

Service Manual: FRONT HALF SHAFT

DESCRIPTION > DESCRIPTION

This vehicle is equipped with halfshafts that consist of a fixed Constant Velocity (CV) joint at the outboard end connected by a solid shaft to a plunging CV joint on the inboard end. The inner CV joint has a splined connection into the transmission. The outer joint has a spline connection to the wheel hub and is retained with a steel lock nut.

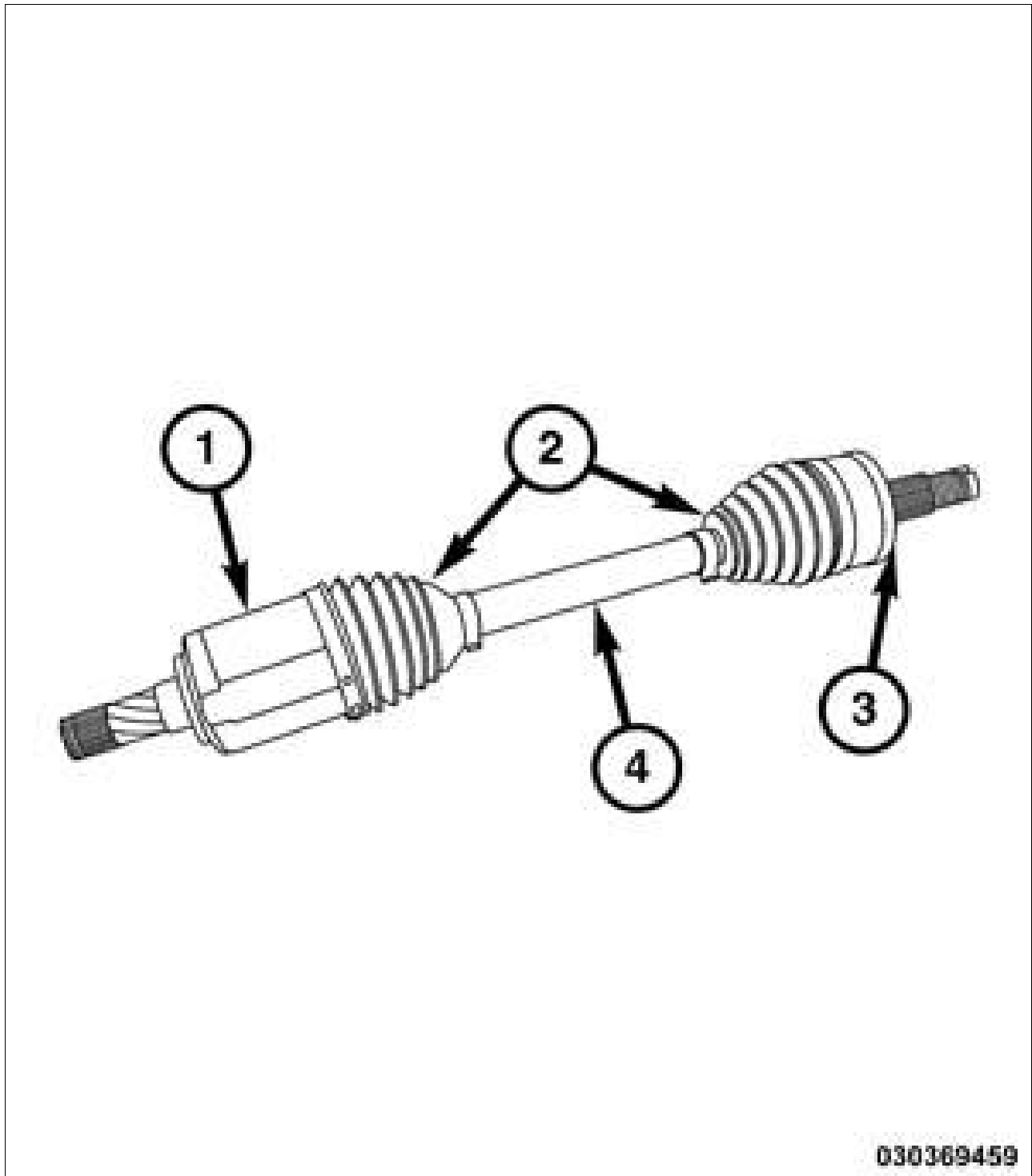
All the halfshaft assemblies use the same type of inner and outer joints. The inner joint is a tripod joint that allows for the changes in halfshaft length through the jounce and rebound travel of the front suspension. The outer joint is a Rzeppa joint that allows articulation during front suspension travel and steering. Both tripod joints and Rzeppa joints are true constant velocity CV joint assemblies.

The inner tripod joints are designed with a retention feature that prevents the tripod rollers from coming out of the inner joint housing up to a specific load. If this feature is overcome and any of the rollers are pulled past the retention feature the joint will lock up and no longer function properly. The entire halfshaft assembly must be replaced if it locks up.

	1.4 Turbo MultiAir	1.6 16V Multijet	1.6 16V Multijet
DRIVE	Front	Front	AWD/4WD

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - HALF SHAFT > VEHICLE INSPECTION

Fig 1: C/V Joint, Tripod Joint, Halfshaft & Inner/Outer Boots



Courtesy of CHRYSLER GROUP, LLC

The general appearance of the halfshafts should be clean and oil free around the Constant Velocity (CV) joint (3) and tripod (1) boots (2). Grease on or around the boots is a sign of leakage and the boots or halfshaft should be replaced.

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - HALF SHAFT > NOISE OR

VIBRATION IN TURNS

Vibration associated with the Constant Velocity (CV) joints in the halfshafts occur in the 3rd and 6th order. Use a vibration analyzer to determine the frequency of the vibration.

SYMPTOM	POSSIBLE CAUSE	REPAIR
Clicking noise while turning.	Lack of lube in CV joint boots.	Replace the halfshaft.
Chuckling or snap noise while turning.	Loose wheel or hub nut.	Tighten wheel or hub nut. Replace damaged components.
Loud knocking noise centering on inner CV tripod joints.	Damaged Differential side/pinion gears.	Remove halfshaft and rotate side gears by hand. Replaced damaged transaxle components.

Noise may also be caused by another component of the vehicle coming in contact with the halfshaft, brake or wheel assemblies.

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - HALF SHAFT > CLUNKING NOISE DURING ACCELERATION

SYMPTOM	POSSIBLE CAUSE	REPAIR
Clunk/snap noise during launch or shifting into drive or reverse.	• Loose hub nut. • Damaged hub splines.	• Replace hub nut and properly tighten. • Replace hub bearing and halfshaft.
Clunking noise at low speed.	Severely worn or damaged tripod or CV joint.	Replace halfshaft.
Rattle/clunk over bumps. Grease slung around undercarriage.	Loss of lube in CV joint boots.	Replace halfshaft.

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - HALF SHAFT > SHUDDER OR VIBRATION DURING ACCELERATION

SYMPTOM	POSSIBLE CAUSE	REPAIR
Shudder or vibration on acceleration.	• Engine rotating beyond limits. • Worn or damaged halfshaft inner tripod joint.	• Replaced damaged or worn engine/transaxle mounts. • Replace halfshaft. • Replace worn or damaged

	- Severely worn or damaged suspension or steering component. - Front end severely out of alignment.	suspension or steering component. Align front end. Refer to WHEEL ALIGNMENT, STANDARD PROCEDURE .
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DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - HALF SHAFT > VIBRATION AT HIGHWAY SPEEDS

Vibration associated with the CV joints in the halfshafts occur in the 3rd and 6th order (3 or 6 events for each rotation). The inner tripod joint with three pivot axis has three events in each rotation of the halfshaft. This will produce a 3rd order vibration of the wheel rotation speed. The outer CV joint with 6 pivot axis balls has six events in each rotation of the halfshaft. This will produce a 6th order vibration of the wheel rotation speed. A 6th order vibration will create a high pitch sound, like gear noise. Use a vibration analyzer to determine the frequency of the vibration before replacing components.

SYMPTOM	POSSIBLE CAUSE	REPAIR
Low frequency vibration, matching wheel speed. Wheel balance and runout is OK.	Foreign material (plastic bags, organic sinew and road debris) fouling the half shaft.	Clean debris from around halfshaft.
High frequency vibration matching 3rd order wheel speed.	- Faulty inner tripod joint. - Vehicle ride height is modified.	- Replace halfshaft. - Return vehicle to proper ride height.
High pitch whine sound with possible high frequency vibration in the floor matching 6th order wheel speed.	- Faulty outer CV joint. - Vehicle ride height is modified.	- Replace halfshaft. - Return vehicle to proper ride height.

SPECIFICATIONS > TORQUE SPECIFICATIONS

FRONT HALF SHAFT TORQUE SPECIFICATIONS

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.	NEW FASTENER*
Hub Nut, All Engines	For Halfshaft Installation procedure, refer to REMOVAL AND INSTALLATION .			X
Intermediate Shaft Bearing to Bracket Bolts, 1.4 Turbo MultiAir	26	19	-	-

Intermediate Shaft Bearing to Bracket Bolts, 1.6 Turbo Diesel	20	15	-	-
Intermediate Bracket to Engine Block and Oil Pan Bolts, 1.6 Turbo Diesel	50	37	-	-
*NEW FASTENER: Do not reuse these fasteners. If removed, a new fastener must be installed and tightened to specifications.				

SPECIAL TOOLS > SPECIAL TOOLS

Tool (EMEA)	Tool (NAFTA)	Name	Function
99341011	*	Jaws	Half Shaft Removal
1840005004	*	Puller Bridge	Half Shaft Removal
1847017001	*	Slide Hammer	Half Shaft Removal
1870815000	*	Spanner Wrench	Hub Nut Removal and Installation
1871000700	C-4150A	Tie Rod Separator	Tie Rod End Removal From Knuckle
2000036600	*	Seal Installer	Seal Mounting on Differential
2000040443	8902A	Seal Installer	Dust Seal on Differential Assembly
2000001600	*	Puller	Removing Half Shaft from Hub
2000040488	*	Puller	Half Shaft Removal
*Tool not available for NAFTA. Use a commercially available tool or contact Mopar Essential Tools to order the custom EMEA tool.			

REMOVAL AND INSTALLATION > 1.4L TURBO MULTIAIR, WITHOUT INTERMEDIATE SHAFT > REMOVAL



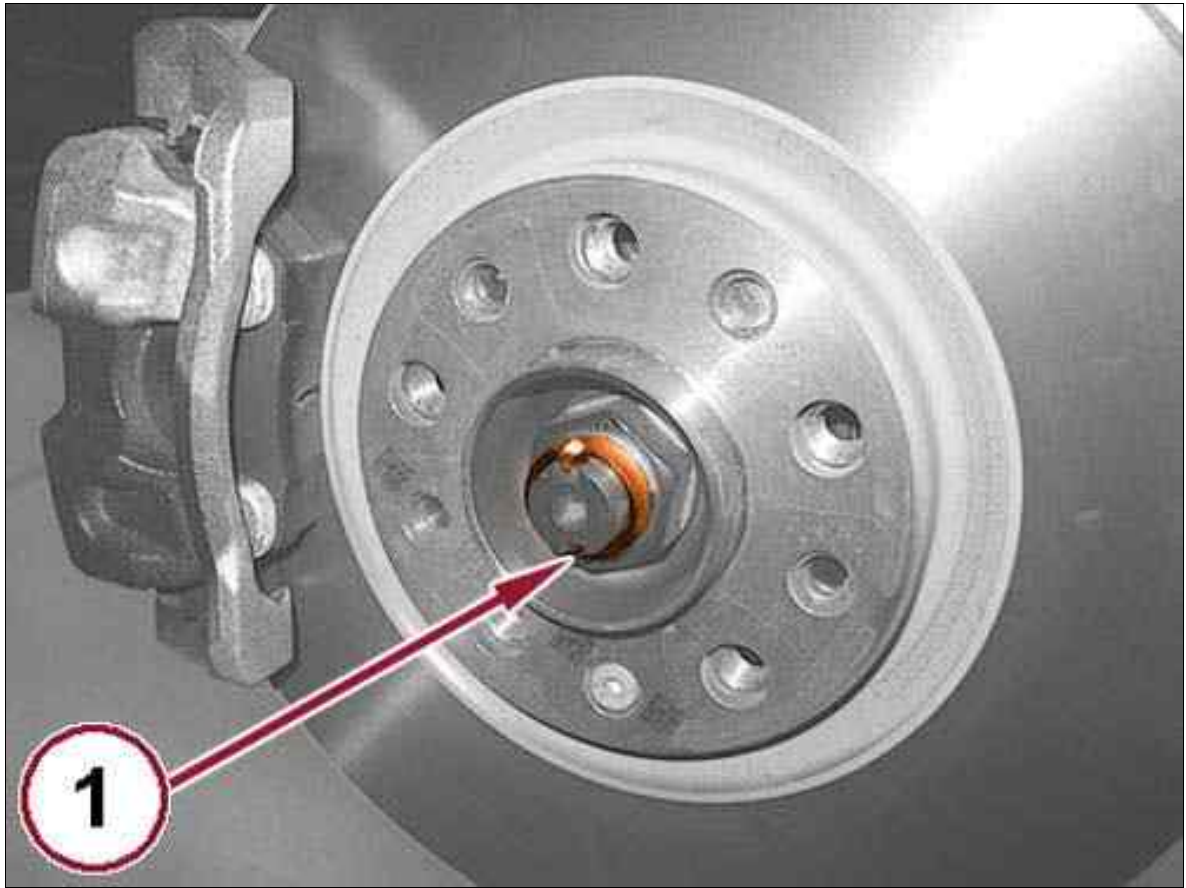
NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .

2. Remove the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
3. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

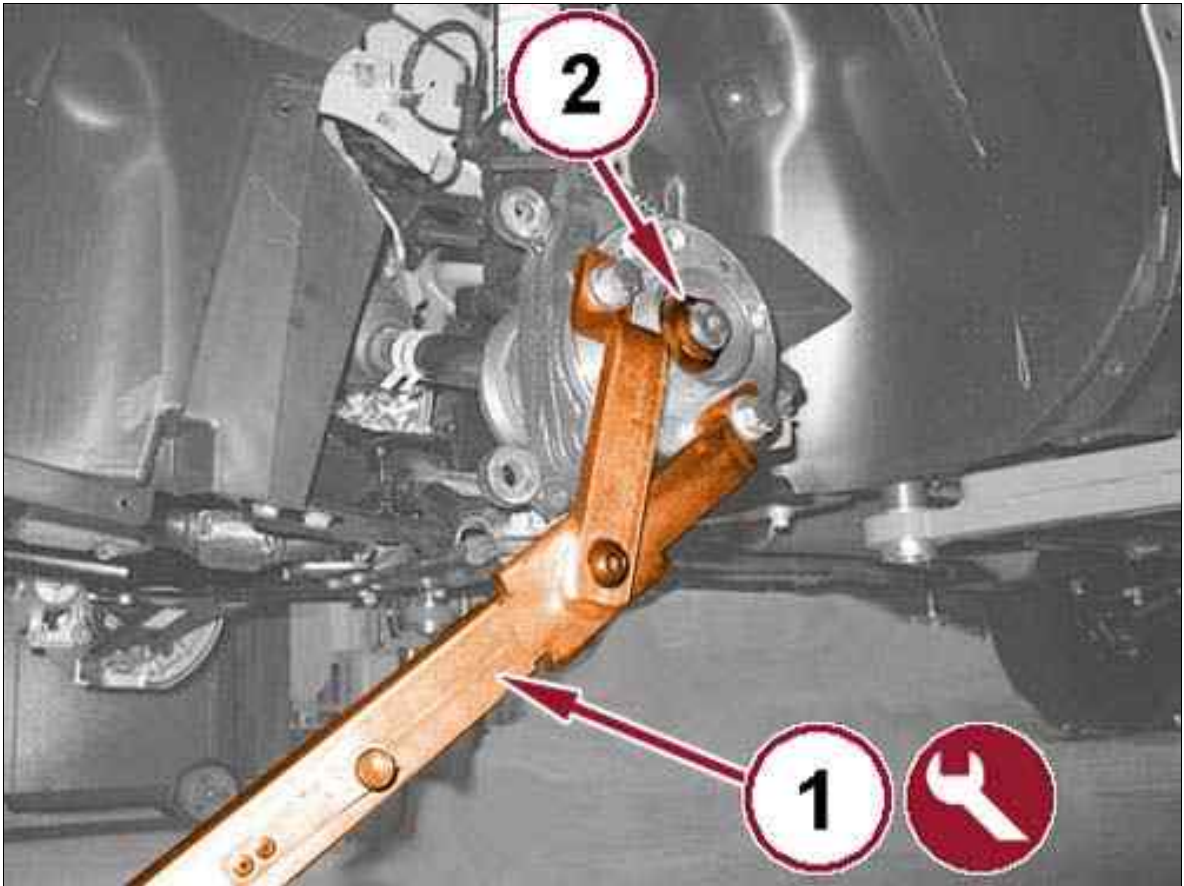
Fig 1: Hub Nut Staked Area



Courtesy of CHRYSLER GROUP, LLC

4. Using a suitable punch, lift the two staked areas (1) in the hub nut to avoid damaging the halfshaft.

Fig 2: Special Tool & Hub Nut



Courtesy of CHRYSLER GROUP, LLC

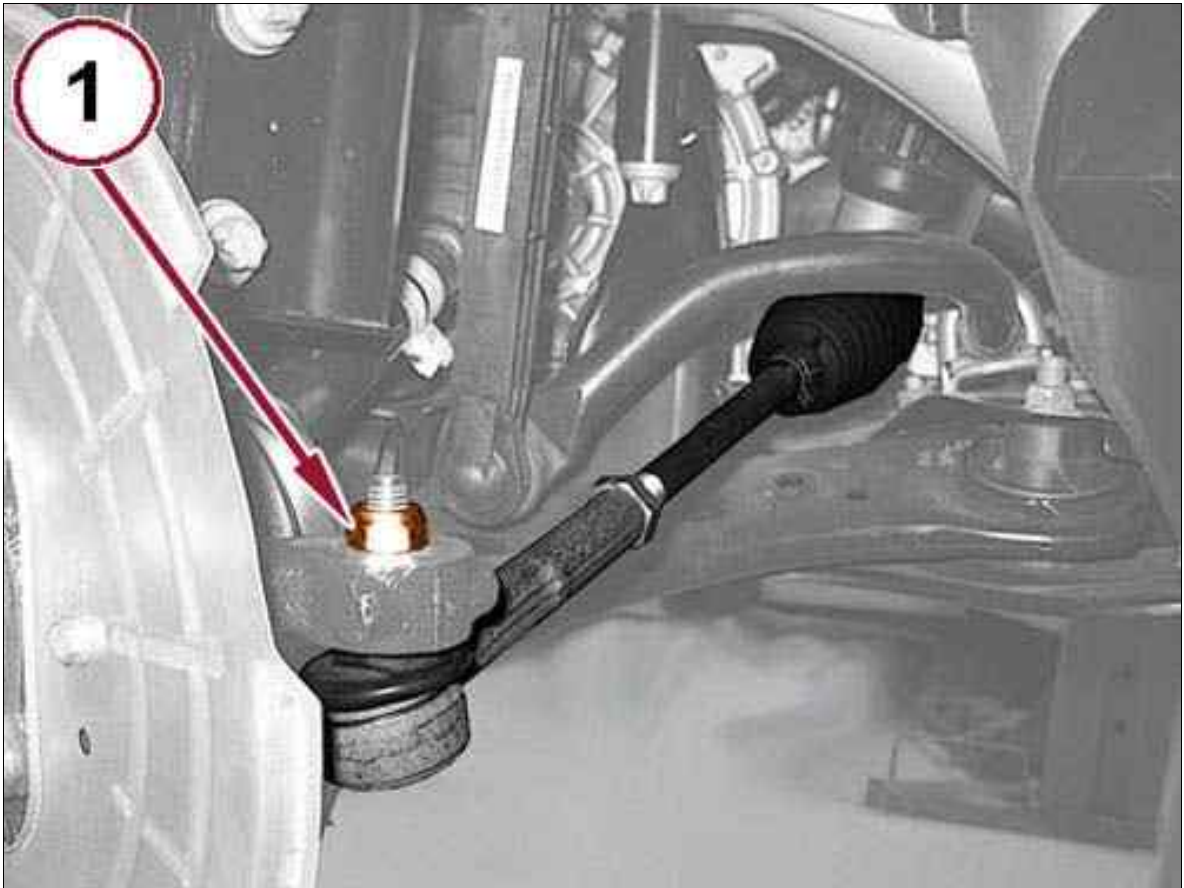
5. Fit the tool 1870815000 (1) to the brake disc.

 **NOTE:**

The used hub nut is not reusable.

6. Remove the hub nut (2) from the halfshaft and **DISCARD** .

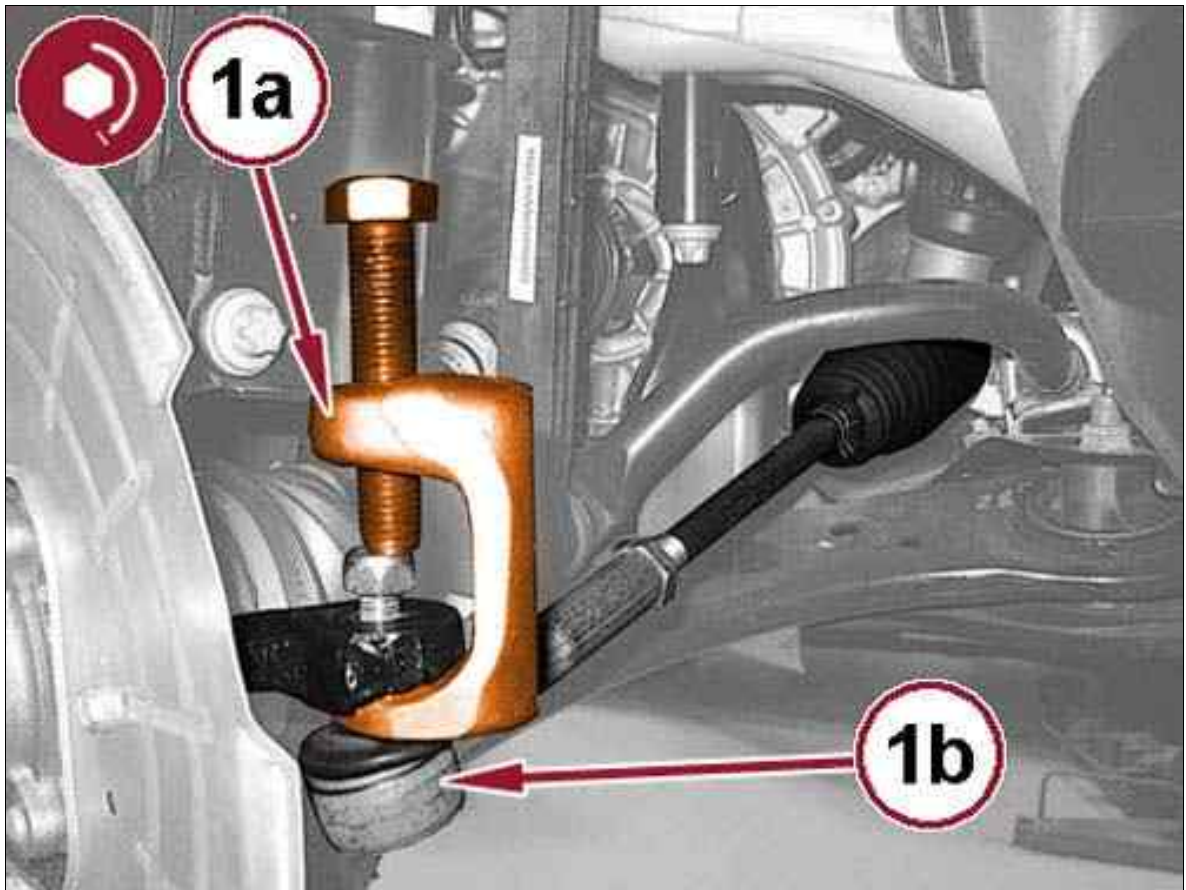
Fig 3: Tie Rod Nut



Courtesy of CHRYSLER GROUP, LLC

7. Unscrew and **DISCARD** the nut (1) securing the tie rod end to the steering knuckle.

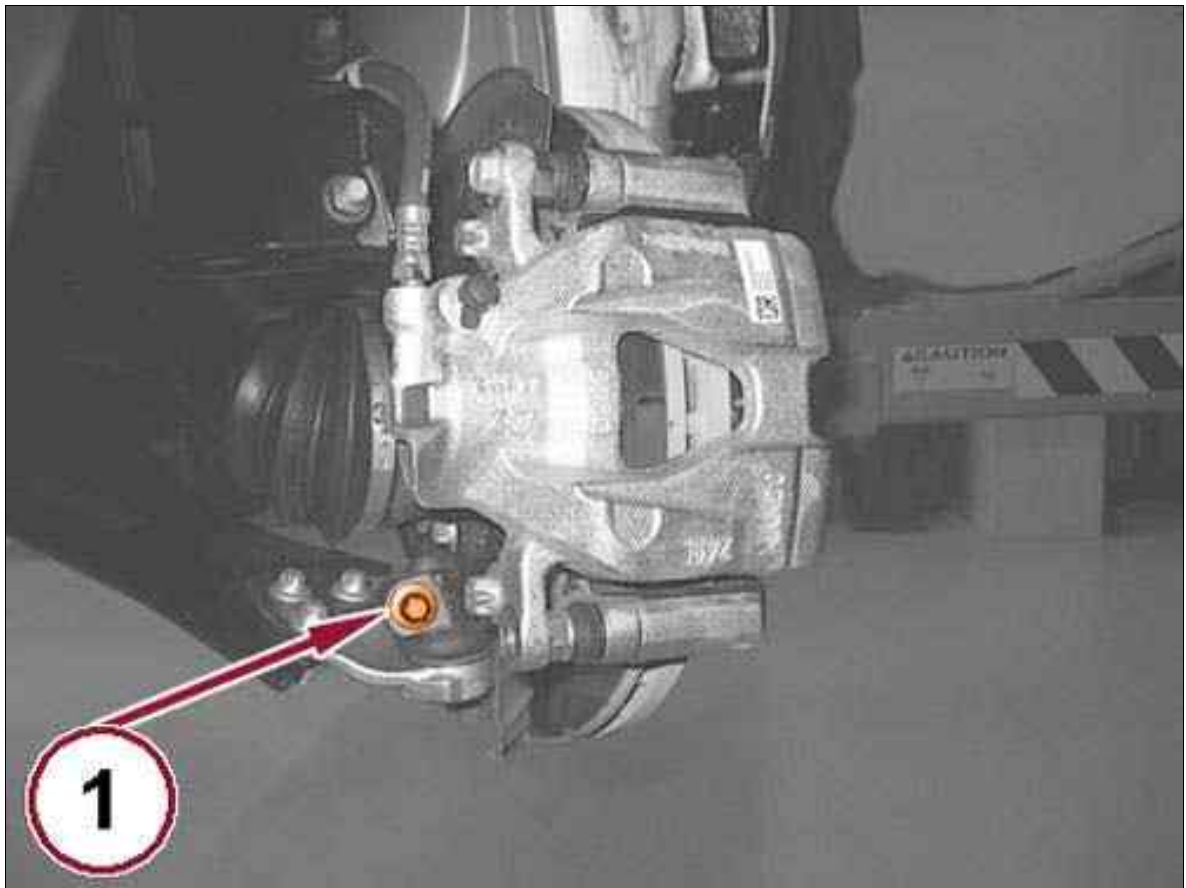
Fig 4: Disconnecting Tie Rod



Courtesy of CHRYSLER GROUP, LLC

8. Fit the tool 1871000700 (EMEA) or (special tool #C-4150A, Press, Ball Joint) (NAFTA) (1a) and disconnect the tie rod (1b) from the steering knuckle.

