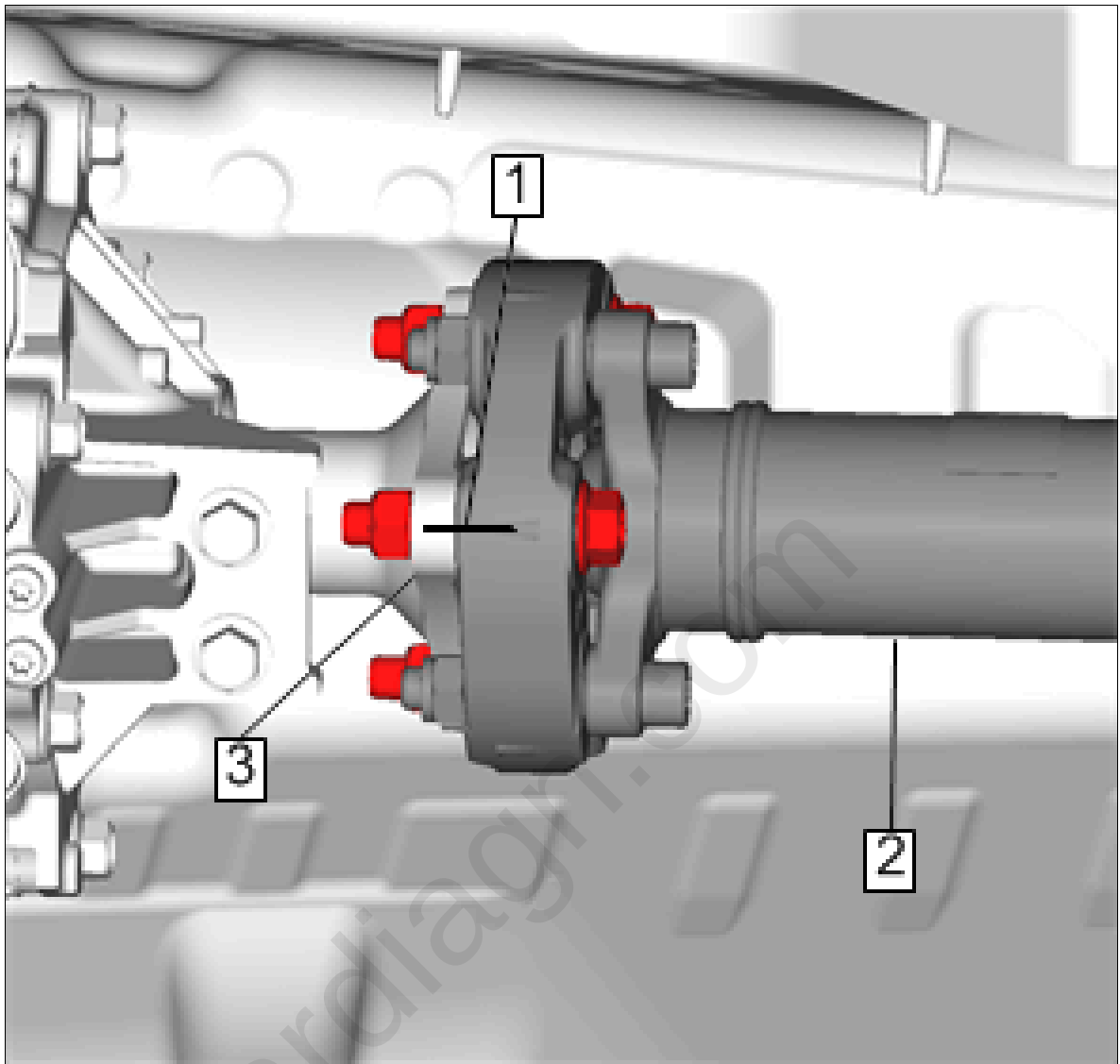
DIAGNOSTIC INFORMATION AND PROCEDURES > SHUDDER ON ACCELERATION AT LOW SPEED

Checks	Action
DEFINITION: When the vehicle is accelerating at low speed a shudder occurs.	
The driveline center bearing splined shaft angle is excessive or incorrectly set.	Determine if the driveline angle is incorrect then correct as necessary. Refer to Diagnostic Starting Point - Vehicle .
One or more of the universal joints are worn or damaged.	Replace the driveshaft complete. Refer to Two-Piece Propeller Shaft Replacement (Coupe MM6, M13) Two-Piece Propeller Shaft Replacement (Convertible MM6, M13) Two-Piece Propeller Shaft Replacement (Coupe M5T, M5U) Two-Piece Propeller Shaft Replacement (Convertible M5T, M5U) .
Rubber coupling bolts loose	Tighten the bolts to specifications. Refer to Fastener Specifications .

REPAIR INSTRUCTIONS > TWO-PIECE PROPELLER SHAFT REPLACEMENT (COUPE MM6, M13) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
2. Remove the floor panel number 4 cross bar. Floor Panel Number 4 Cross Bar Replacement
3. Remove the exhaust muffler. Exhaust Muffler Replacement (LGX, Coupe)Exhaust Muffler Replacement (LT1, Coupe)Exhaust Muffler Replacement (LTG, Coupe)
4. Remove the intermediate body exhaust heat shield. Intermediate Body Exhaust Heat Shield Replacement
5. Remove the floor panel number 2 cross bar reinforcement. Floor Panel Number 2 Cross Bar Reinforcement Replacement

Fig 1: Propeller Shaft Flange And Transmission Output Flange



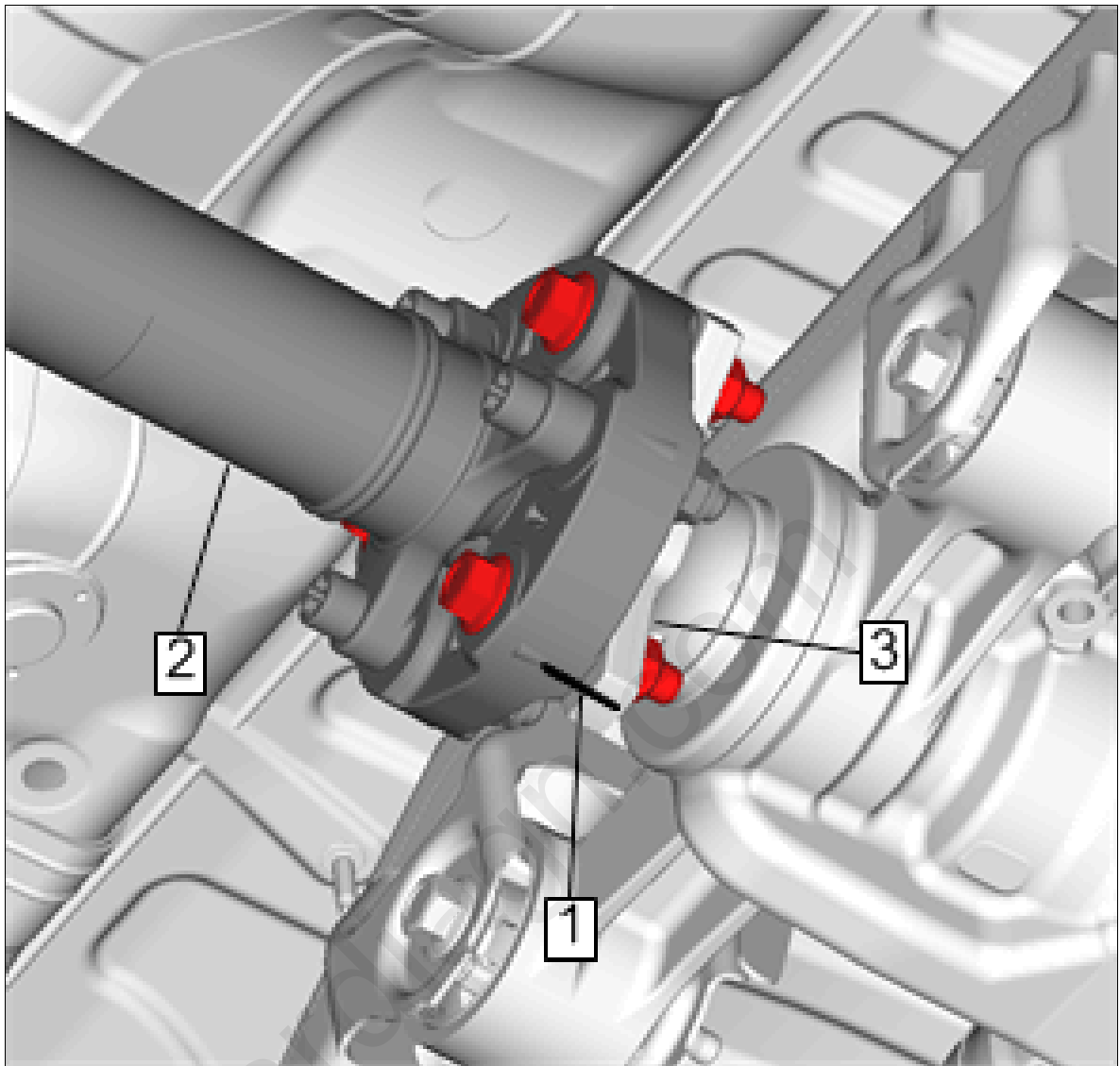
Courtesy of GENERAL MOTORS COMPANY

 NOTE:

Before removing the propeller shaft from the vehicle, paint or scribe reference marks on the transmission flange to the propeller shaft and the rear differential drive flange to ensure minimal driveline system imbalance.

6. Mark (1) the relationship of the propeller shaft flange (2) and the output flange (3) of the transmission.

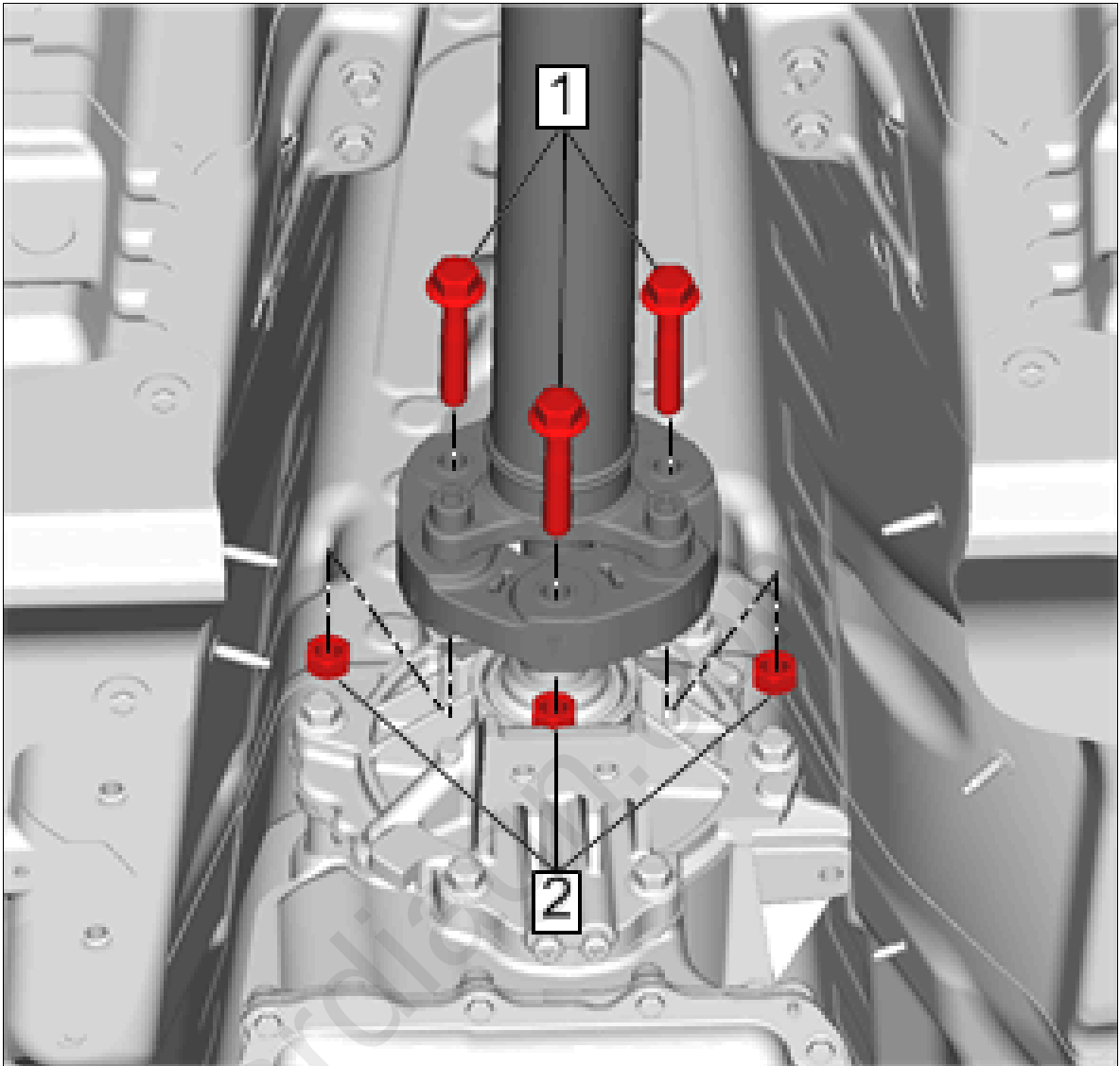
Fig 2: Propeller Shaft Flange And Rear Axle Pinion Flange



Courtesy of GENERAL MOTORS COMPANY

7. Mark (1) the relationship of the propeller shaft flange (2) and the rear axle pinion flange (3).

Fig 3: Front Propeller Shaft Bolts And Nuts



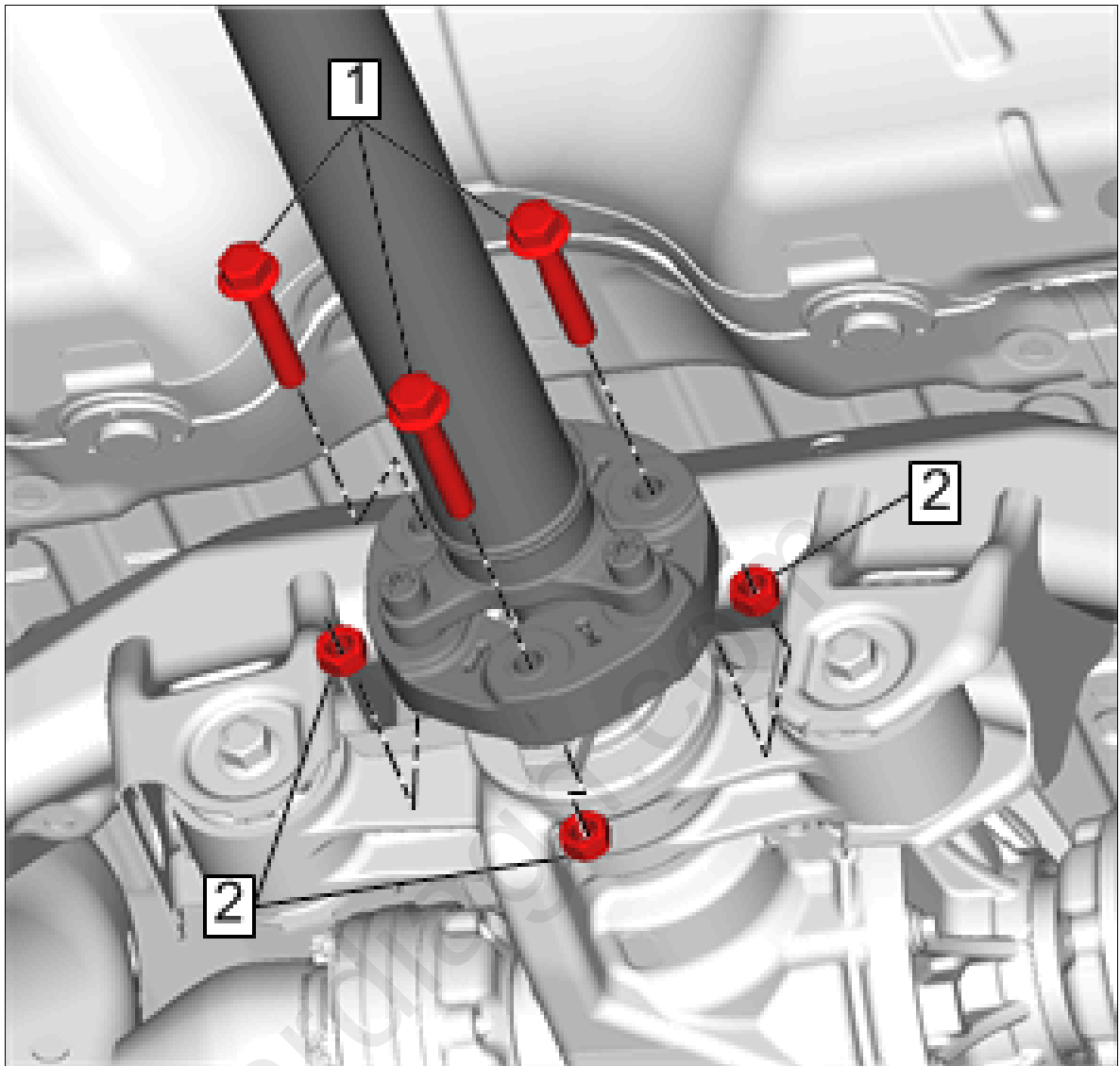
Courtesy of GENERAL MOTORS COMPANY

 NOTE:

Ensure that the propeller shaft is secured to the hydraulic jack stand.

8. Support the propeller shaft with a suitable hydraulic jack stand.
9. Remove the three front propeller shaft bolts (1) and the nuts (2).

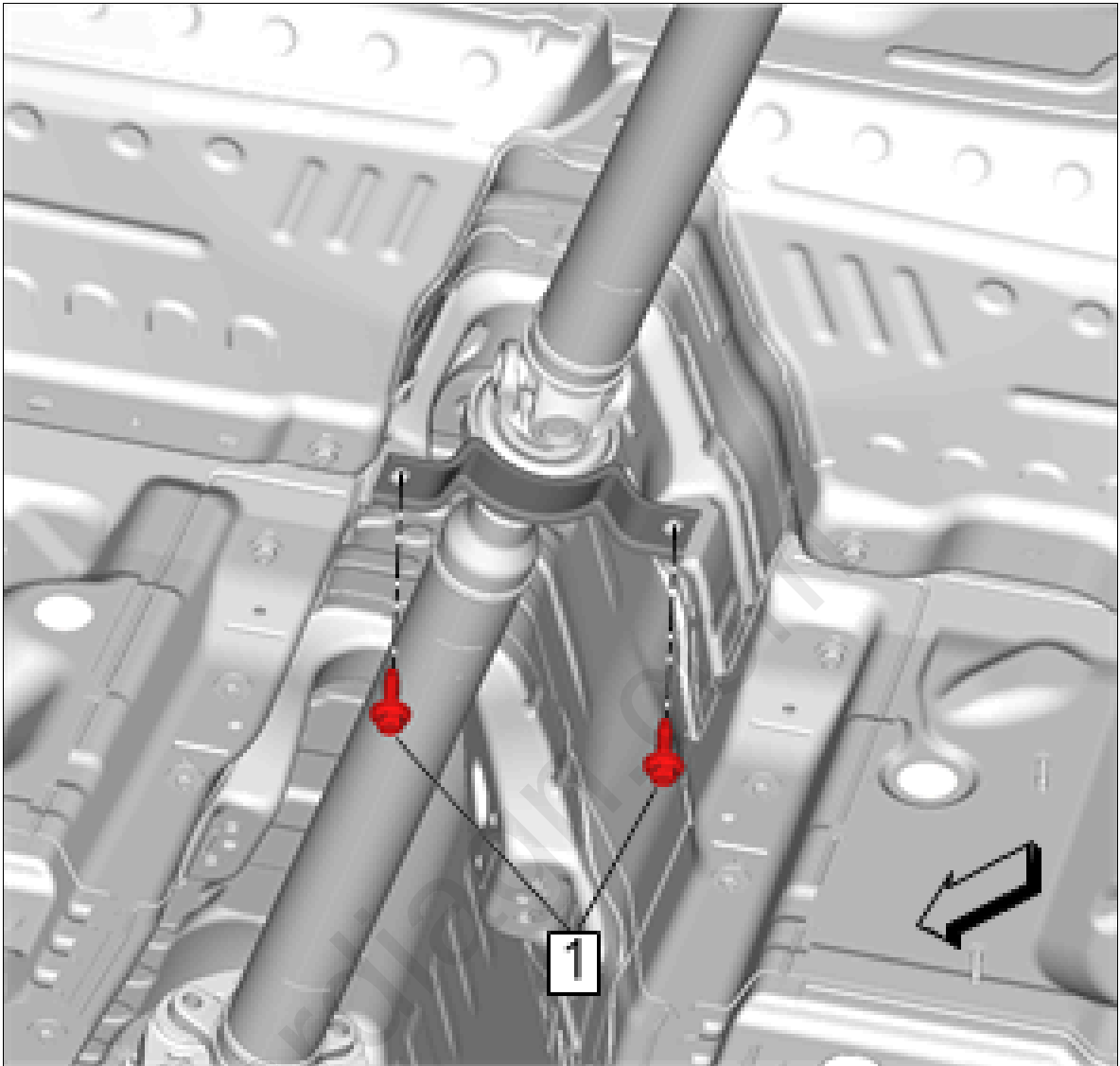
Fig 4: Rear Propeller Shaft Bolts And Nuts



Courtesy of GENERAL MOTORS COMPANY

10. Remove the three rear propeller shaft bolts (1) and the nuts (2).

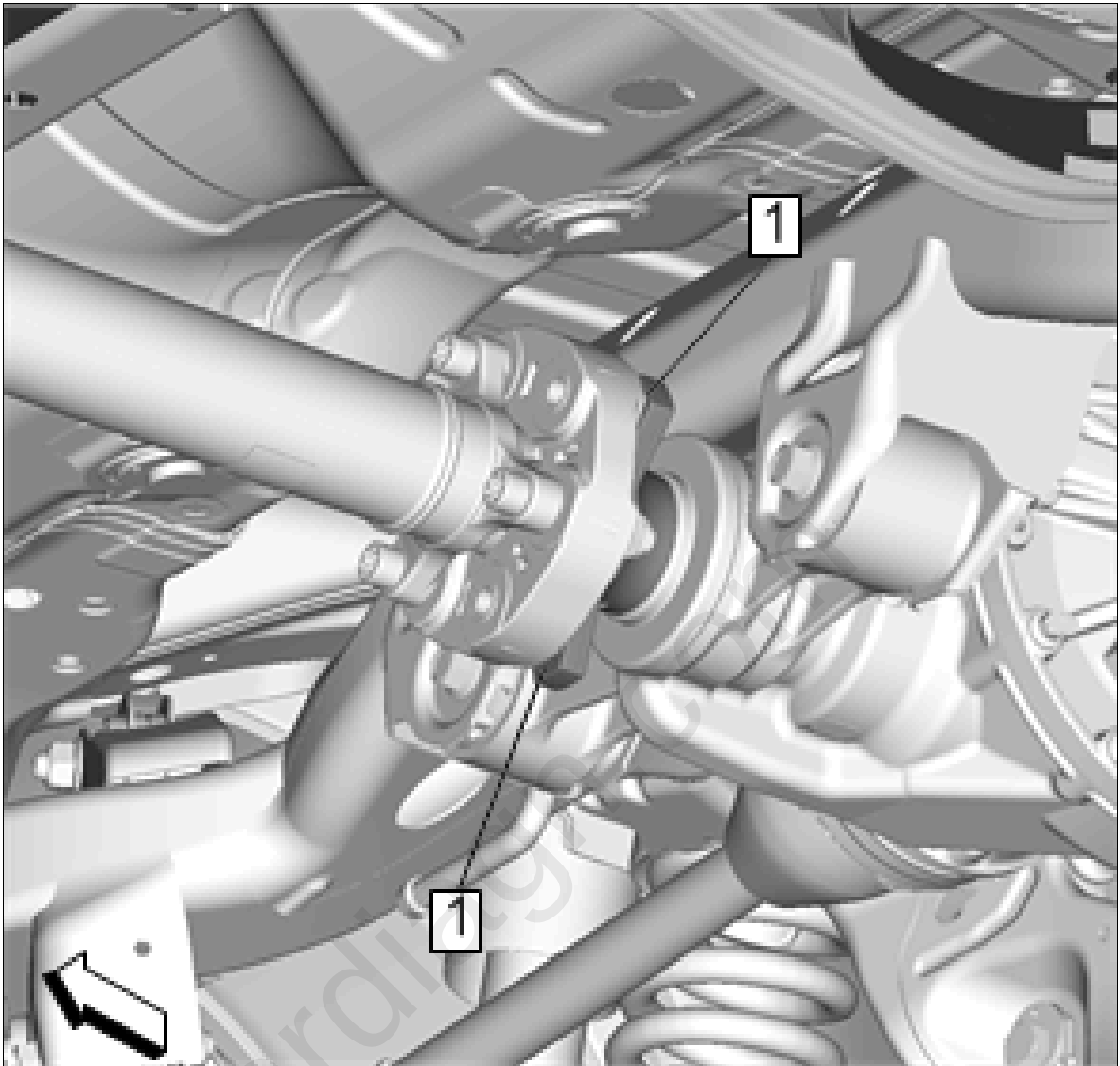
Fig 5: Propeller Shaft Bearing Support Bolts



Courtesy of GENERAL MOTORS COMPANY

11. Remove the two propeller shaft bearing support bolts (1).

Fig 6: Lubricant Or WD-40® To Area Shown



Courtesy of GENERAL MOTORS COMPANY

 CAUTION:

Care should be taken not to use sharp or pry tools when separating the propeller shaft coupler from the drive flange. Damage to the coupler could result and replacement of the entire propeller shaft would be required.