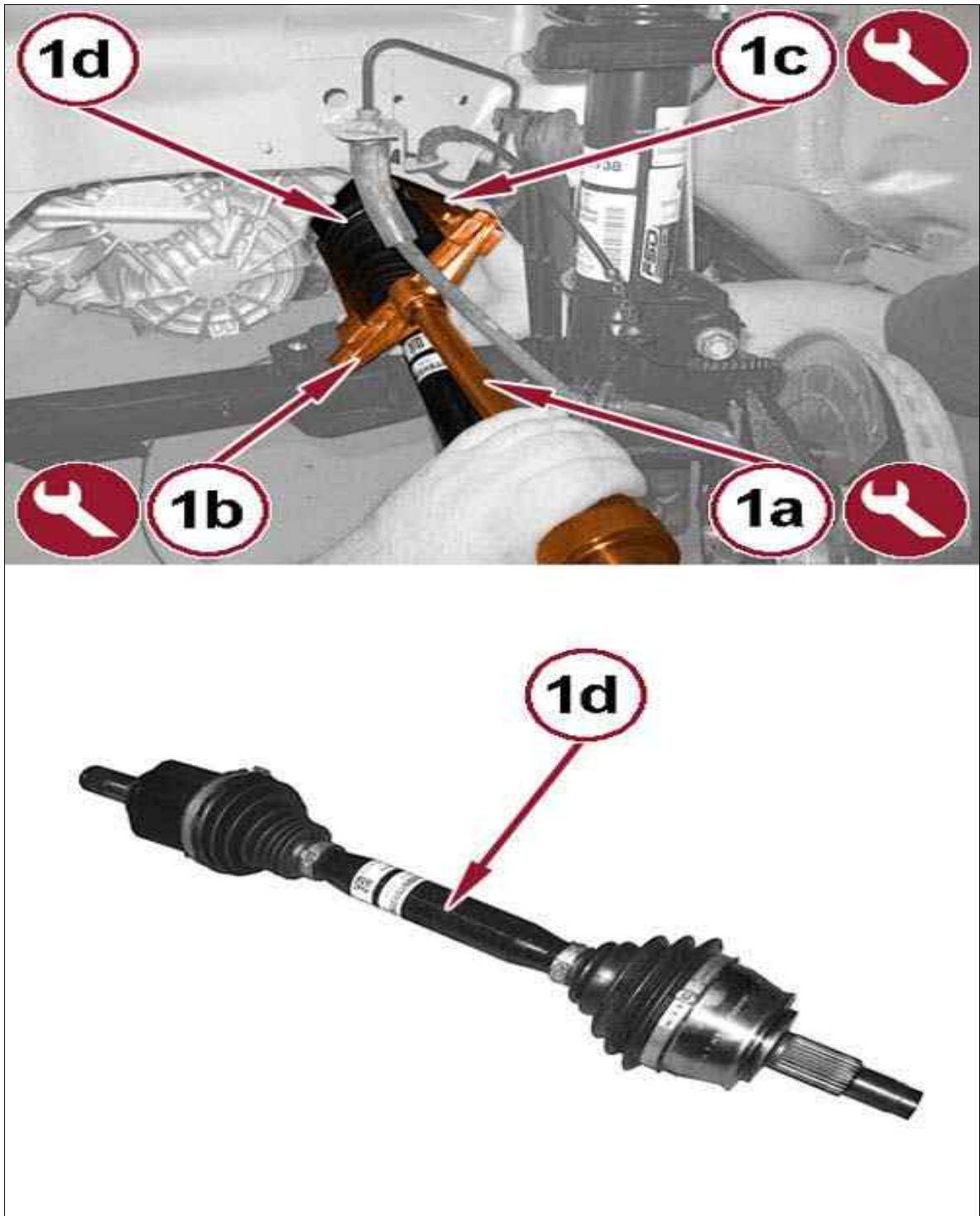
Fig 5: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

9. Remove the ball joint pinch bolt (1).
10. Disengage the ball joint from the steering knuckle.
11. Disengage the halfshaft from the wheel hub.

Fig 6: Removing Halfshaft



Courtesy of CHRYSLER GROUP, LLC

12. With the tools 1847017001 (1a), 1840005004 (1b) and 99341011 (1c), remove the halfshaft (1d).

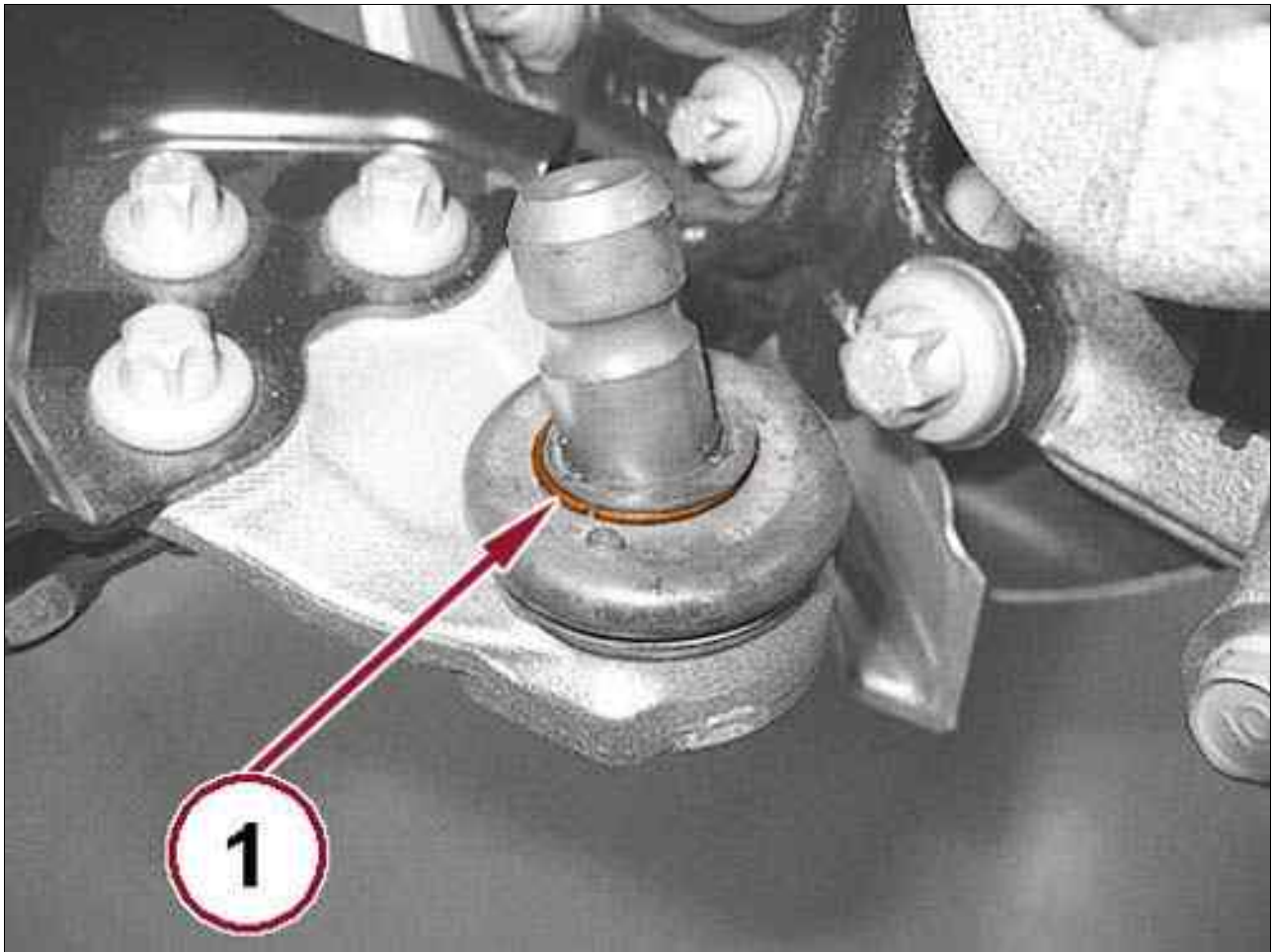
**REMOVAL AND INSTALLATION > 1.4L TURBO MULTIAIR, WITHOUT INTERMEDIATE
SHAFT > INSTALLATION**



NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

Fig 1: Boot Tension Ring



Courtesy of CHRYSLER GROUP, LLC

1. Inspect the ball joint boot and the boot tension ring (1) for damage.
2. Position the halfshaft into the differential and wheel hub.

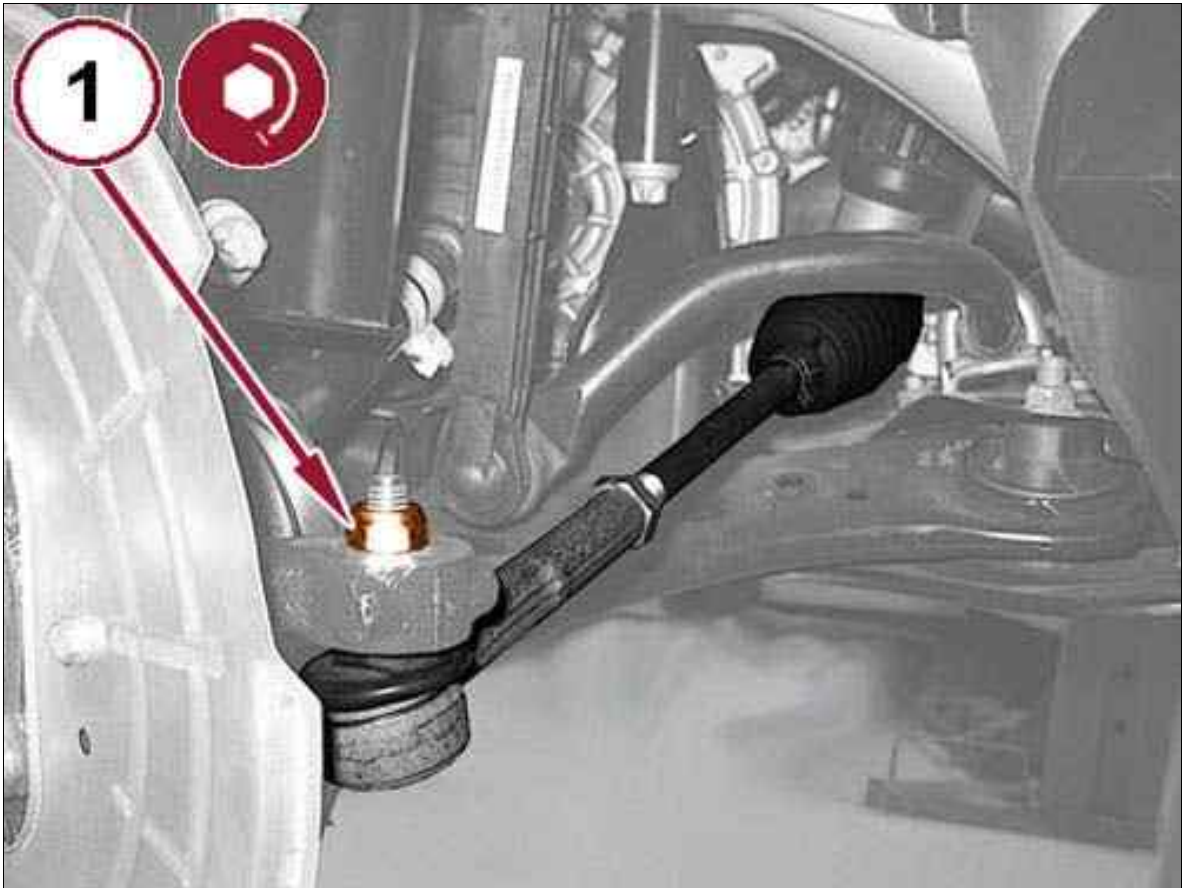
Fig 2: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

3. Position the ball joint stud into the steering knuckle tighten the pinch bolt (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

Fig 3: Tie Rod End Nut



Courtesy of CHRYSLER GROUP, LLC

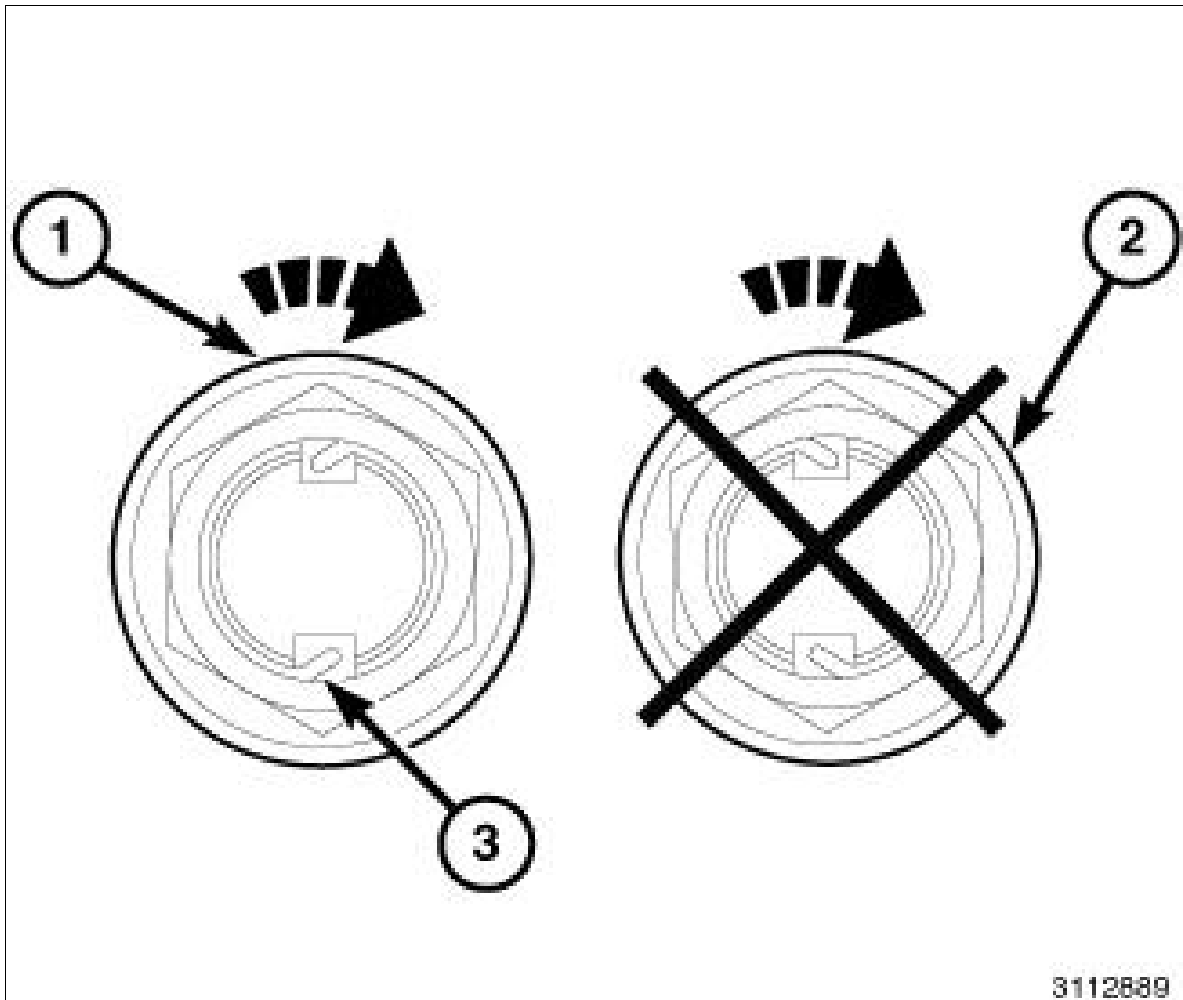
4. Connect the tie rod end to the steering knuckle and tighten the **NEW** nut (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

 NOTE:

*Always install a **NEW** hub nut. The original hub nut is one time use only and must be discarded when removed.*

5. Fit the tool 1870815000 and install a **NEW** hub nut, tighten the nut using the following procedure:
 1. tighten the nut to 70 N.m (52 Ft Lbs)
 2. tighten the nut an additional 60°

Fig 4: Correct Hub Nut Staking



Courtesy of CHRYSLER GROUP, LLC

 **NOTE:**

Do not use air tools while staking hub nut.

 **NOTE:**

The hub nut must be staked so that it looks similar to Fig 4. Both edges must be split and bent into the shape shown (3) in illustration. The staking must be in the opposite direction from the forward rotation of the wheel.

6. Stake the hub nut as shown in illustration.
7. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
8. Install the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .

9. Check and correct the transmission fluid level. Refer to the appropriate Service Information .

REMOVAL AND INSTALLATION > 1.6L AND 2.0L TURBO DIESEL (120 / 140 HP) WITHOUT INTERMEDIATE SHAFT > REMOVAL

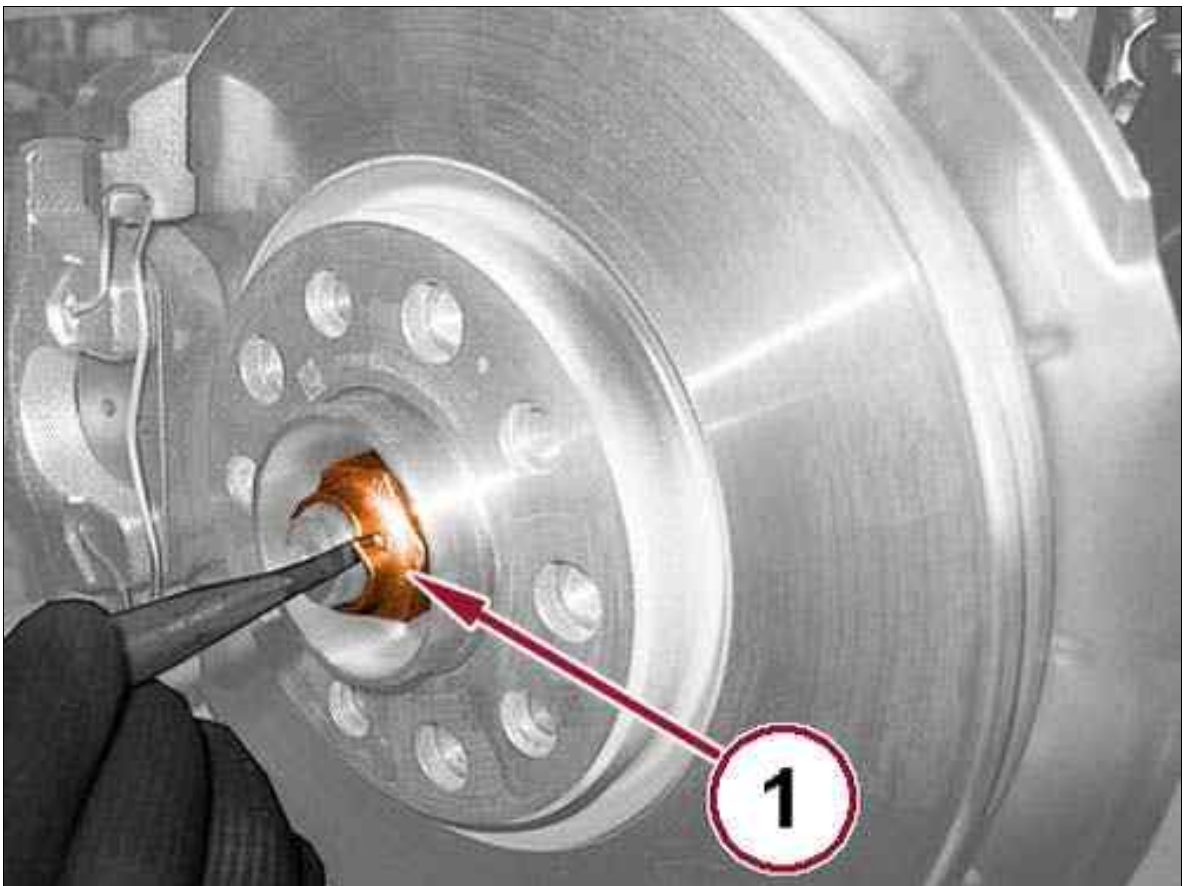


NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
2. Remove the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
3. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

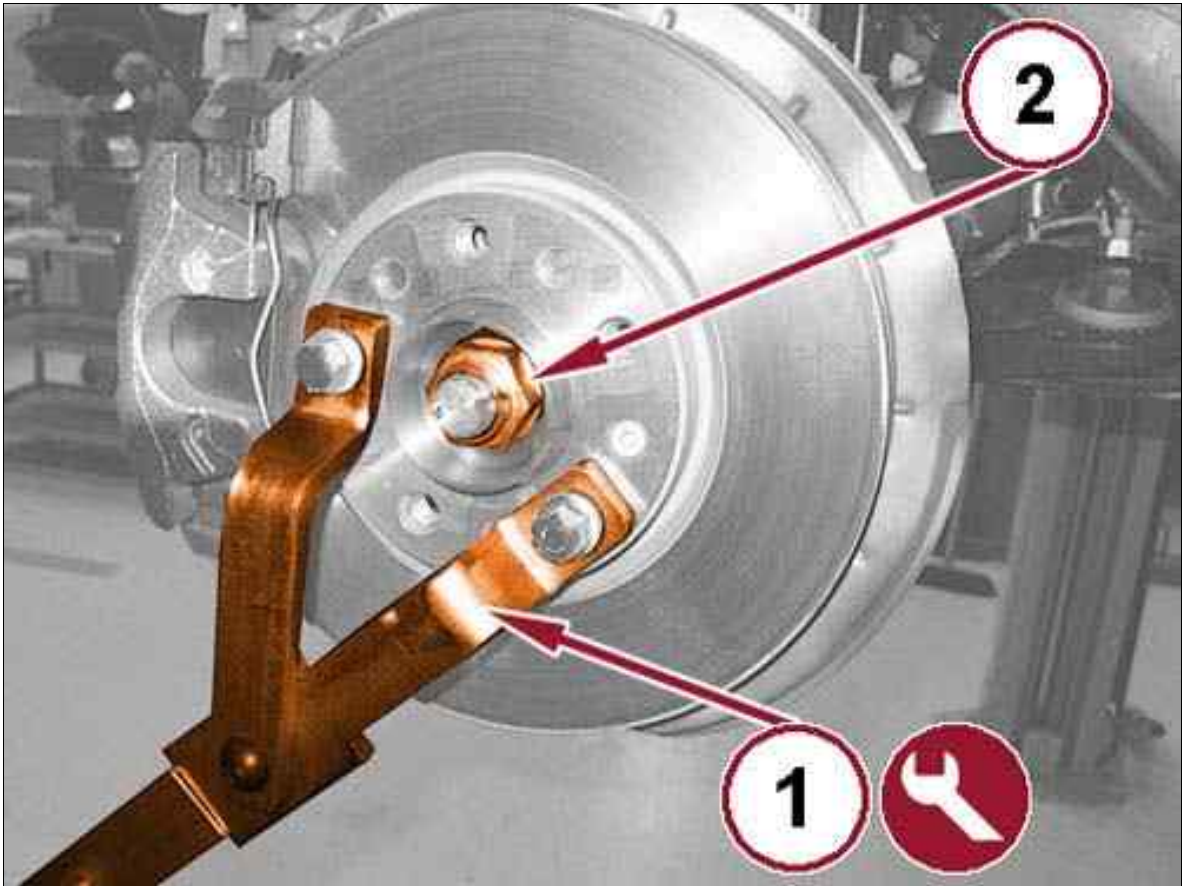
Fig 1: Lifting Staked Area



Courtesy of CHRYSLER GROUP, LLC

4. Using a suitable punch, lift the two staked areas (1) in the hub nut to avoid damaging the halfshaft.

Fig 2: Special Tool & Hub Nut



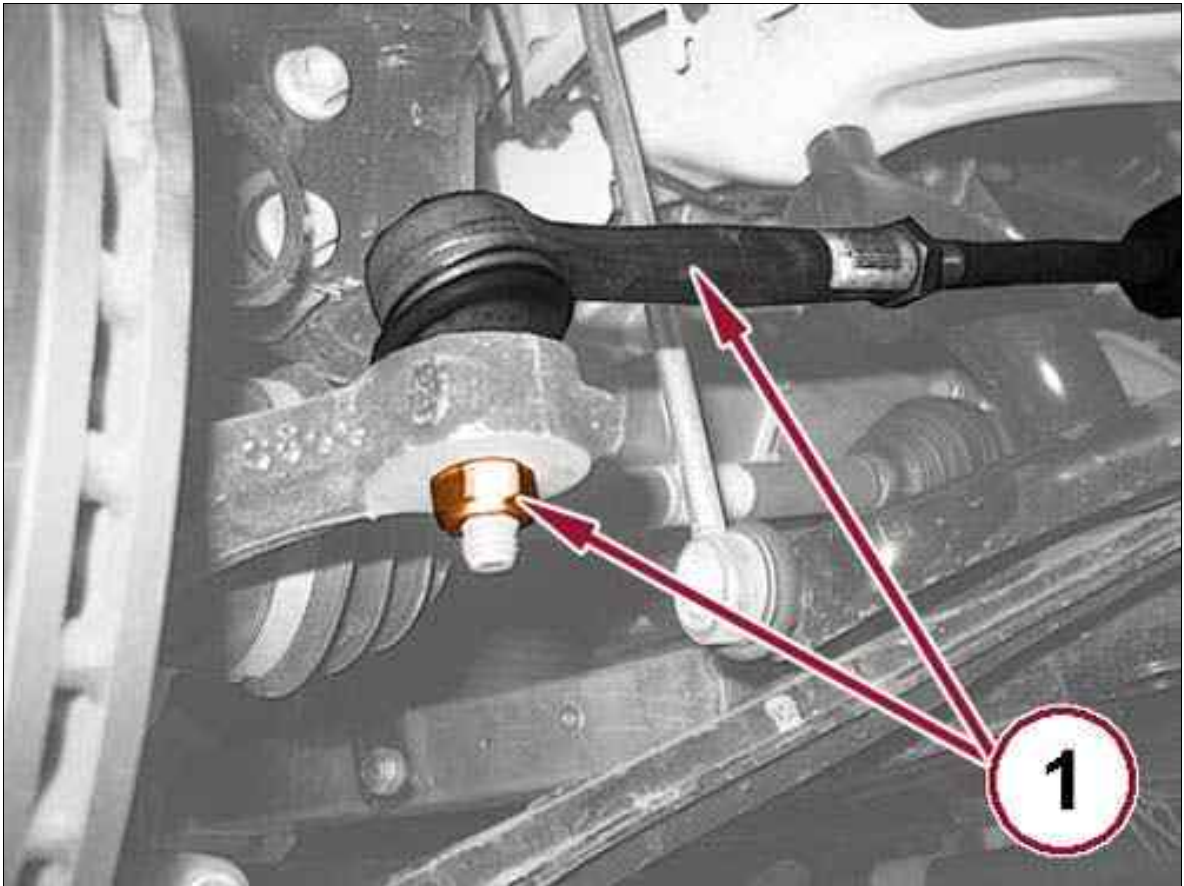
Courtesy of CHRYSLER GROUP, LLC

5. Fit the tool 1870815000 (1) to the brake disc.
6. Remove the hub nut (2) from the halfshaft and **DISCARD** .

 **NOTE:**

The used hub nut is not reusable.

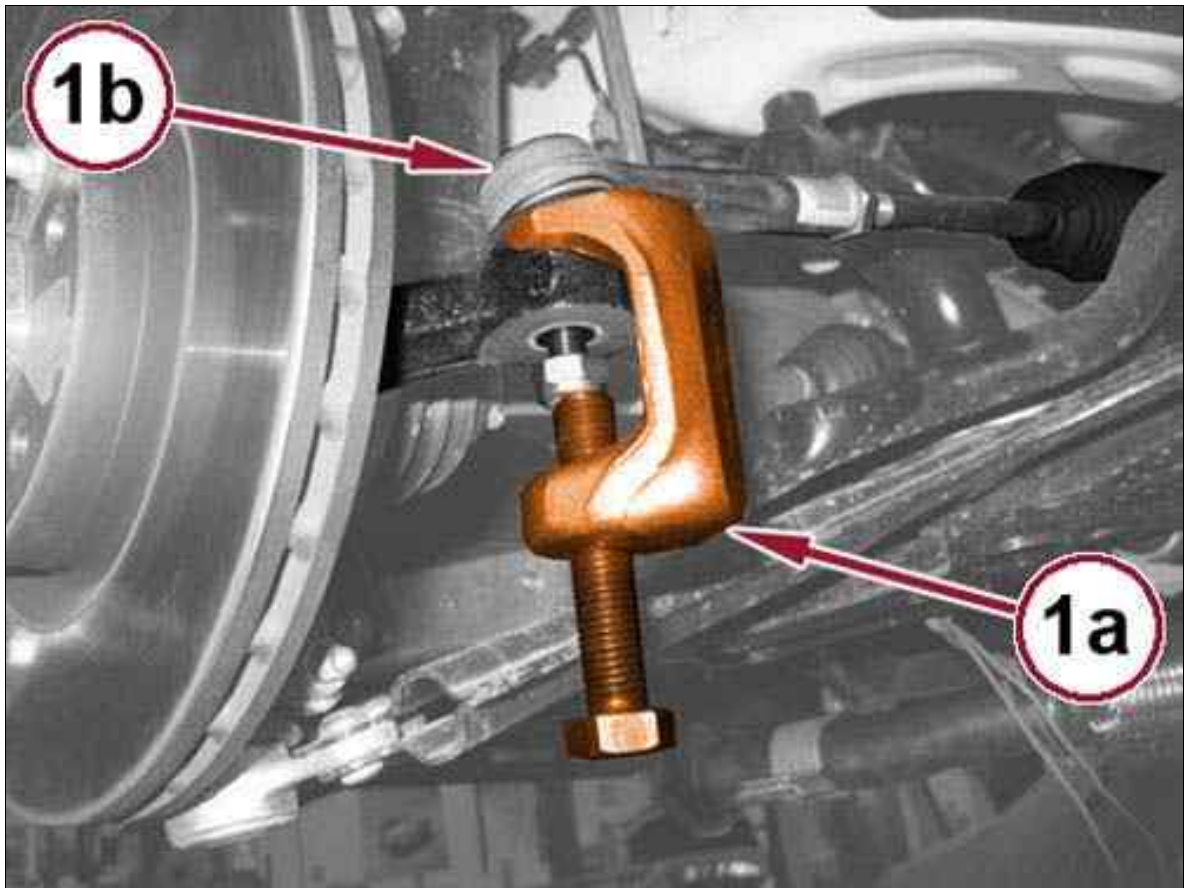
Fig 3: Tie Rod End & Nut



Courtesy of CHRYSLER GROUP, LLC

7. Remove and **DISCARD** the nut (1) securing the tie rod end to the steering knuckle.

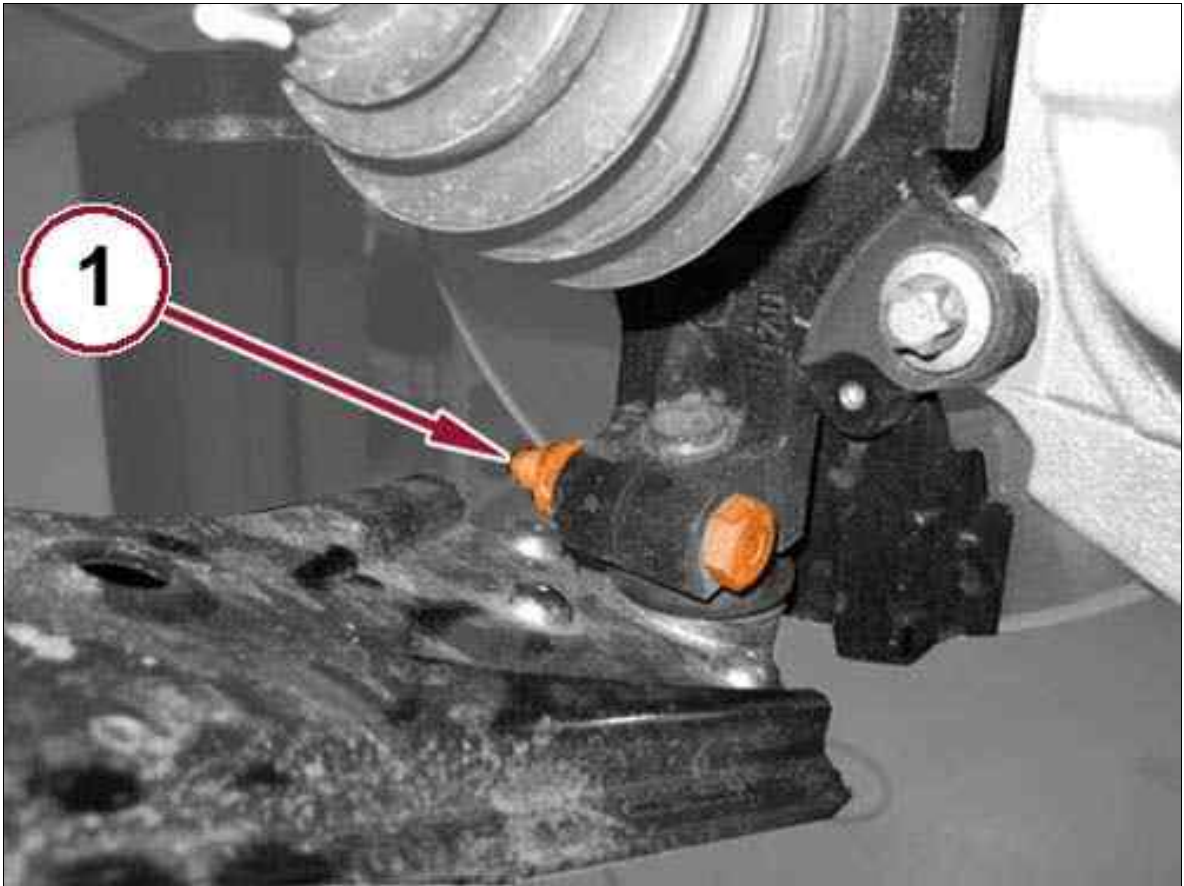
Fig 4: Disconnecting Tie Rod



Courtesy of CHRYSLER GROUP, LLC

8. Fit the tool 1871000700 (EMEA) or (special tool #C-4150A, Press, Ball Joint) (NAFTA) (1a) and disconnect the tie rod (1b) from the steering knuckle.

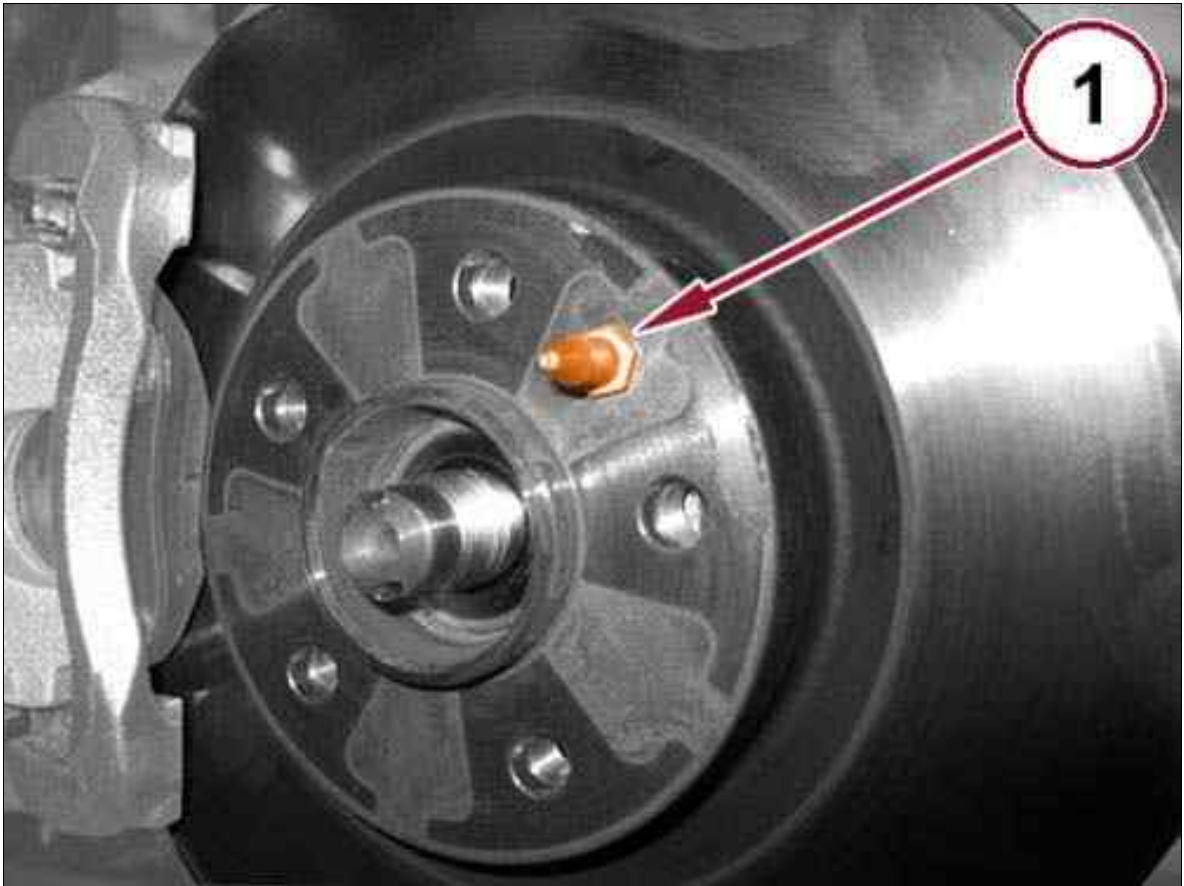
Fig 5: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

9. Remove the ball joint pinch bolt (1).
10. Disengage the ball joint from the steering knuckle.

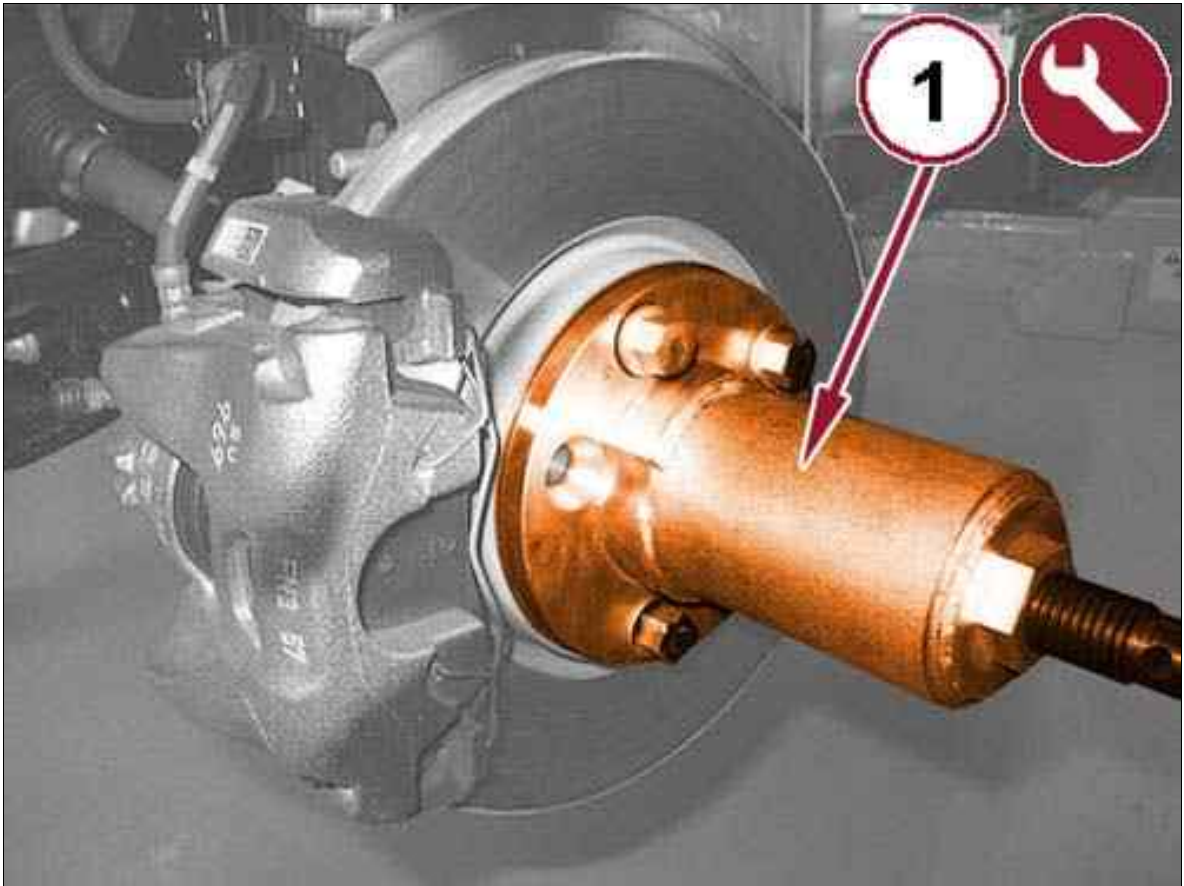
Fig 6: Brake Rotor Retaining Pin



Courtesy of CHRYSLER GROUP, LLC

11. Remove the disc brake rotor retaining pin (1).

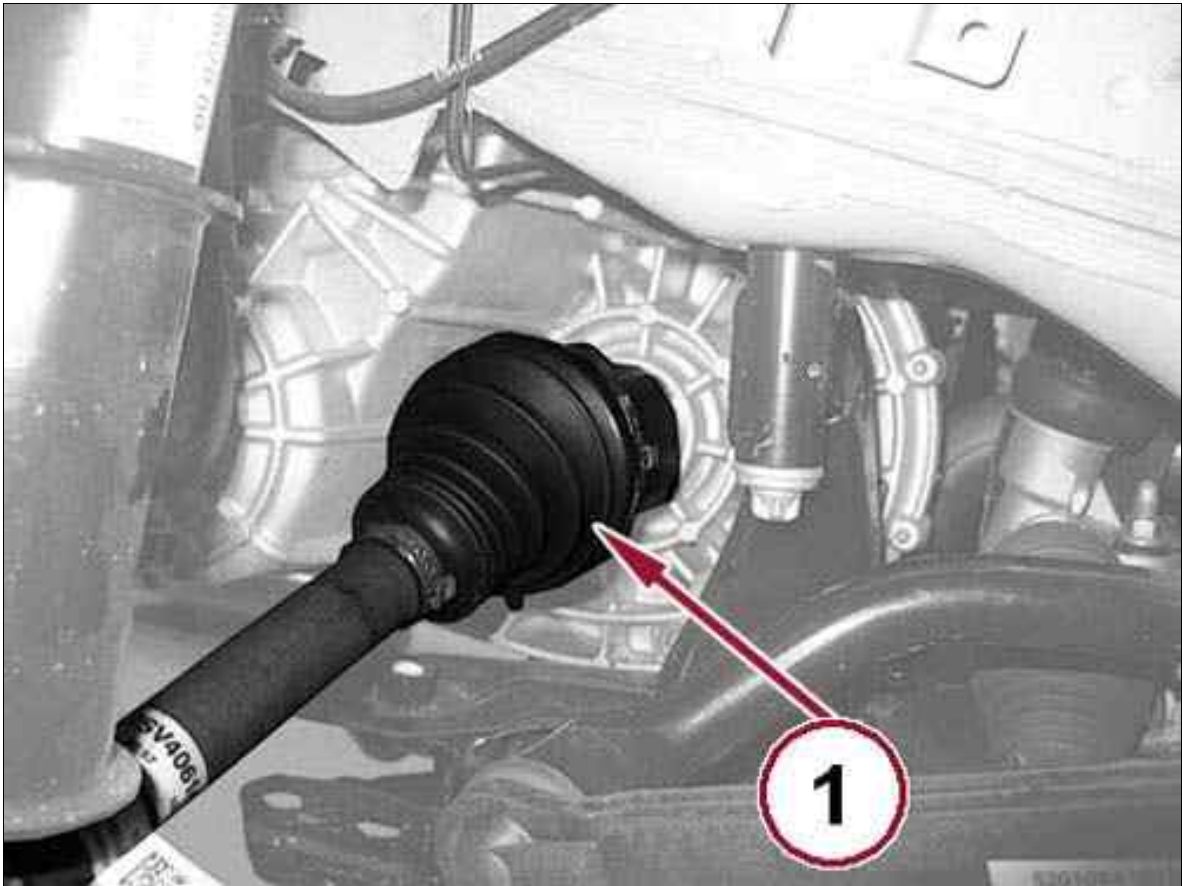
Fig 7: Disengaging Halfshaft From Wheel Hub



Courtesy of CHRYSLER GROUP, LLC

12. Disengage the halfshaft from the wheel hub using tool 2000001600 (1), position the knuckle and rotor assembly aside.
13. Remove the tool, install the disc brake rotor retaining pin and tighten to the proper specification. Refer to TORQUE SPECIFICATIONS .

Fig 8: Halfshaft



Courtesy of CHRYSLER GROUP, LLC

14. Pry the halfshaft (1) from the differential and remove the halfshaft assembly.

REMOVAL AND INSTALLATION > 1.6L AND 2.0L TURBO DIESEL (120 / 140 HP) WITHOUT INTERMEDIATE SHAFT > INSTALLATION

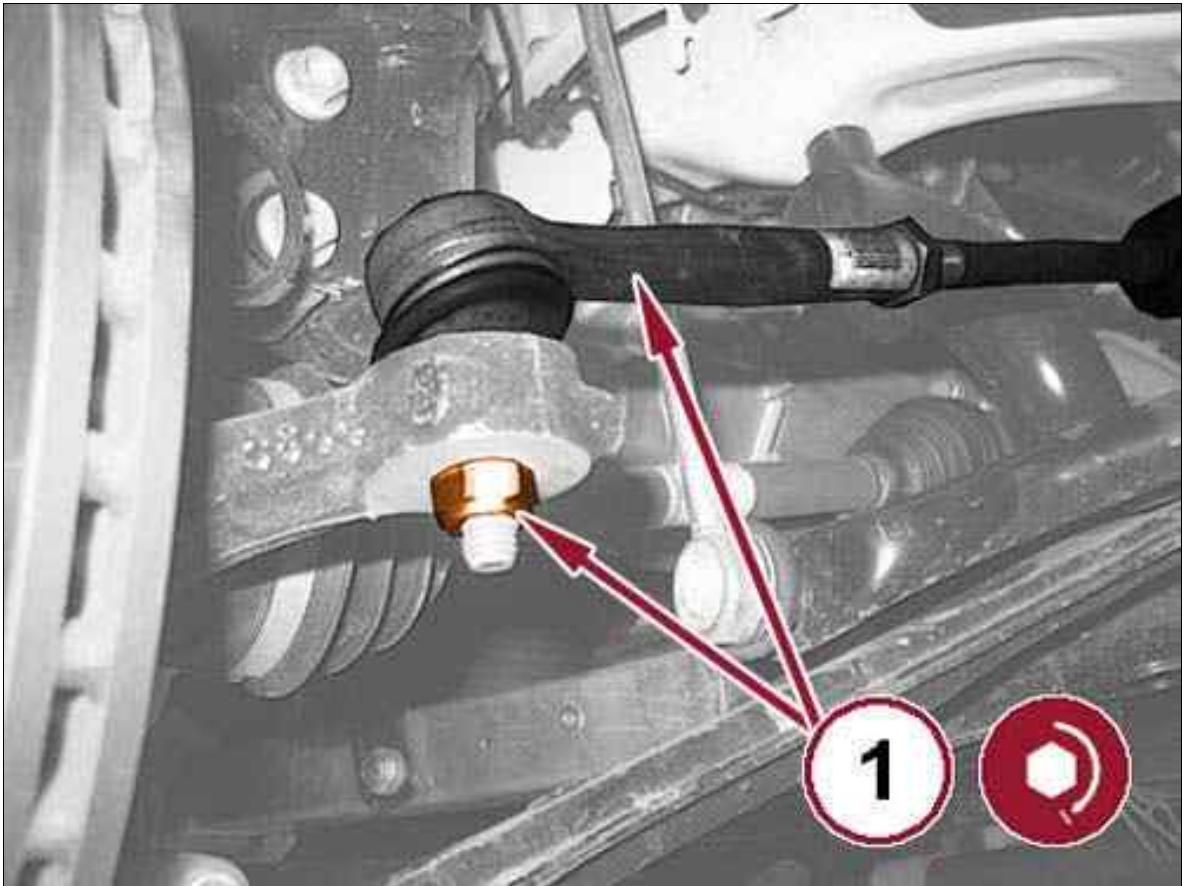


NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Position the halfshaft into the differential and wheel hub.

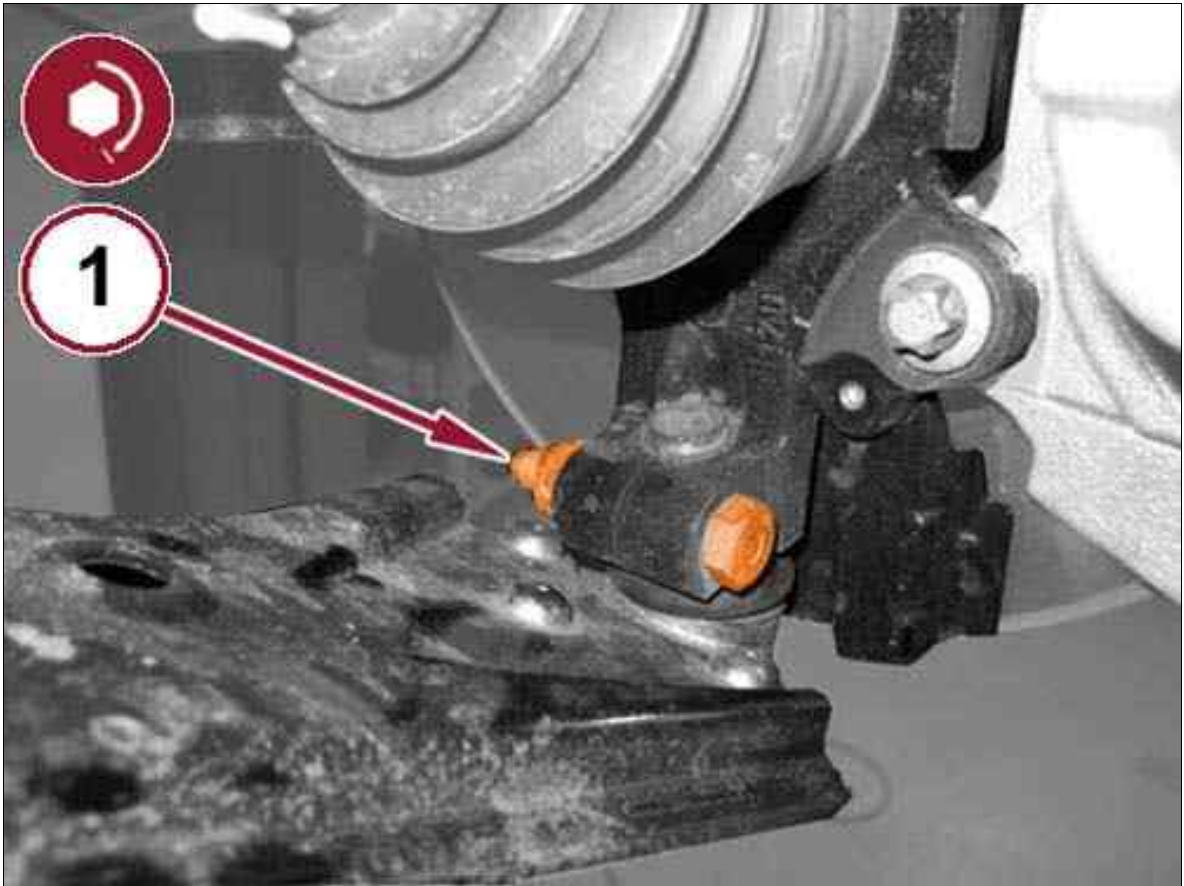
Fig 1: Tie Rod End & Nut



Courtesy of CHRYSLER GROUP, LLC

2. Connect the tie rod end to the steering knuckle and tighten the **NEW** nut (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

Fig 2: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

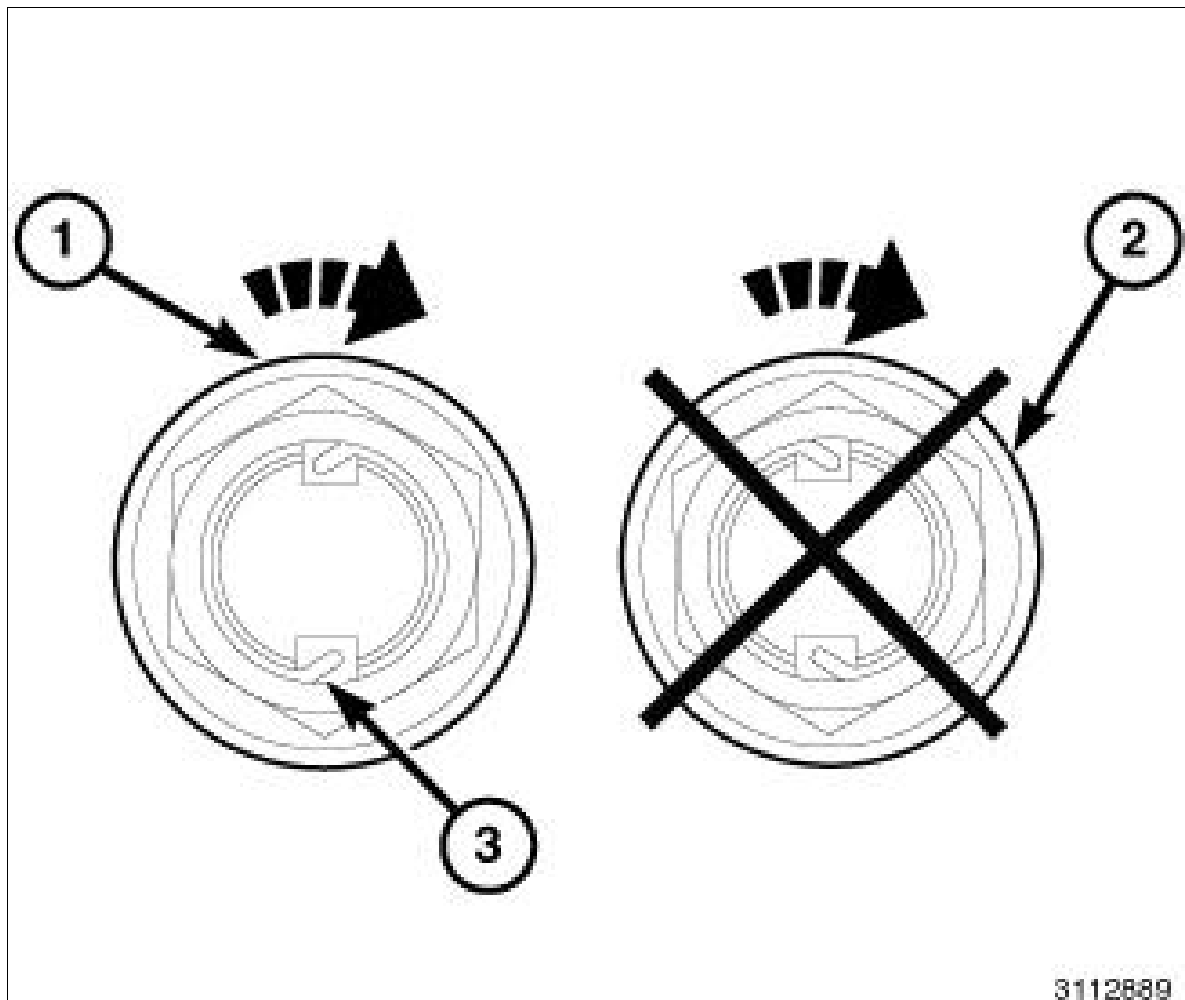
3. Position the ball joint stud into the steering knuckle tighten the pinch bolt (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

 NOTE:

*Always install a **NEW** hub nut. The original hub nut is one time use only and must be discarded when removed.*

4. Fit the tool 1870815000 and install a **NEW** hub nut, tighten the nut using the following procedure:
 1. tighten the nut to 70 N.m (52 Ft Lbs)
 2. tighten the nut an additional 60°

Fig 3: Correct Hub Nut Staking



Courtesy of CHRYSLER GROUP, LLC

 NOTE:

Do not use air tools on staking tool while staking hub nut.