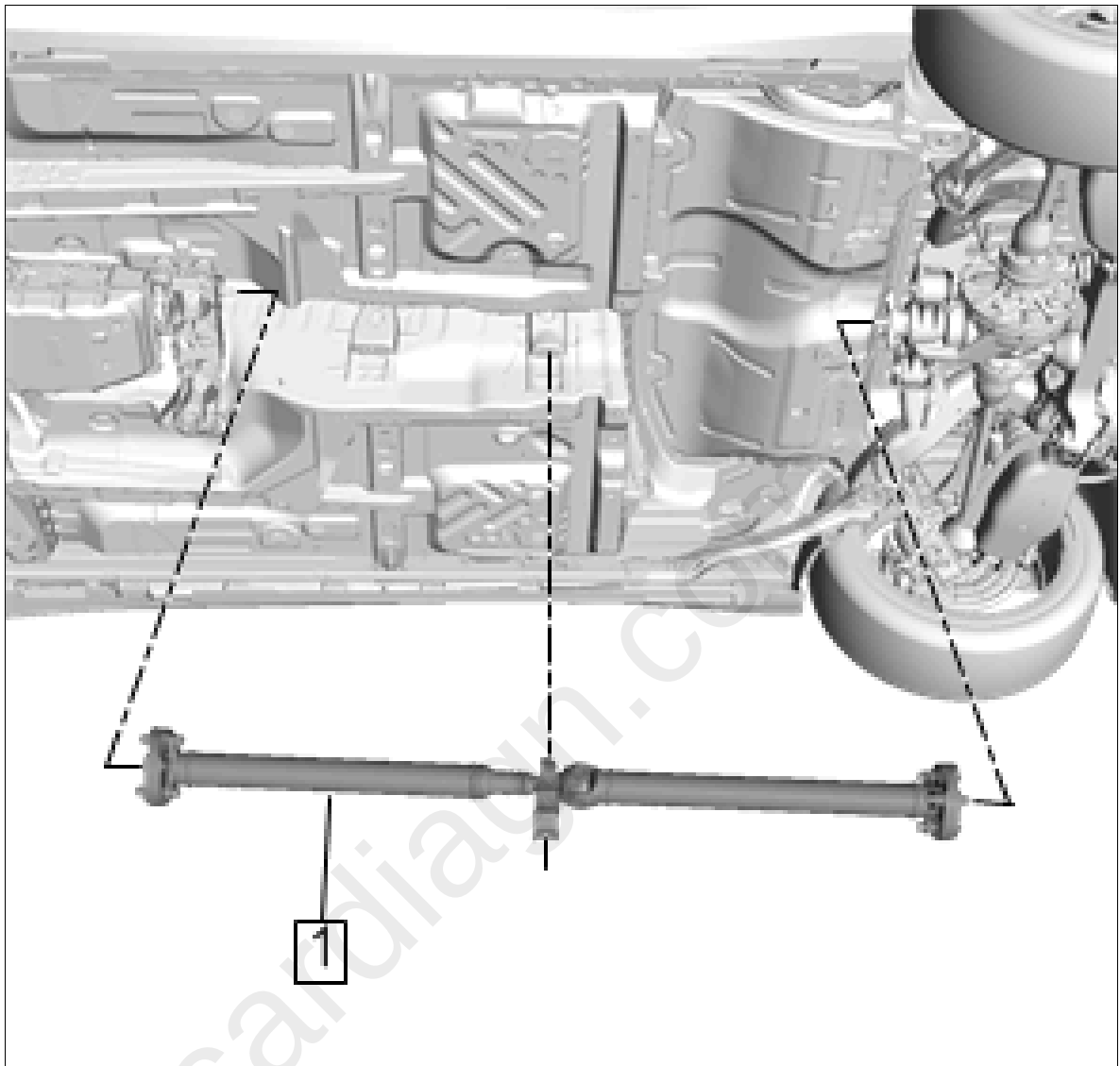
 NOTE:

It may be necessary to apply a small amount of penetrating lubricant or WD-40® to the area shown (1) to aid in separation of the propeller shaft coupling.

12. If the propeller shaft does not easily separate from the differential, transmission or transfer

case, use a rubber mallet to gently tap the locations (1) on the rubber coupling shown above to separate.

Fig 7: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

13. Remove the propeller shaft (1) from the vehicle.

REPAIR INSTRUCTIONS > TWO-PIECE PROPELLER SHAFT REPLACEMENT (COUPE MM6, M13) > INSTALLATION PROCEDURE

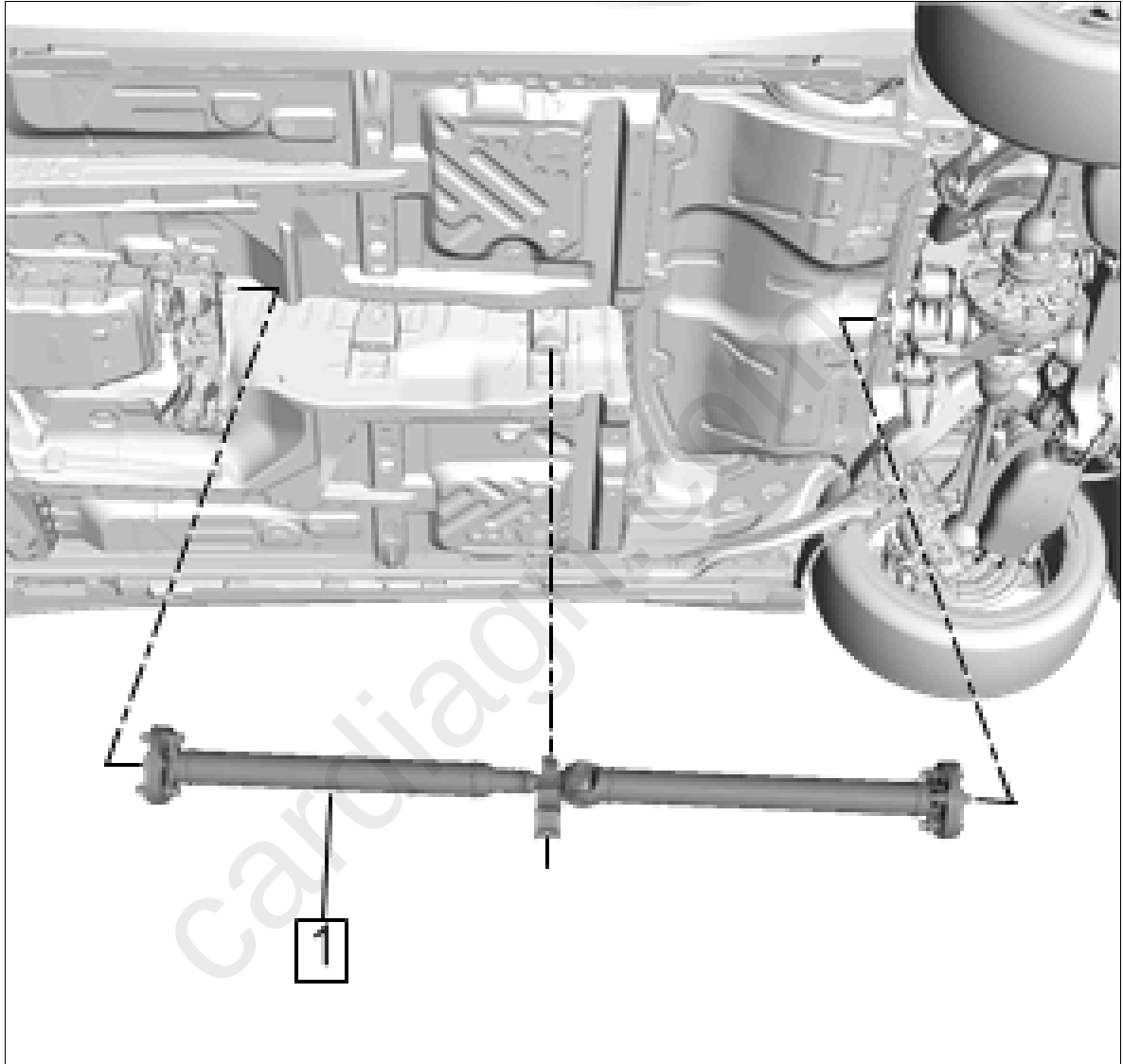
NOTE:

If reusing the propeller shaft bolts, to ensure proper adhesion and fastener retention, the threads must be free of debris prior to the application of threadlocker. Use an appropriate cleaner to thoroughly clean the threads and allow to dry. Apply threadlocker to the propeller shaft to flange bolts. Ensure that there are no gaps in

the threadlocker along the length of the filled area of the bolts. Allow the threadlocker to cure approximately 10 minutes before installation.

1. Thoroughly clean apply threadlocker to the threads of the propeller shaft bolts. Adhesives, Fluids, Lubricants, and Sealers

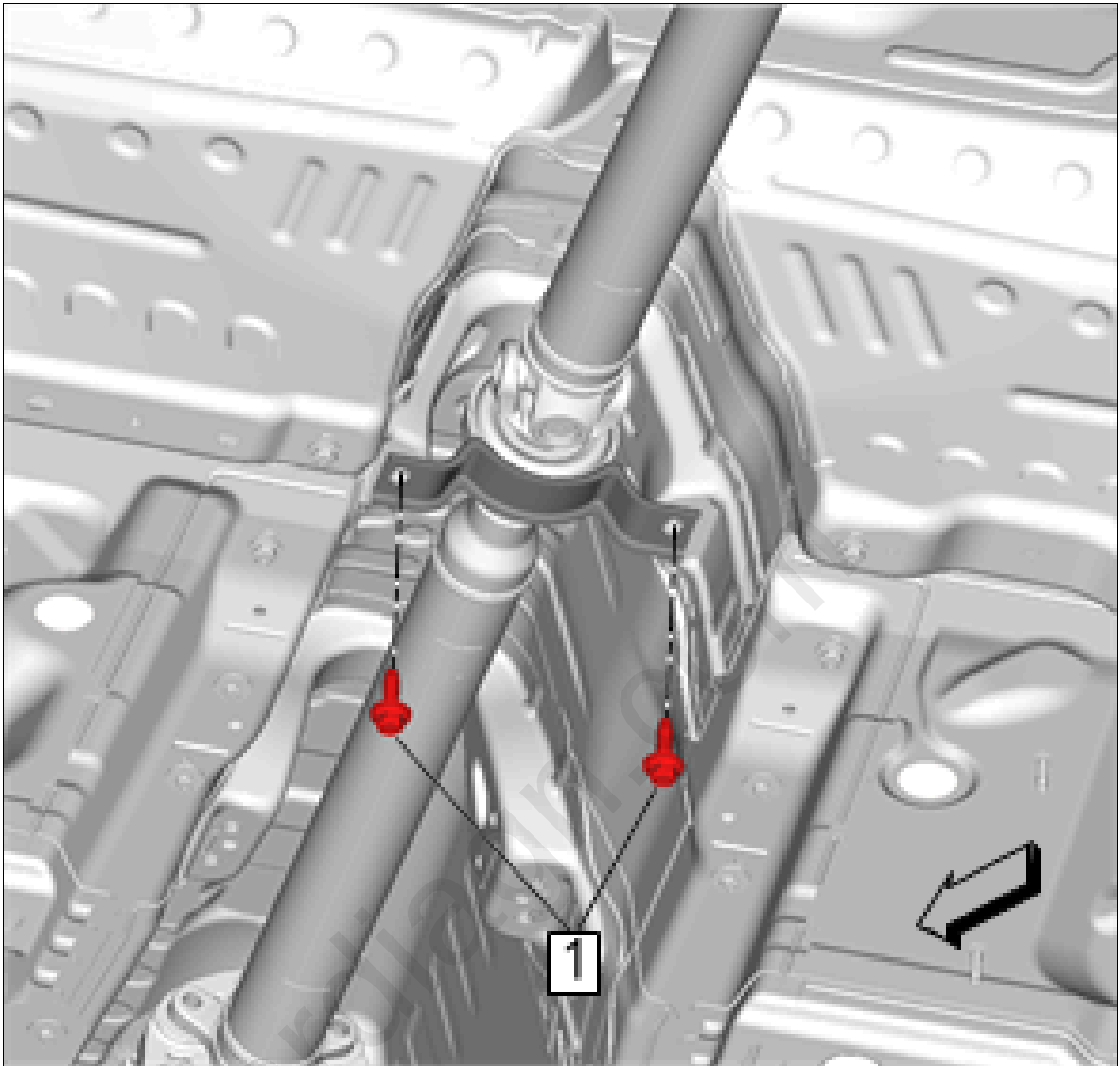
Fig 1: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

2. Position the propeller shaft (1) in the vehicle.

Fig 2: Propeller Shaft Bearing Bolts



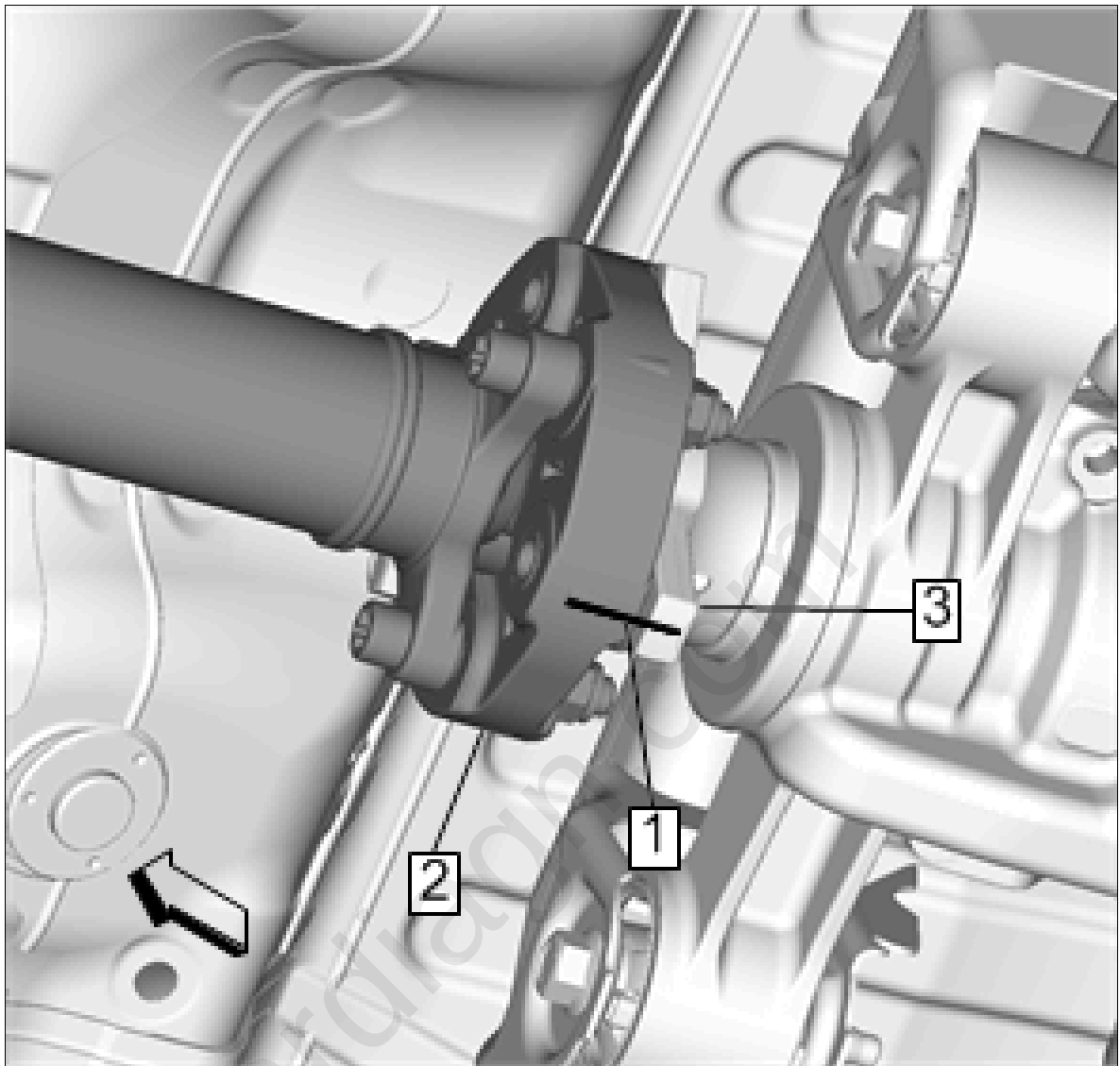
Courtesy of GENERAL MOTORS COMPANY

 **CAUTION:**

Refer to Fastener Caution .

3. Install the two propeller shaft bearing bolts (1) and tighten to 50 N.m (37 lb ft).

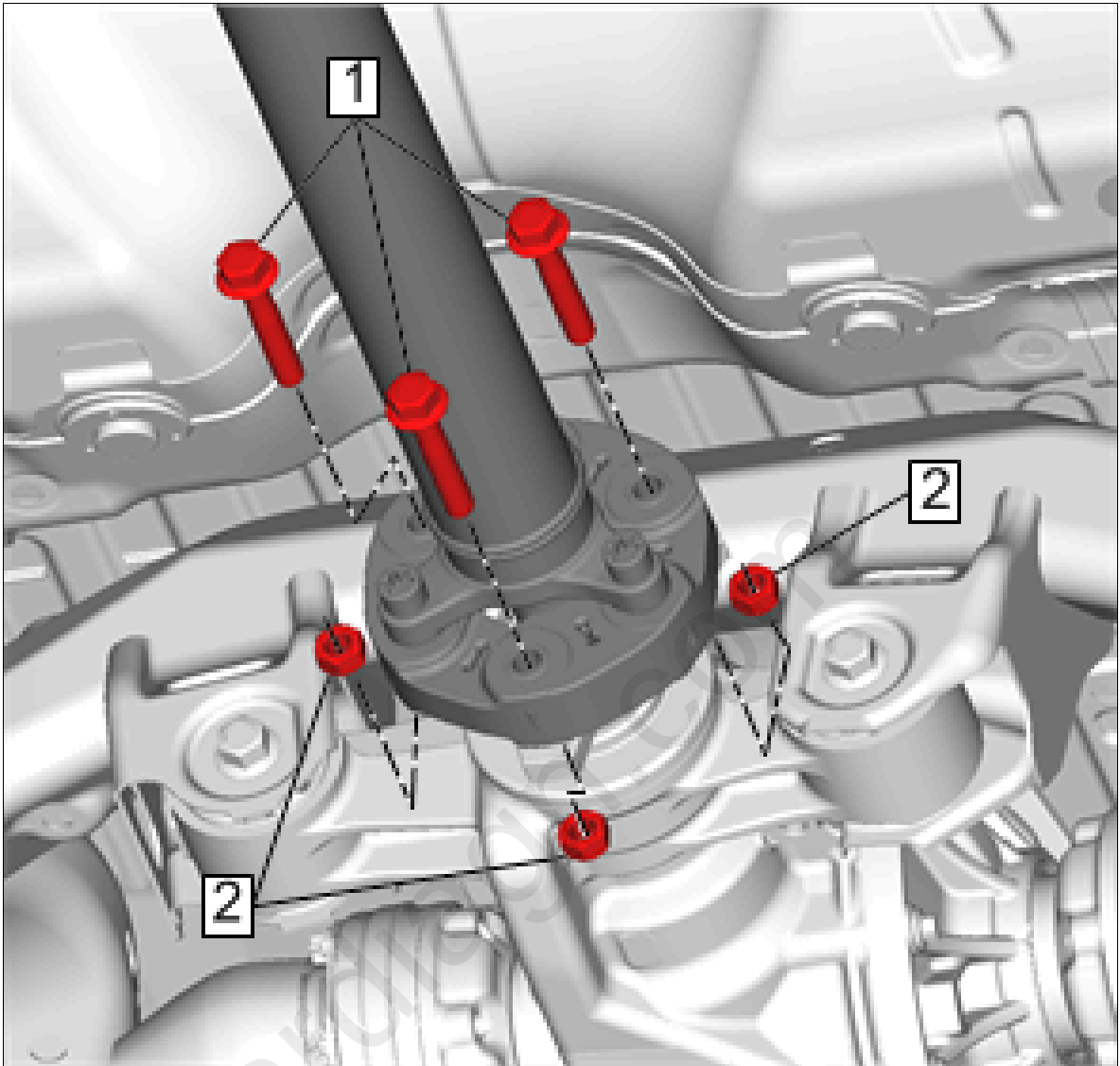
Fig 3: Propeller Shaft Flange And Rear Axle Pinion Flange



Courtesy of GENERAL MOTORS COMPANY

4. Align the reference mark (1) between the propeller shaft flange and the rear axle pinion flange.

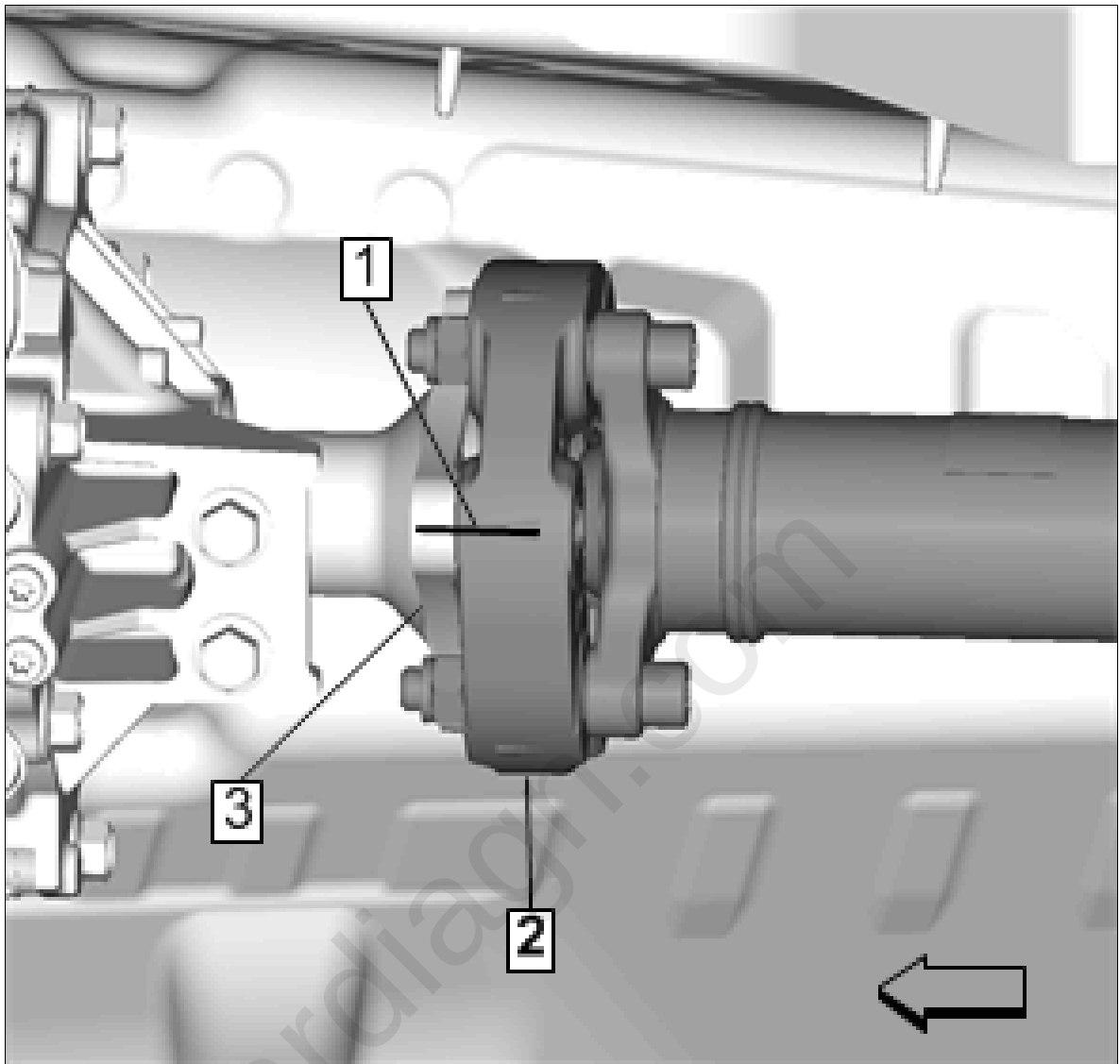
Fig 4: Rear Propeller Shaft Nuts And Bolts



Courtesy of GENERAL MOTORS COMPANY

5. Install the three rear propeller shaft nuts (2) and the bolts (1).
6. Tighten the bolts (1) to 90 N.m (66 lb ft).

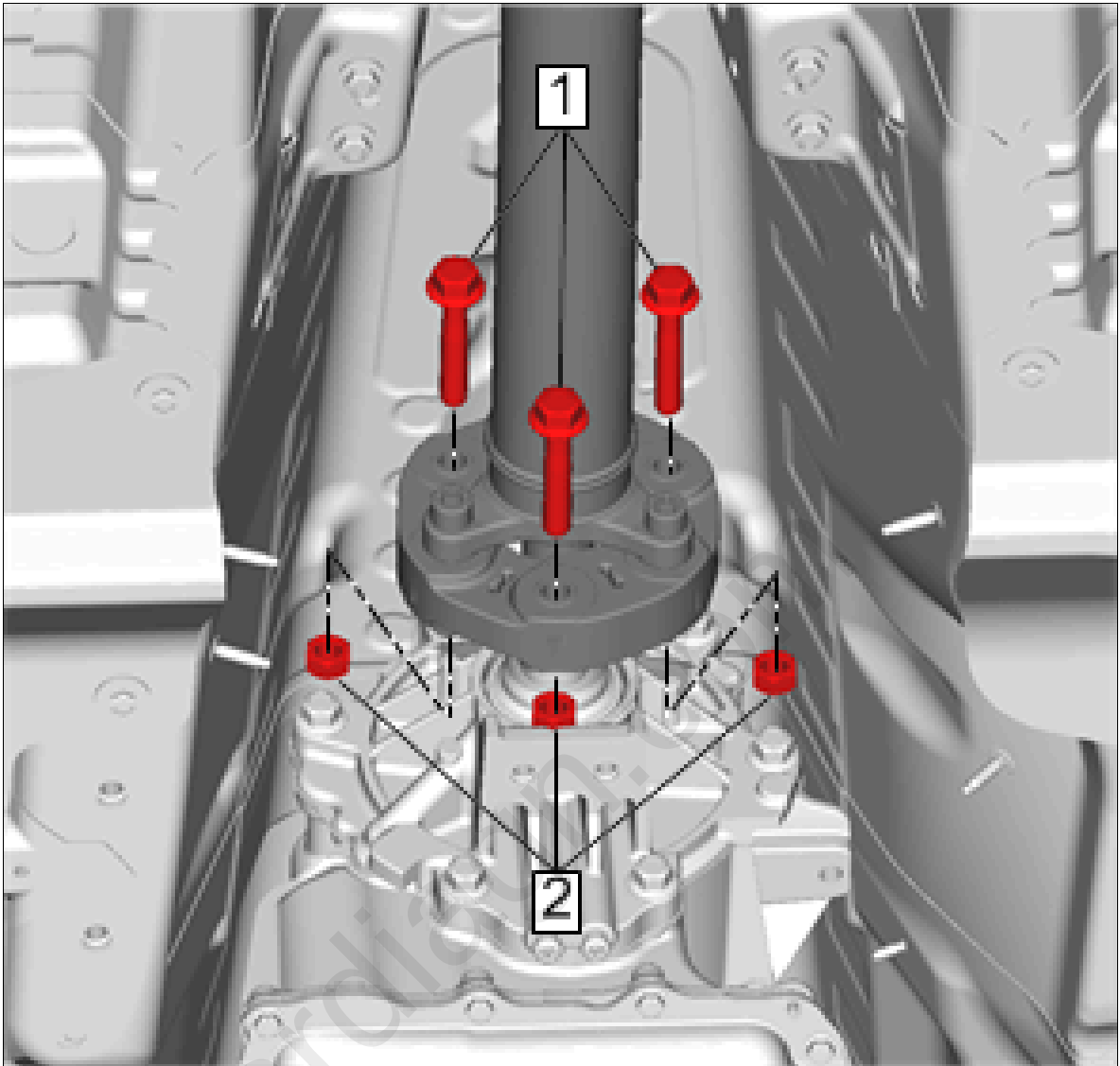
Fig 5: Propeller Shaft Flange And Transmission Output Flange



Courtesy of GENERAL MOTORS COMPANY

7. Align the reference mark (1) between the propeller shaft flange and the output flange of the transmission.

Fig 6: Front Propeller Shaft Nuts And Bolts



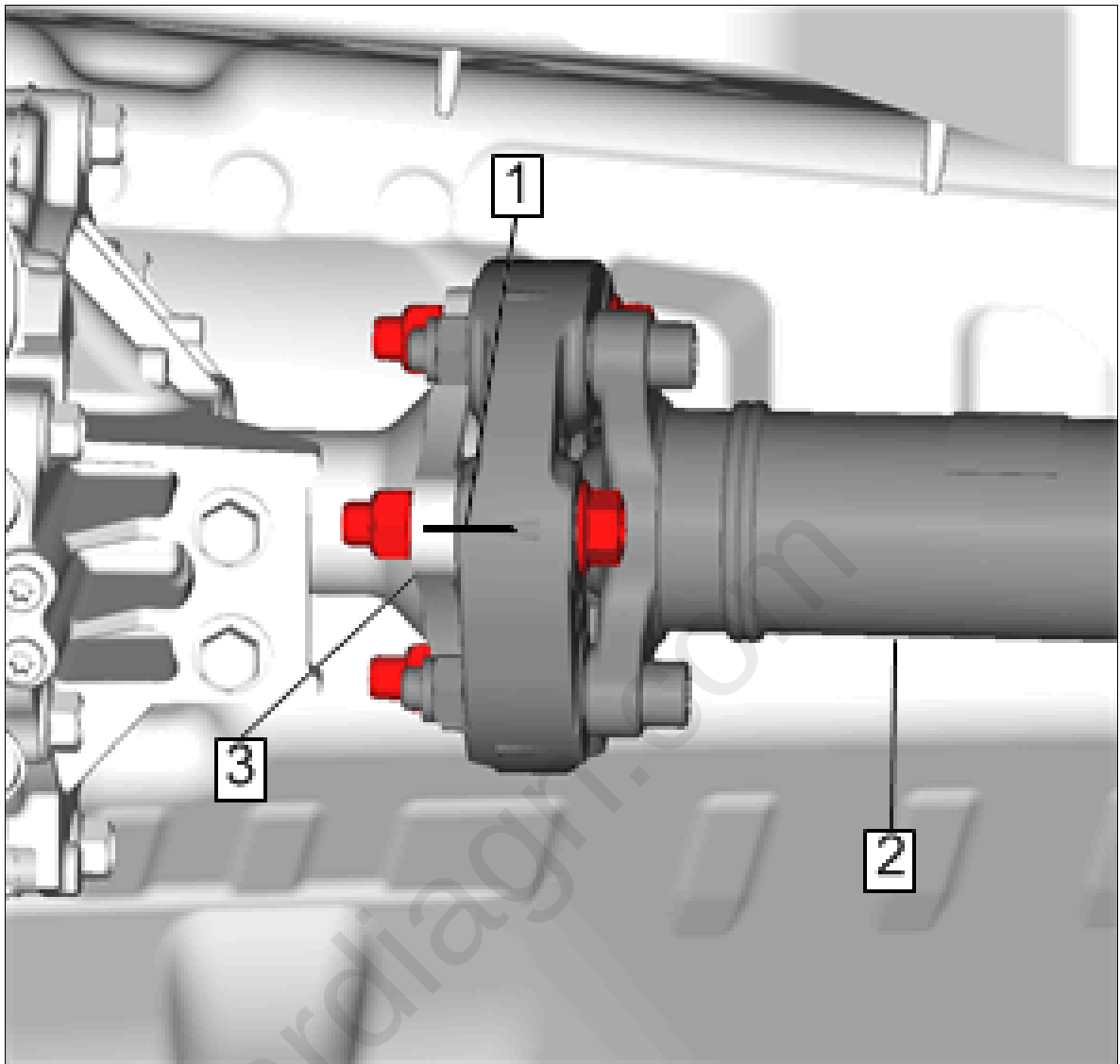
Courtesy of GENERAL MOTORS COMPANY

8. Install the three front propeller shaft nuts (2) and the bolts (1).
9. Tighten the bolts (1) to 90 N.m (66 lb ft)
10. Install the floor panel number 2 cross bar reinforcement. Floor Panel Number 2 Cross Bar Reinforcement Replacement
11. Install the intermediate body exhaust heat shield. Intermediate Body Exhaust Heat Shield Replacement
12. Install the exhaust muffler. Exhaust Muffler Replacement (LGX, Coupe)Exhaust Muffler Replacement (LT1, Coupe)Exhaust Muffler Replacement (LTG, Coupe)
13. Install the floor panel number 4 cross bar. Floor Panel Number 4 Cross Bar Replacement
14. Remove the support and lower the vehicle.