 NOTE:

The hub nut must be staked so that it looks similar to Fig 3. Both edges must be split and bent into the shape shown (3) in illustration. The staking must be in the opposite direction from the forward rotation of the wheel.

5. Stake the hub nut as shown in illustration.
6. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
7. Install the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .

8. Check and correct the transmission fluid level. Refer to the appropriate Service Information .

REMOVAL AND INSTALLATION > 2.0L TURBO DIESEL (170 HP), 2.4L MULTIAIR WITHOUT INTERMEDIATE SHAFT > REMOVAL

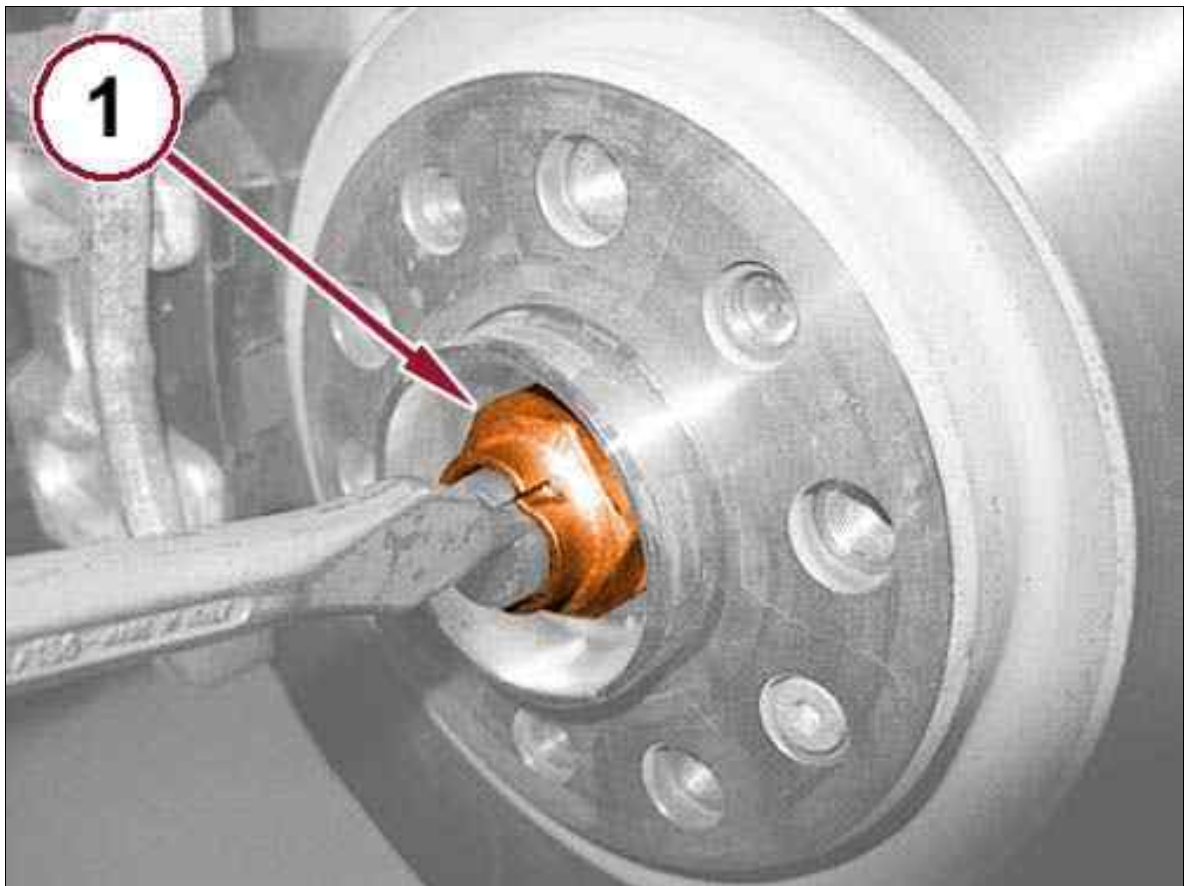


NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
2. Remove the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
3. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

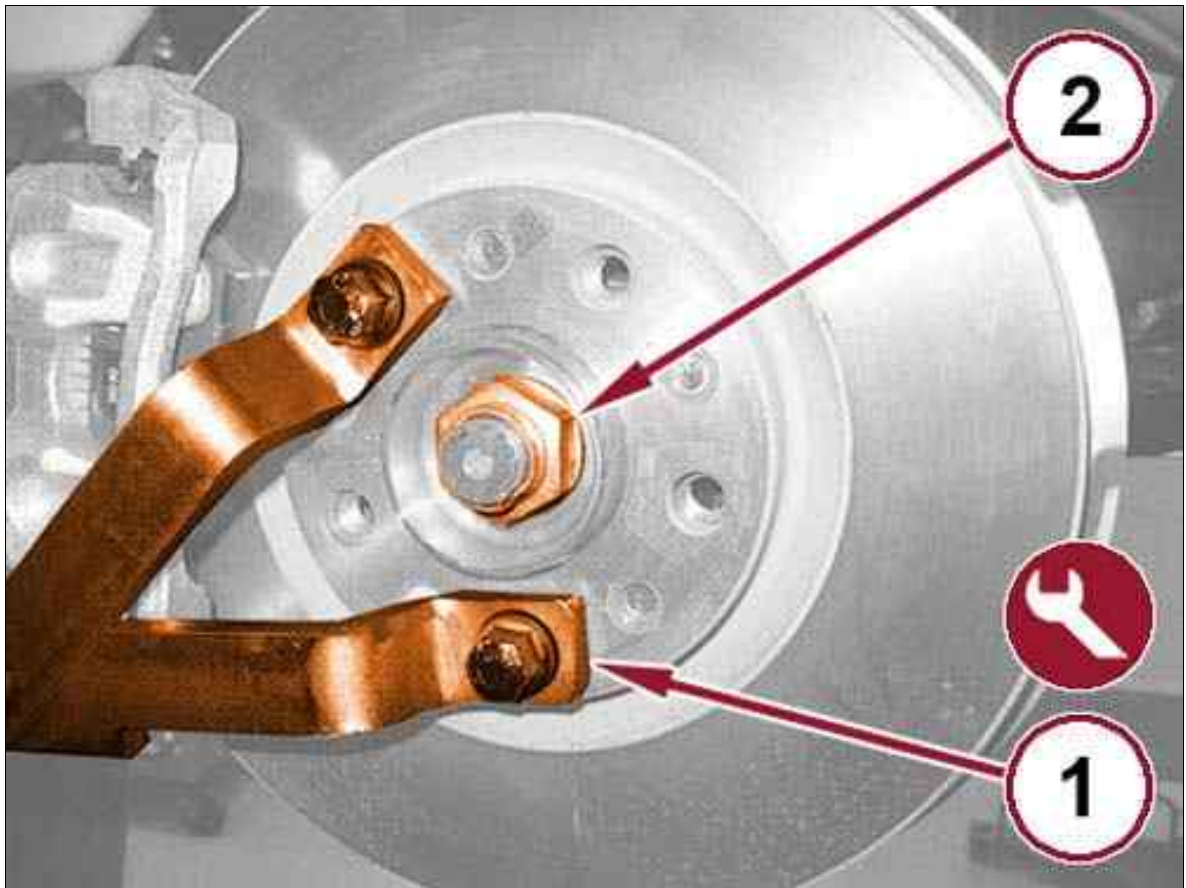
Fig 1: Lifting Staked Area



Courtesy of CHRYSLER GROUP, LLC

4. Using a suitable punch, lift the two staked areas (1) in the hub nut to avoid damaging the halfshaft.

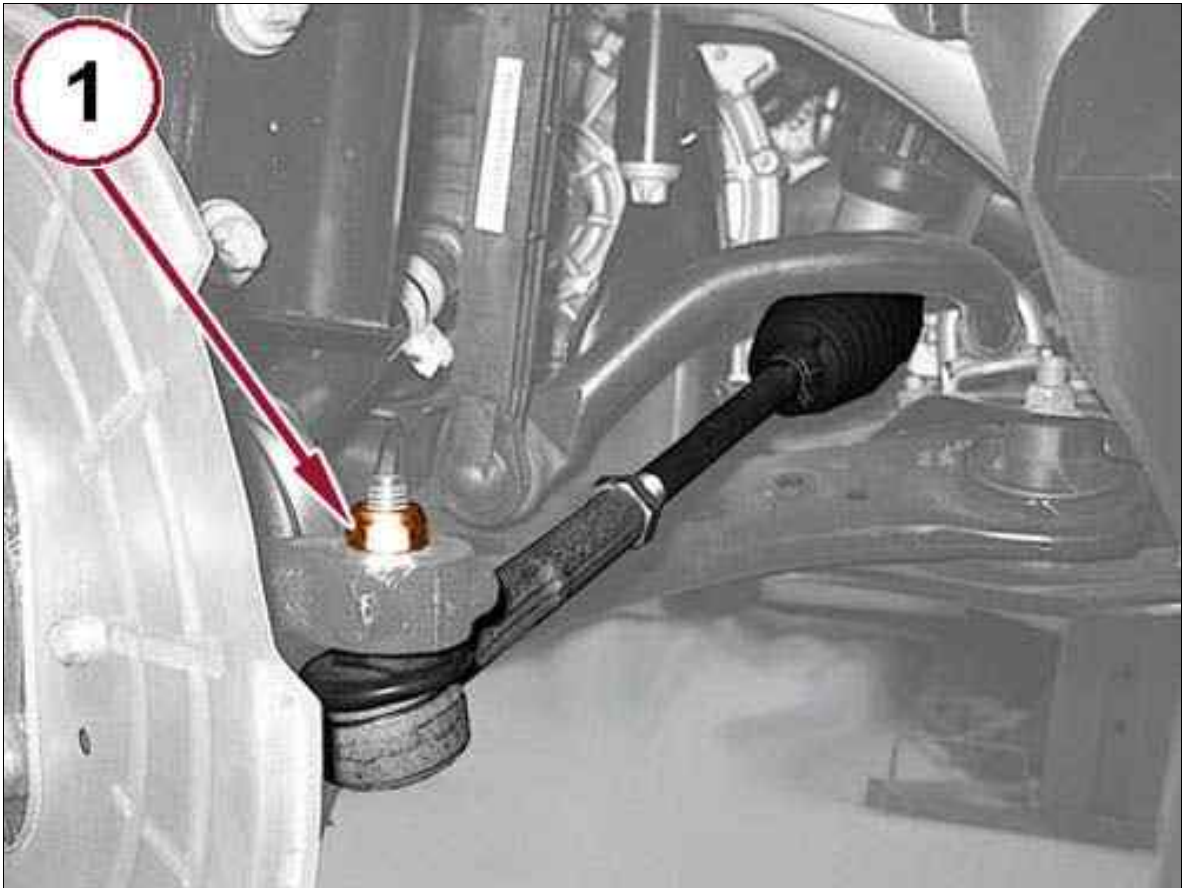
Fig 2: Special Tool & Hub Nut



Courtesy of CHRYSLER GROUP, LLC

5. Fit the tool 1870815000 (1) to the brake disc.
6. Remove the hub nut (2) from the halfshaft and discard. **The used hub nut is not reusable.**

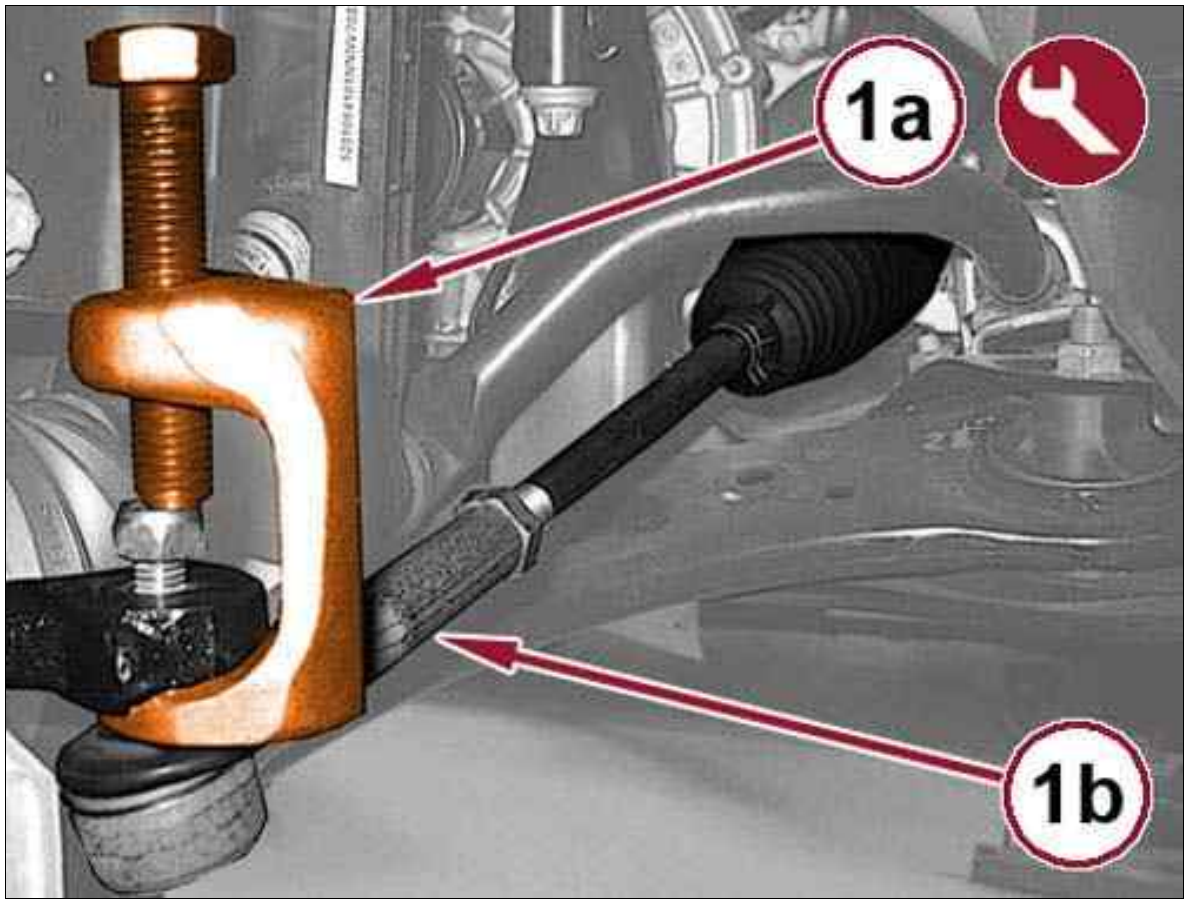
Fig 3: Tie Rod Nut



Courtesy of CHRYSLER GROUP, LLC

7. Unscrew the nut (1) securing the tie rod end to the steering knuckle.

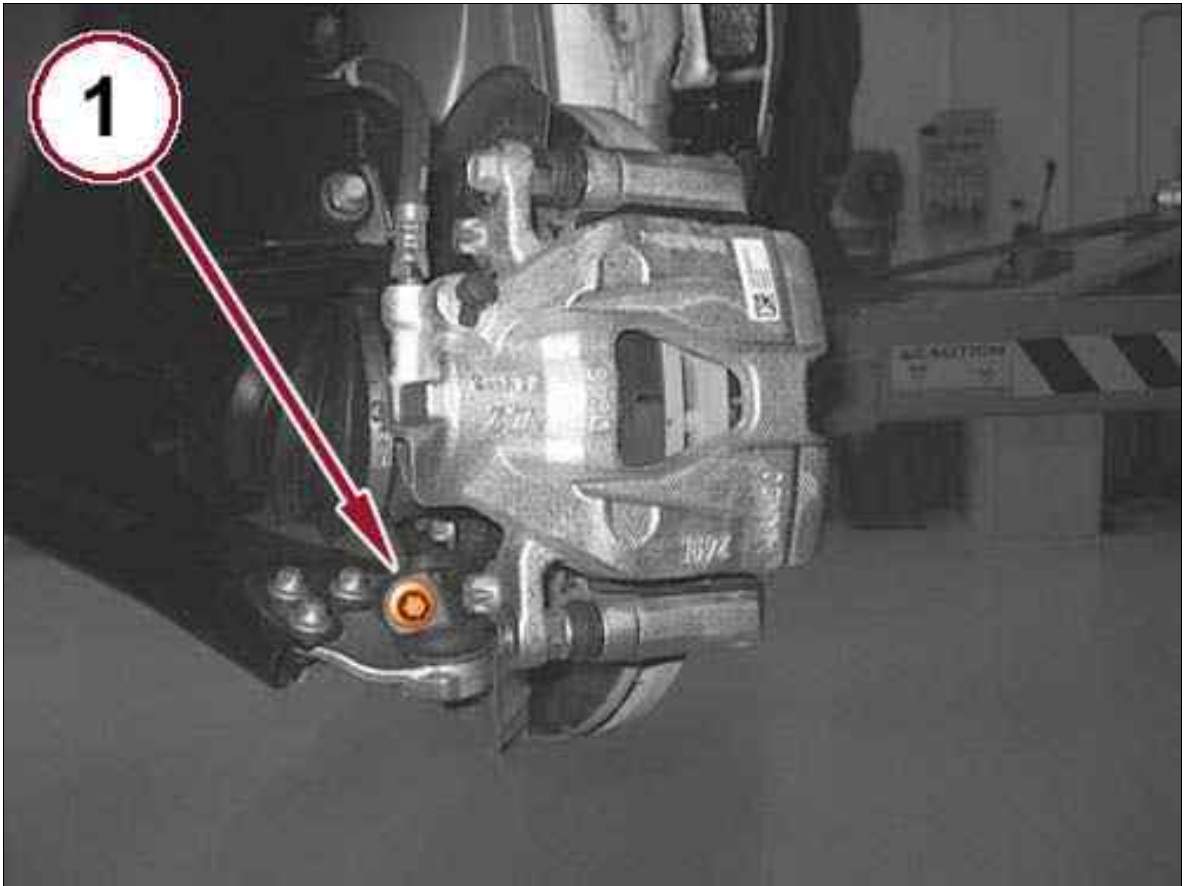
Fig 4: Disconnecting Tie Rod



Courtesy of CHRYSLER GROUP, LLC

8. Fit the tool 1871000700 (EMEA) or (special tool #C-4150A, Press, Ball Joint) (NAFTA) (1a) and disconnect the tie rod (1b) from the wheel upright.

Fig 5: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

9. Remove the ball joint pinch bolt (1).
10. Disengage the ball joint from the steering knuckle.
11. Disengage the halfshaft from the wheel hub.

Fig 6: Removing Halfshaft With Special Tool



Courtesy of CHRYSLER GROUP, LLC

12. With the tool 2000040488 (1a) remove the halfshaft (1b).

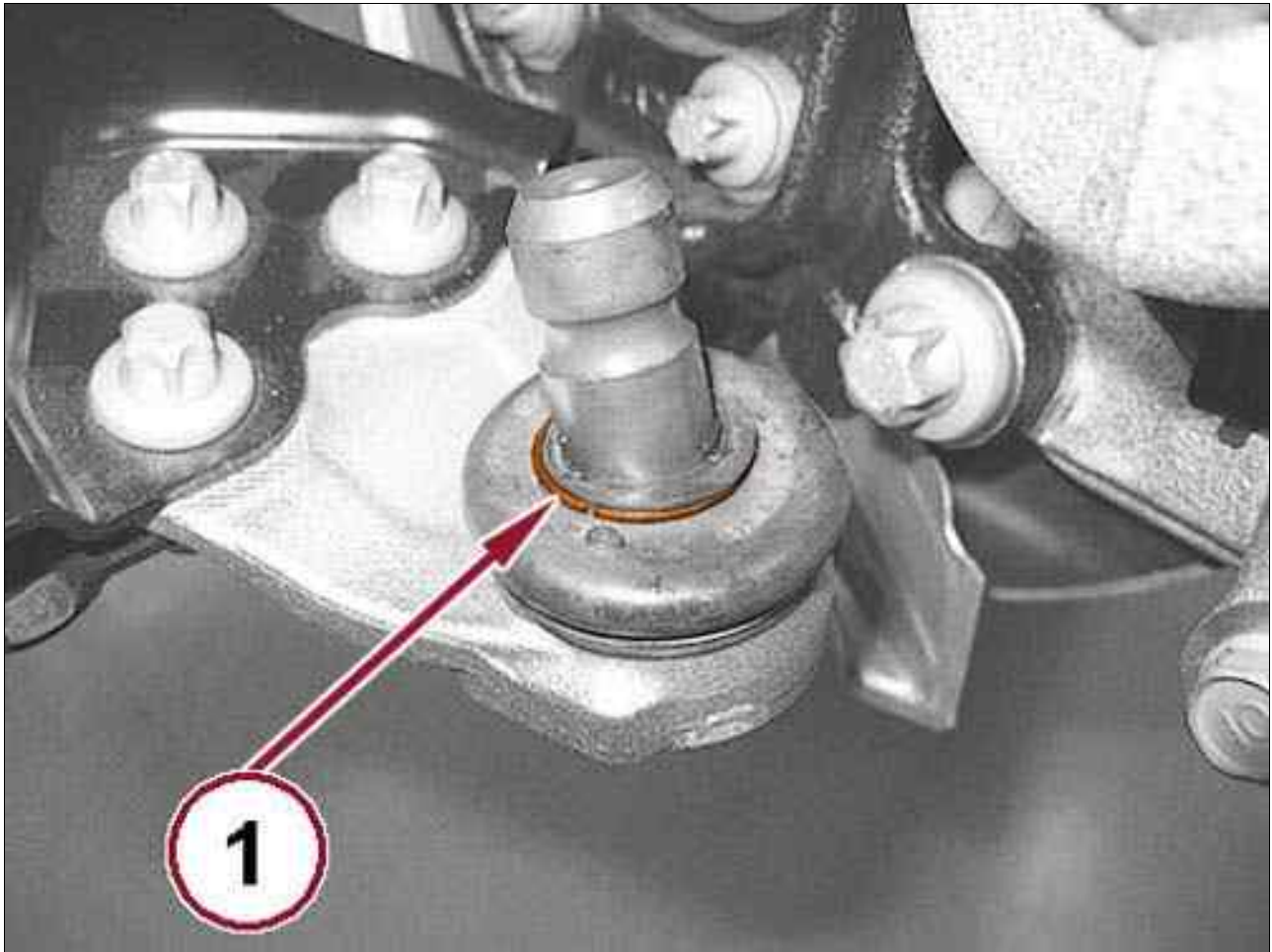
REMOVAL AND INSTALLATION > 2.0L TURBO DIESEL (170 HP), 2.4L MULTIAIR WITHOUT INTERMEDIATE SHAFT > INSTALLATION



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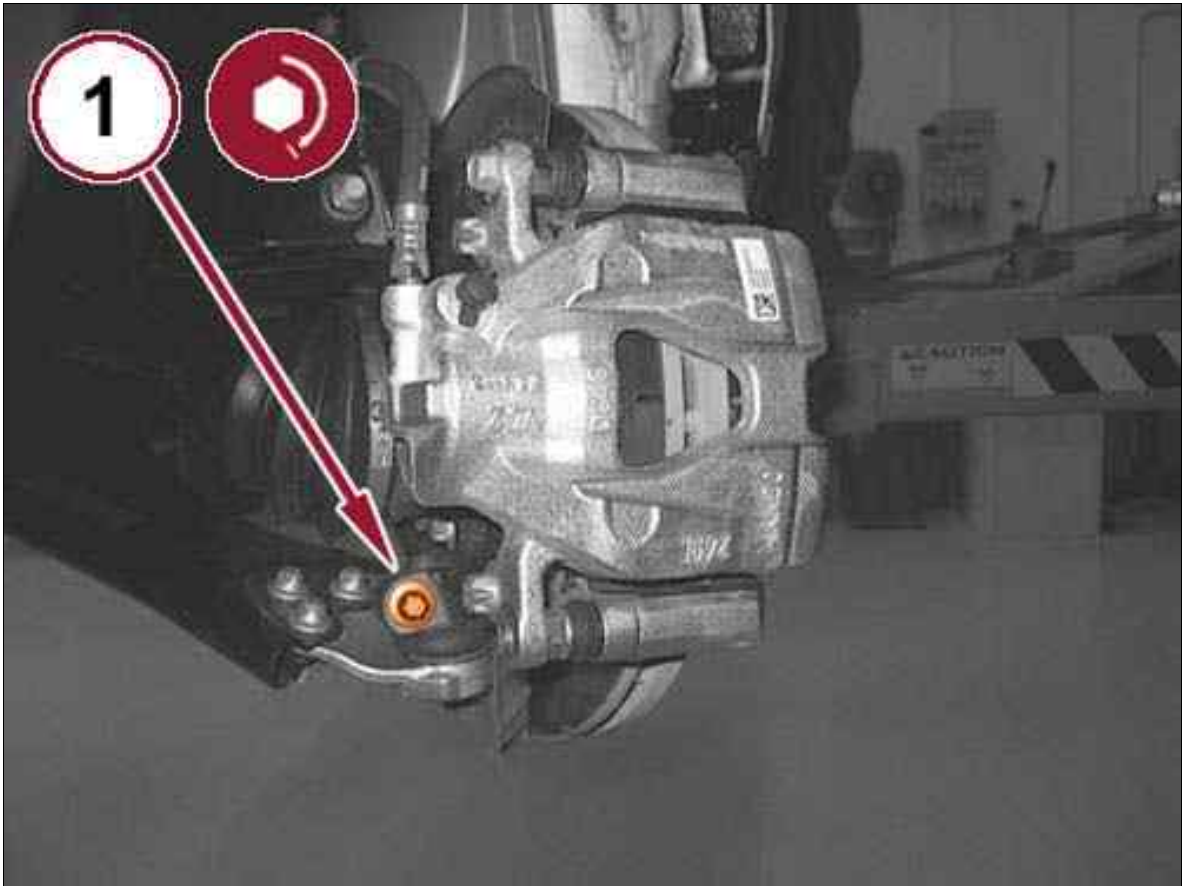
Fig 1: Boot Tension Ring



Courtesy of CHRYSLER GROUP, LLC

1. Inspect the ball joint boot and the boot tension ring (1) for damage.
2. Position the half shaft into the differential and wheel hub.

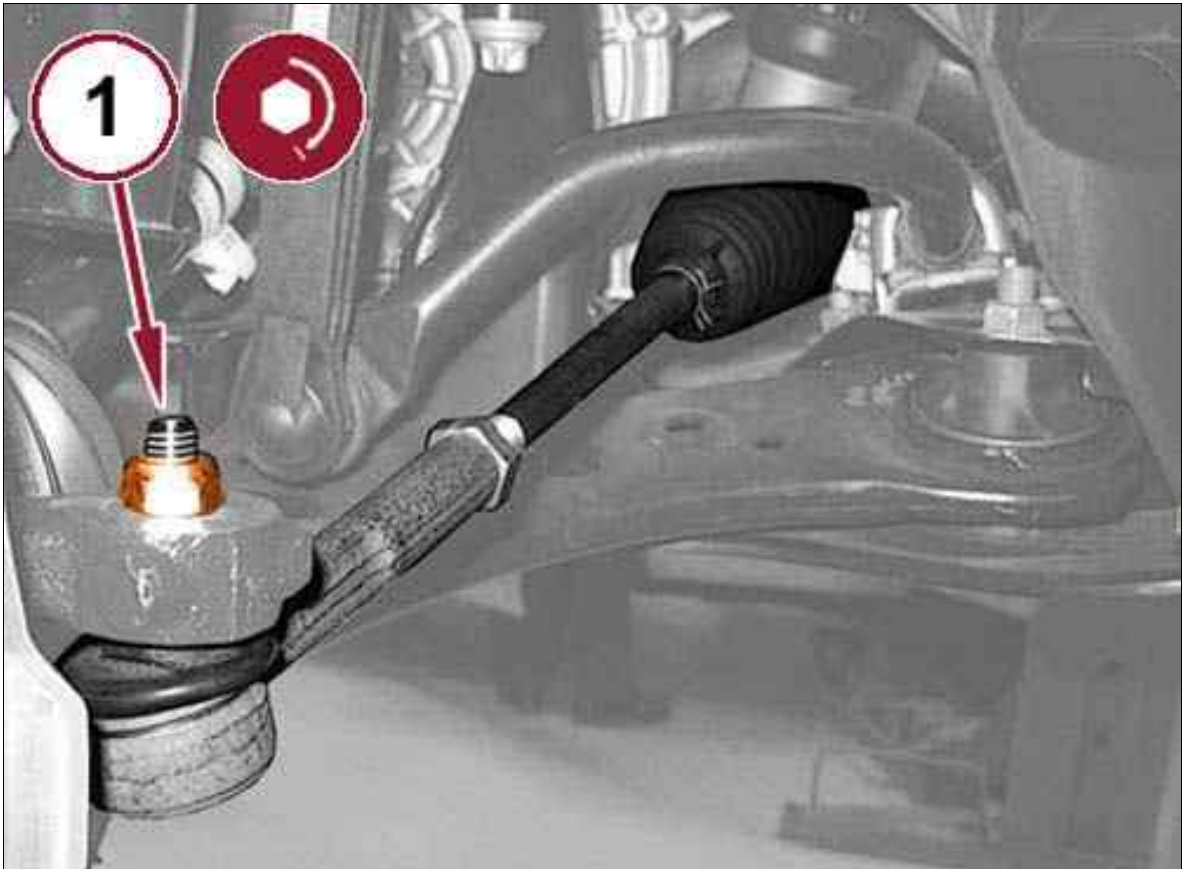
Fig 2: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

3. Position the ball joint stud into the steering knuckle tighten the **NEW** pinch bolt (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

Fig 3: Tie Rod End Nut



Courtesy of CHRYSLER GROUP, LLC

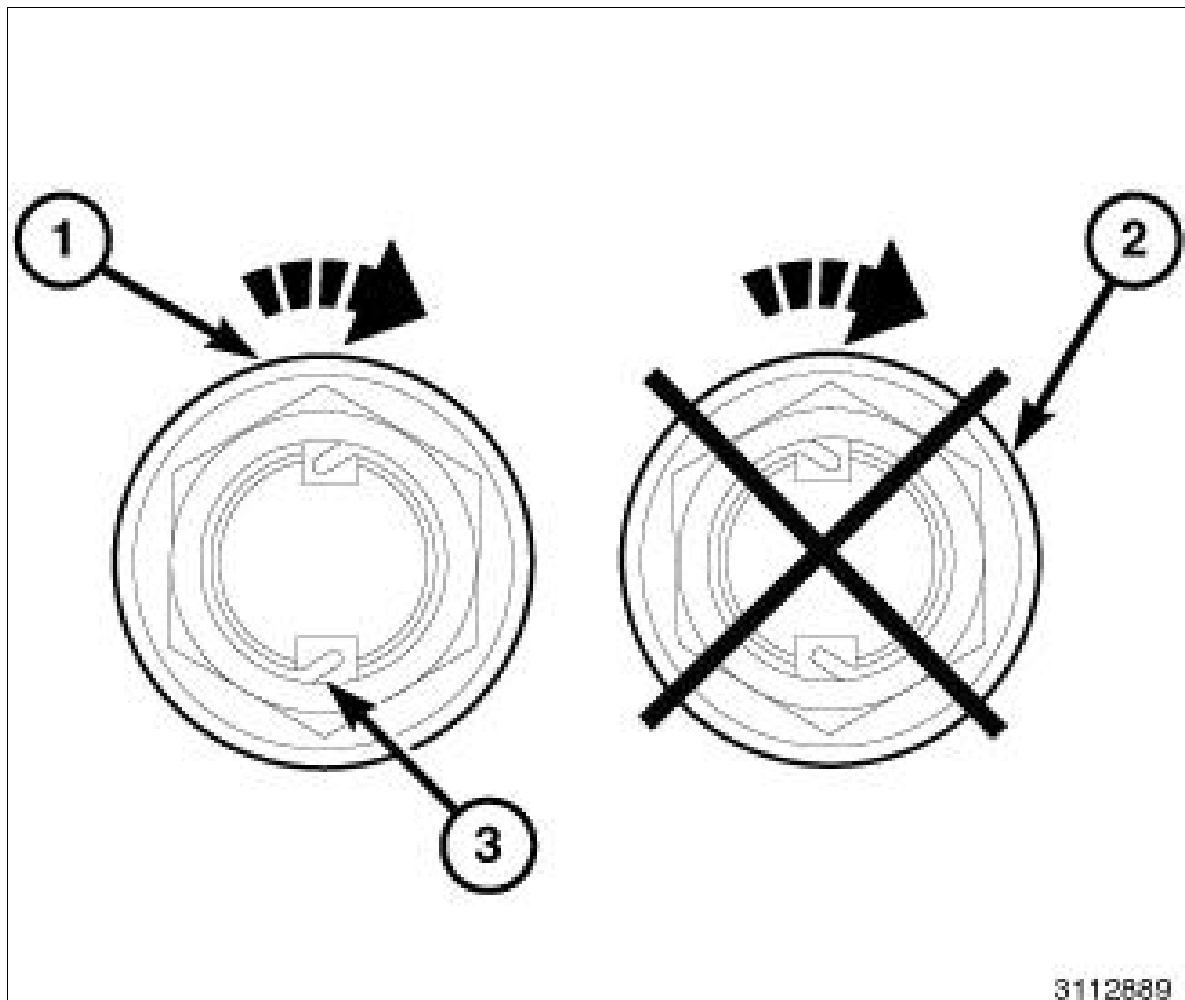
4. Connect the tie rod end to the steering knuckle and tighten the **NEW** nut (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

 NOTE:

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5. Fit the tool 1870815000 and install a **NEW** hub nut, tighten the nut using the following procedure:
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Fig 4: Correct Hub Nut Staking



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7. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
8. Install the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .

9. Check and correct the transmission fluid level. Refer to the appropriate Service Information .

REMOVAL AND INSTALLATION > AWD / 4WD RIGHT SIDE, WITHOUT INTERMEDIATE SHAFT > REMOVAL

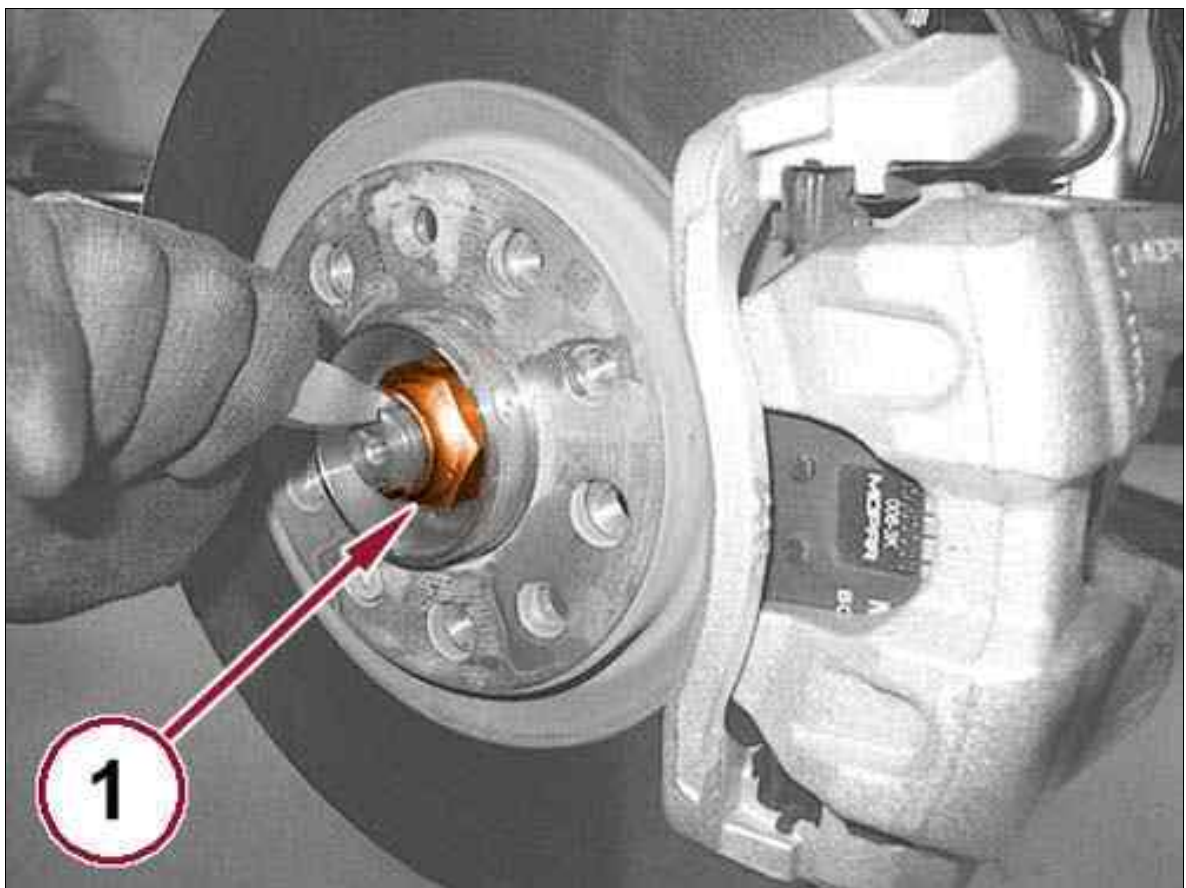


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3. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

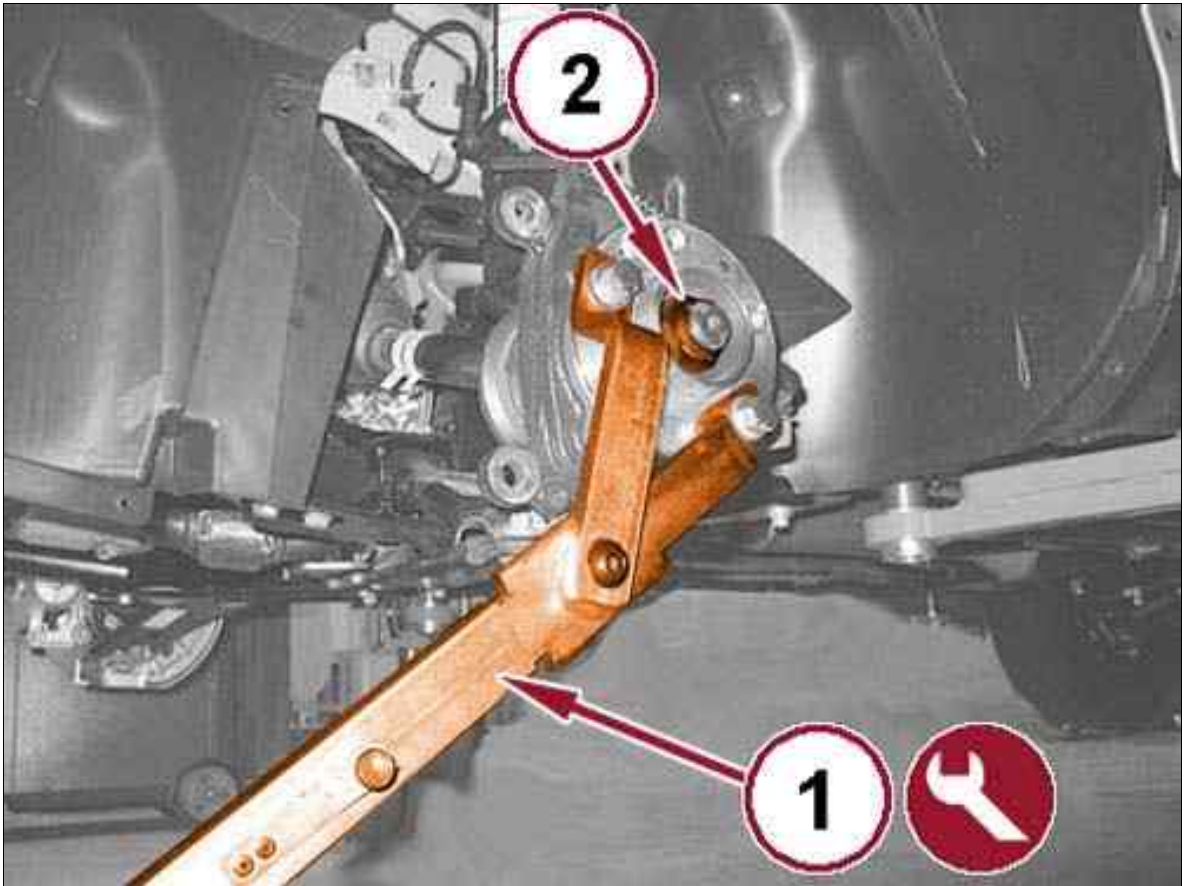
Fig 1: Lifting Staked Area



Courtesy of CHRYSLER GROUP, LLC

4. Using a suitable punch, lift the two staked areas (1) in the hub nut to avoid damaging the halfshaft.

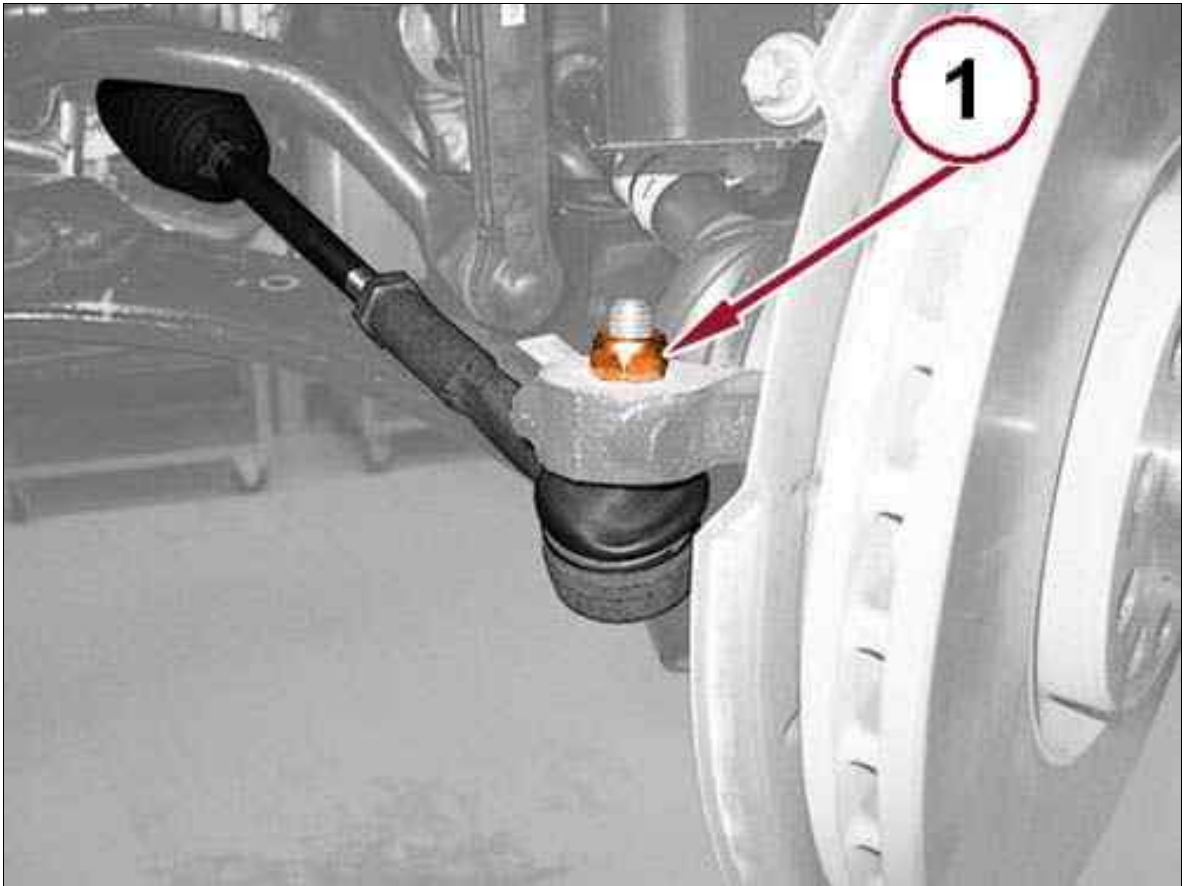
Fig 2: Special Tool & Hub Nut



Courtesy of CHRYSLER GROUP, LLC

5. Fit the tool 1870815000 (1) to the brake disc.
6. Remove the hub nut (2) from the halfshaft and **DISCARD** . The used hub nut is not reusable.

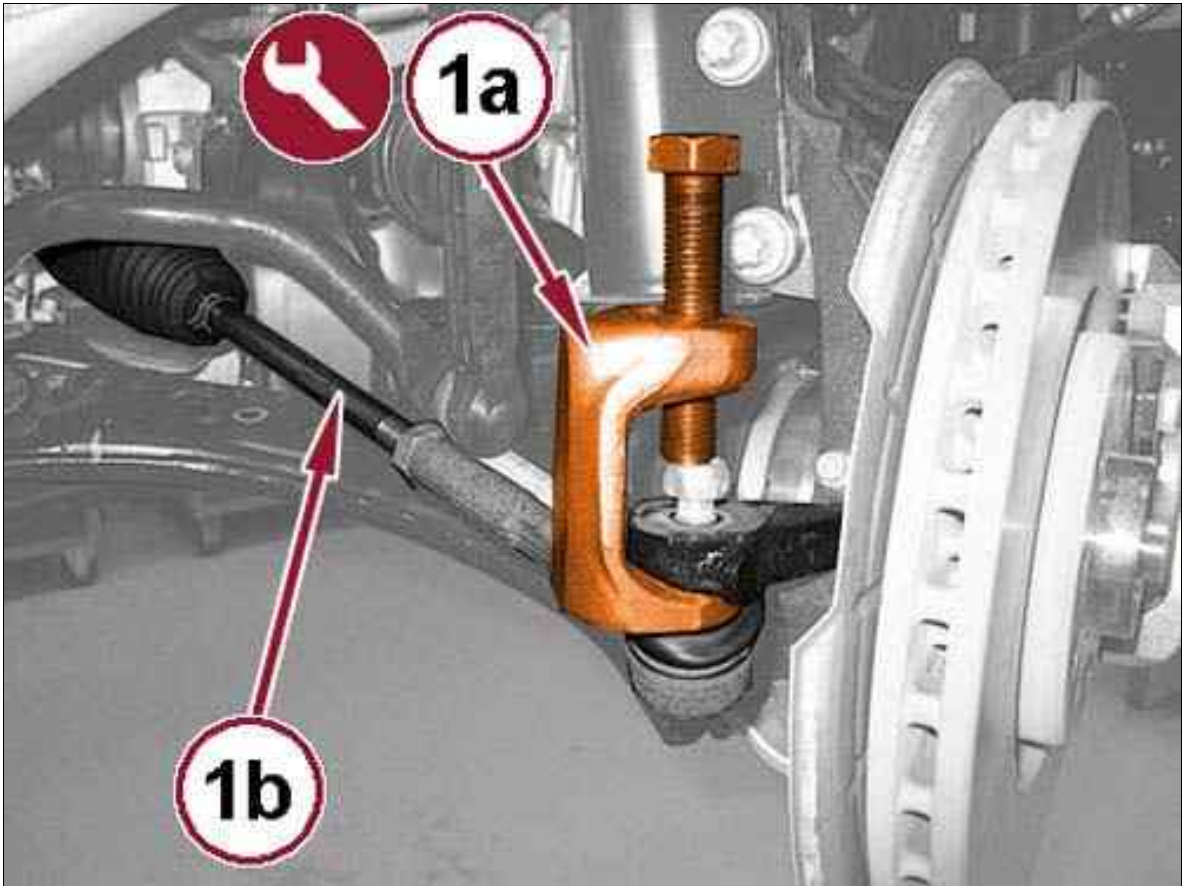
Fig 3: Tie Rod End Nut



Courtesy of CHRYSLER GROUP, LLC

7. Unscrew and **DISCARD** the nut (1) securing the tie rod end to the steering knuckle.

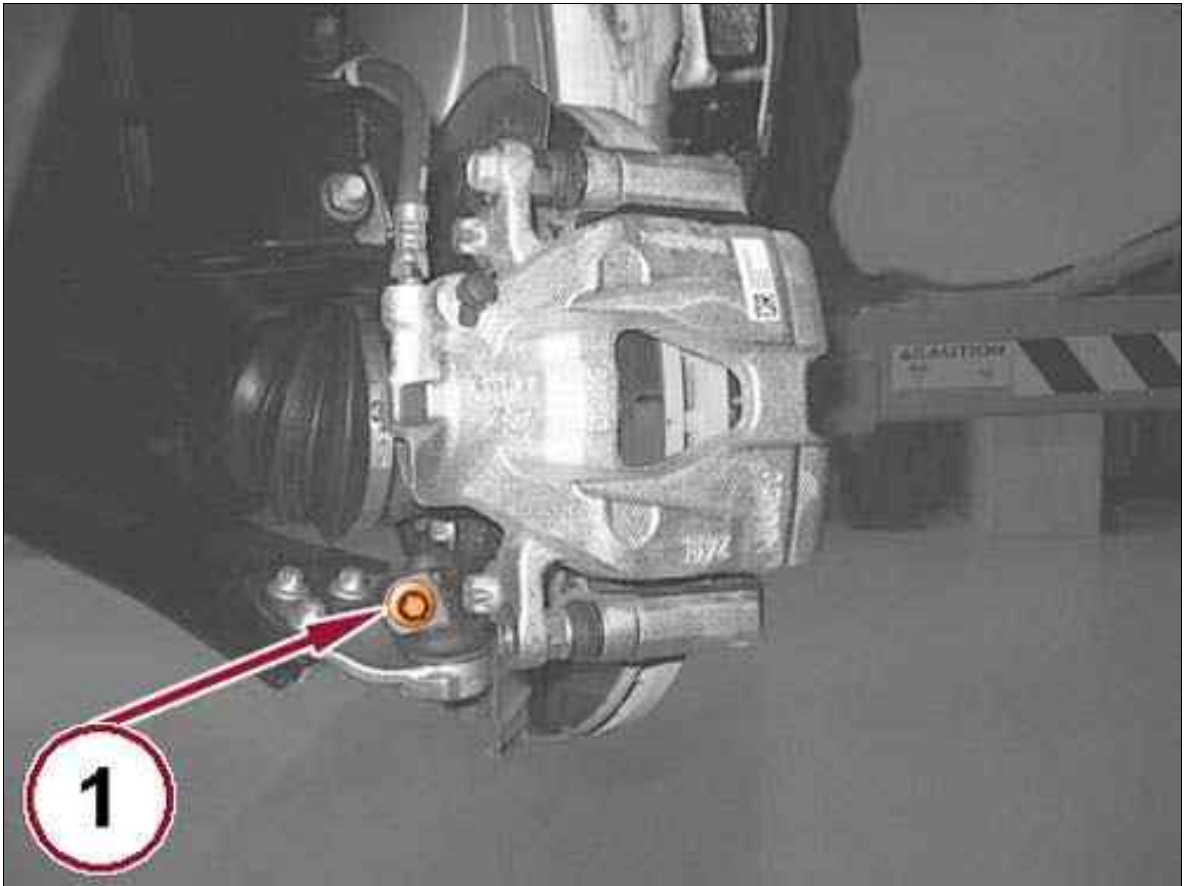
Fig 4: Disconnecting Tie Rod End



Courtesy of CHRYSLER GROUP, LLC

8. Fit the tool 1871000700 (EMEA) or (special tool #C-4150A, Press, Ball Joint) (NAFTA) (1a) and disconnect the tie rod (1b) from the wheel upright.

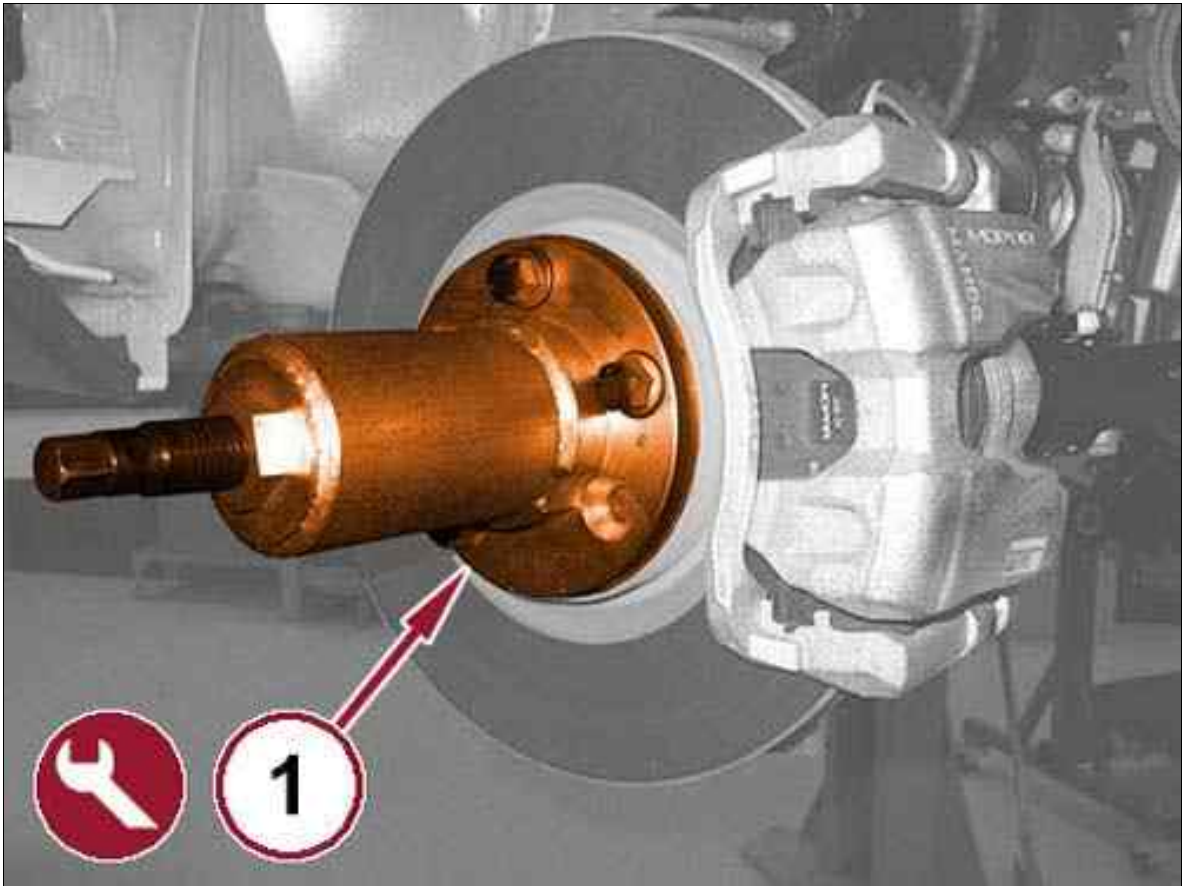
Fig 5: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

9. Remove the ball joint pinch bolt (1).
10. Disengage the ball joint from the steering knuckle.
11. If equipped with a 1.4L Turbo, disengage the halfshaft from the wheel hub.