REPAIR INSTRUCTIONS > TWO-PIECE PROPELLER SHAFT REPLACEMENT (CONVERTIBLE MM6, M13) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
2. Remove the floor panel tunnel rear brace. Floor Panel Tunnel Rear Brace Replacement (Convertible)
3. Remove the underbody rear brace. Underbody Rear Brace Replacement (Convertible)
4. Remove the floor panel number 4 cross bar. Floor Panel Number 4 Cross Bar Replacement
5. Remove the exhaust muffler. Exhaust Muffler Replacement (LGX, Convertible)Exhaust Muffler Replacement (LT1, Convertible)Exhaust Muffler Replacement (LTG, Convertible)
6. Remove the intermediate body exhaust heat shield. Intermediate Body Exhaust Heat Shield Replacement
7. Remove the floor panel number 2 cross bar reinforcement. Floor Panel Number 2 Cross Bar Reinforcement Replacement

Fig 1: Propeller Shaft Flange And Transmission Output Flange



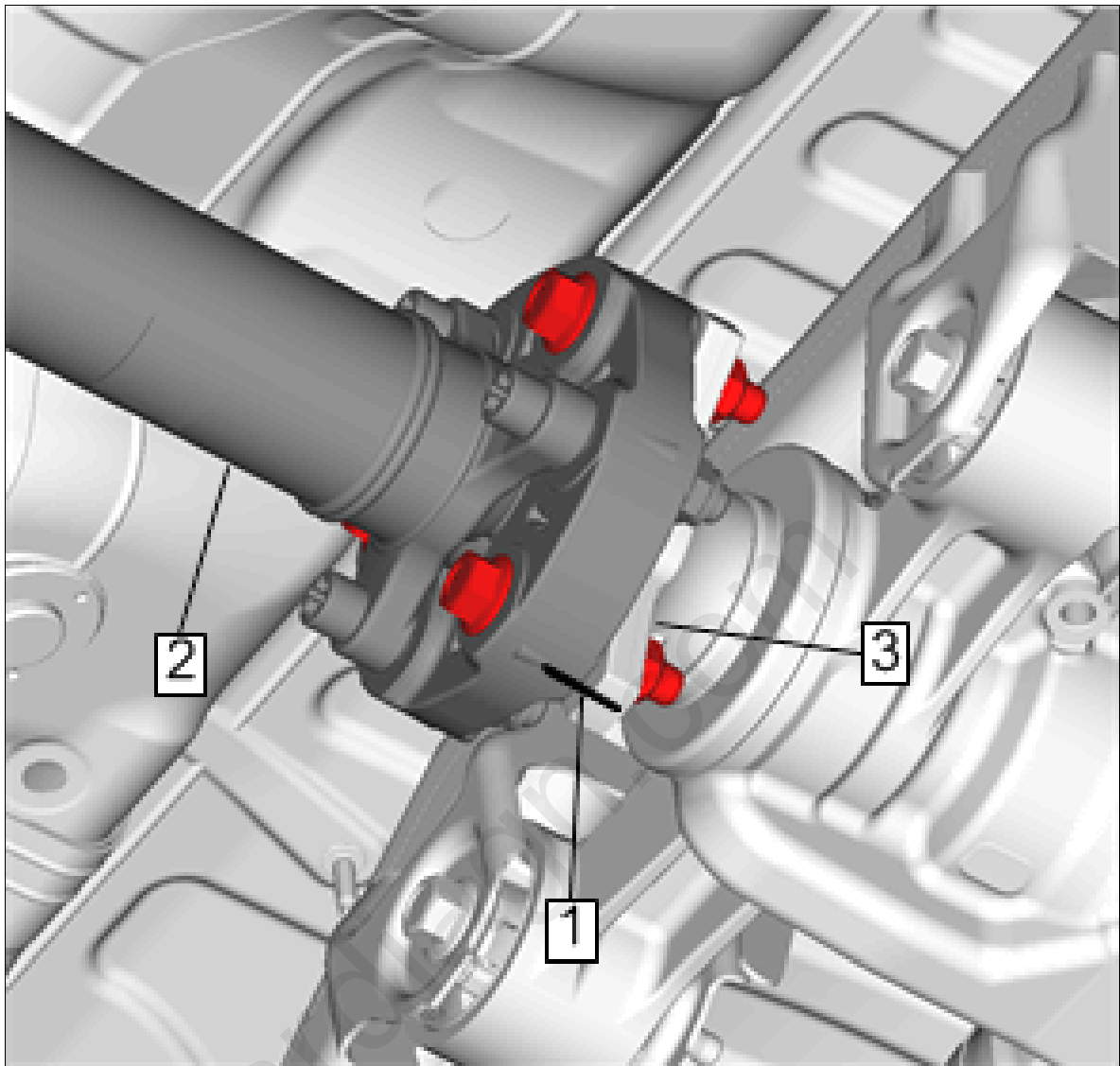
Courtesy of GENERAL MOTORS COMPANY

 NOTE:

Before removing the propeller shaft from the vehicle, paint or scribe references marks on the transmission flange to the propeller shaft and the rear differential drive flange to ensure minimal driveline system imbalance.

8. Mark (1) the relationship of the propeller shaft flange (2) and the output flange (3) of the transmission.

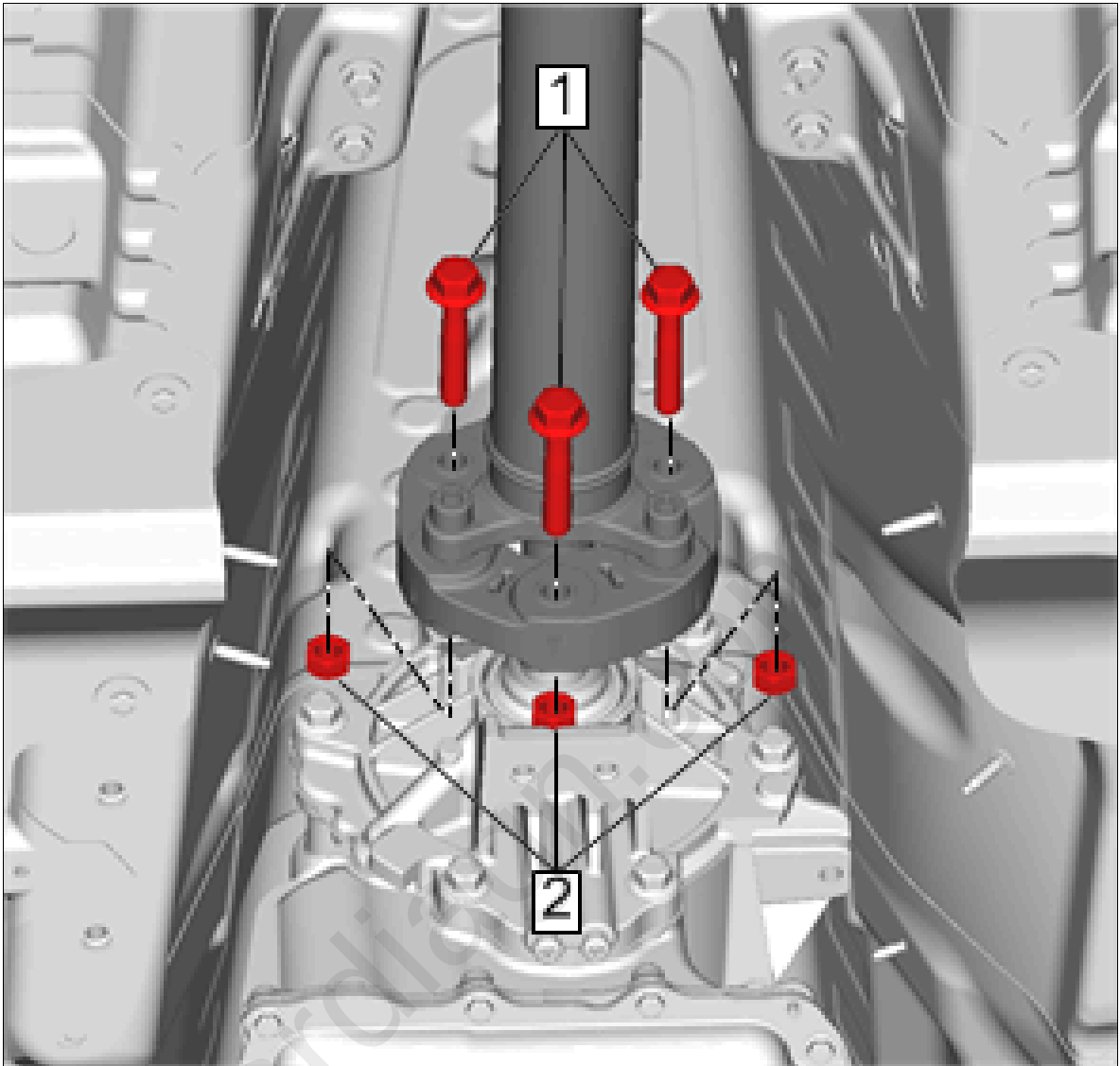
Fig 2: Propeller Shaft Flange And Rear Axle Pinion Flange



Courtesy of GENERAL MOTORS COMPANY

9. Mark (1) the relationship of the propeller shaft flange (2) and the rear axle pinion flange (3).

Fig 3: Front Propeller Shaft Bolts And Nuts



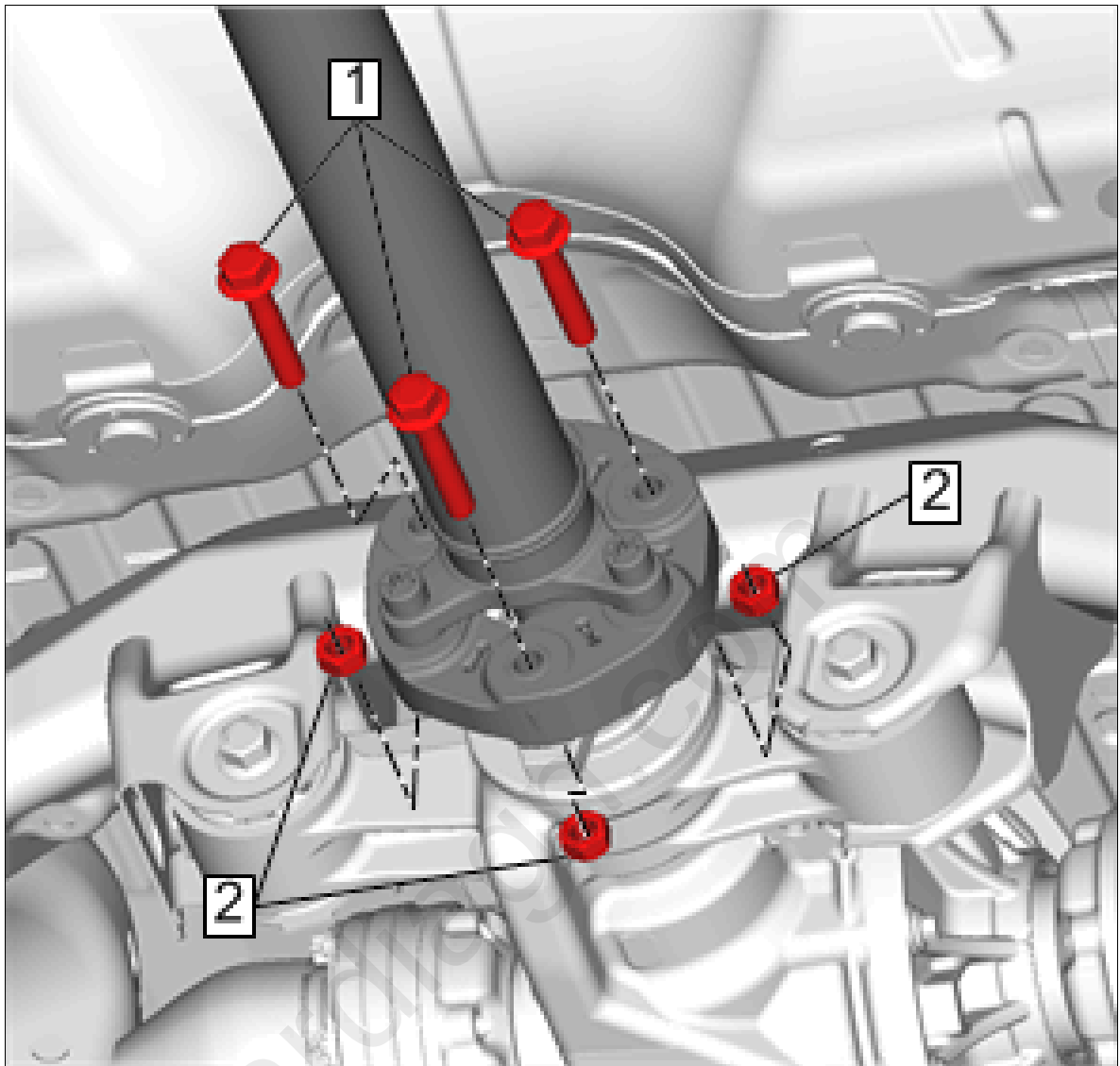
Courtesy of GENERAL MOTORS COMPANY

 NOTE:

Ensure that the propeller shaft is secured to the hydraulic jack stand.

10. Support the propeller shaft with a suitable hydraulic jack stand.
11. Remove the three front propeller shaft bolts (1) and the nuts (2).

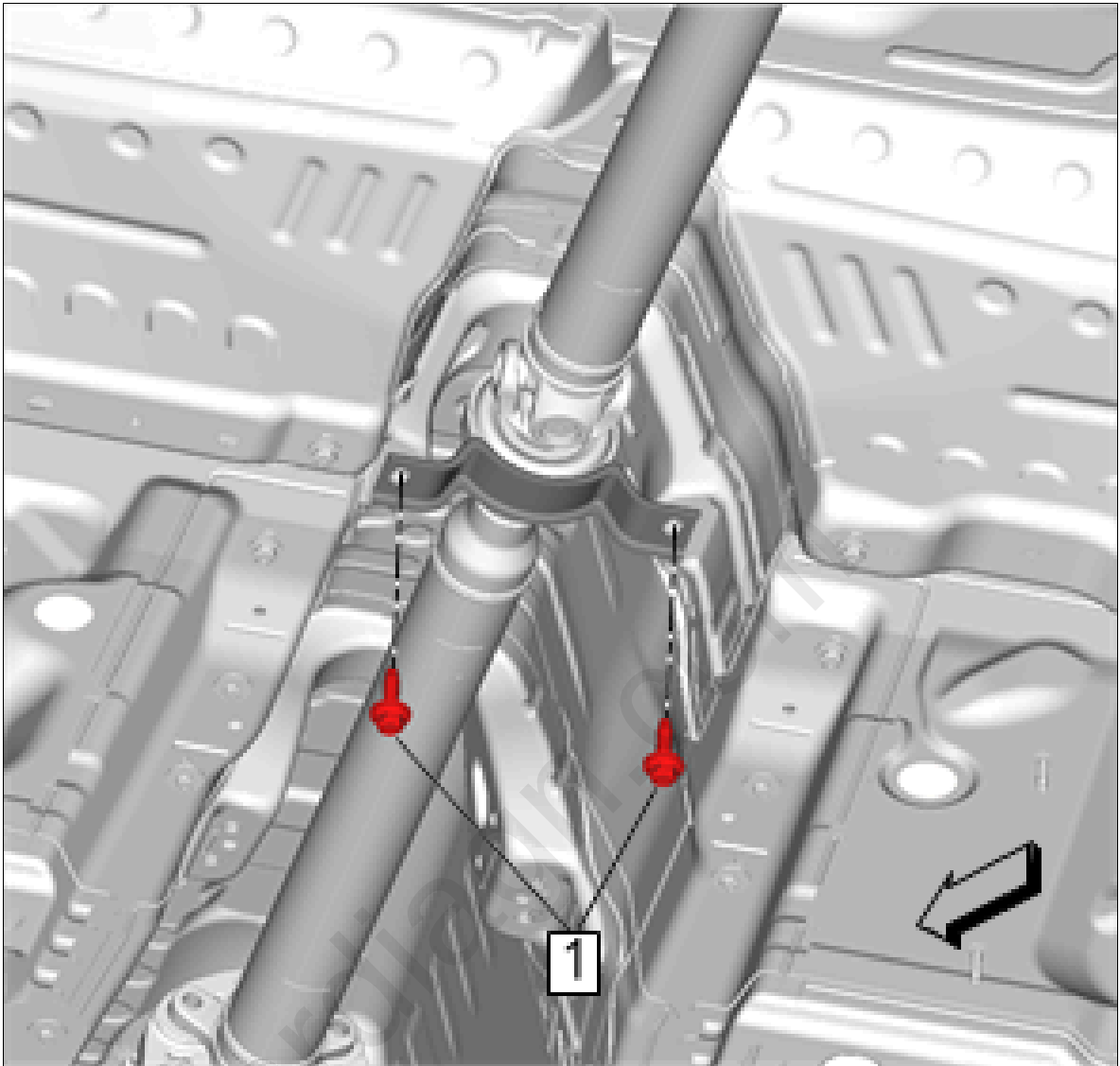
Fig 4: Rear Propeller Shaft Bolts And Nuts



Courtesy of GENERAL MOTORS COMPANY

12. Remove the three rear propeller shaft bolts (1) and the nuts (2).

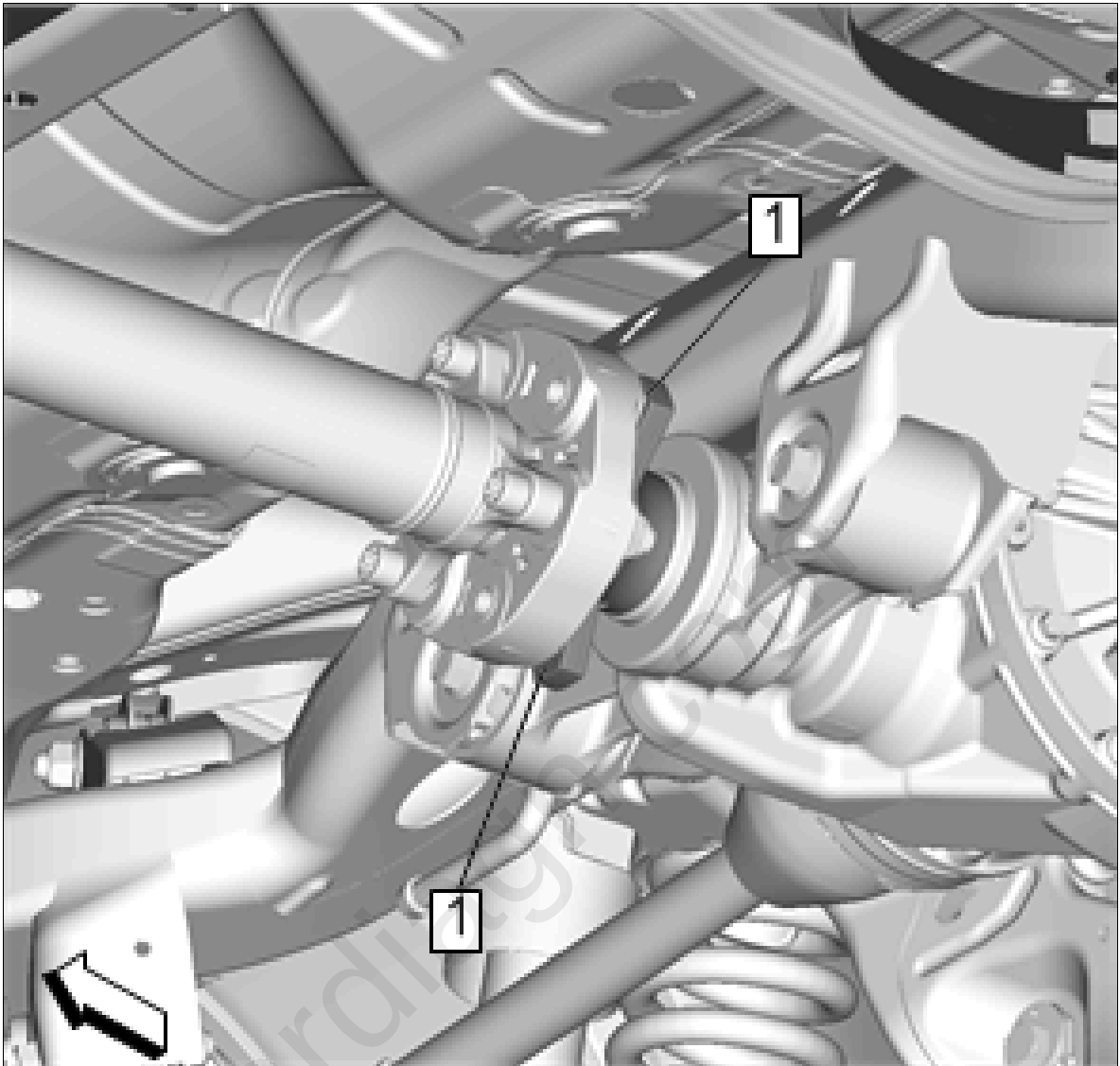
Fig 5: Propeller Shaft Bearing Support Bolts



Courtesy of GENERAL MOTORS COMPANY

13. Remove the two propeller shaft bearing support bolts (1).

Fig 6: Lubricant Or Wd-40® To Area Shown



Courtesy of GENERAL MOTORS COMPANY

 CAUTION:

Care should be taken not to use sharp or pry tools when separating the propeller shaft coupler from the drive flange. Damage to the coupler could result and replacement of the entire propeller shaft would be required.

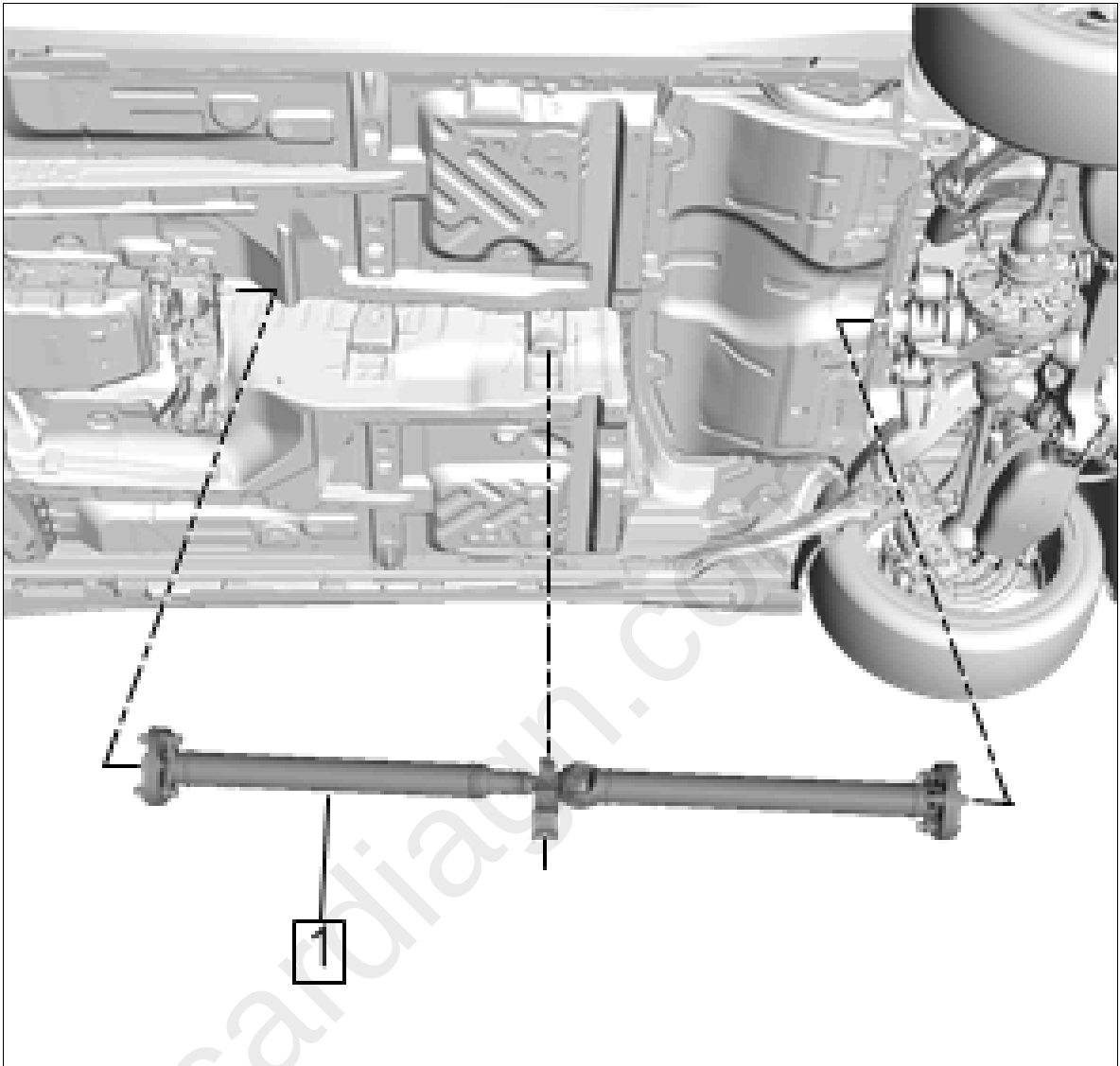
 NOTE:

It may be necessary to apply a small amount of penetrating lubricant or WD-40® to the area shown (1) to aid in separation of the propeller shaft coupling.

14. If the propeller shaft does not easily separate from the differential, transmission or transfer

case, use a rubber mallet to gently tap the locations (1) on the rubber coupling shown above to separate.

Fig 7: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

15. Remove the propeller shaft (1) from the vehicle.

REPAIR INSTRUCTIONS > TWO-PIECE PROPELLER SHAFT REPLACEMENT (CONVERTIBLE MM6, M13) > INSTALLATION PROCEDURE

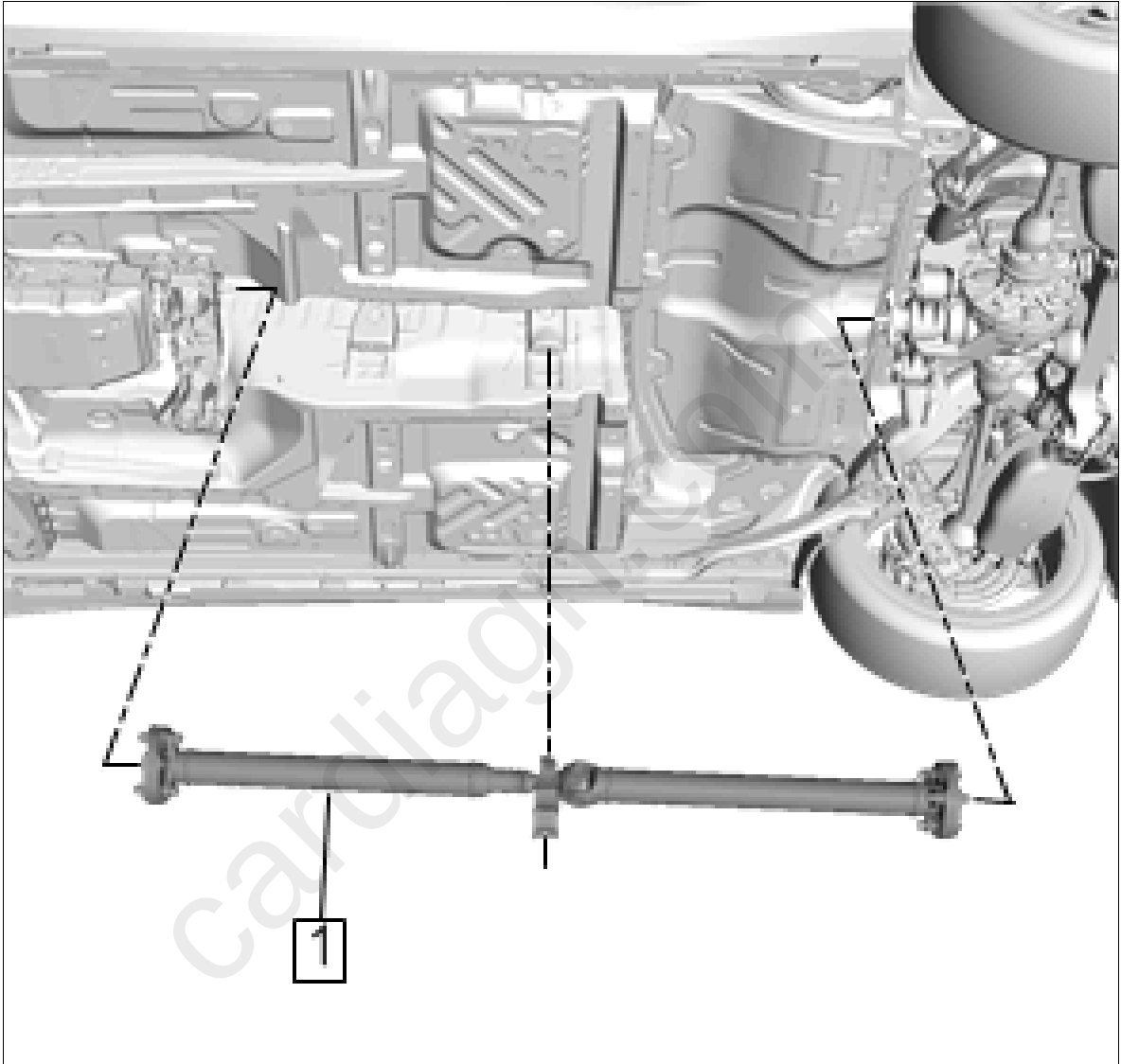
NOTE:

If reusing the propeller shaft bolts, to ensure proper adhesion and fastener retention, the threads must be free of debris prior to the application of threadlocker. Use an appropriate cleaner to thoroughly clean the threads and allow to dry. Apply threadlocker to the propeller shaft to flange bolts. Ensure that there are no gaps in

the threadlocker along the length of the filled area of the bolts. Allow the threadlocker to cure approximately 10 minutes before installation.

1. Thoroughly clean apply threadlocker to the threads of the propeller shaft bolts. Adhesives, Fluids, Lubricants, and Sealers

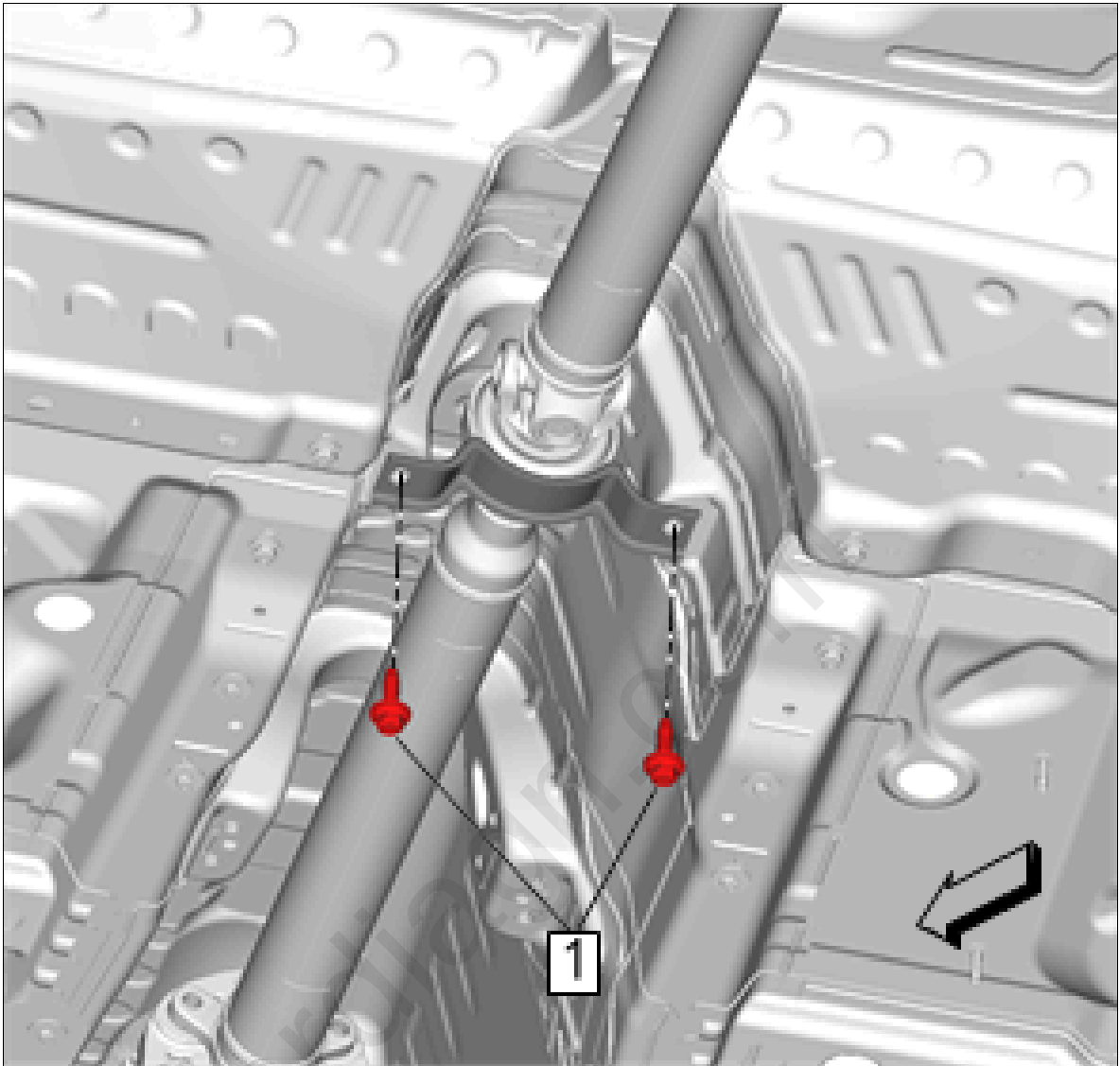
Fig 1: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

2. Position the propeller shaft (1) in the vehicle.

Fig 2: Propeller Shaft Bearing Bolts



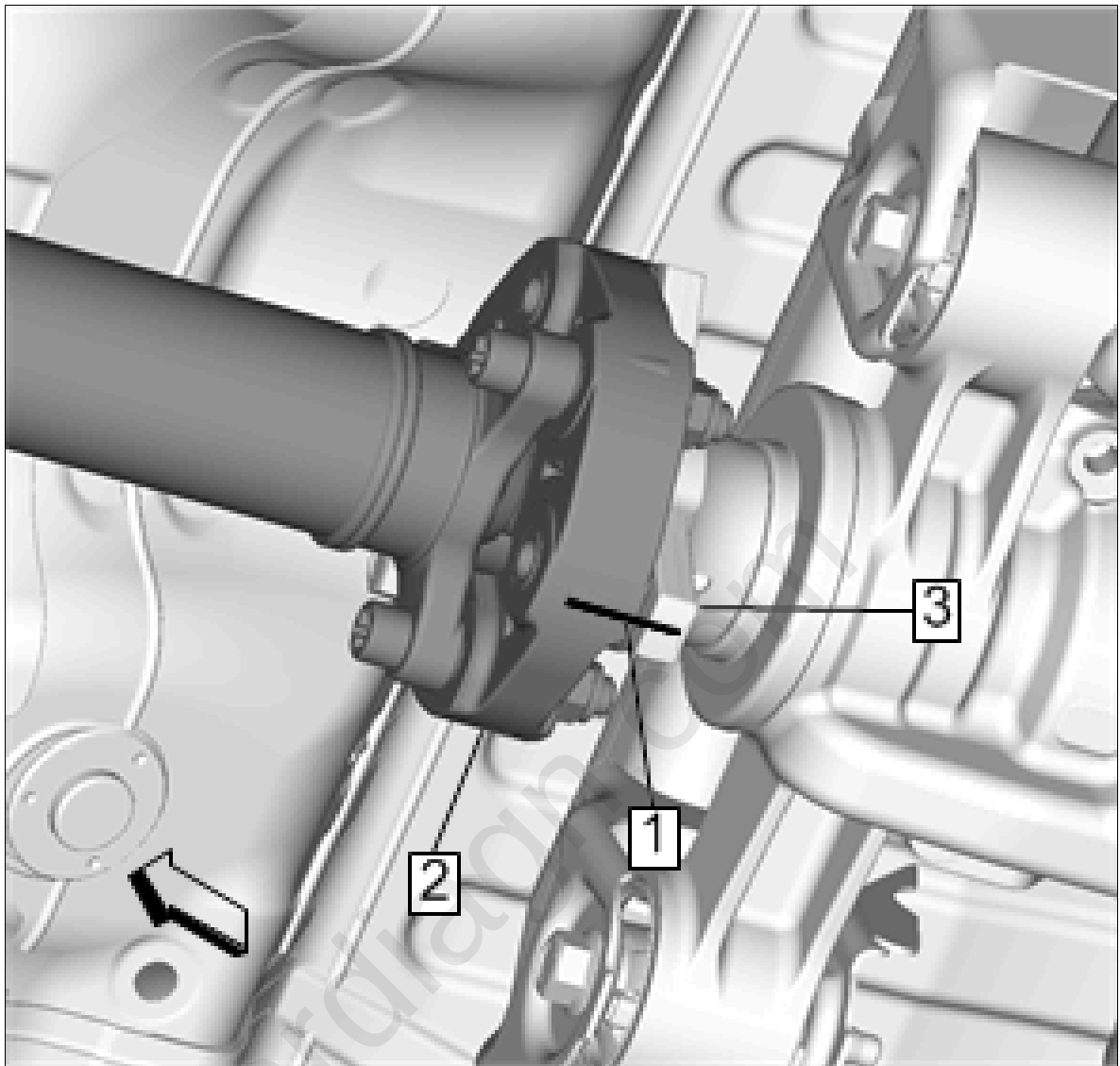
Courtesy of GENERAL MOTORS COMPANY

 **CAUTION:**

Refer to Fastener Caution .

3. Install the two propeller shaft bearing bolts (1) and tighten to 50 N.m (37 lb ft).

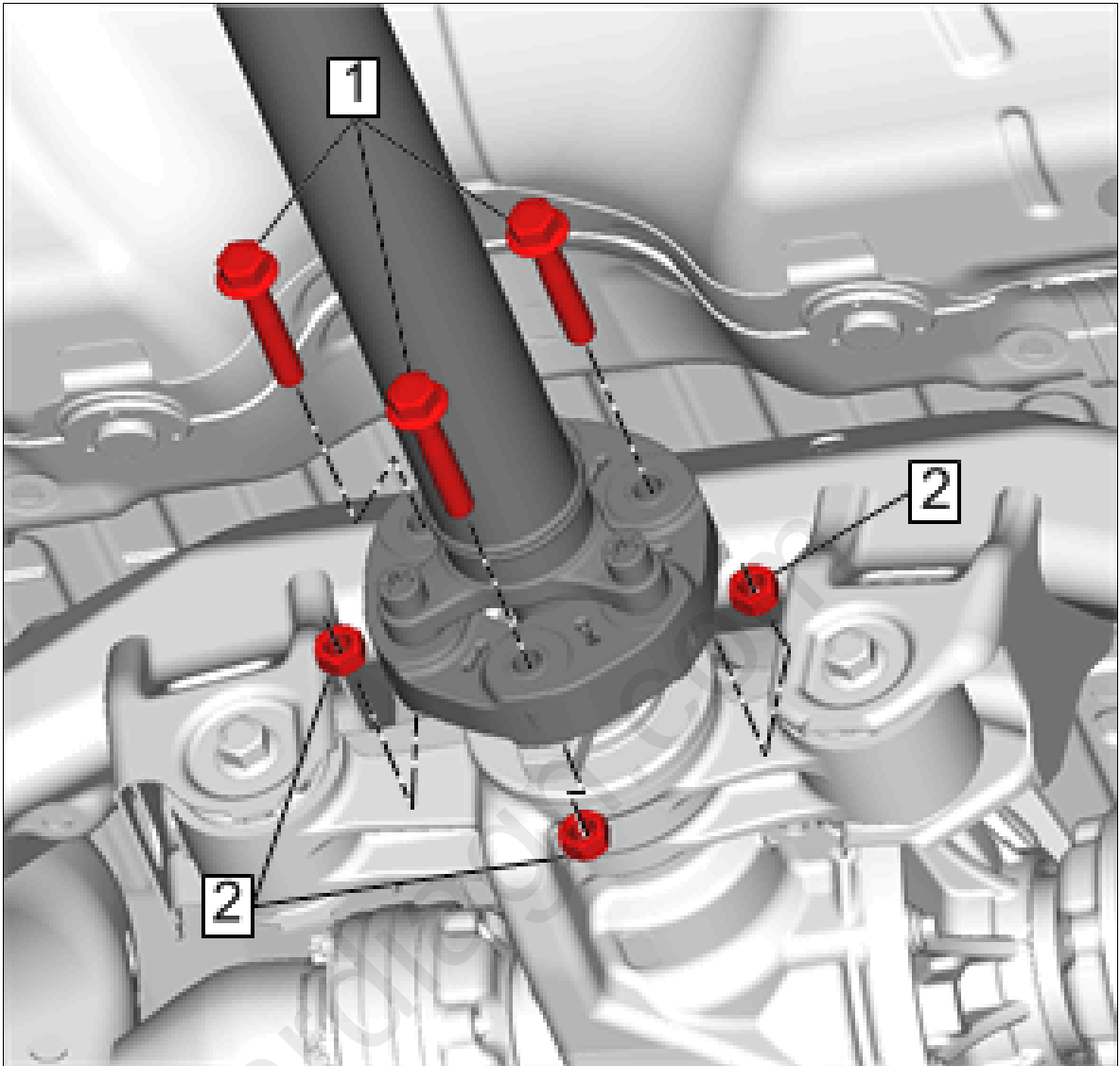
Fig 3: Propeller Shaft Flange And Rear Axle Pinion Flange



Courtesy of GENERAL MOTORS COMPANY

4. Align the reference mark (1) between the propeller shaft flange and the rear axle pinion flange.

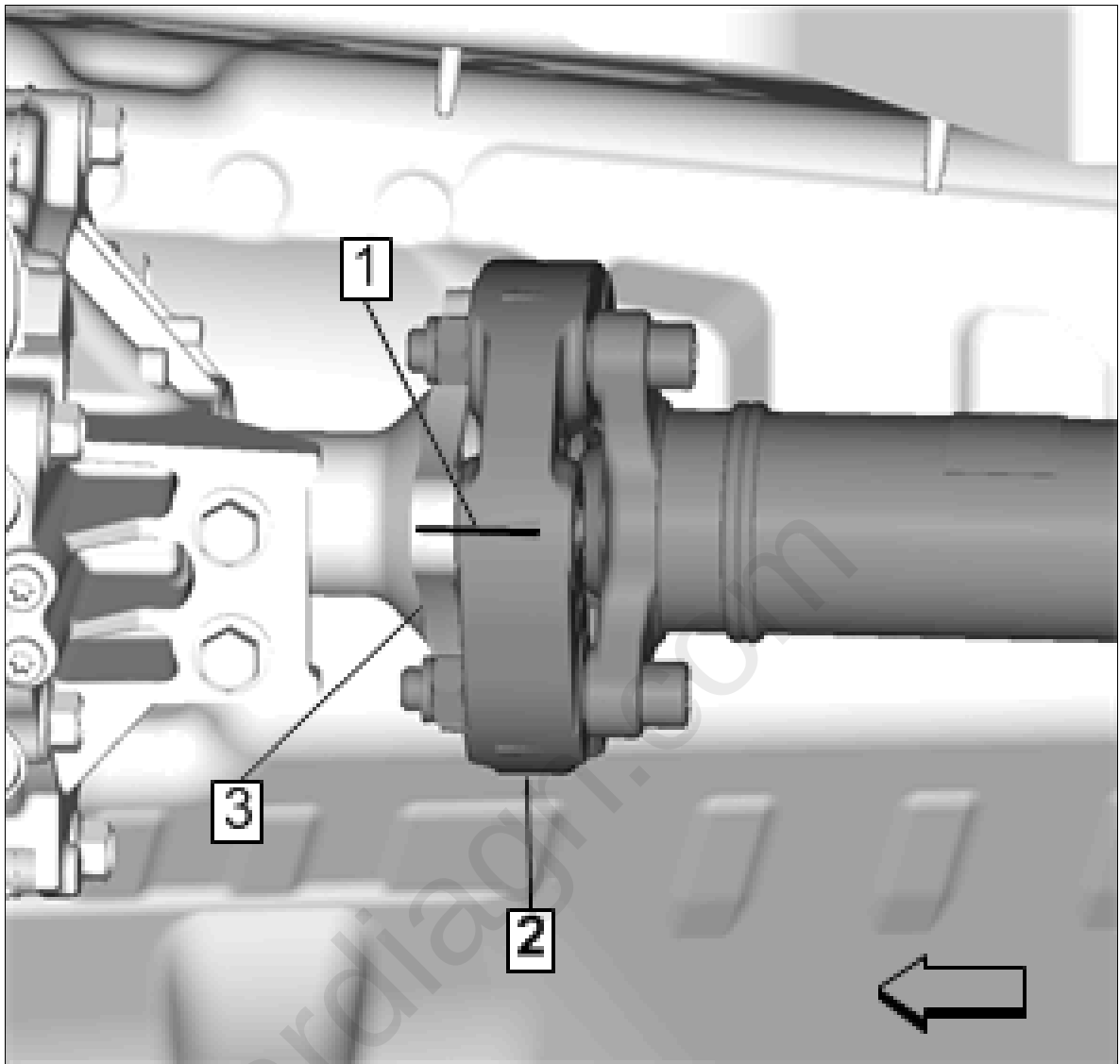
Fig 4: Rear Propeller Shaft Nuts And Bolts



Courtesy of GENERAL MOTORS COMPANY

5. Install the three rear propeller shaft nuts (2) and the bolts (1).
6. Tighten the bolts (1) to 90 N.m (66 lb ft).

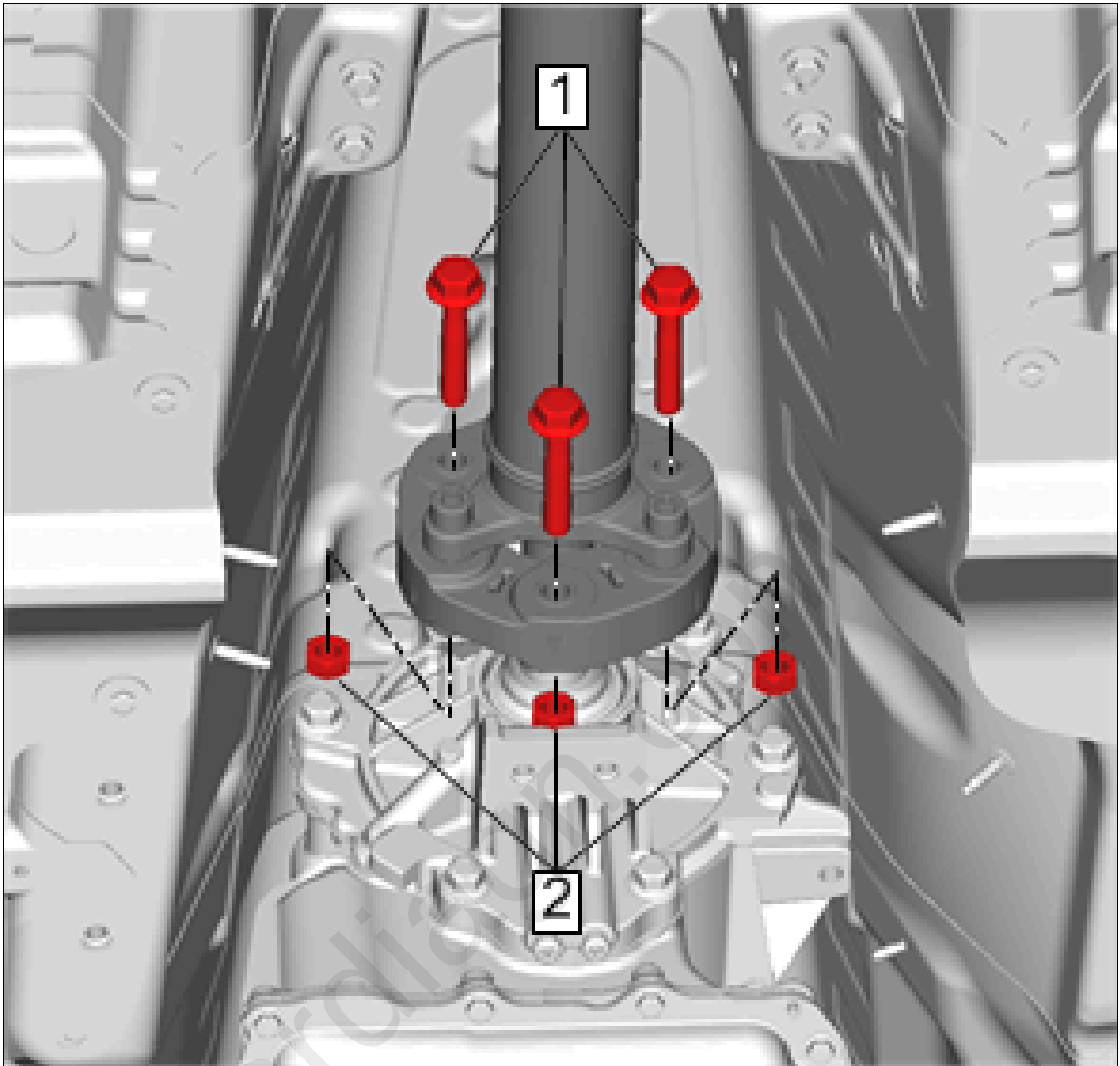
Fig 5: Propeller Shaft Flange And Transmission Output Flange



Courtesy of GENERAL MOTORS COMPANY

7. Align the reference mark (1) between the propeller shaft flange and the output flange of the transmission.

Fig 6: Front Propeller Shaft Nuts And Bolts



Courtesy of GENERAL MOTORS COMPANY

8. Install the three front propeller shaft nuts (2) and the bolts (1).
9. Tighten the bolts (1) to 90 N.m (66 lb ft)
10. Install the floor panel number 2 cross bar reinforcement. Floor Panel Number 2 Cross Bar Reinforcement Replacement
11. Install the intermediate body exhaust heat shield. Intermediate Body Exhaust Heat Shield Replacement
12. Install the exhaust muffler. Exhaust Muffler Replacement (LGX, Convertible)Exhaust Muffler Replacement (LT1, Convertible)Exhaust Muffler Replacement (LTG, Convertible)
13. Install the floor panel number 4 cross bar. Floor Panel Number 4 Cross Bar Replacement
14. Install the underbody rear brace. Underbody Rear Brace Replacement (Convertible)
15. Install the floor panel tunnel rear brace. Floor Panel Tunnel Rear Brace Replacement