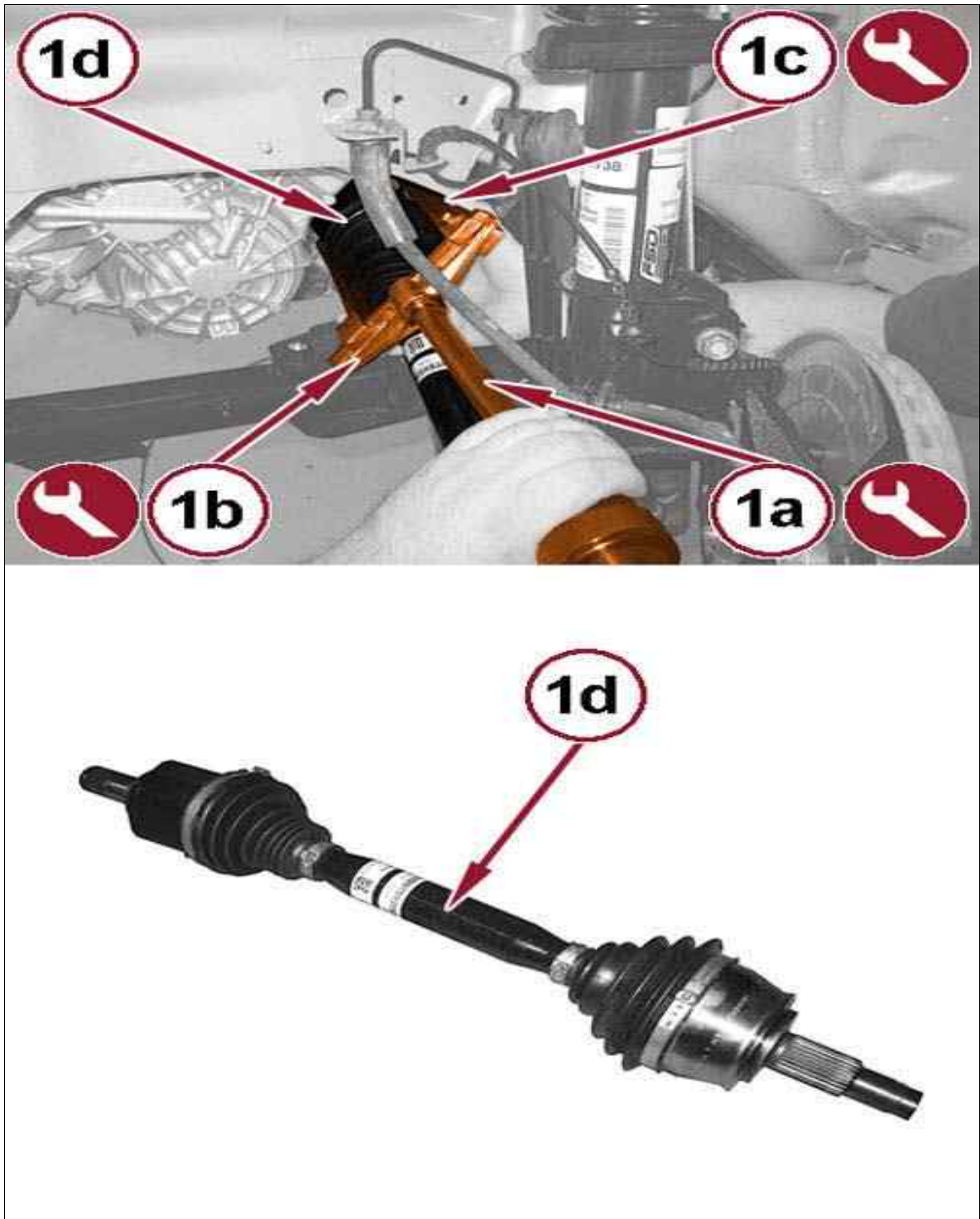
Fig 6: Disengaging Halfshaft



Courtesy of CHRYSLER GROUP, LLC

12. If equipped with a 2.0 Turbo Diesel or 2.4L MultiAir, use tool 2000001600 (1) to disengage the halfshaft from the wheel hub.

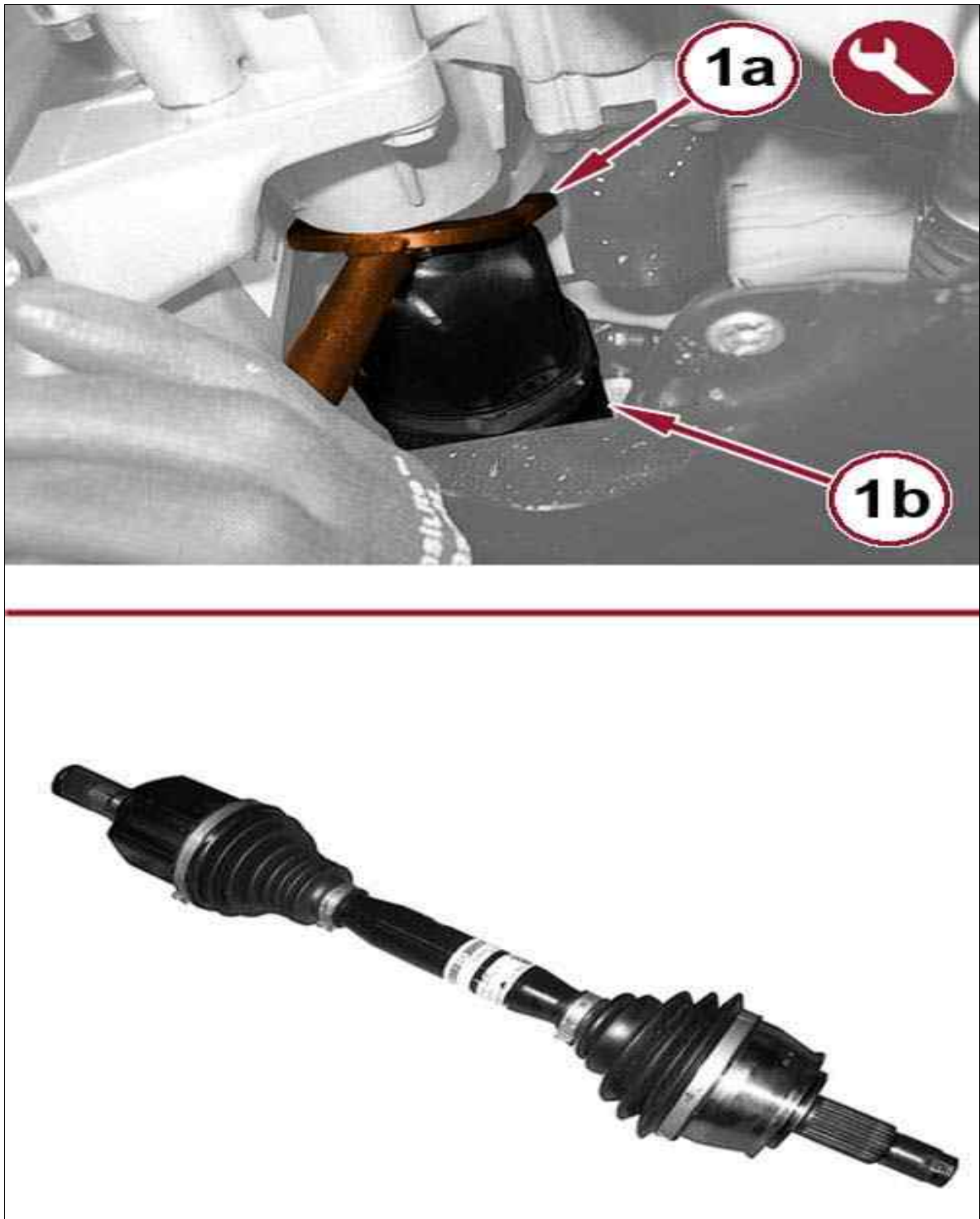
Fig 7: Removing Halfshaft



Courtesy of CHRYSLER GROUP, LLC

13. If equipped with a 1.4L MultiAir, use tools 1847017001 (1a), 1840005004 (1b) and 99341011 (1c) to remove the halfshaft (1d).

Fig 8: Disengaging Halfshaft From PTU



Courtesy of CHRYSLER GROUP, LLC

14. If equipped with a 2.0 Turbo Diesel or 2.4L MultiAir, use tool 2000040488 (1a) to disengage the halfshaft (1b) from the Power Transfer Unit (PTU).

**REMOVAL AND INSTALLATION > AWD / 4WD RIGHT SIDE, WITHOUT INTERMEDIATE
SHAFT > INSTALLATION**



NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

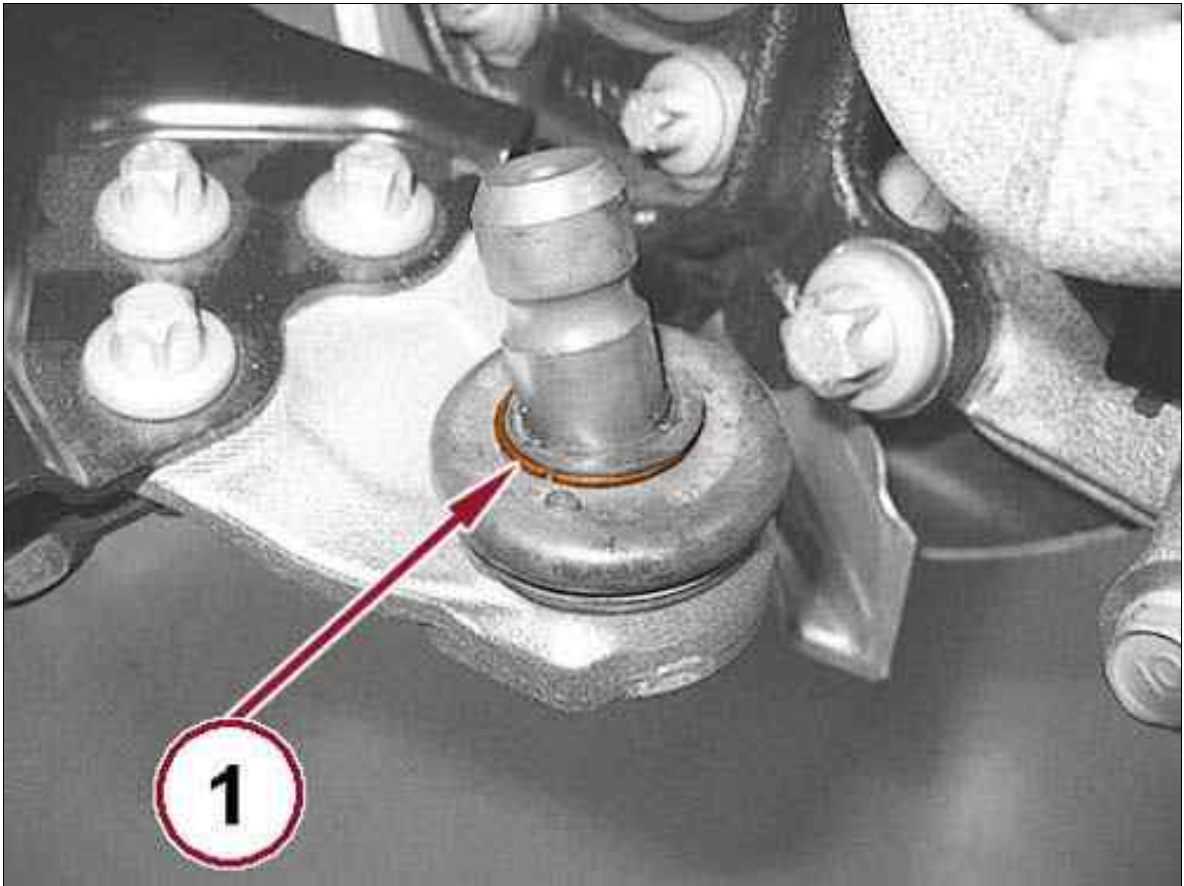
Fig 1: Snap Ring & O-Ring



Courtesy of CHRYSLER GROUP, LLC

1. Install a **NEW** snap ring (1) on the halfshaft.
2. Install a **NEW** O-ring (2) on the halfshaft.

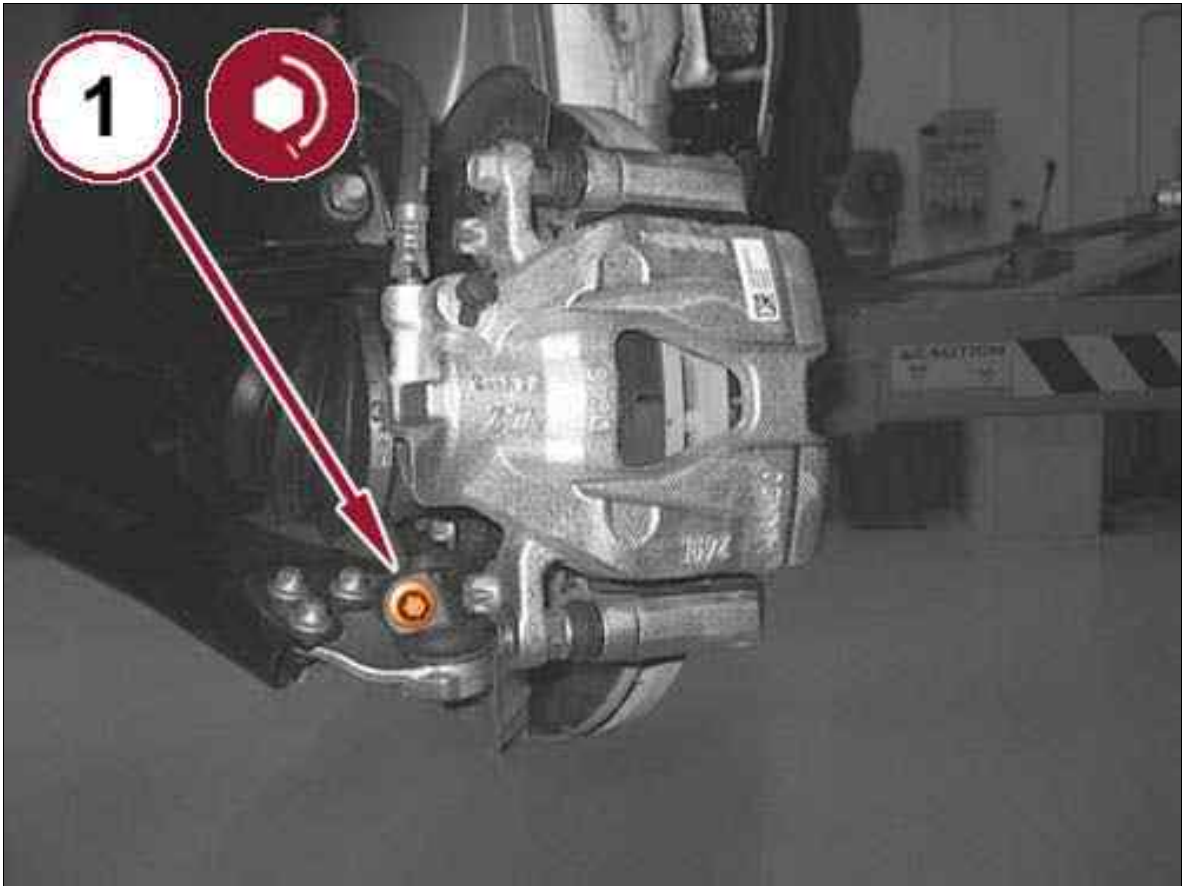
Fig 2: Boot Tension Ring



Courtesy of CHRYSLER GROUP, LLC

3. Inspect the ball joint boot and the boot tension ring (1) for damage.
4. Position the halfshaft into the Power Transfer Unit (PTU) and wheel hub.

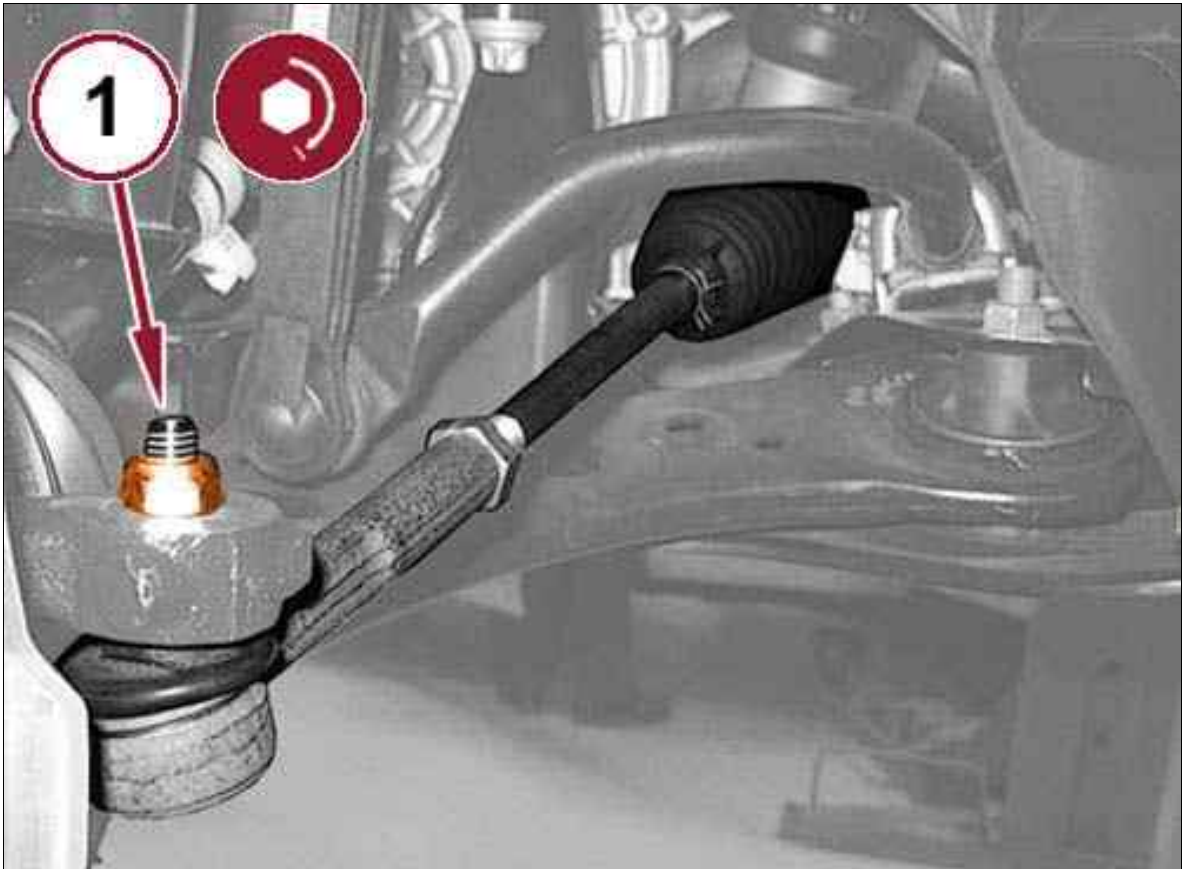
Fig 3: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

5. Position the ball joint stud into the steering knuckle tighten the pinch bolt (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

Fig 4: Tie Rod End Nut



Courtesy of CHRYSLER GROUP, LLC

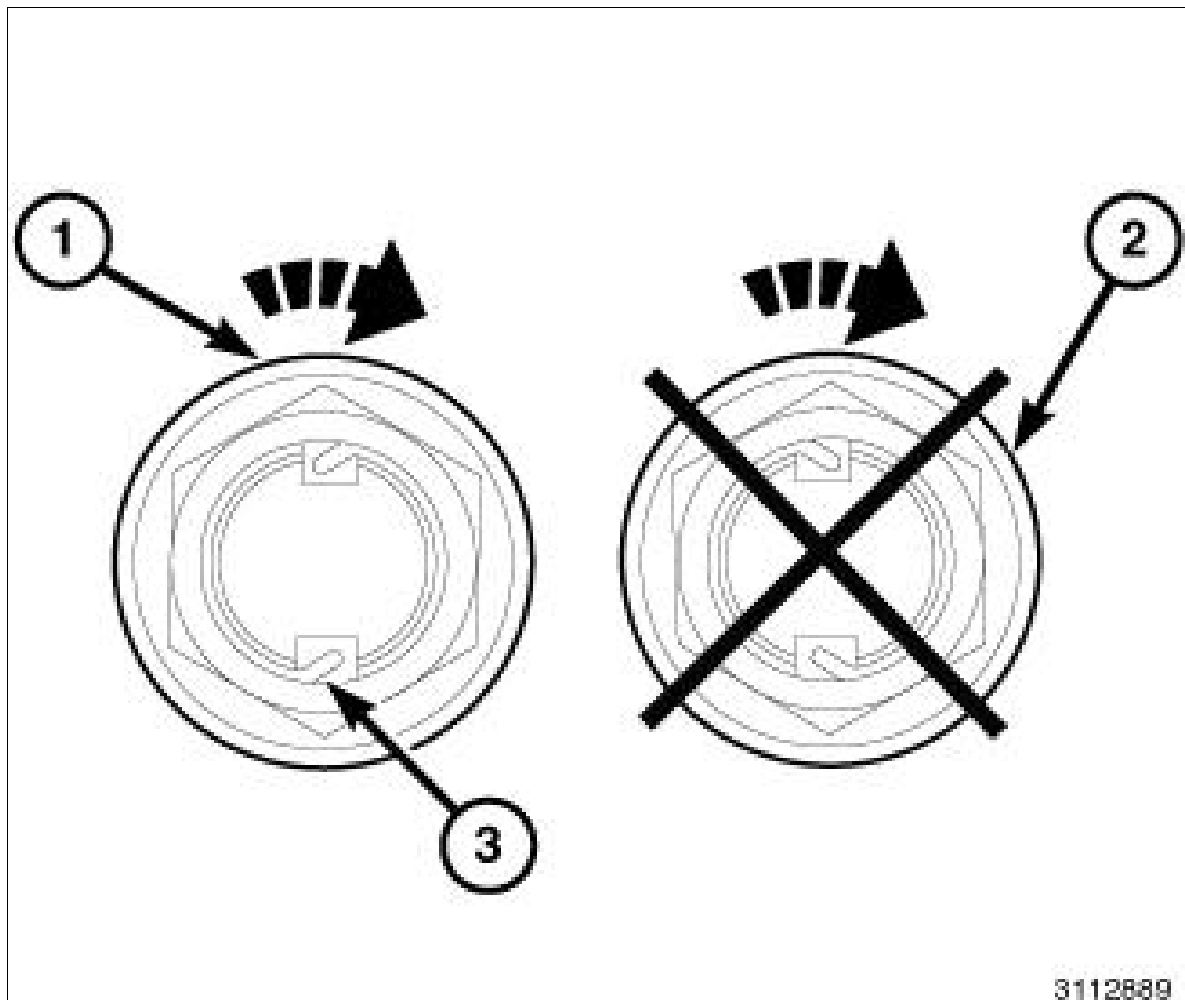
6. Connect the tie rod end to the steering knuckle and tighten the **NEW** nut (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

 NOTE:

*Always install a **NEW** hub nut. The original hub nut is one time use only and must be discarded when removed.*

7. Fit the tool 1870815000 and install a **NEW** hub nut, tighten the nut using the following procedure:
 1. tighten the nut to 70 N.m (52 Ft Lbs)
 2. tighten the nut an additional 60°

Fig 5: Correct Hub Nut Staking



Courtesy of CHRYSLER GROUP, LLC

 NOTE:

Do not use air tools on staking tool while staking hub nut.

 NOTE:

The hub nut must be staked so that it looks similar to Fig 5. Both edges must be split and bent into the shape shown (3) in illustration. The staking must be in the opposite direction from the forward rotation of the wheel.

8. Stake the hub nut as shown in illustration.
9. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
10. Install the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .

11. Check and correct the PTU fluid level. Refer to STANDARD PROCEDURE .

REMOVAL AND INSTALLATION > 1.4L TURBO MULTIAIR WITH INTERMEDIATE SHAFT > REMOVAL

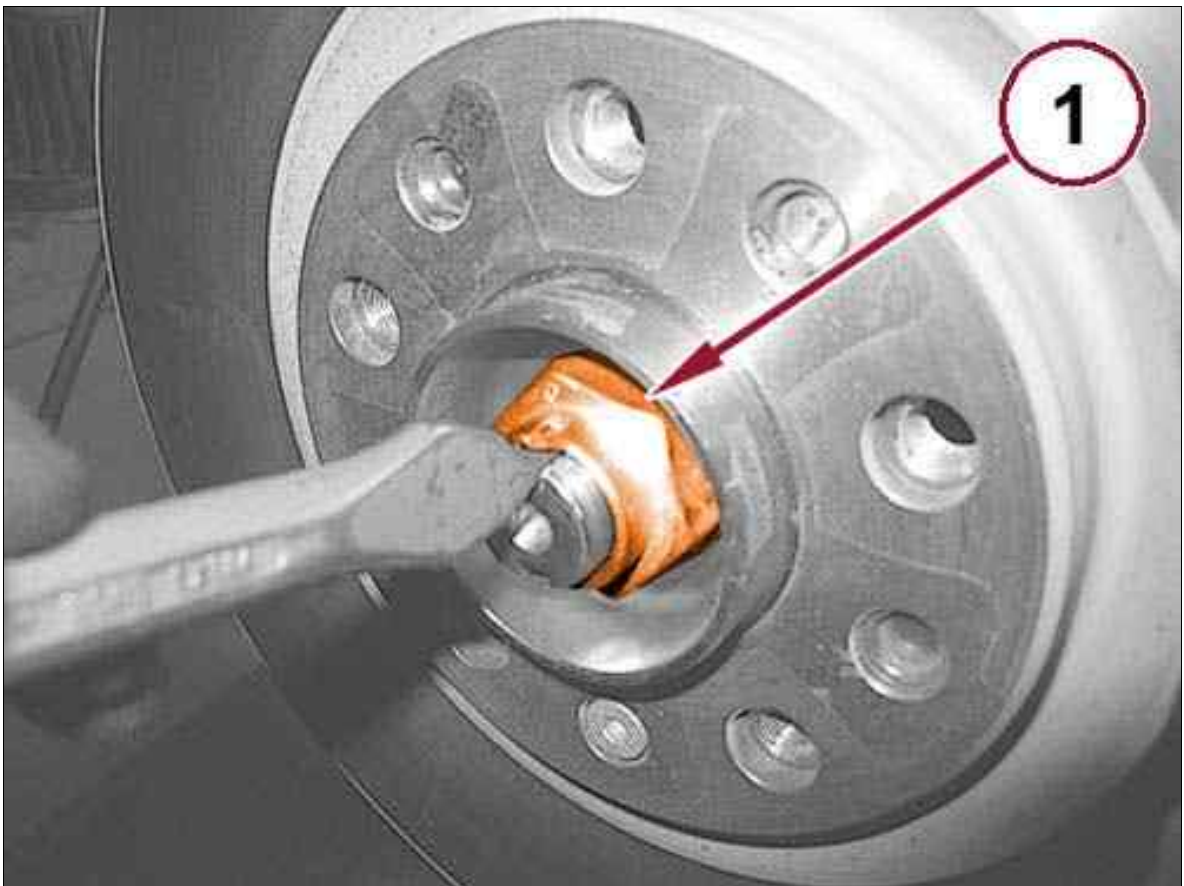


NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
2. Remove the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
3. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

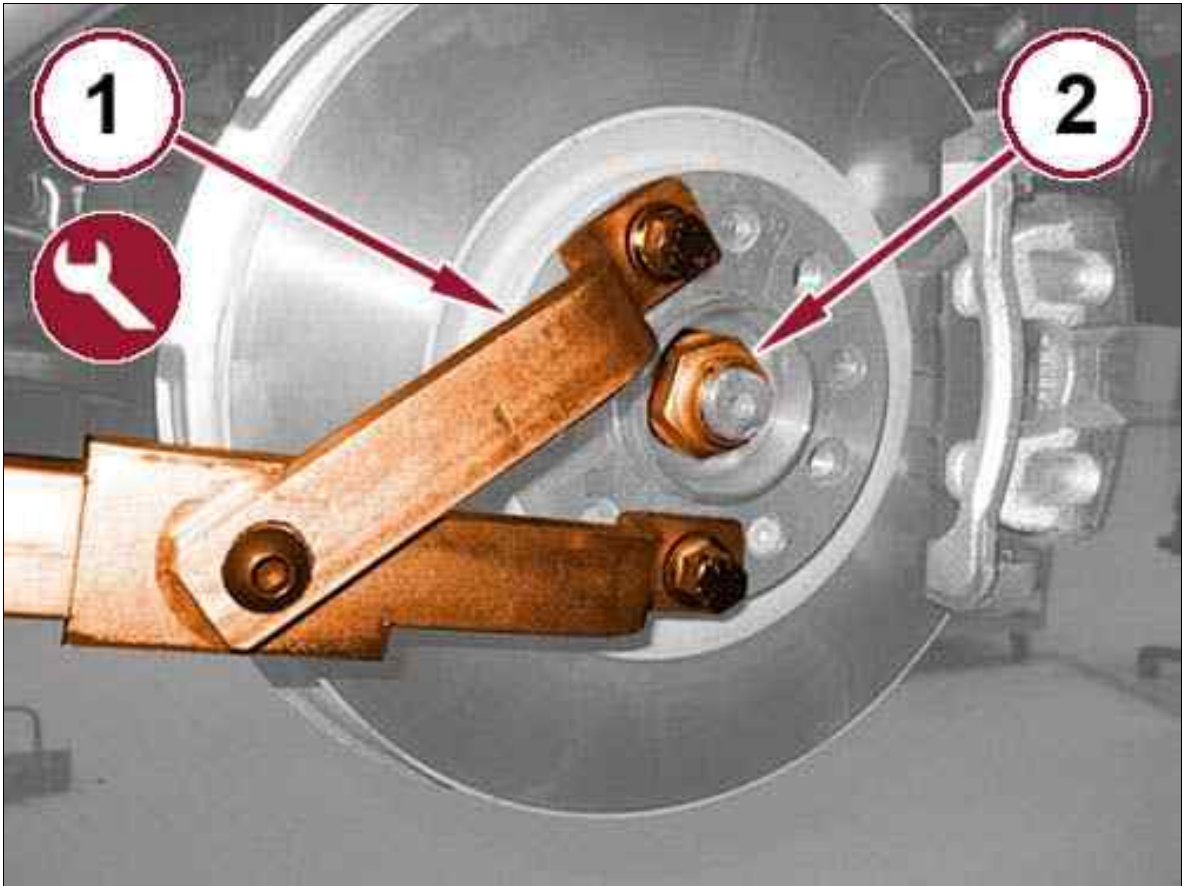
Fig 1: Lifting Staked Area



Courtesy of CHRYSLER GROUP, LLC

4. Using a suitable punch, lift the two staked areas in the hub nut (1) to avoid damaging the halfshaft.

Fig 2: Special Tool & Hub Nut



Courtesy of CHRYSLER GROUP, LLC

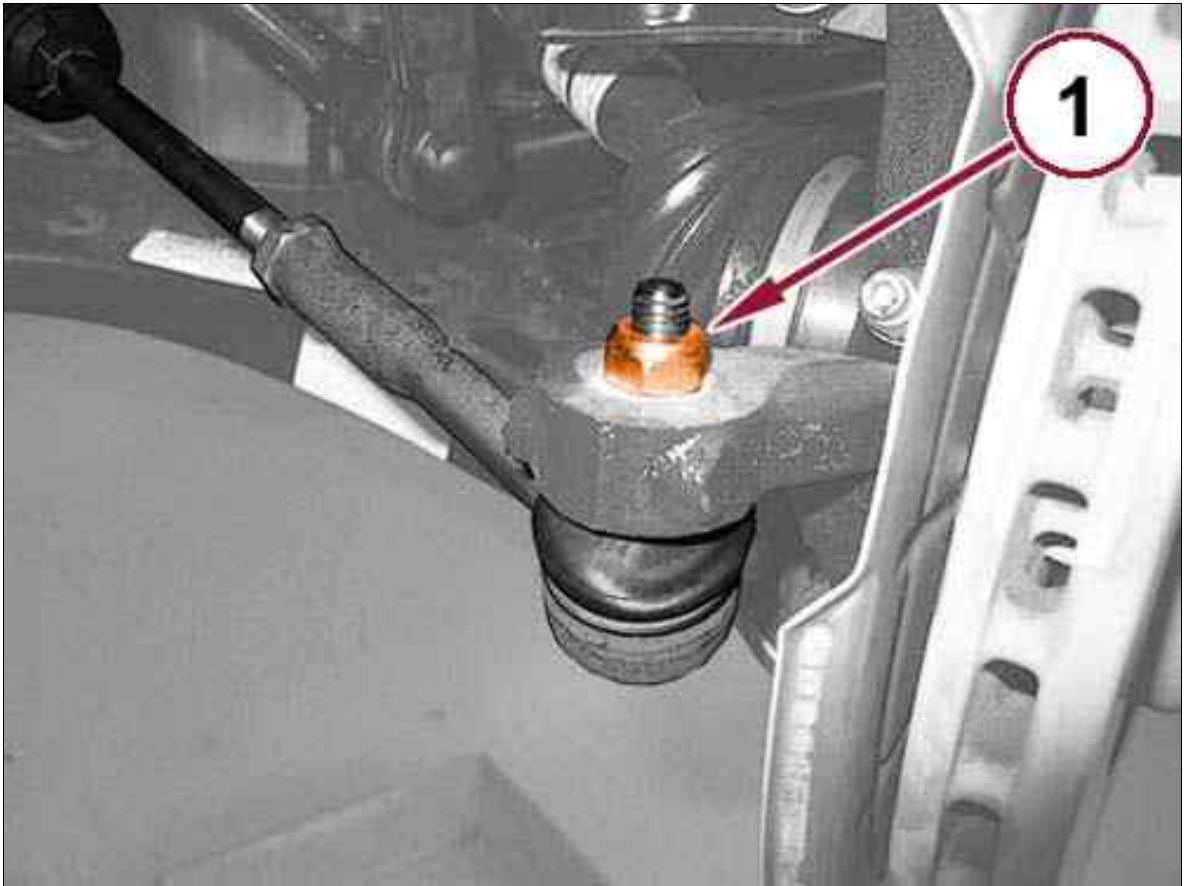
5. Fit the tool 1870815000 (1) to the brake disc.

 **NOTE:**

The used hub nut is not reusable.

6. Remove the hub nut (2) from the halfshaft and **DISCARD** .

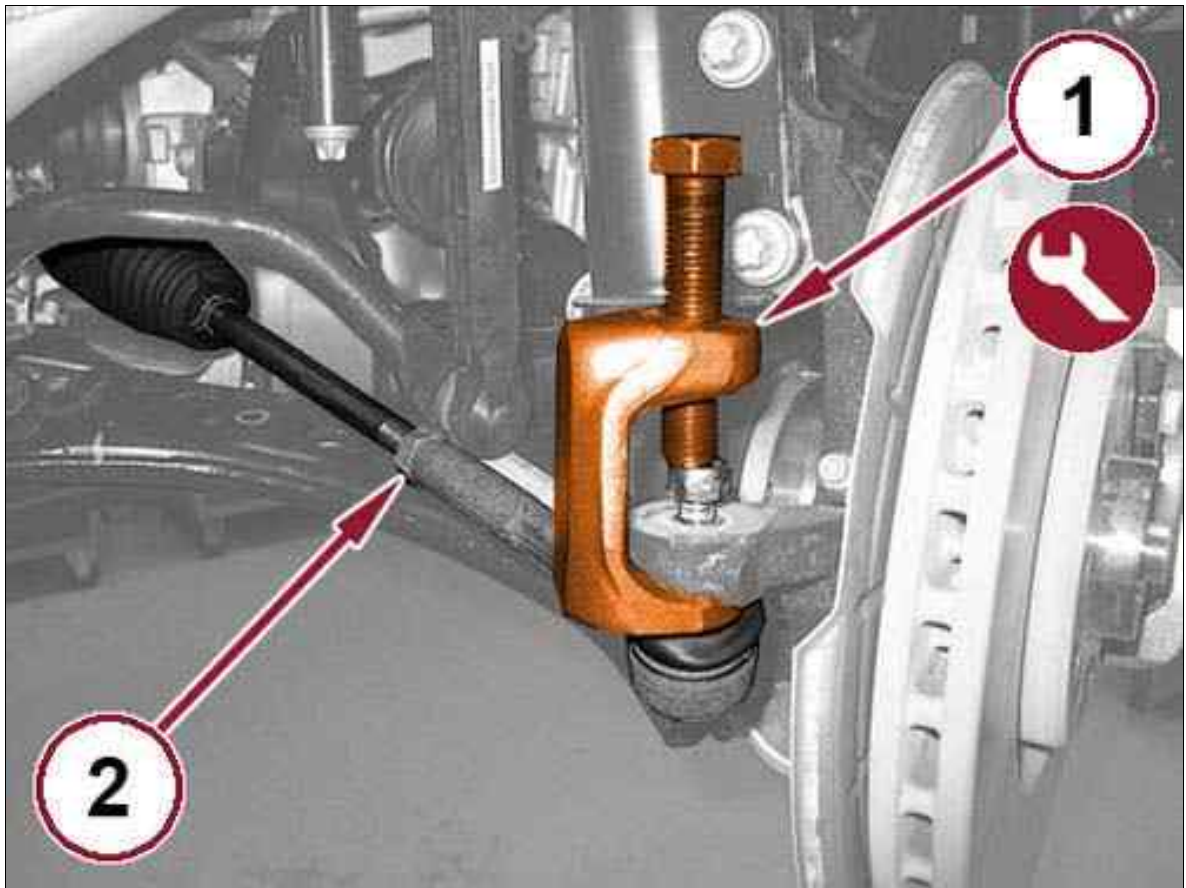
Fig 3: Tie Rod End Nut



Courtesy of CHRYSLER GROUP, LLC

7. Unscrew and **DISCARD** the nut (1) securing the tie rod end to the steering knuckle.

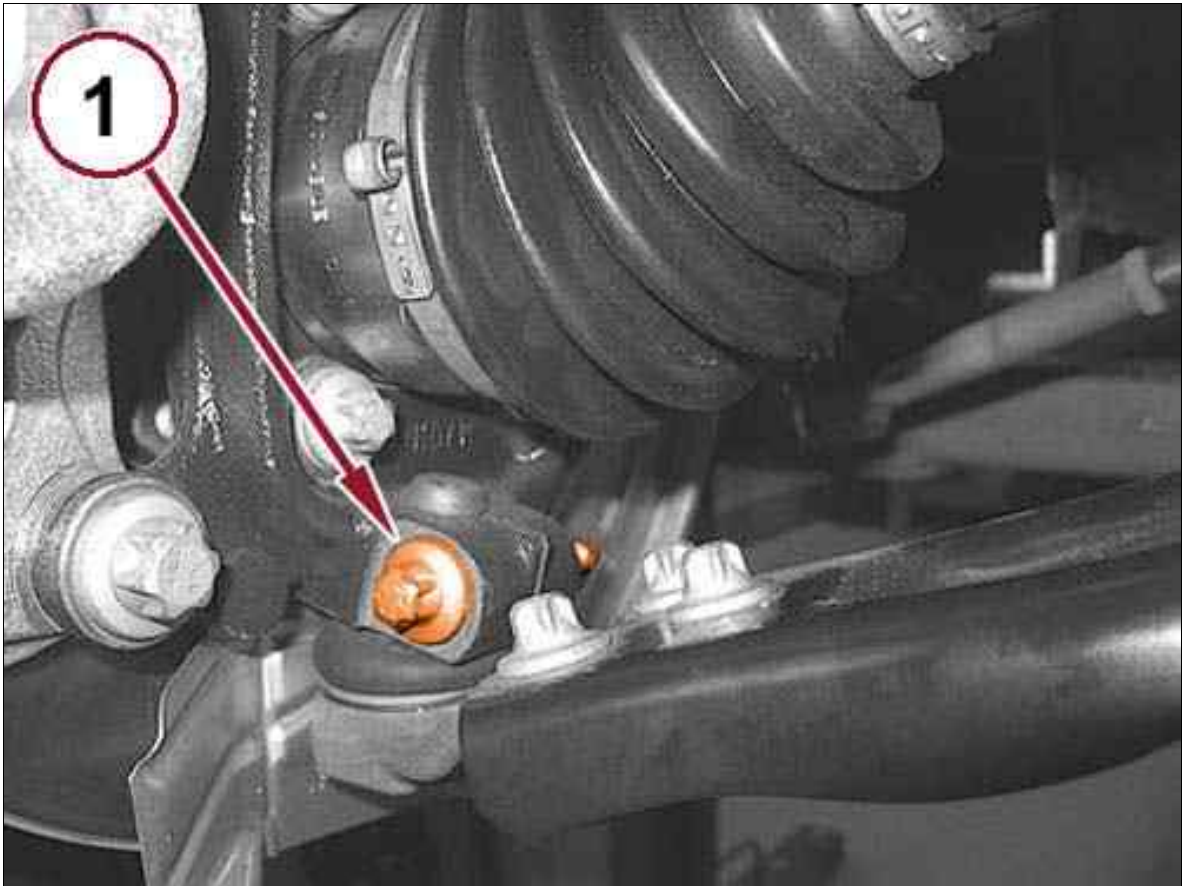
Fig 4: Disconnecting Tie Rod



Courtesy of CHRYSLER GROUP, LLC

8. Fit the tool 1871000700 (EMEA) or (special tool #C-4150A, Press, Ball Joint) (NAFTA) (1a) and disconnect the tie rod (1b) from the steering knuckle.

Fig 5: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

9. Remove the ball joint pinch bolt (1).

 NOTE:

Use care when separating the ball joint stud from the knuckle so the ball joint boot does not get cut.

10. Disengage the ball joint from the steering knuckle.
11. Disengage the halfshaft from the wheel hub.

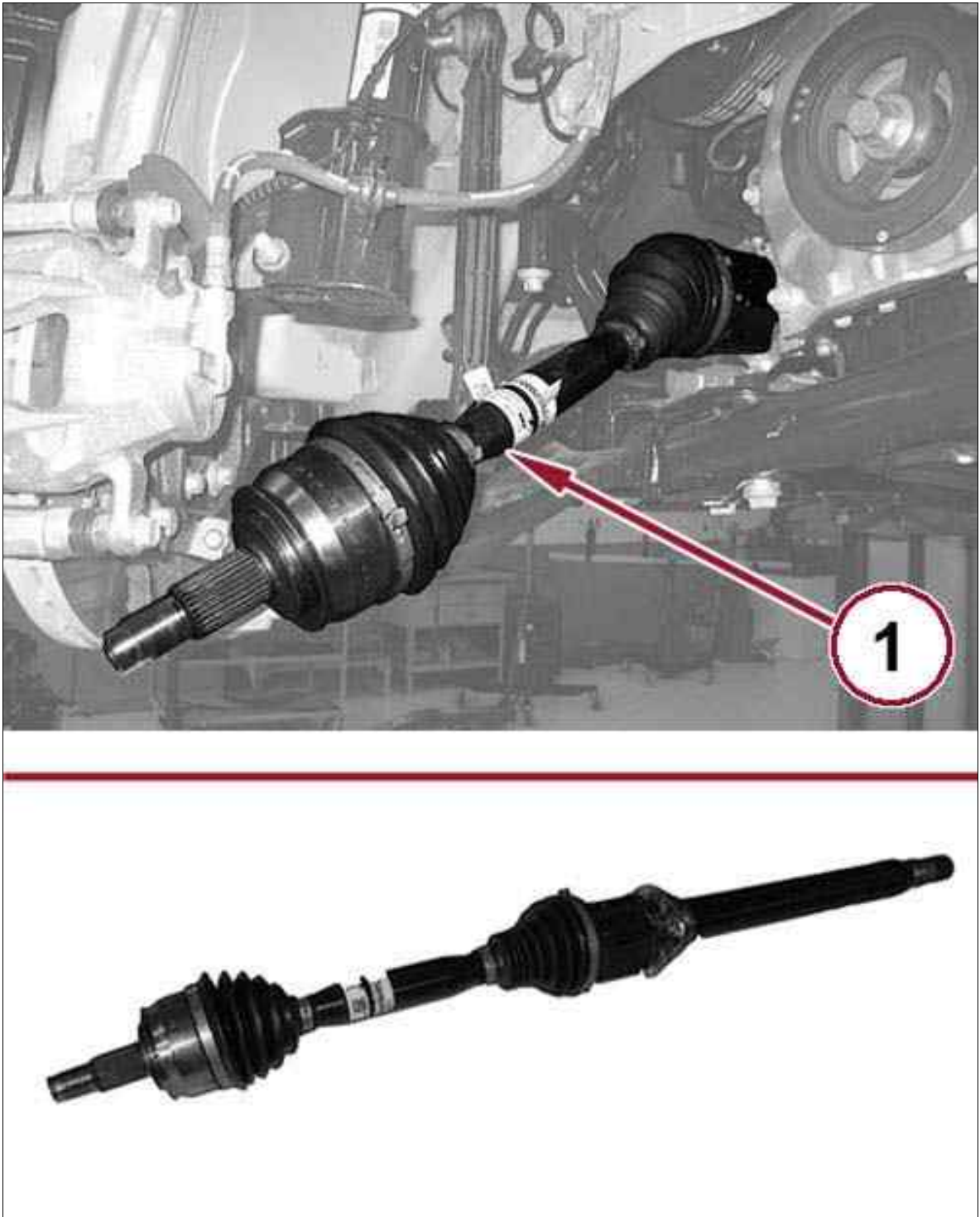
Fig 6: Intermediate Shaft Bearing Bolts



Courtesy of CHRYSLER GROUP, LLC

12. Remove bolts (1) mounting the intermediate shaft bearing to the bearing support.

Fig 7: Halfshaft With Intermediate Shaft



Courtesy of CHRYSLER GROUP, LLC

13. Remove the halfshaft (1) with the intermediate shaft from the vehicle.

**REMOVAL AND INSTALLATION > 1.4L TURBO MULTIAIR WITH INTERMEDIATE
SHAFT > INSTALLATION**

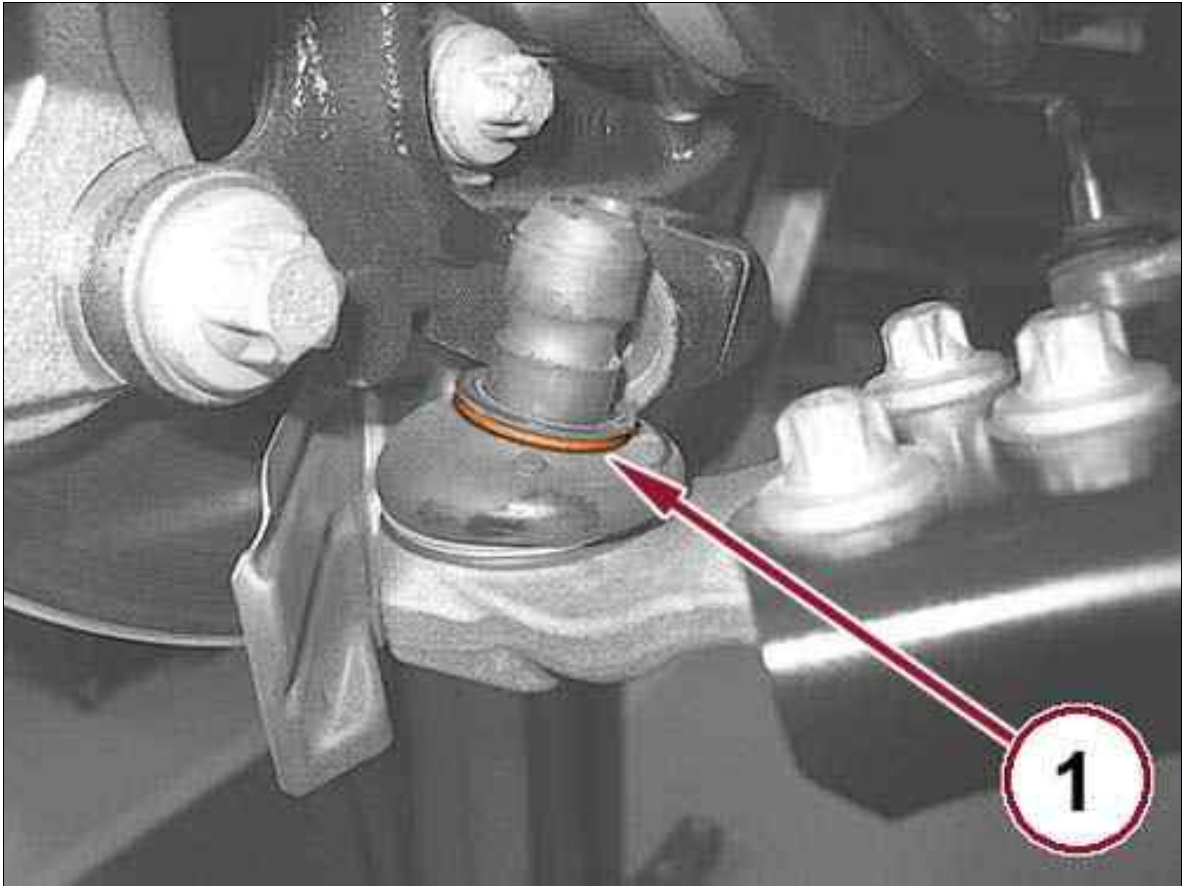


NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Position the halfshaft and intermediate shaft assembly into the differential and wheel hub.
2. Install the intermediate shaft bearing to bearing support bolts and tighten to the proper specification. Refer to SPECIFICATIONS .

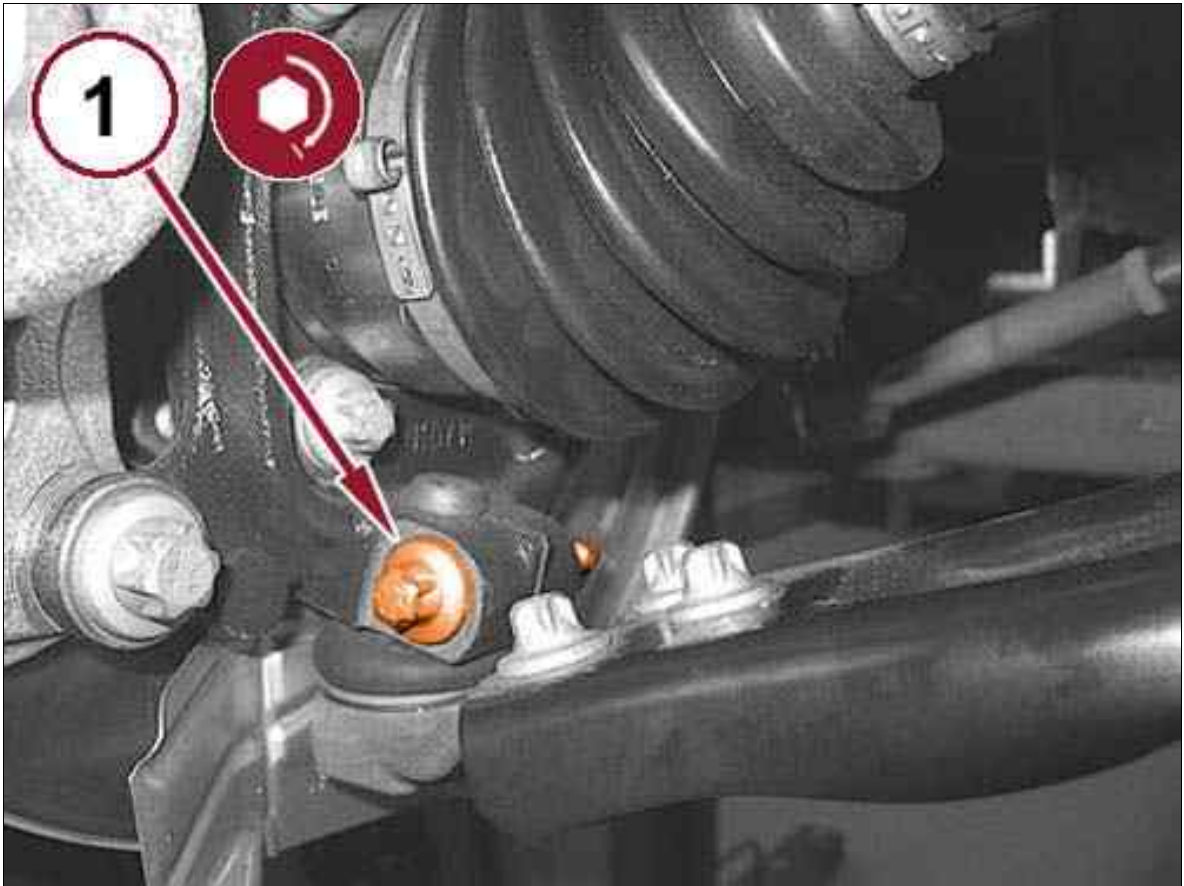
Fig 1: Tension Ring



Courtesy of CHRYSLER GROUP, LLC

3. Inspect the ball joint boot and the boot tension ring (1) for damage.

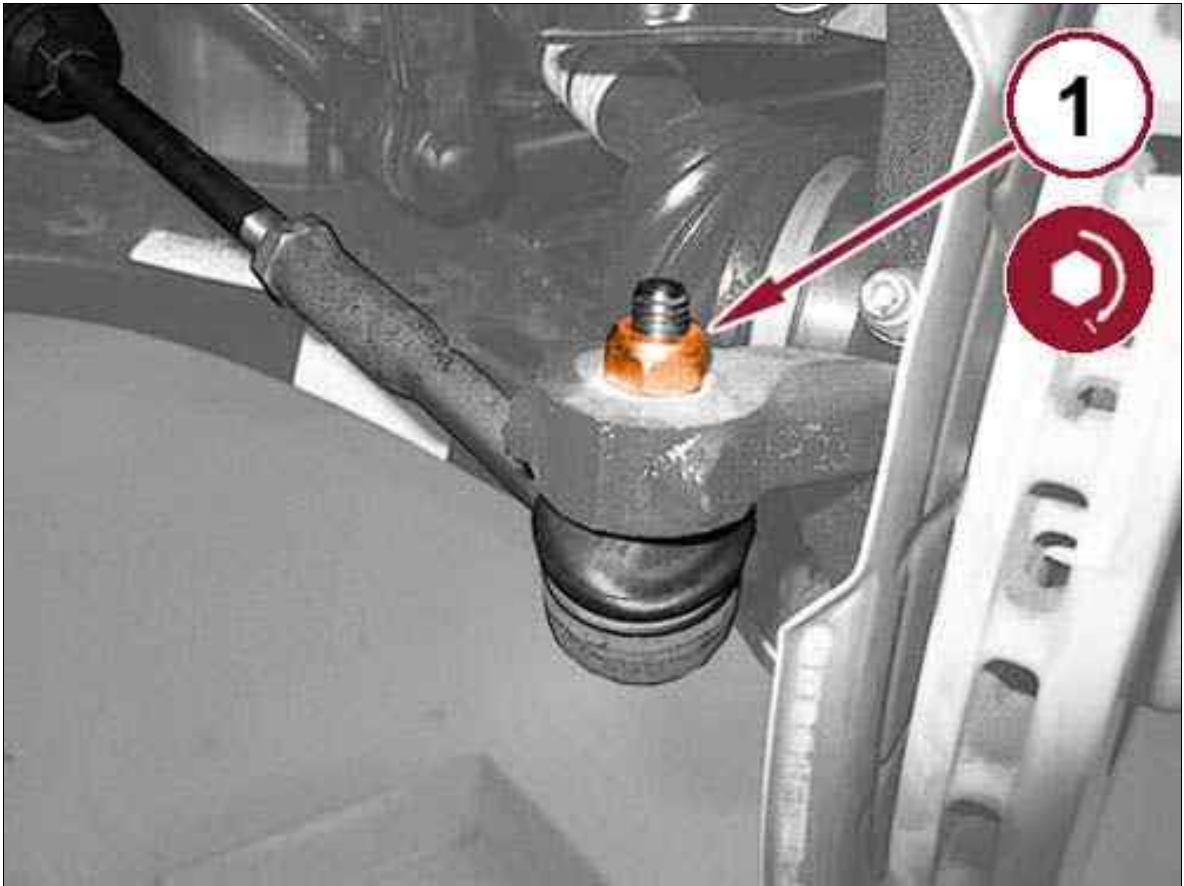
Fig 2: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