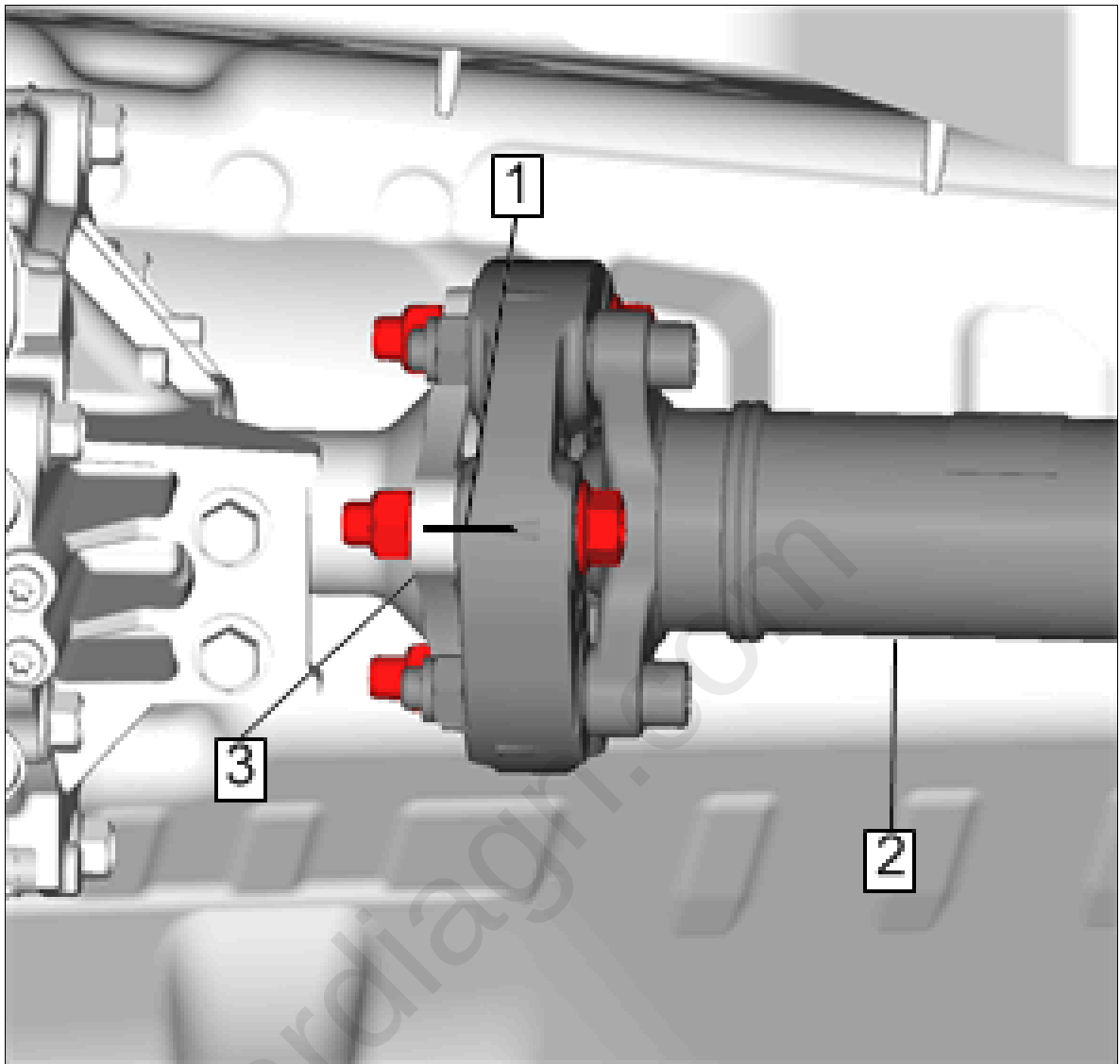
(Convertible)

16. Remove the support and lower the vehicle.

REPAIR INSTRUCTIONS > TWO-PIECE PROPELLER SHAFT REPLACEMENT (COUPE M5T, M5U) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
2. Remove the floor panel number 4 cross bar. Floor Panel Number 4 Cross Bar Replacement
3. Remove the exhaust muffler. Exhaust Muffler Replacement (LGX, Coupe)Exhaust Muffler Replacement (LT1, Coupe)Exhaust Muffler Replacement (LTG, Coupe)
4. Remove the intermediate body exhaust heat shield. Intermediate Body Exhaust Heat Shield Replacement
5. Remove the floor panel number 2 cross bar reinforcement. Floor Panel Number 2 Cross Bar Reinforcement Replacement

Fig 1: Propeller Shaft Flange And Transmission Output Flange



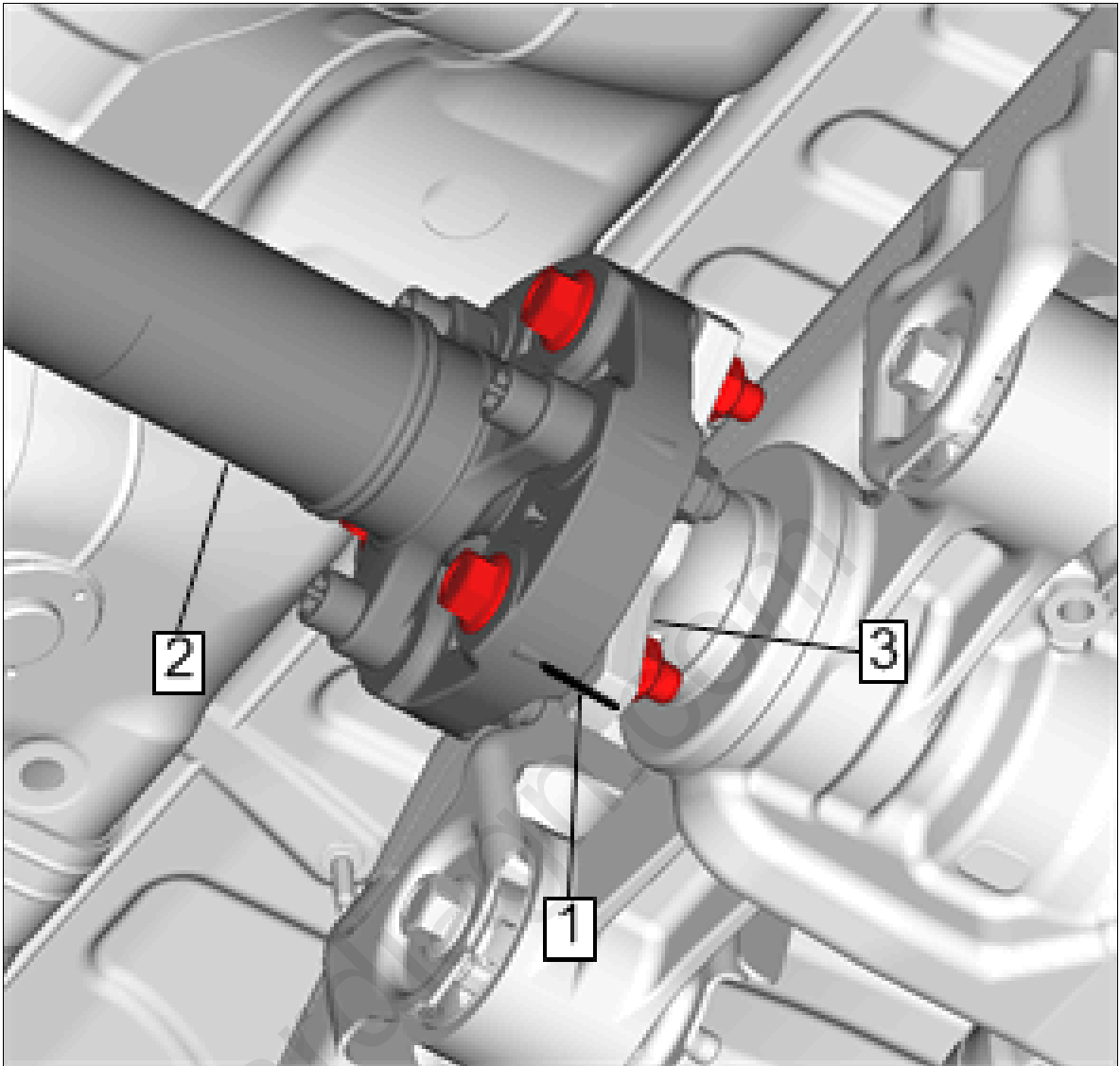
Courtesy of GENERAL MOTORS COMPANY

 NOTE:

Before removing the propeller shaft from the vehicle, paint or scribe references marks on the transmission flange to the propeller shaft and the rear differential drive flange to ensure minimal driveline system imbalance.

6. Mark (1) the relationship of the propeller shaft flange (2) and the output flange (3) of the transmission.

Fig 2: Propeller Shaft Flange And Rear Axle Pinion Flange



Courtesy of GENERAL MOTORS COMPANY

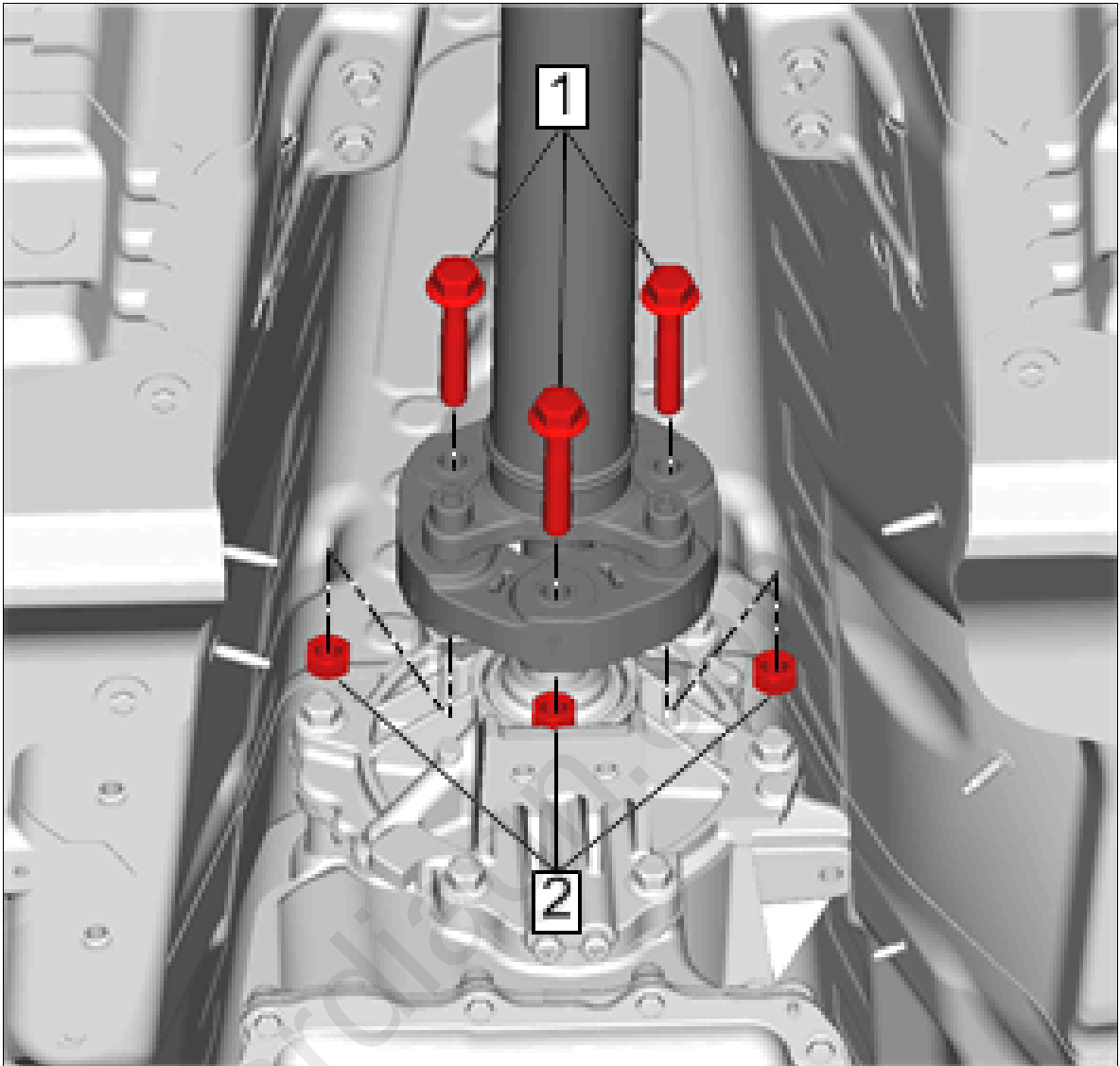
7. Mark (1) the relationship of the propeller shaft flange (2) and the rear axle pinion flange (3).

 **NOTE:**

Ensure that the propeller shaft is secured to the hydraulic jack stand.

8. Support the propeller shaft with a suitable hydraulic jack stand.

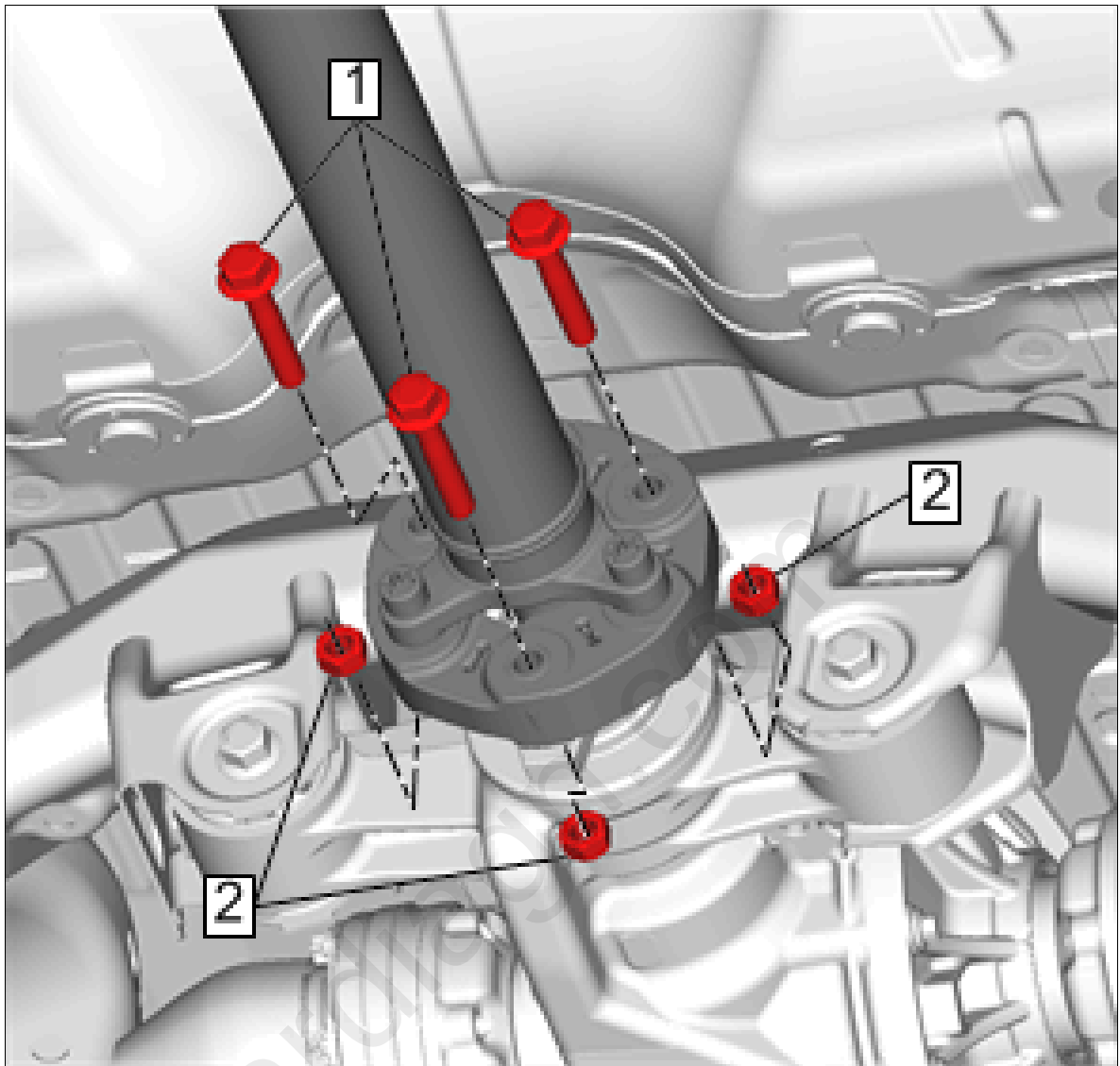
Fig 3: Front Propeller Shaft Bolts And Nuts



Courtesy of GENERAL MOTORS COMPANY

9. Remove the three front propeller shaft bolts (1) and the nuts (2).

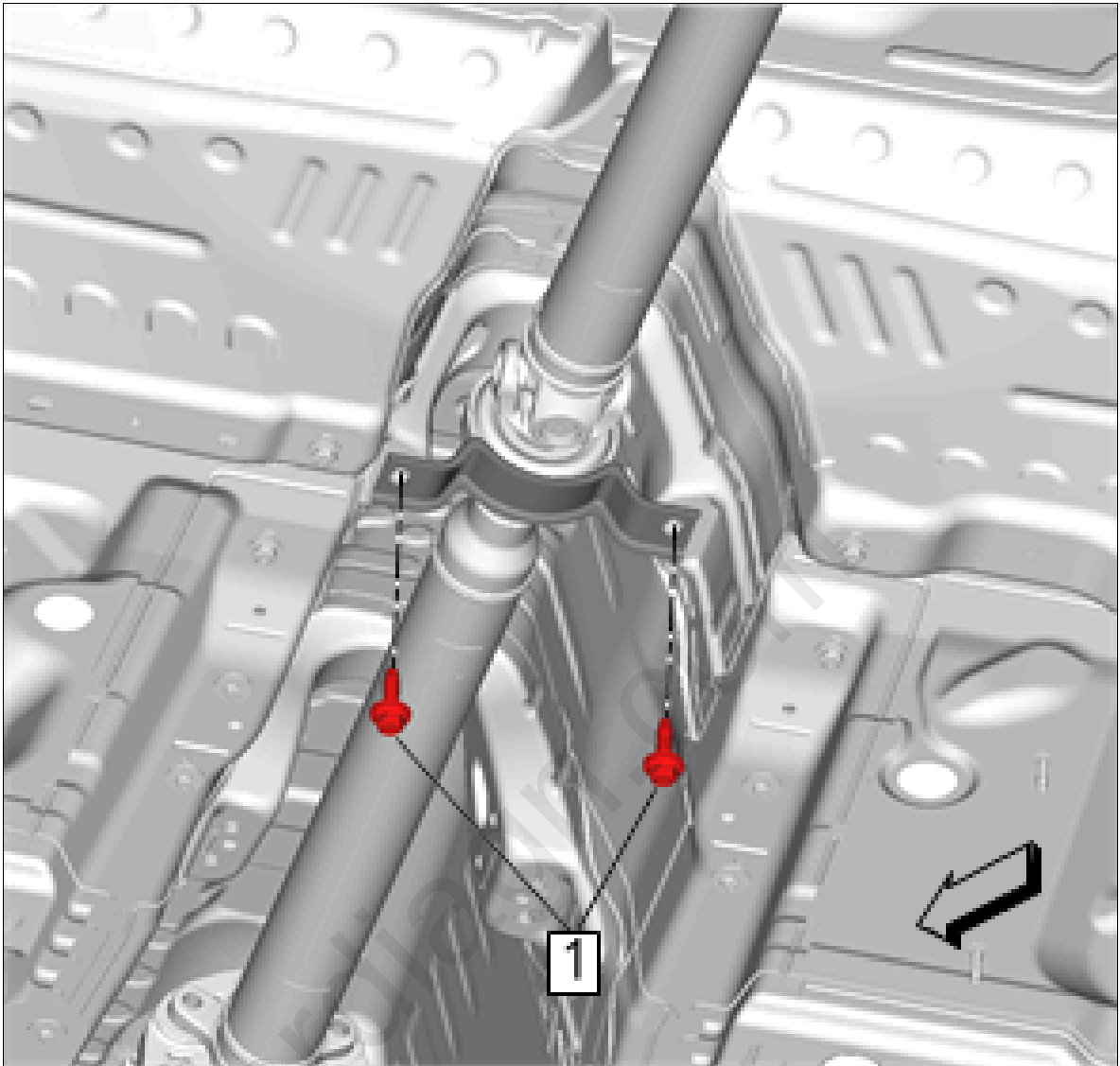
Fig 4: Rear Propeller Shaft Bolts And Nuts



Courtesy of GENERAL MOTORS COMPANY

10. Remove the three rear propeller shaft bolts (1) and the nuts (2).

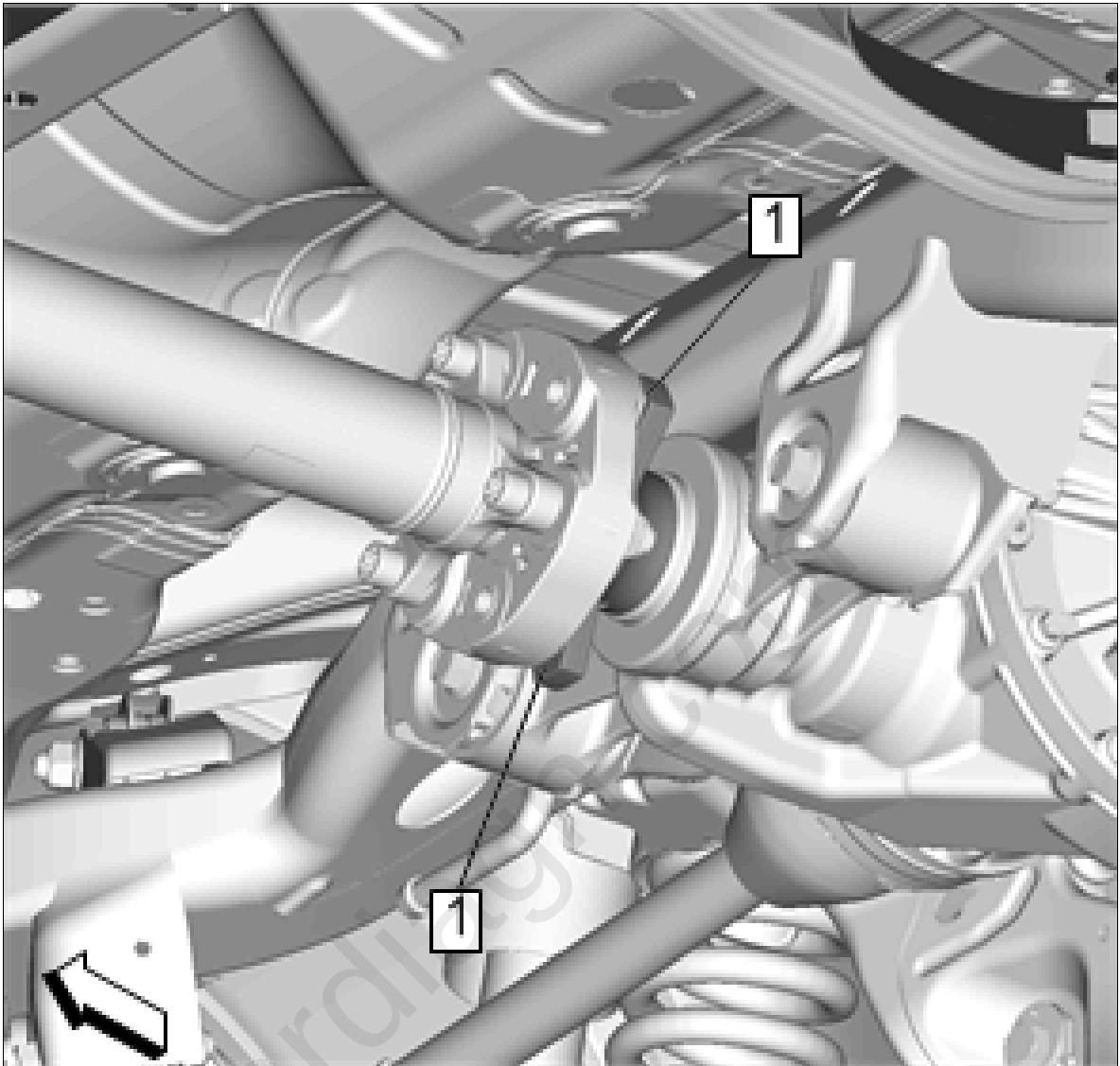
Fig 5: Propeller Shaft Bearing Support Bolts



Courtesy of GENERAL MOTORS COMPANY

11. Remove the two propeller shaft bearing support bolts (1).

Fig 6: Lubricant Or WD-40® To Area Shown



Courtesy of GENERAL MOTORS COMPANY

 CAUTION:

Care should be taken not to use sharp or pry tools when separating the propeller shaft coupler from the drive flange. Damage to the coupler could result and replacement of the entire propeller shaft would be required.

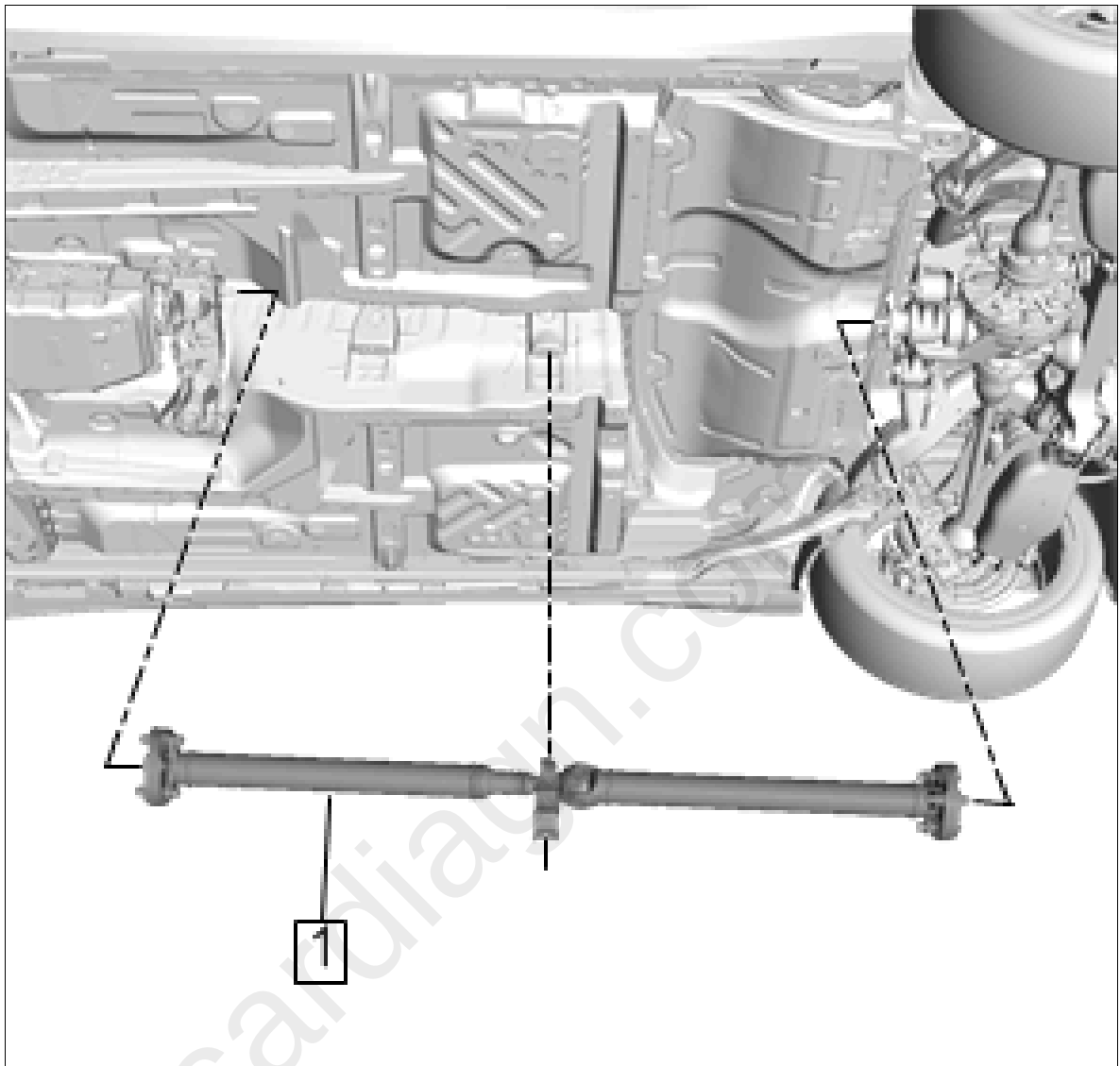
 NOTE:

It may be necessary to apply a small amount of penetrating lubricant or WD-40® to the area shown (1) to aid in separation of the propeller shaft coupling.

12. If the propeller shaft does not easily separate from the differential, transmission or transfer

case, use a rubber mallet to gently tap the locations (1) on the rubber coupling shown above to separate.

Fig 7: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

13. Remove the propeller shaft (1) from the vehicle.

REPAIR INSTRUCTIONS > TWO-PIECE PROPELLER SHAFT REPLACEMENT (COUPE M5T, M5U) > INSTALLATION PROCEDURE

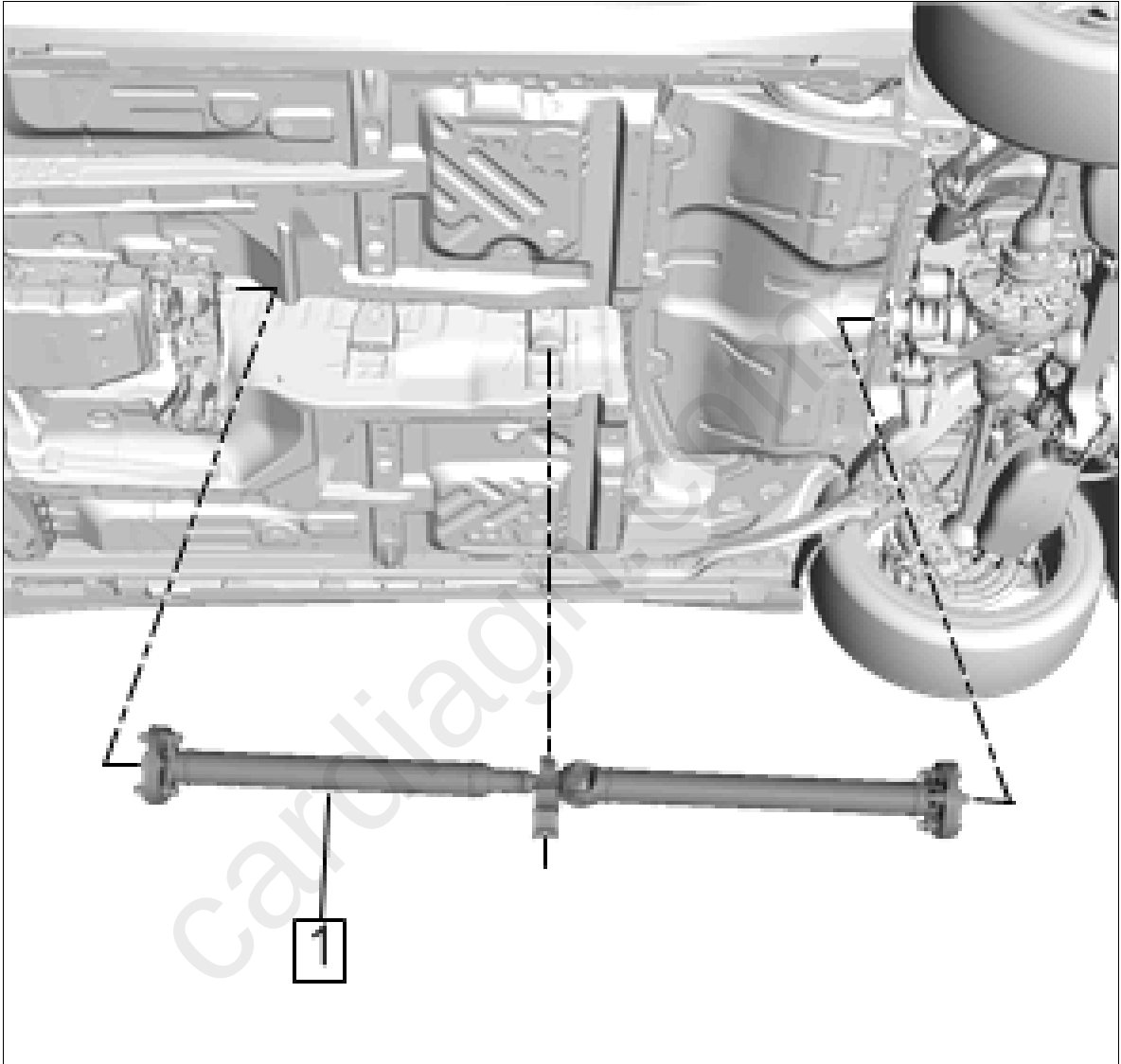
NOTE:

If reusing the propeller shaft bolts, to ensure proper adhesion and fastener retention, the threads must be free of debris prior to the application of threadlocker. Use an appropriate cleaner to thoroughly clean the threads and allow to dry. Apply threadlocker to the propeller shaft to flange bolts. Ensure that there are no gaps in

the threadlocker along the length of the filled area of the bolts. Allow the threadlocker to cure approximately 10 minutes before installation.

1. Thoroughly clean apply threadlocker to the threads of the propeller shaft bolts. Adhesives, Fluids, Lubricants, and Sealers .

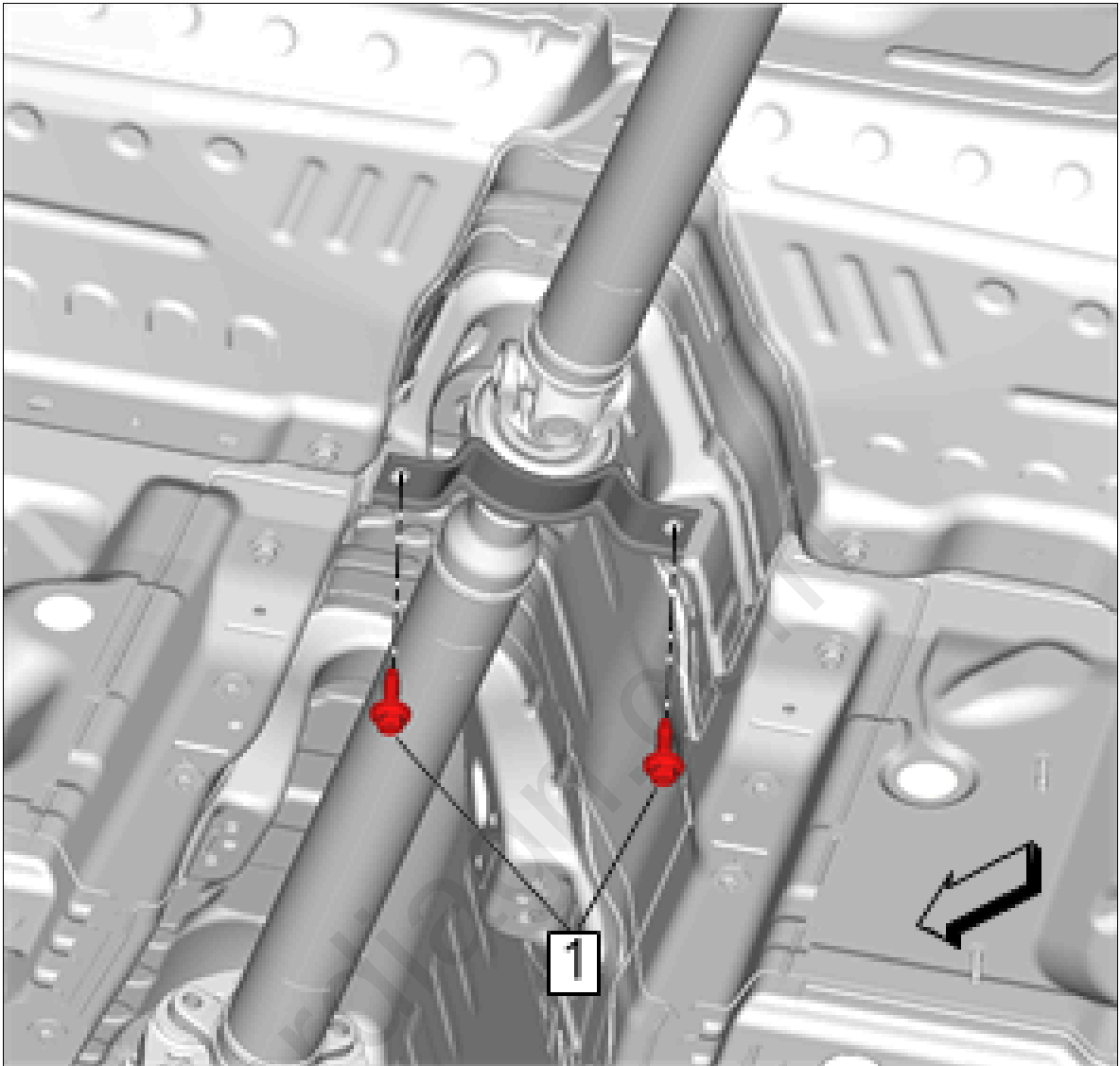
Fig 1: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

2. Position the propeller shaft (1) in the vehicle.

Fig 2: Propeller Shaft Bearing Bolts



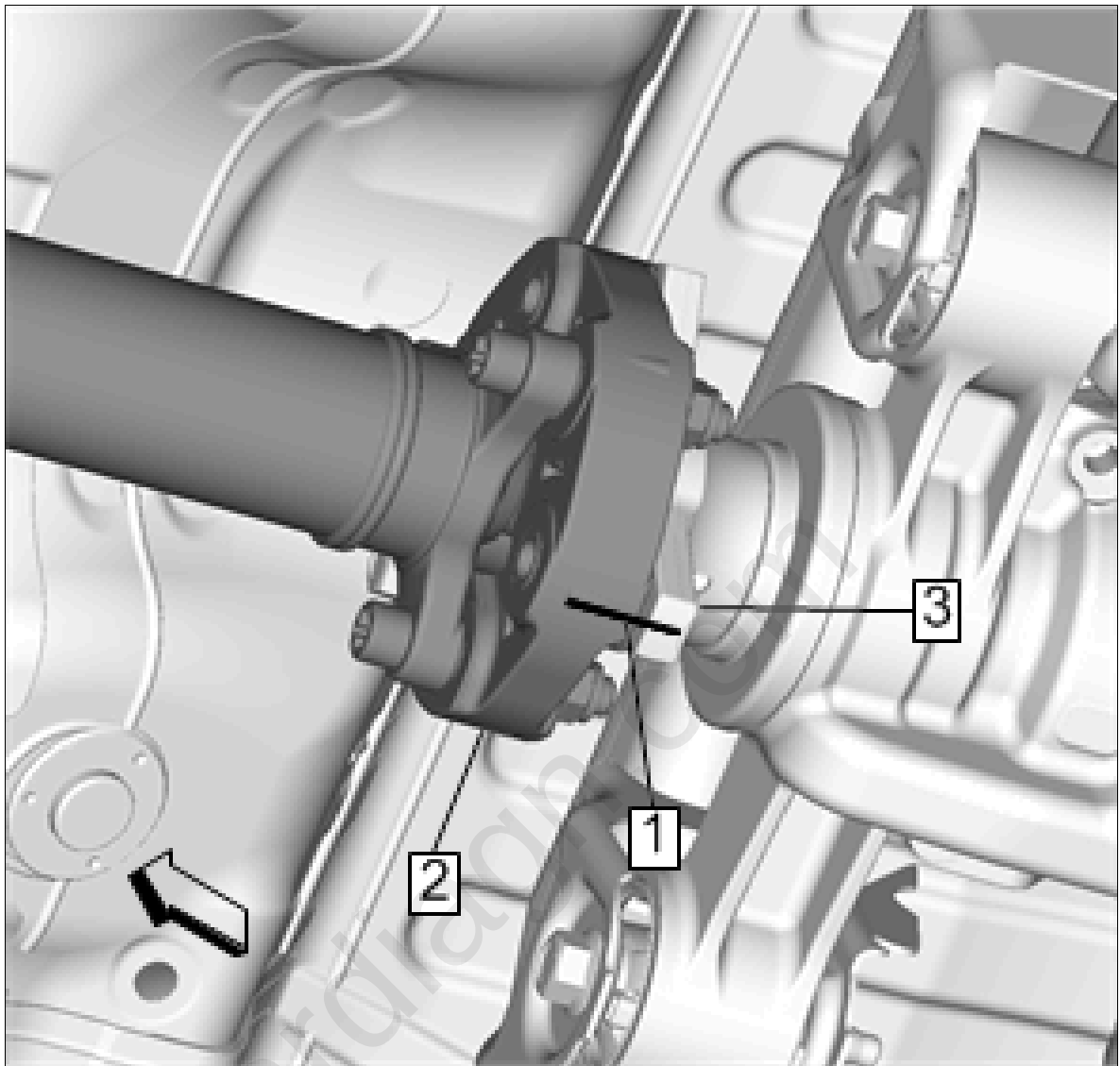
Courtesy of GENERAL MOTORS COMPANY

 **CAUTION:**

Refer to Fastener Caution .

3. Install the two propeller shaft bearing bolts (1) and tighten to 50 N.m (37 lb ft).

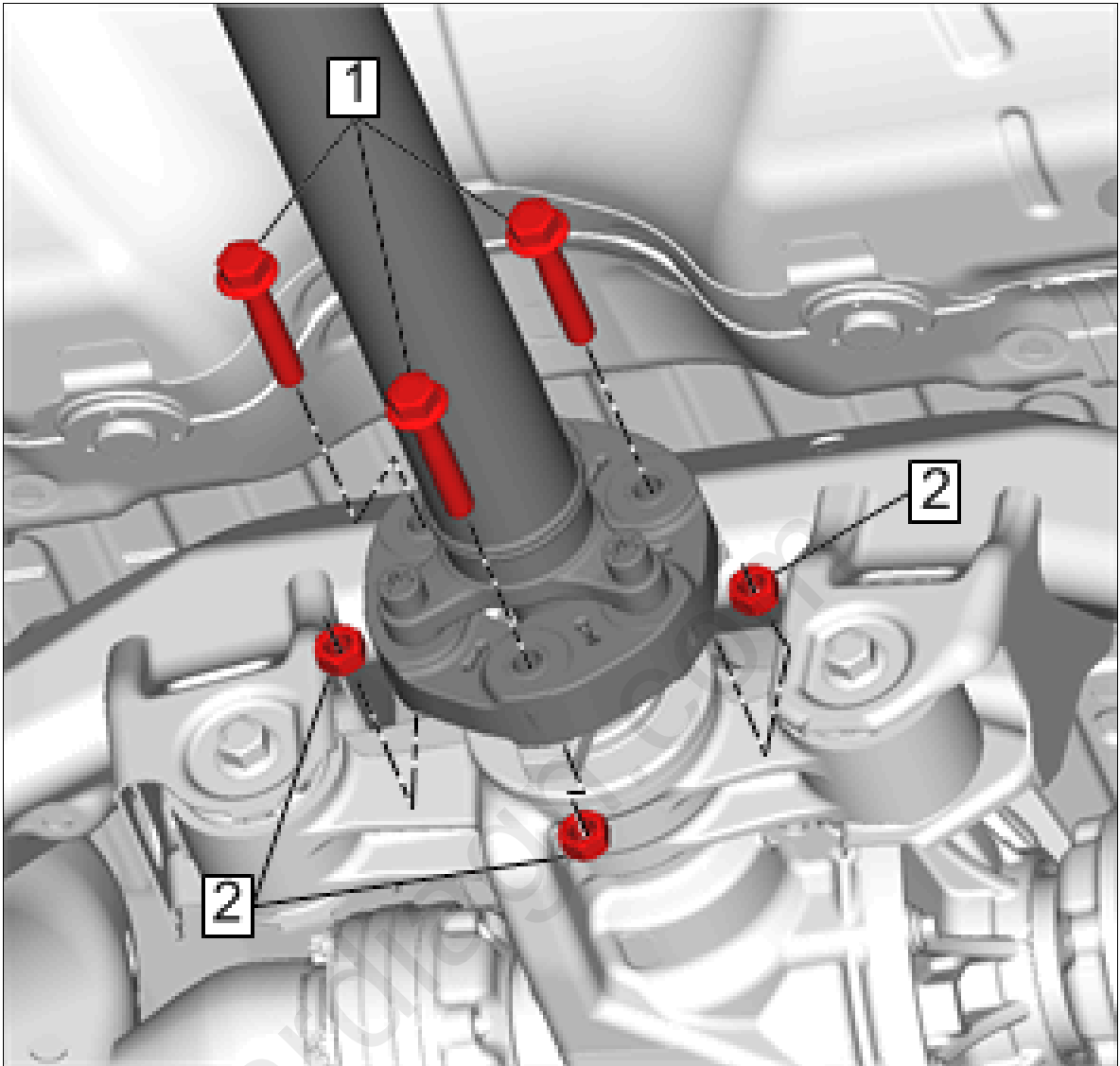
Fig 3: Propeller Shaft Flange And Rear Axle Pinion Flange



Courtesy of GENERAL MOTORS COMPANY

4. Align the reference mark (1) between the propeller shaft flange and the rear axle pinion flange.

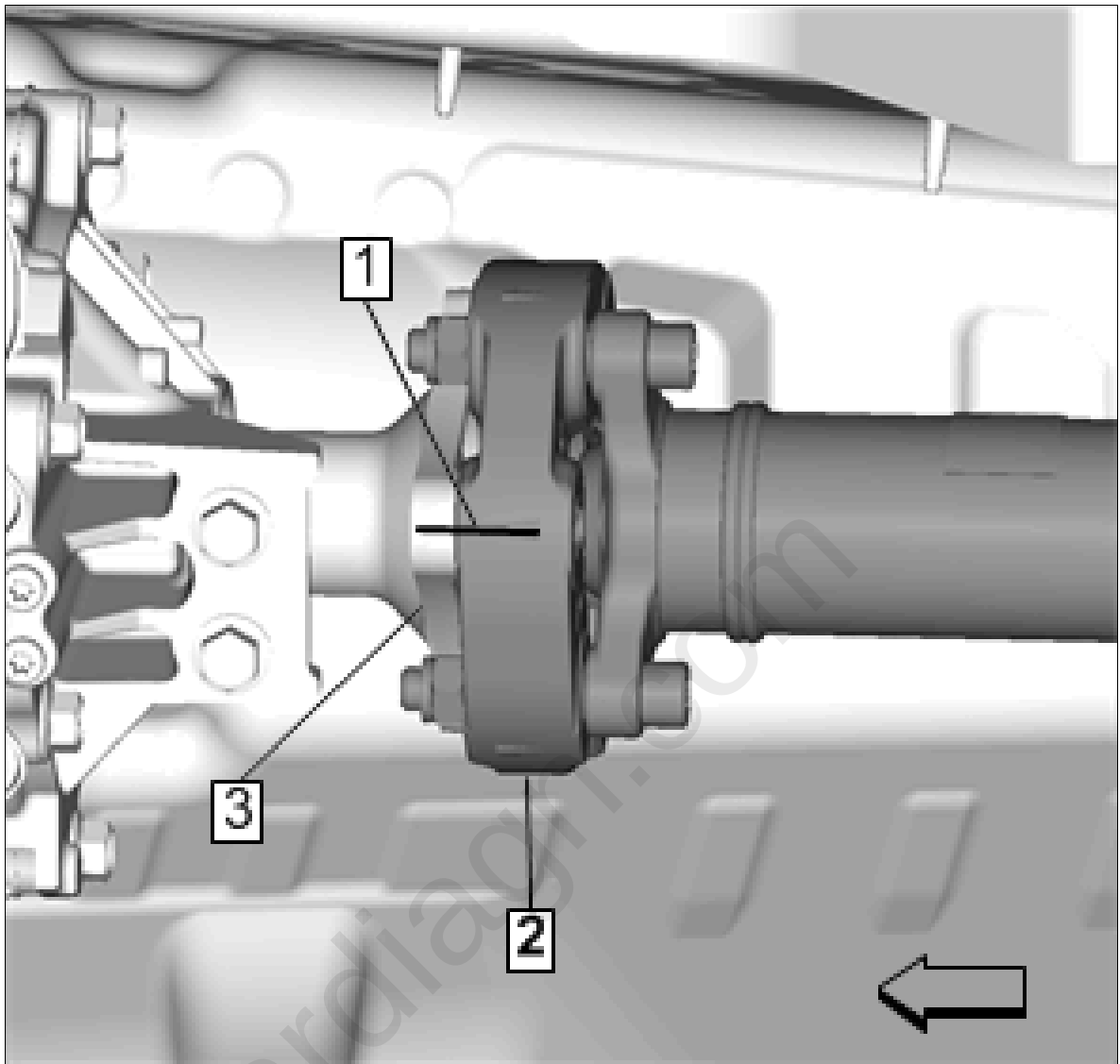
Fig 4: Rear Propeller Shaft Nuts And Bolts



Courtesy of GENERAL MOTORS COMPANY

5. Install the three rear propeller shaft nuts (2) and the bolts (1).
6. Tighten the bolts (1) to 90 N.m (66 lb ft).

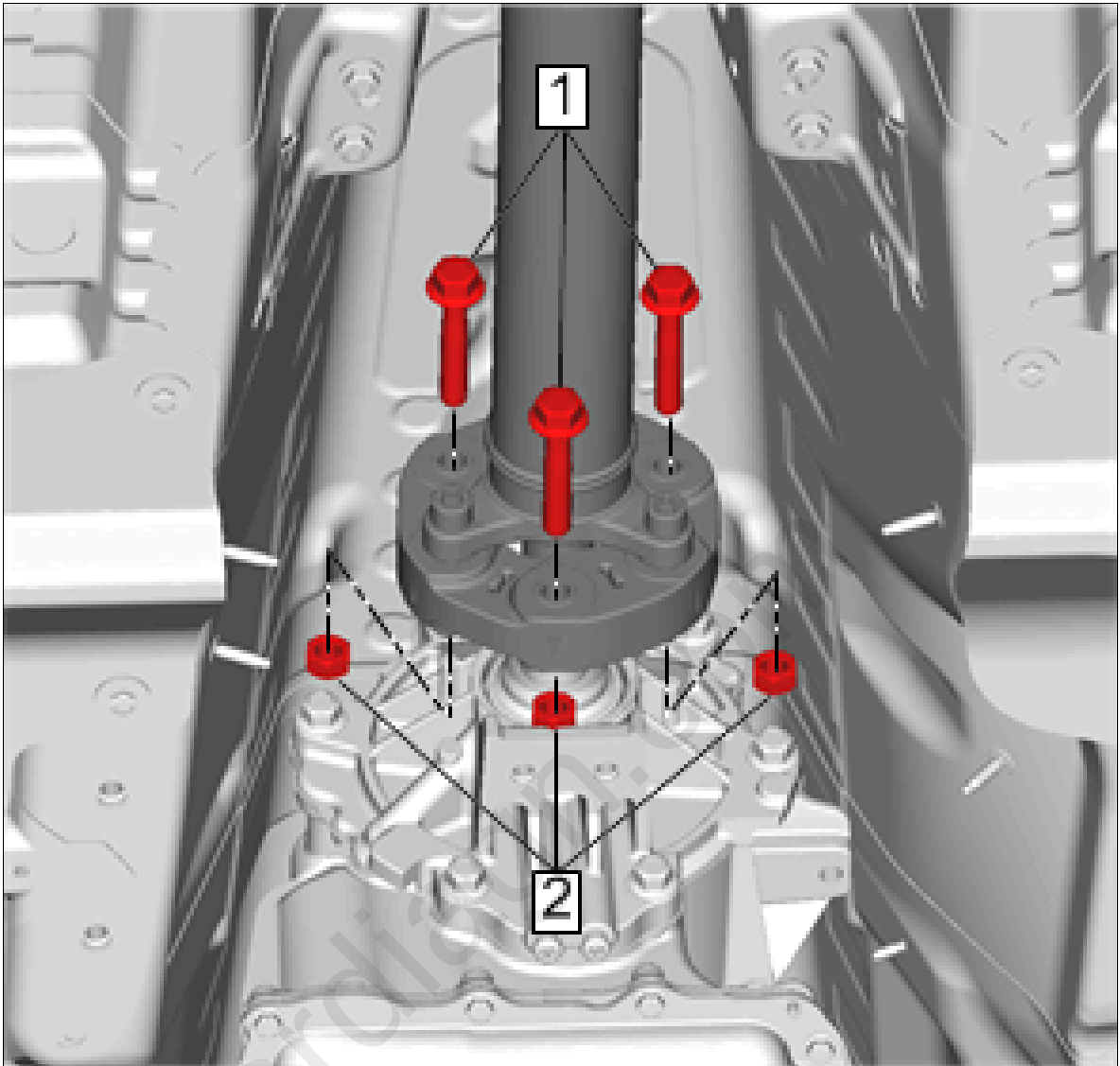
Fig 5: Propeller Shaft Flange And Transmission Output Flange



Courtesy of GENERAL MOTORS COMPANY

7. Align the reference mark (1) between the propeller shaft flange and the output flange of the transmission.

Fig 6: Front Propeller Shaft Nuts And Bolts



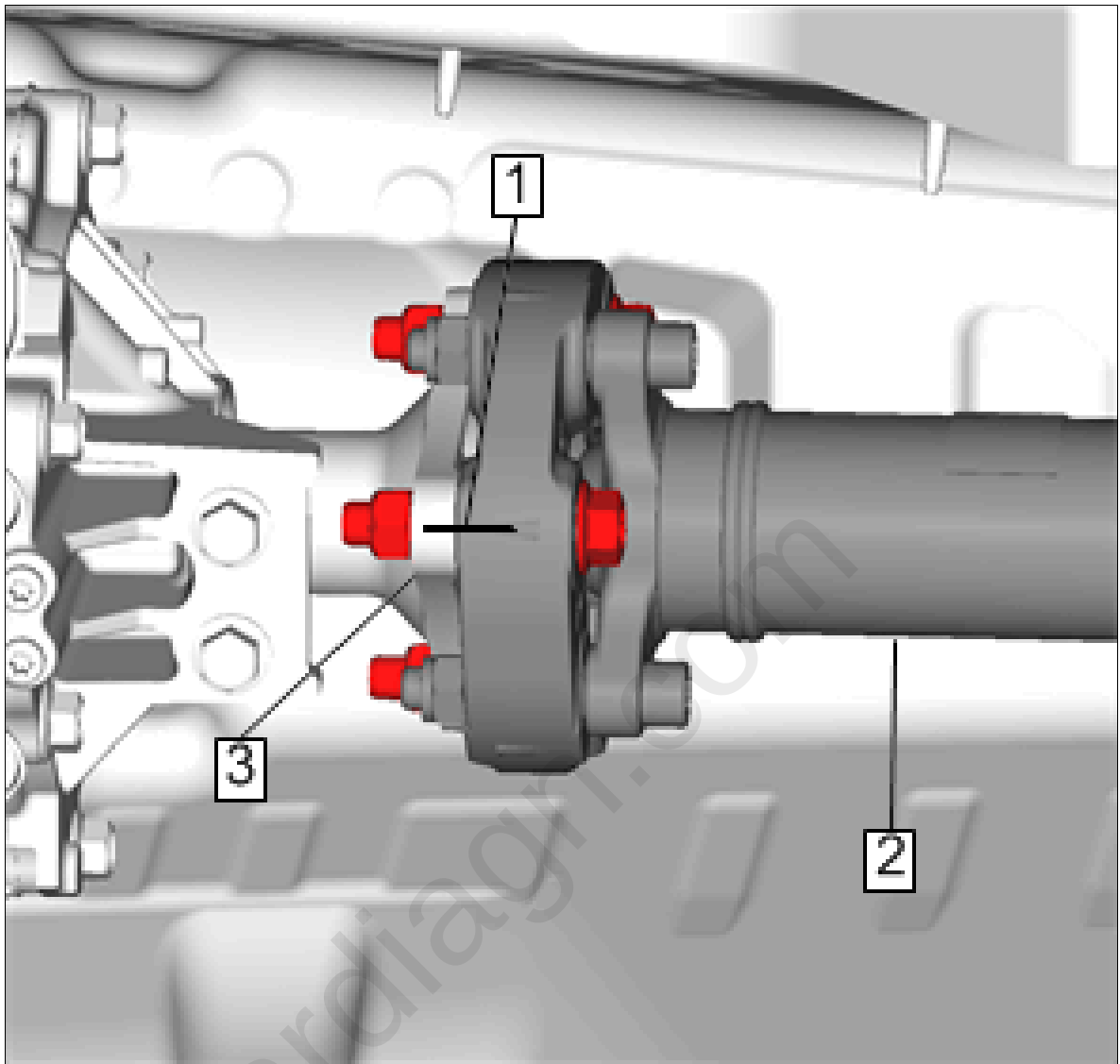
Courtesy of GENERAL MOTORS COMPANY

8. Install the three front propeller shaft nuts (2) and the bolts (1).
9. Tighten the bolts (1) to 90 N.m (66 lb ft)
10. Install the floor panel number 2 cross bar reinforcement. Floor Panel Number 2 Cross Bar Reinforcement Replacement
11. Install the intermediate body exhaust heat shield. Intermediate Body Exhaust Heat Shield Replacement
12. Install the exhaust muffler. Exhaust Muffler Replacement (LGX, Coupe)Exhaust Muffler Replacement (LT1, Coupe)Exhaust Muffler Replacement (LTG, Coupe)
13. Install the floor panel number 4 cross bar. Floor Panel Number 4 Cross Bar Replacement
14. Remove the support and lower the vehicle.

REPAIR INSTRUCTIONS > TWO-PIECE PROPELLER SHAFT REPLACEMENT (CONVERTIBLE M5T, M5U) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
2. Remove the floor panel tunnel rear brace. Floor Panel Tunnel Rear Brace Replacement (Convertible)
3. Remove the underbody rear brace. Underbody Rear Brace Replacement (Convertible)
4. Remove the floor panel number 4 cross bar. Floor Panel Number 4 Cross Bar Replacement
5. Remove the exhaust muffler. Exhaust Muffler Replacement (LGX, Convertible)Exhaust Muffler Replacement (LT1, Convertible)Exhaust Muffler Replacement (LTG, Convertible)
6. Remove the intermediate body exhaust heat shield. Intermediate Body Exhaust Heat Shield Replacement
7. Remove the floor panel number 2 cross bar reinforcement. Floor Panel Number 2 Cross Bar Reinforcement Replacement

Fig 1: Propeller Shaft Flange And Transmission Output Flange



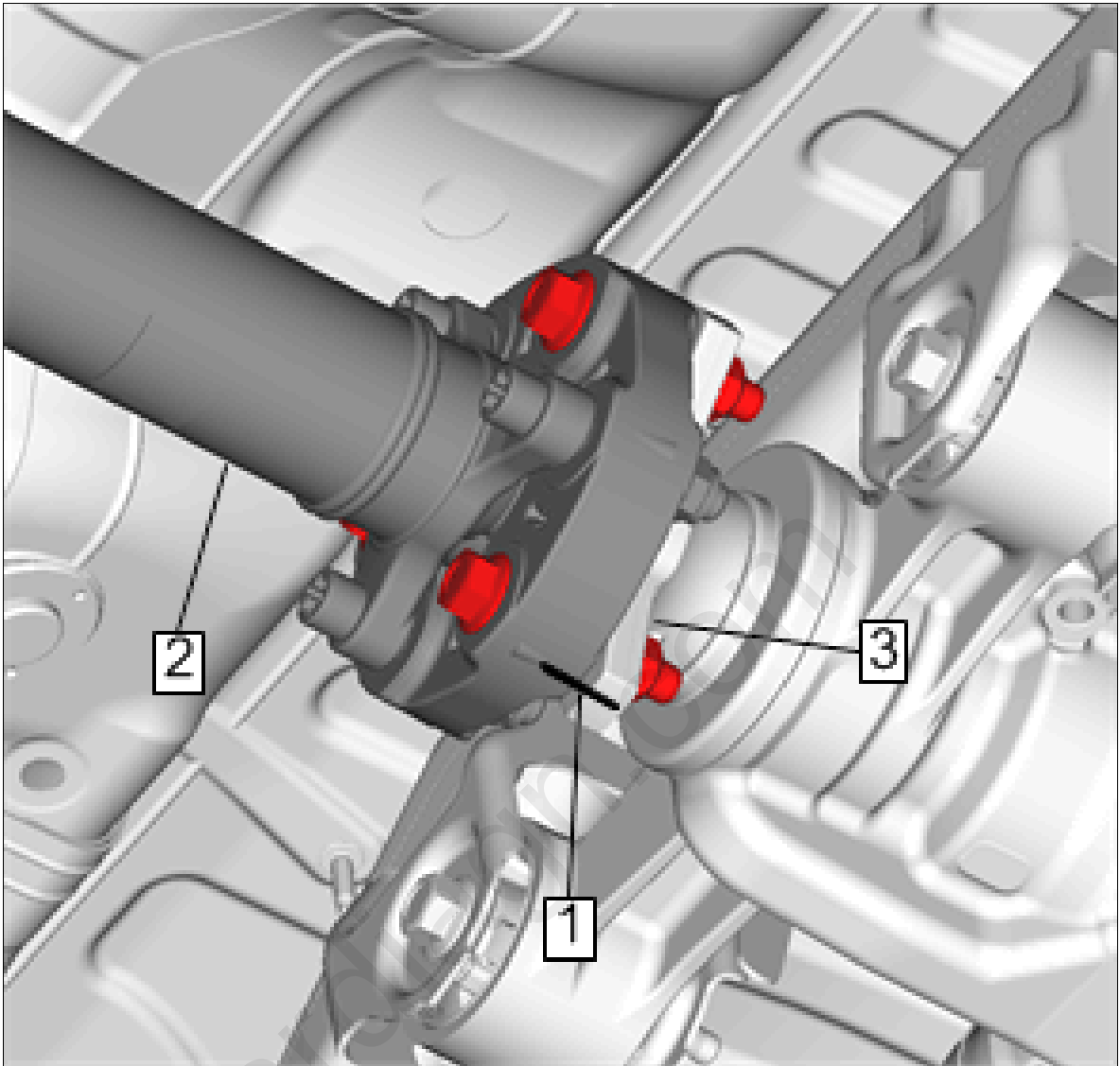
Courtesy of GENERAL MOTORS COMPANY

 NOTE:

Before removing the propeller shaft from the vehicle, paint or scribe references marks on the transmission flange to the propeller shaft and the rear differential drive flange to ensure minimal driveline system imbalance.

8. Mark (1) the relationship of the propeller shaft flange (2) and the output flange (3) of the transmission.

Fig 2: Propeller Shaft Flange And Rear Axle Pinion Flange



Courtesy of GENERAL MOTORS COMPANY

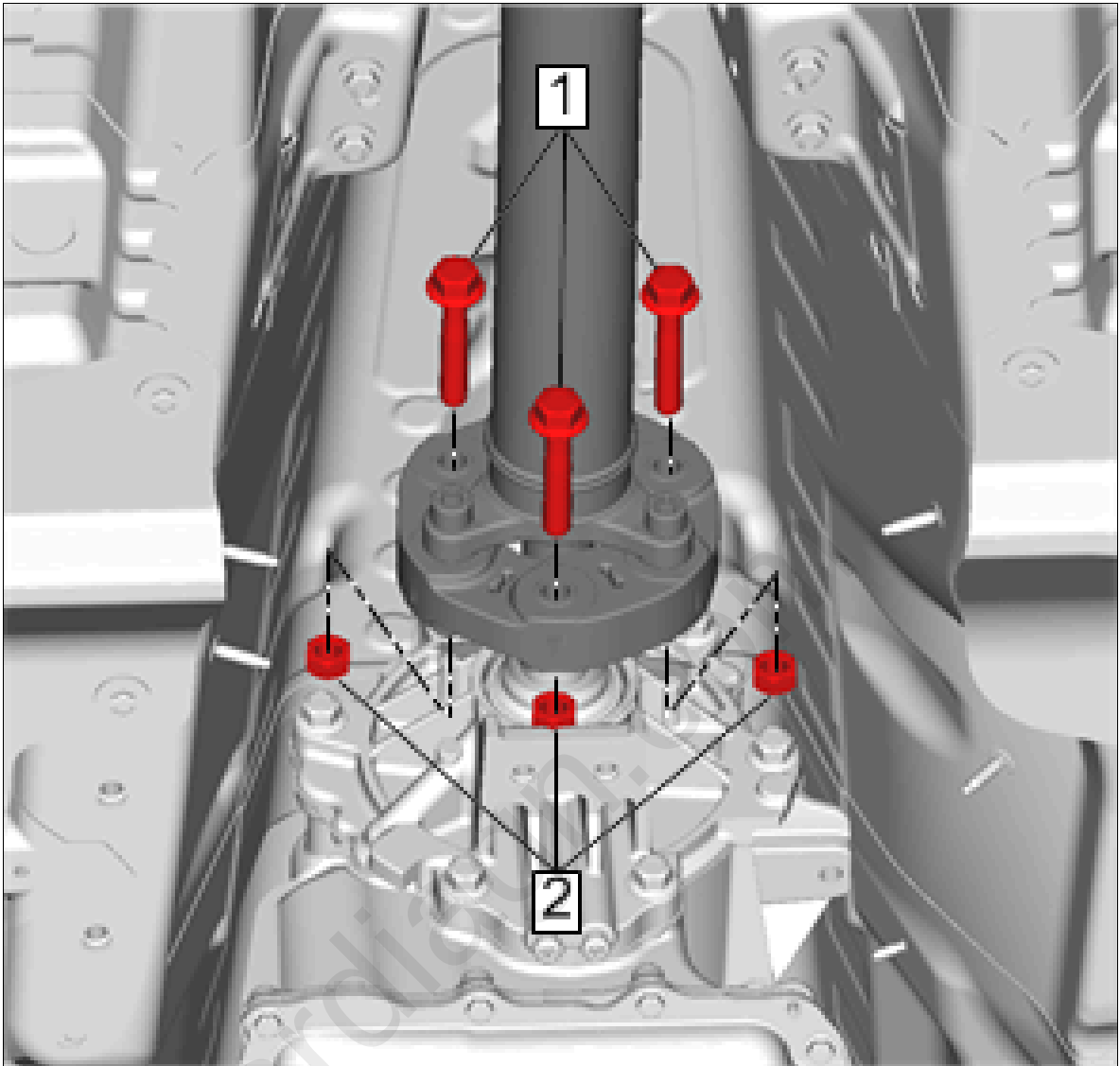
9. Mark (1) the relationship of the propeller shaft flange (2) and the rear axle pinion flange (3).

 **NOTE:**

Ensure that the propeller shaft is secured to the hydraulic jack stand.

10. Support the propeller shaft with a suitable hydraulic jack stand.
11. Remove the transmission mount. Transmission Mount Replacement

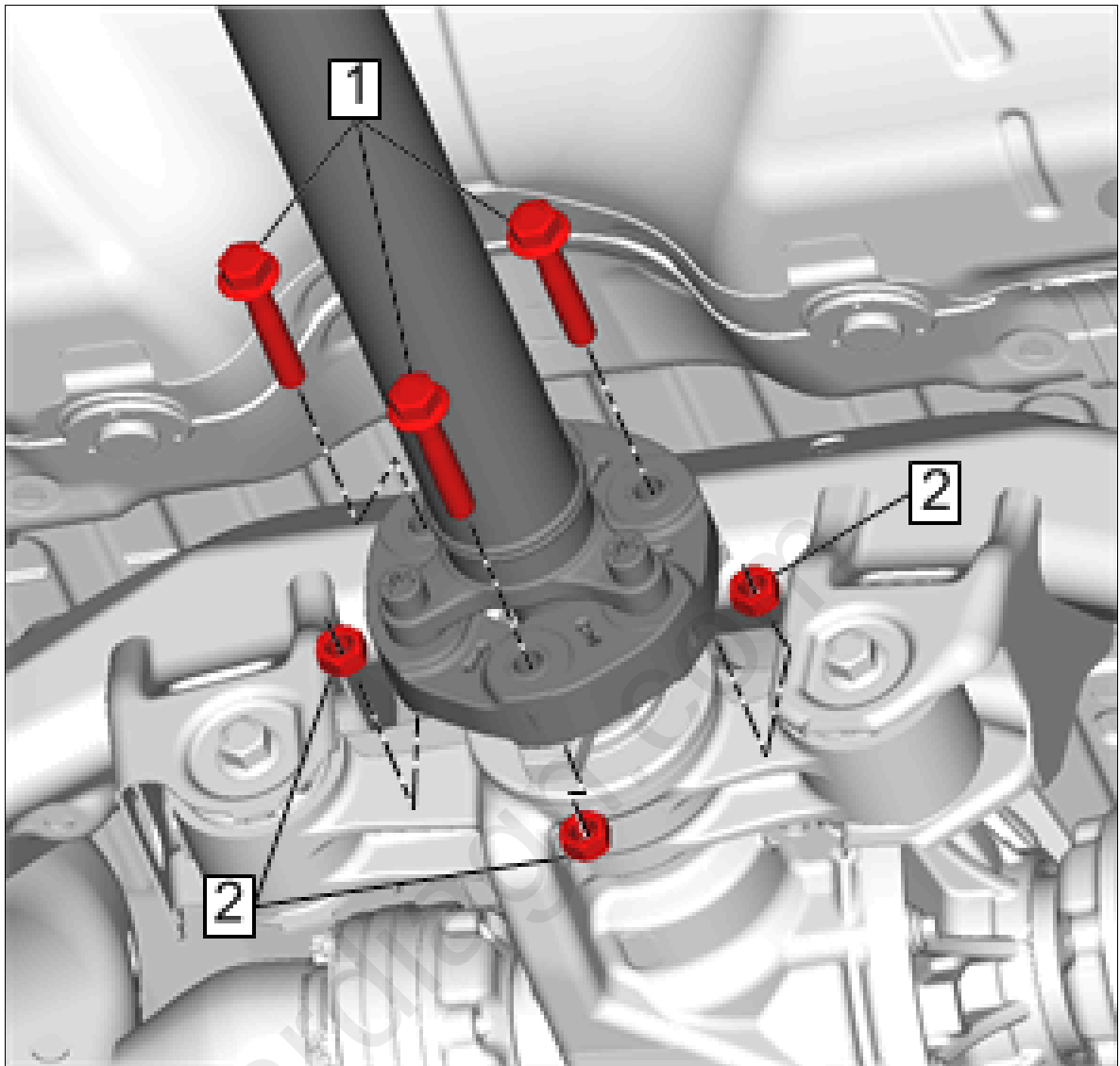
Fig 3: Front Propeller Shaft Bolts And Nuts



Courtesy of GENERAL MOTORS COMPANY

12. Remove the three front propeller shaft bolts (1) and the nuts (2).

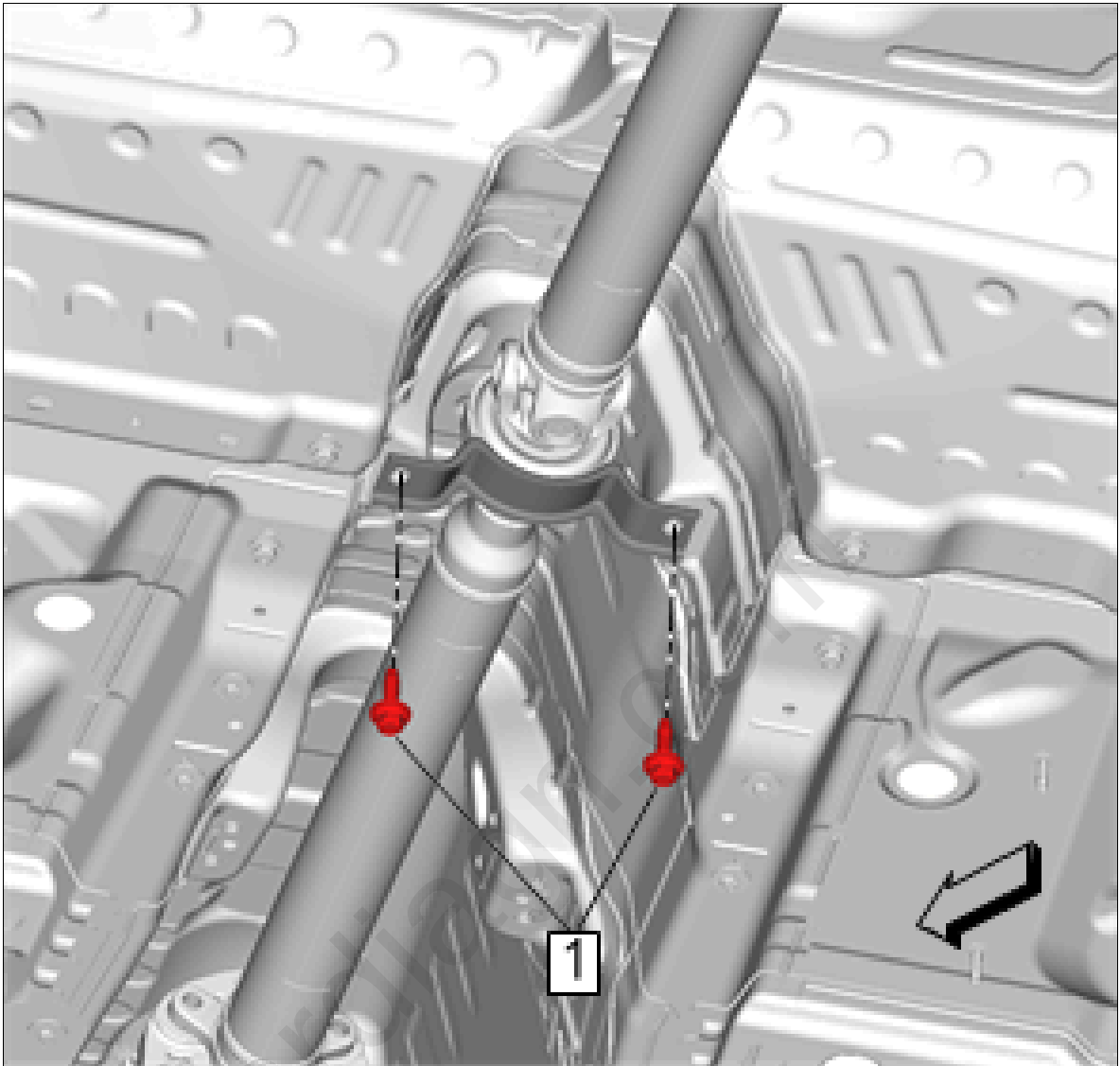
Fig 4: Rear Propeller Shaft Bolts And Nuts



Courtesy of GENERAL MOTORS COMPANY

13. Remove the three rear propeller shaft bolts (1) and the nuts (2).

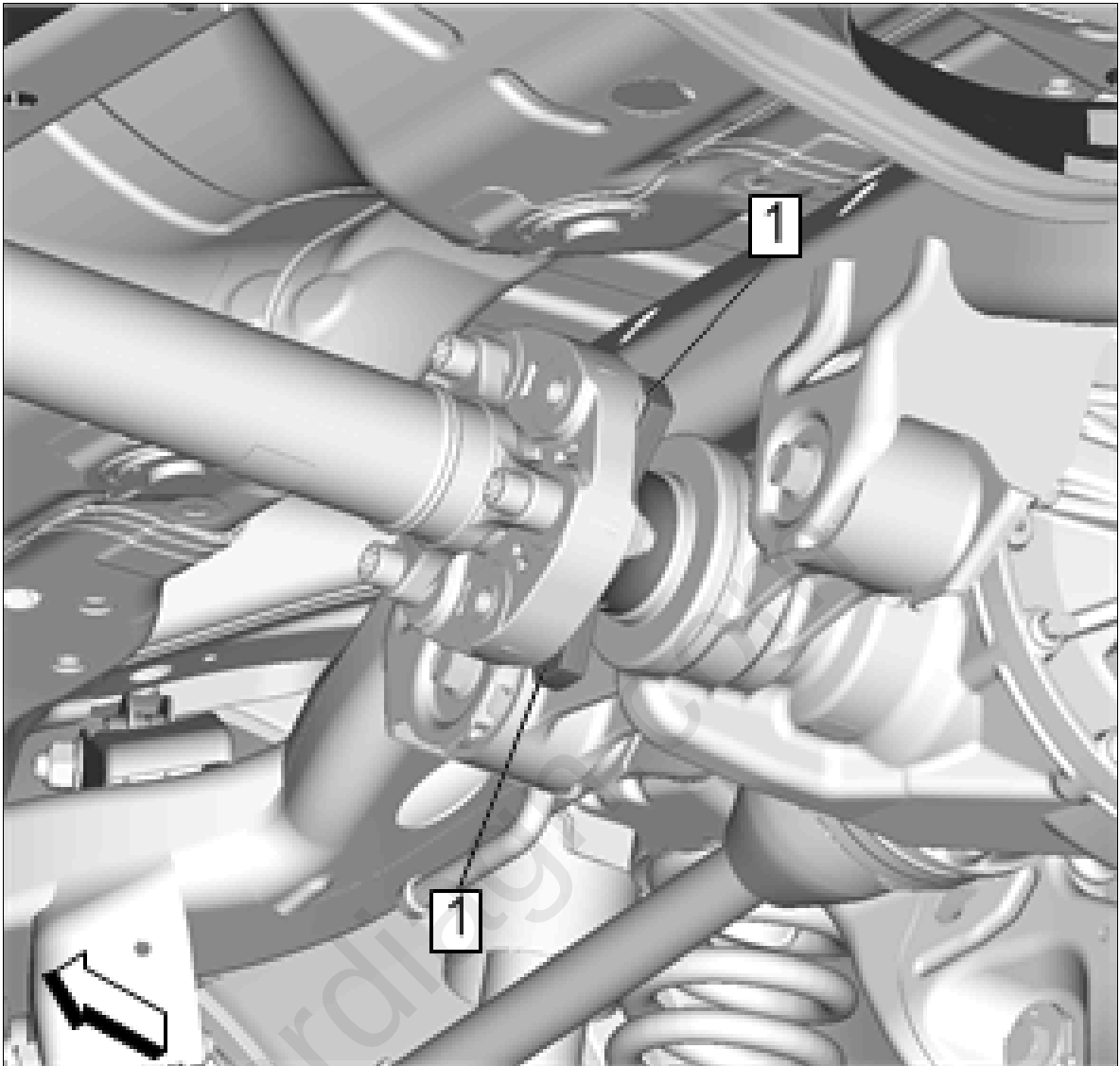
Fig 5: Propeller Shaft Bearing Support Bolts



Courtesy of GENERAL MOTORS COMPANY

14. Remove the two propeller shaft bearing support bolts (1).

Fig 6: Lubricant Or WD-40® To Area Shown



Courtesy of GENERAL MOTORS COMPANY

 CAUTION:

Care should be taken not to use sharp or pry tools when separating the propeller shaft coupler from the drive flange. Damage to the coupler could result and replacement of the entire propeller shaft would be required.

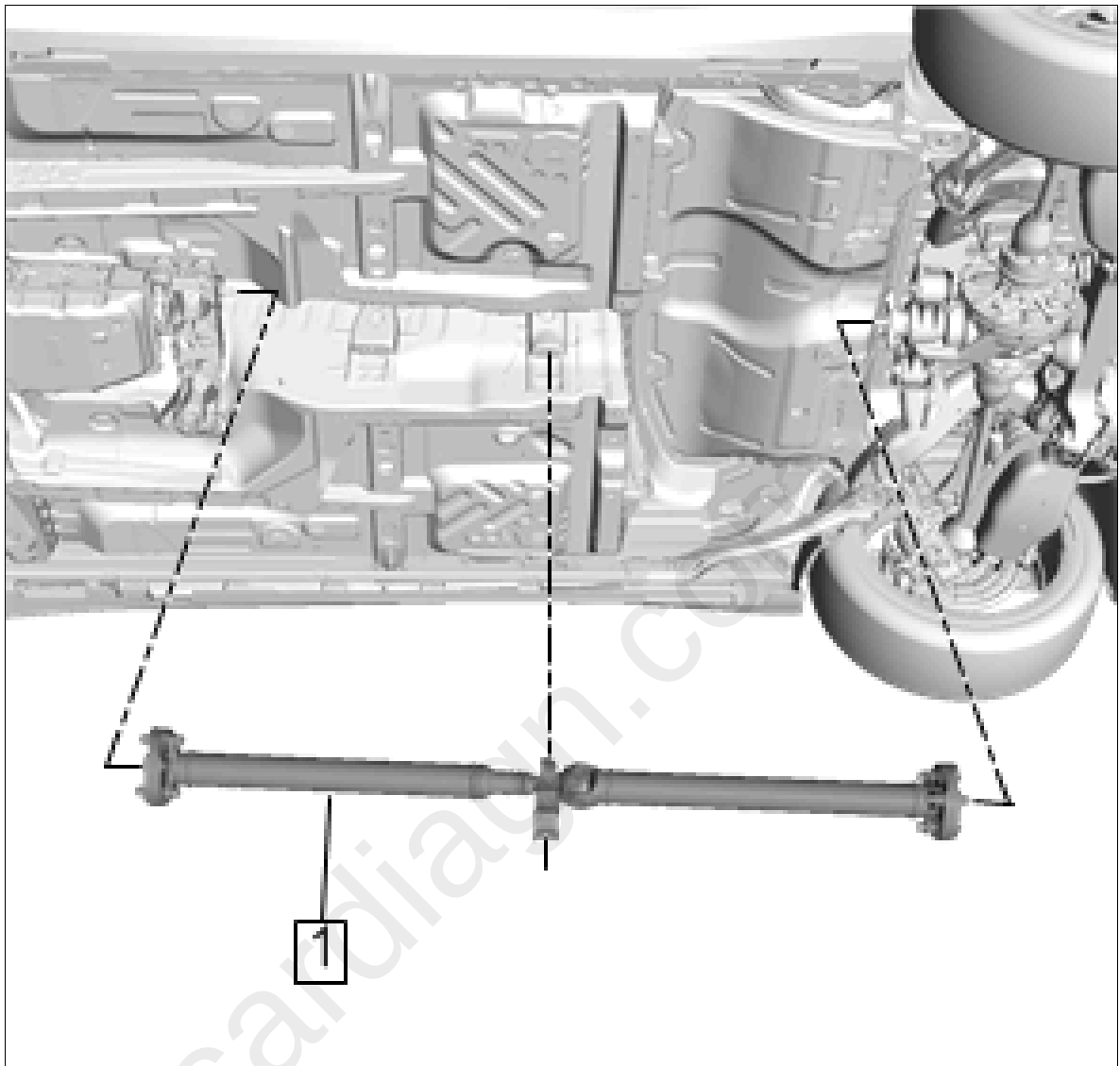
 NOTE:

It may be necessary to apply a small amount of penetrating lubricant or WD-40® to the area shown (1) to aid in separation of the propeller shaft coupling.

15. If the propeller shaft does not easily separate from the differential, transmission or transfer

case, use a rubber mallet to gently tap the locations (1) on the rubber coupling shown above to separate.

Fig 7: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

16. Remove the propeller shaft (1) from the vehicle.

REPAIR INSTRUCTIONS > TWO-PIECE PROPELLER SHAFT REPLACEMENT (CONVERTIBLE M5T, M5U) > INSTALLATION PROCEDURE

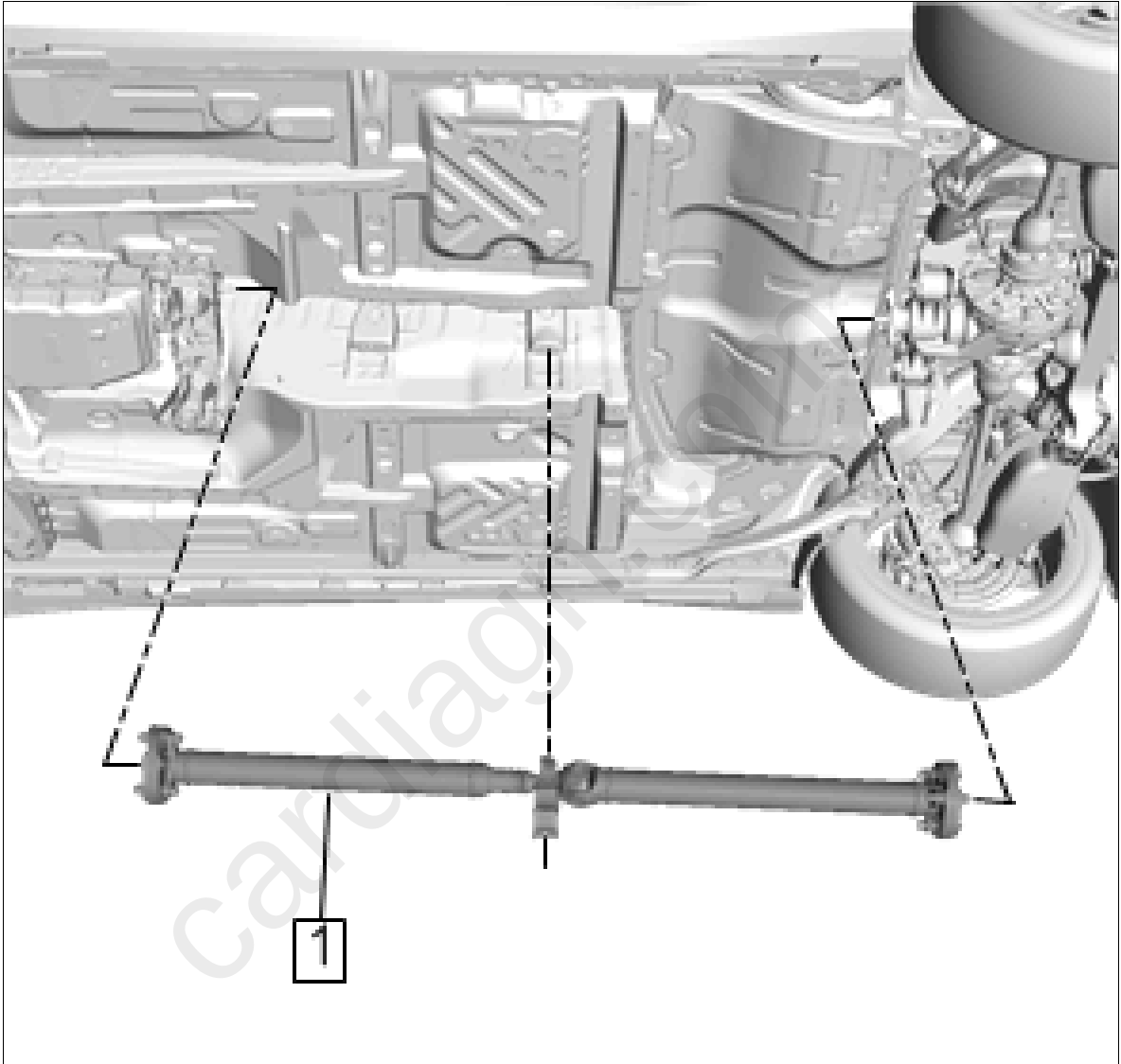
NOTE:

If reusing the propeller shaft bolts, to ensure proper adhesion and fastener retention, the threads must be free of debris prior to the application of threadlocker. Use an appropriate cleaner to thoroughly clean the threads and allow to dry. Apply threadlocker to the propeller shaft to flange bolts. Ensure that there are no gaps in

the threadlocker along the length of the filled area of the bolts. Allow the threadlocker to cure approximately 10 minutes before installation.

1. Thoroughly clean apply threadlocker to the threads of the propeller shaft bolts. Adhesives, Fluids, Lubricants, and Sealers

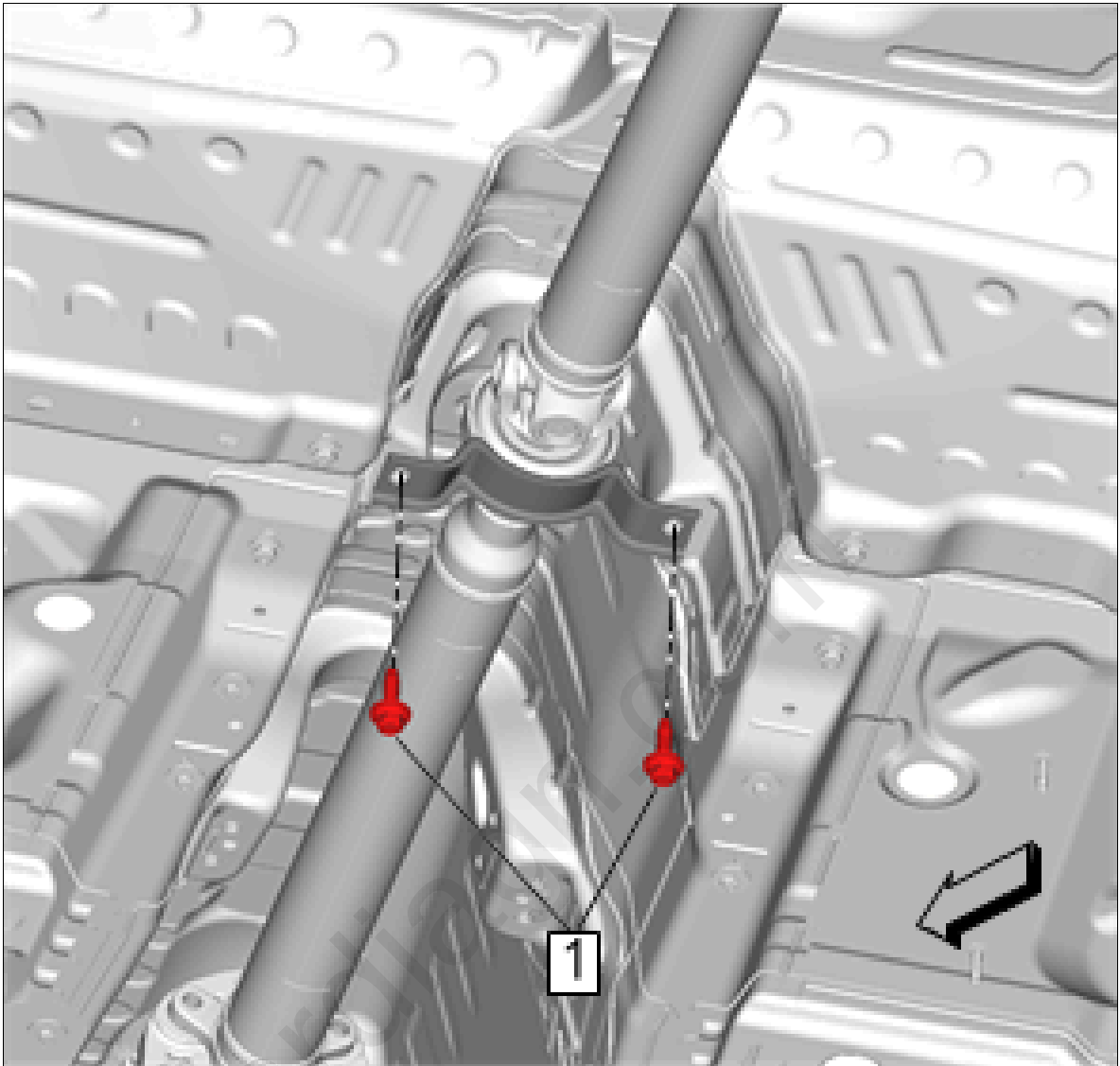
Fig 1: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

2. Position the propeller shaft (1) in the vehicle.

Fig 2: Propeller Shaft Bearing Bolts



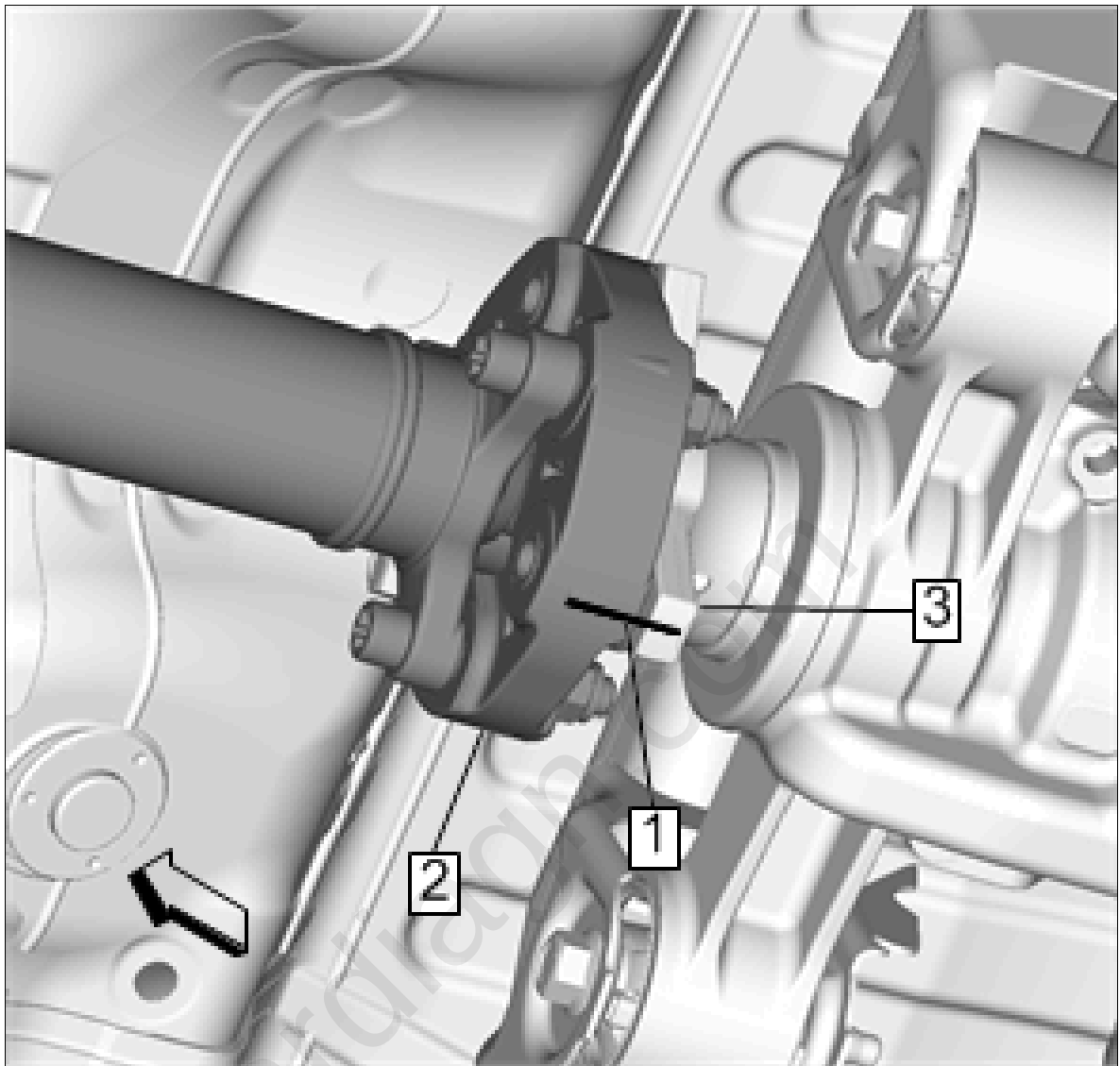
Courtesy of GENERAL MOTORS COMPANY

 **CAUTION:**

Refer to Fastener Caution .

3. Install the two propeller shaft bearing bolts (1) and tighten to 50 N.m (37 lb ft).

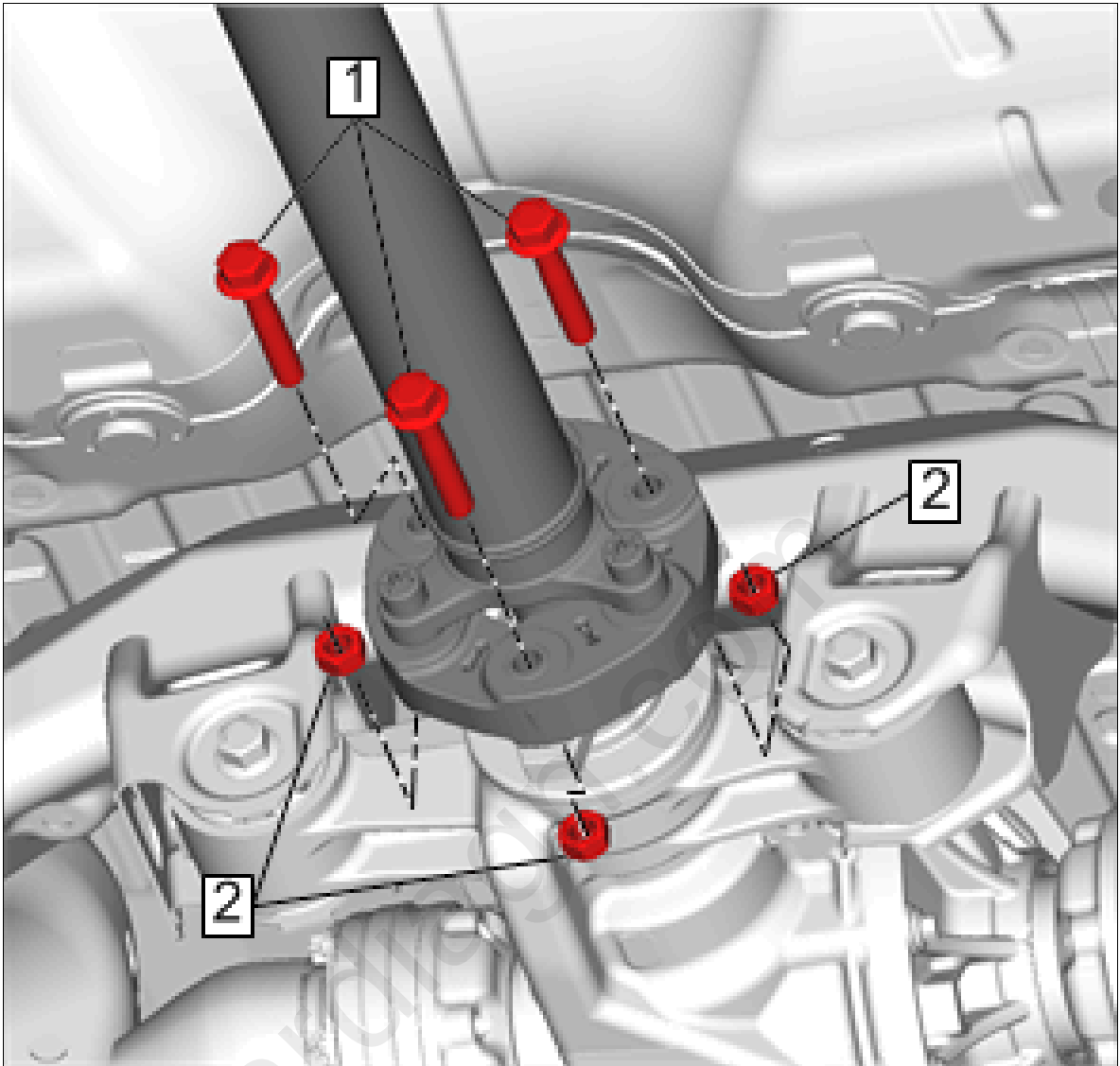
Fig 3: Propeller Shaft Flange And Rear Axle Pinion Flange



Courtesy of GENERAL MOTORS COMPANY

4. Align the reference mark (1) between the propeller shaft flange and the rear axle pinion flange.

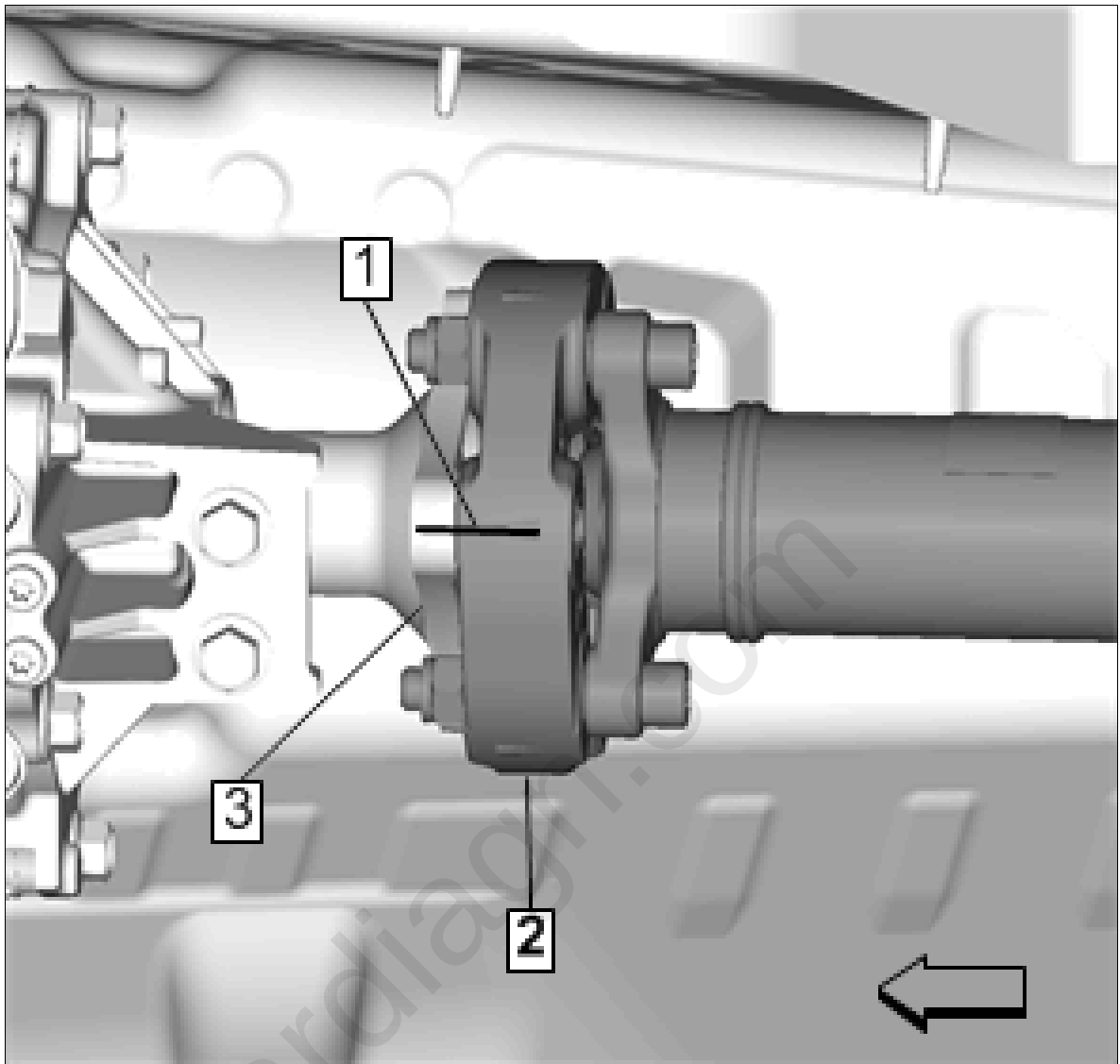
Fig 4: Rear Propeller Shaft Nuts And Bolts



Courtesy of GENERAL MOTORS COMPANY

5. Install the three rear propeller shaft nuts (2) and the bolts (1).
6. Tighten the bolts (1) to 90 N.m (66 lb ft).

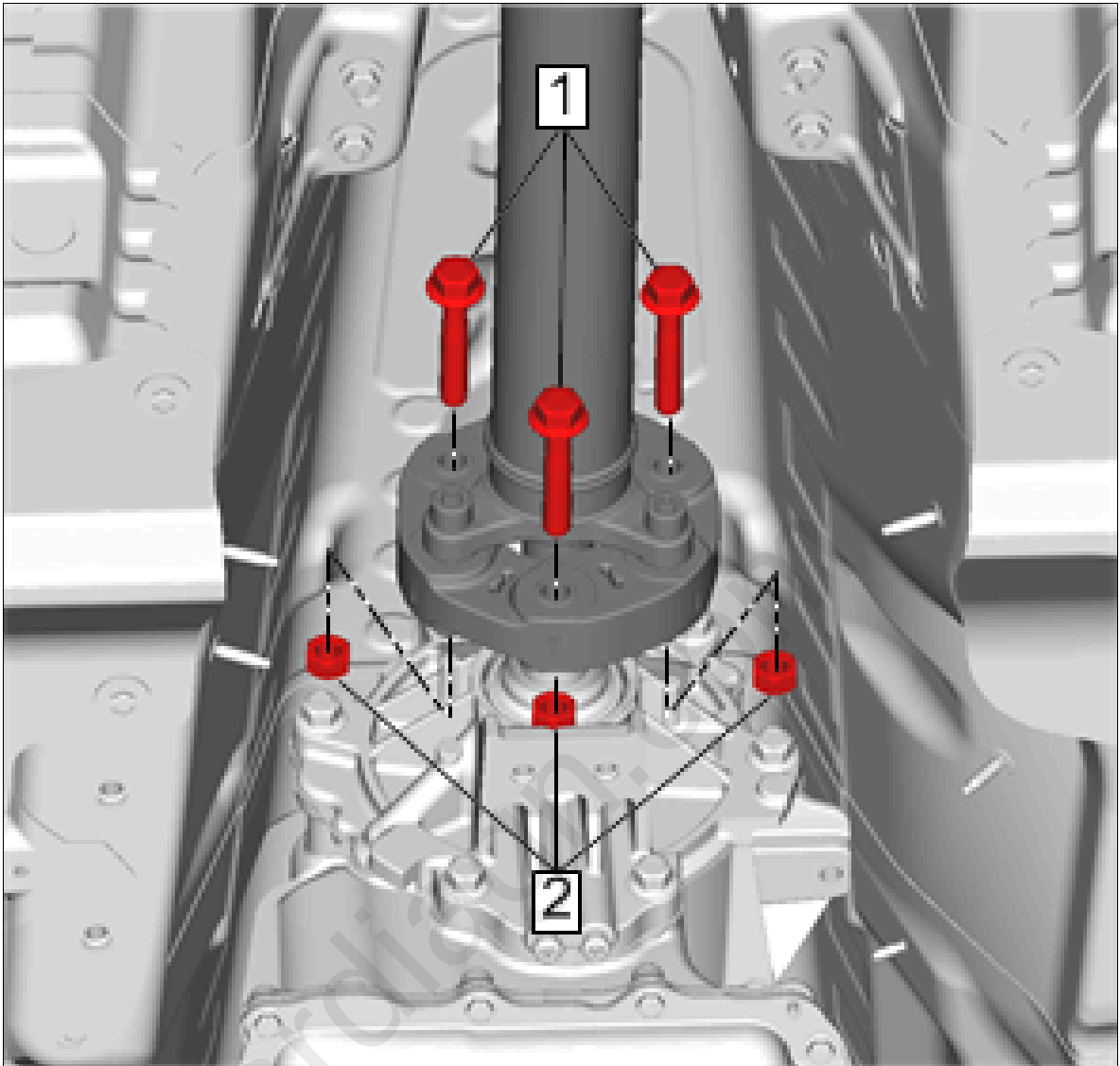
Fig 5: Propeller Shaft Flange And Transmission Output Flange



Courtesy of GENERAL MOTORS COMPANY

7. Align the reference mark (1) between the propeller shaft flange and the output flange of the transmission.

Fig 6: Front Propeller Shaft Nuts And Bolts



Courtesy of GENERAL MOTORS COMPANY

8. Install the three front propeller shaft nuts (2) and the bolts (1).
9. Tighten the bolts (1) to 90 N.m (66 lb ft).
10. Install the floor panel number 2 cross bar reinforcement. Floor Panel Number 2 Cross Bar Reinforcement Replacement
11. Install the transmission mount. Transmission Mount Replacement
12. Install the intermediate body exhaust heat shield. Intermediate Body Exhaust Heat Shield Replacement
13. Install the exhaust muffler. Exhaust Muffler Replacement (LGX, Convertible)Exhaust Muffler Replacement (LT1, Convertible)Exhaust Muffler Replacement (LTG, Convertible)
14. Install the floor panel number 4 cross bar. Floor Panel Number 4 Cross Bar Replacement
15. Install the underbody rear brace. Underbody Rear Brace Replacement (Convertible)

16. Install the floor panel tunnel rear brace. Floor Panel Tunnel Rear Brace Replacement (Convertible)
17. Remove the support and lower the vehicle.

DESCRIPTION AND OPERATION > PROPELLER SHAFT DESCRIPTION AND OPERATION

The propeller shaft is a tube with rubber couplers at each end which do not require periodic maintenance. This transmits power from the transfer case or transmission output shaft to the differential.

DESCRIPTION AND OPERATION > PROPELLER SHAFT DESCRIPTION AND OPERATION > TWO-PIECE PROPELLER SHAFT DESCRIPTION

There is 1 universal joint used in this two-piece propeller shaft design and connects the two pieces together. A center bearing assembly is used to support the propeller shaft connection point, and help isolate the vehicle from vibration.

DESCRIPTION AND OPERATION > PROPELLER SHAFT DESCRIPTION AND OPERATION > PROPELLER SHAFT PHASING DESCRIPTION

The propeller shaft is designed and built with the yoke lugs, ears, in line with each other. This produces the smoothest running shaft possible. A propeller shaft designed with built in yoke lugs in line is known as in-phase. An out of phase propeller shaft often causes vibration. The propeller shaft generates vibration from speeding up and slowing down each time the universal joint goes around. The vibration is the same as a person snapping a rope and watching the wave reaction flow to the end. An in phase propeller shaft is similar to 2 persons snapping a rope at the same time and watching the waves meet and cancel each other out. A total cancellation of vibration produces a smooth flow of power in the driveline.

DESCRIPTION AND OPERATION > PROPELLER SHAFT DESCRIPTION AND OPERATION > UNIVERSAL JOINT DESCRIPTION

The universal joint connects the two-piece propeller shaft. The universal consist of 4 caps with needle bearings and grease seals mounted on the trunnions of a cross or spider. These bearings and caps are greased at the factory and no periodic maintenance is required. The bearings and caps are pressed into the yokes and staked in place. Universal joints are designed to handle the effects of various loads and rear axle windup conditions during acceleration and braking. The universal joint operates efficiently and safely within the designed angle variations. When the design angles are exceeded, the operational life of the joint decreases.

DESCRIPTION AND OPERATION > PROPELLER SHAFT DESCRIPTION AND OPERATION > CENTER BEARING DESCRIPTION

Center bearings support the driveline when using a 2 or more piece propeller shaft. The center bearing is a ball bearing mounted in a rubber cushion that attaches to a frame crossmember. The manufacturer prelubricates and seals the bearing. The cushion allows vertical motion at the driveline and helps isolate the vehicle from vibration.

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