4. Position the ball joint stud into the steering knuckle tighten the pinch bolt (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

Fig 3: Tie Rod End Nut



Courtesy of CHRYSLER GROUP, LLC

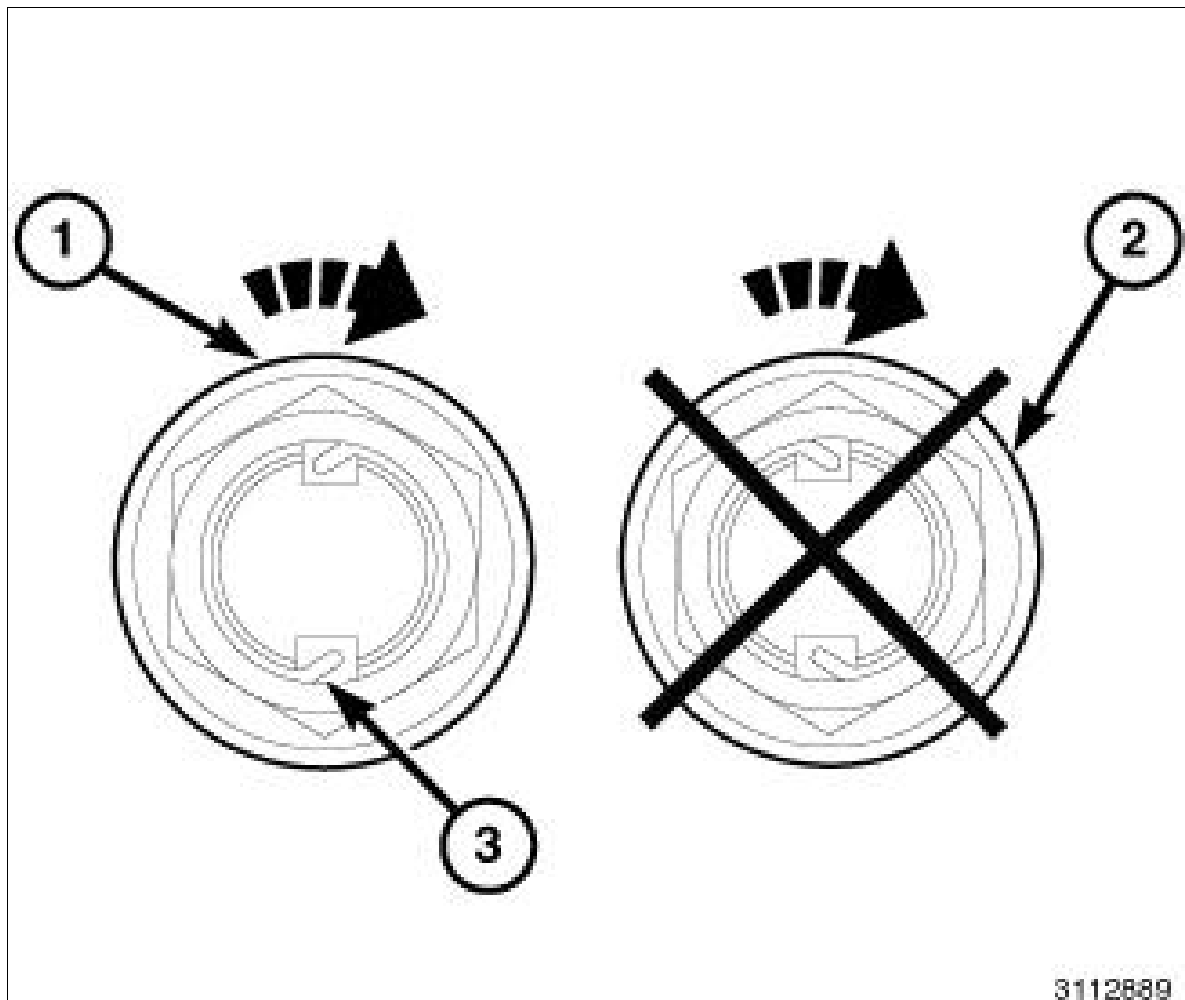
5. Connect the tie rod end to the steering knuckle and tighten the **NEW** nut (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

 NOTE:

*Always install a **NEW** hub nut. The original hub nut is one time use only and must be discarded when removed.*

6. Fit the tool 1870815000 and install a **NEW** hub nut, tighten the nut using the following procedure:
 1. tighten the nut to 70 N.m (52 Ft Lbs)
 2. tighten the nut an additional 60°

Fig 4: Correct Hub Nut Staking



Courtesy of CHRYSLER GROUP, LLC

 **NOTE:**

Do not use air tools while staking hub nut.

 **NOTE:**

The hub nut must be staked so that it looks similar to Fig 4. Both edges must be split and bent into the shape shown (3) in illustration. The staking must be in the opposite direction from the forward rotation of the wheel.

7. Stake the hub nut as shown in illustration.
8. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
9. Install the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .

10. Check and correct the transmission fluid level. Refer to the appropriate Service Information .

REMOVAL AND INSTALLATION > 1.6L TURBO DIESEL WITH INTERMEDIATE SHAFT > REMOVAL

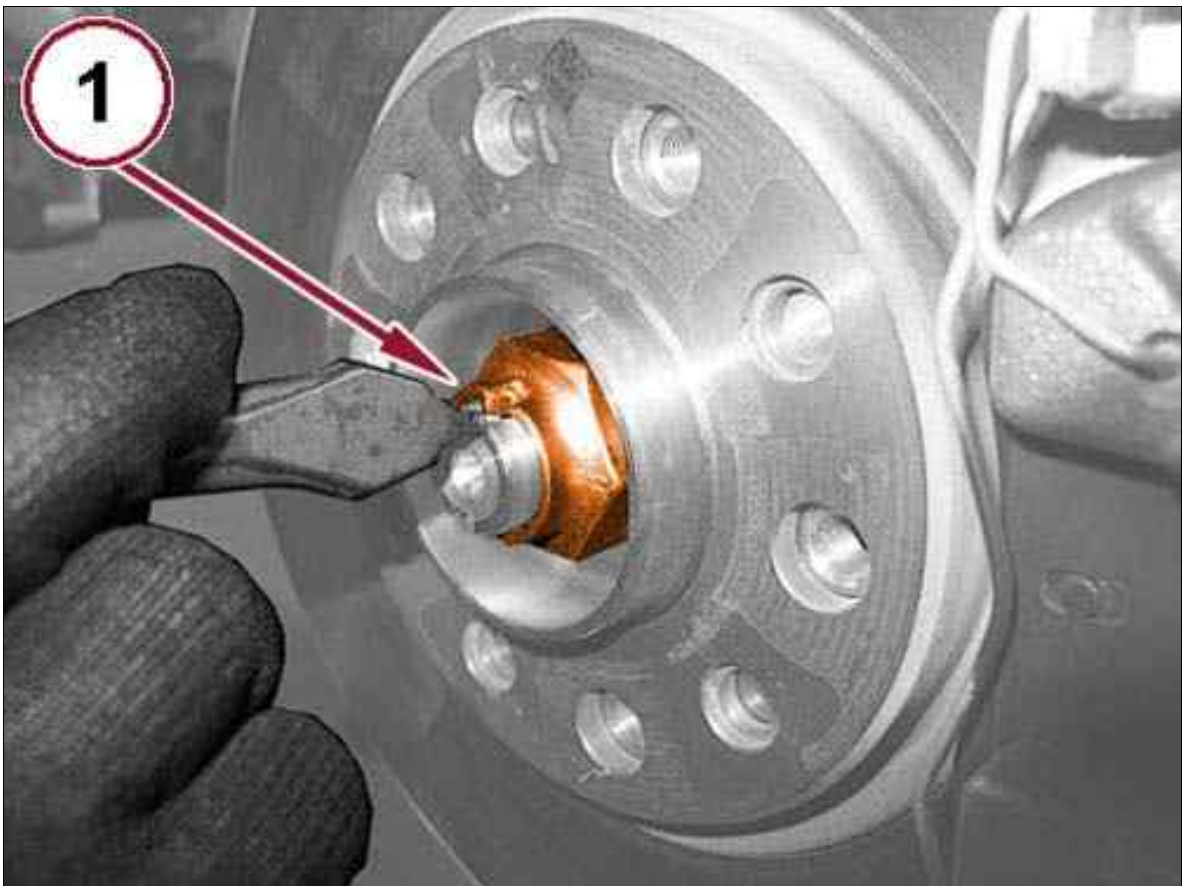


NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
2. Remove the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
3. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

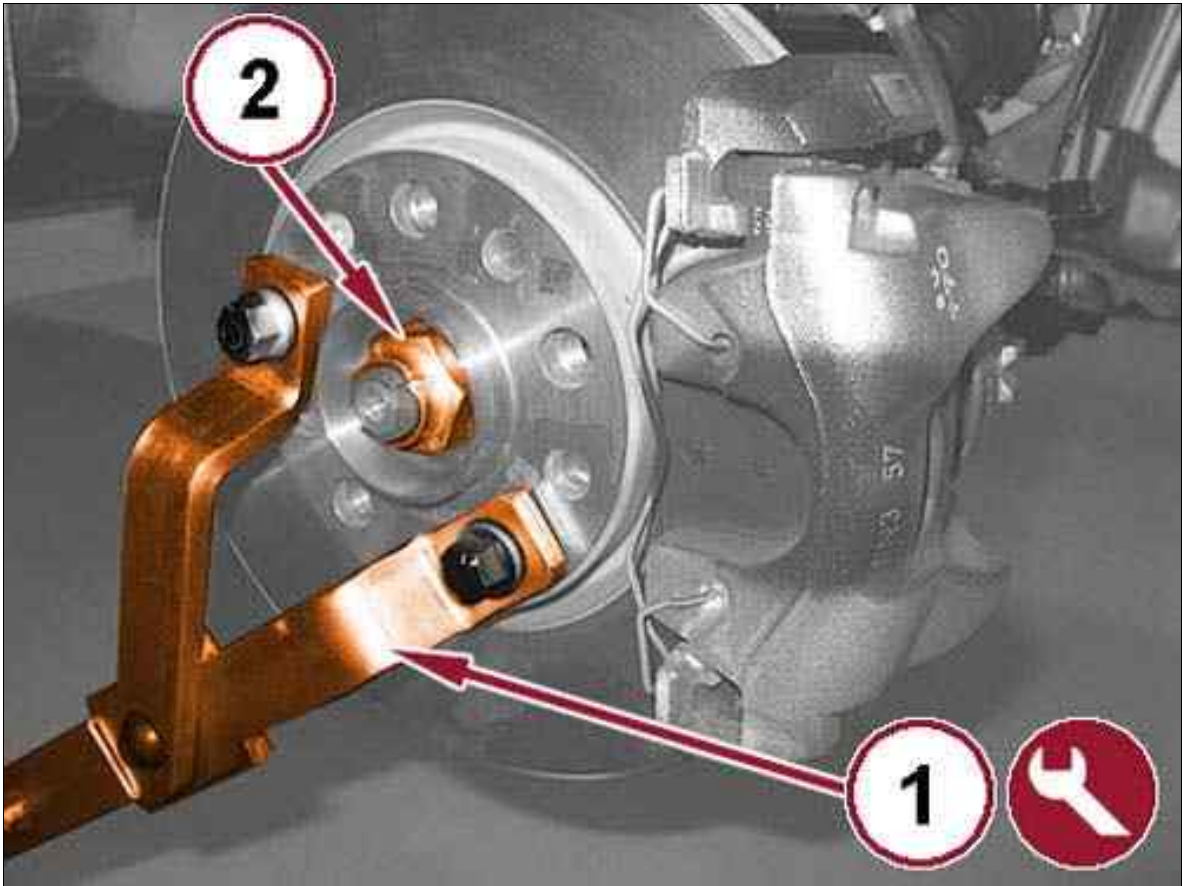
Fig 1: Lifting Staked Area



Courtesy of CHRYSLER GROUP, LLC

4. Using a suitable punch, lift the two staked areas in the hub nut (1) to avoid damaging the halfshaft.

Fig 2: Special Tool & Hub Nut



Courtesy of CHRYSLER GROUP, LLC

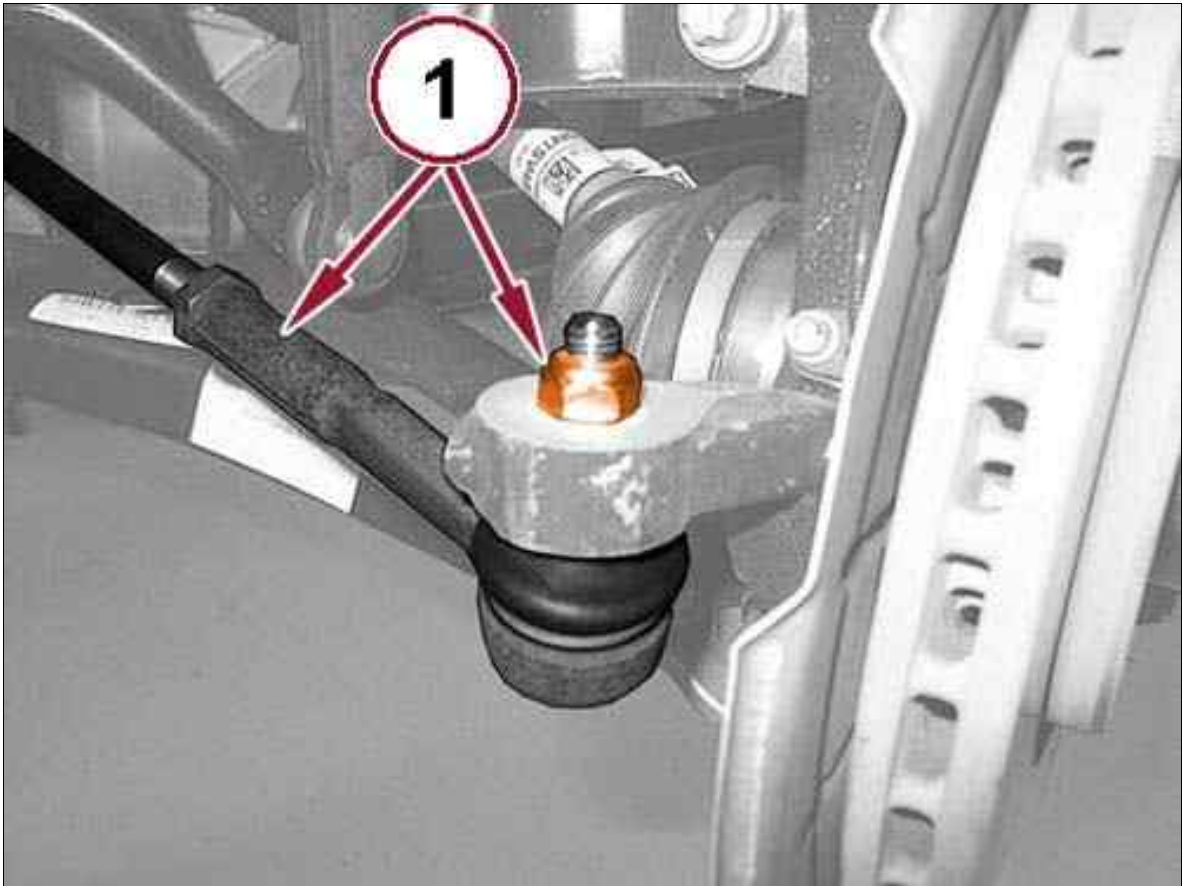
5. Fit the tool 1870815000 (1) to the brake disc.

 **NOTE:**

The used hub nut is not reusable.

6. Remove the hub nut (2) from the halfshaft and **DISCARD** .

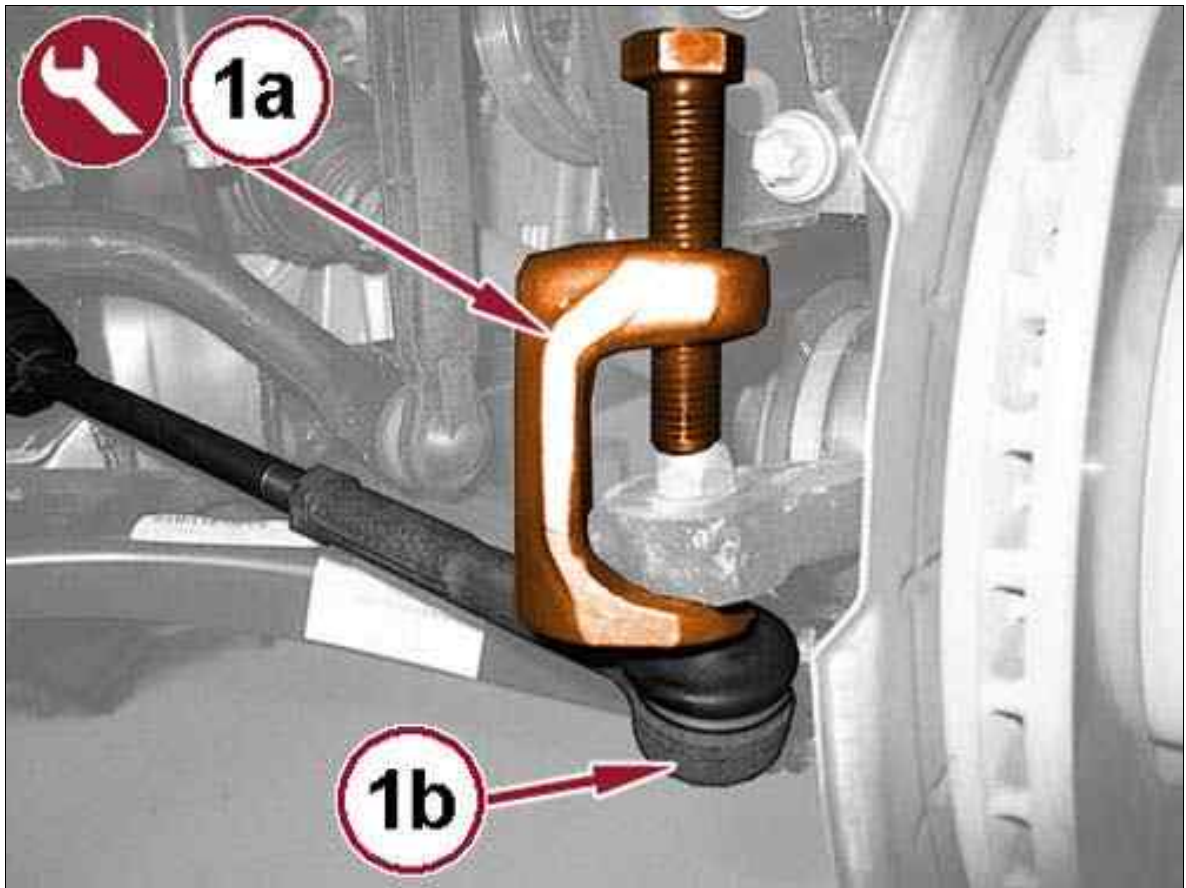
Fig 3: Tie Rod End & Nut



Courtesy of CHRYSLER GROUP, LLC

7. Unscrew and **DISCARD** the nut (1) securing the tie rod end to the steering knuckle.

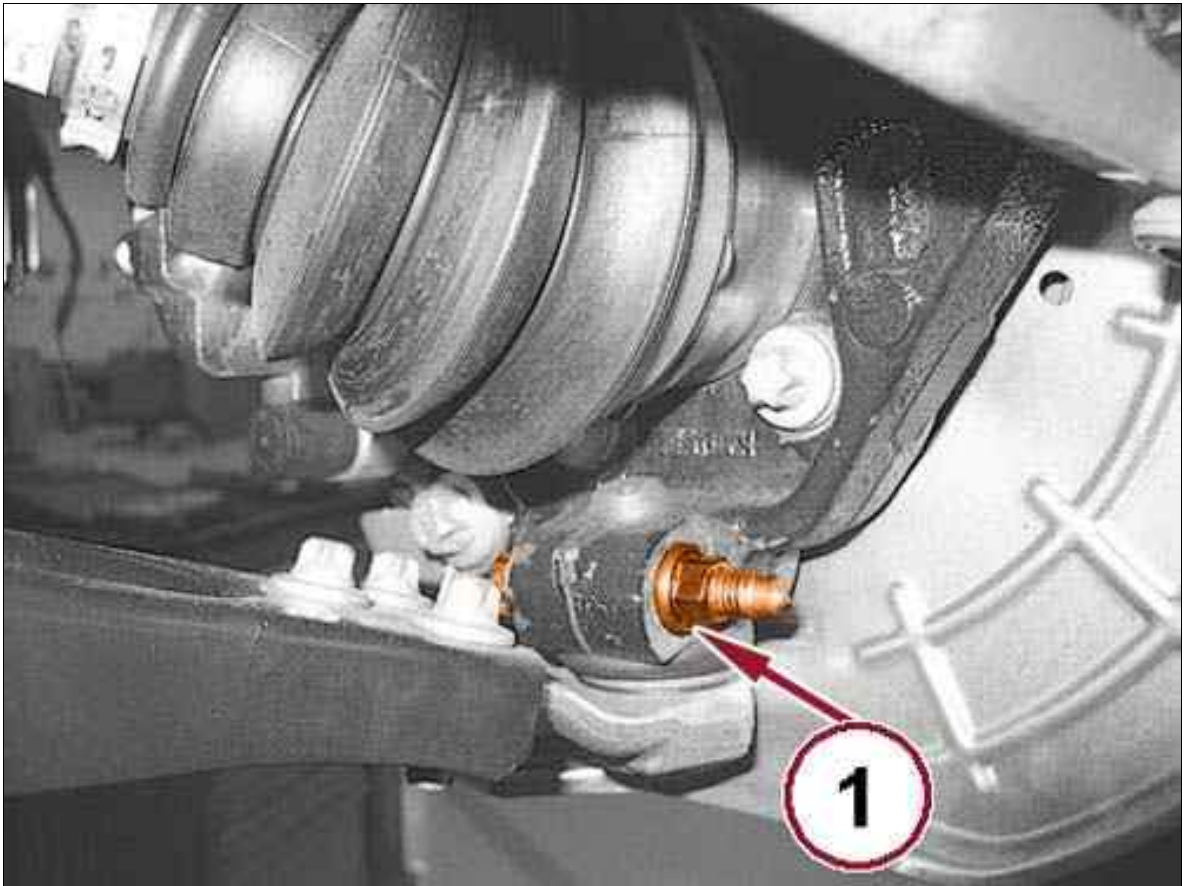
Fig 4: Disconnecting Tie Rod



Courtesy of CHRYSLER GROUP, LLC

8. Fit the tool 1871000700 (EMEA) or (special tool #C-4150A, Press, Ball Joint) (NAFTA) (1a) and disconnect the tie rod (1b) from the steering knuckle.

Fig 5: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

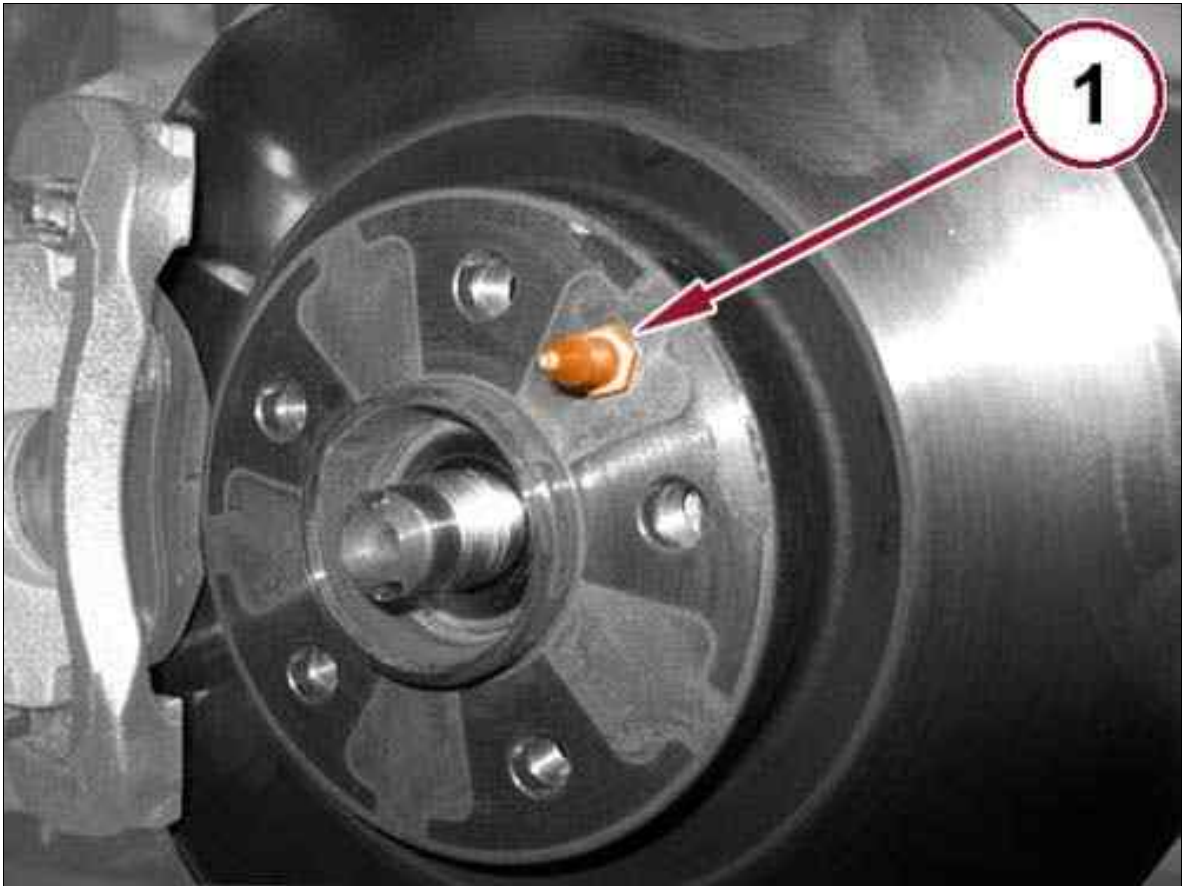
9. Remove the ball joint pinch bolt (1).

 NOTE:

Use care when separating the ball joint stud from the knuckle so the ball joint boot does not get cut.

10. Disengage the ball joint from the steering knuckle.

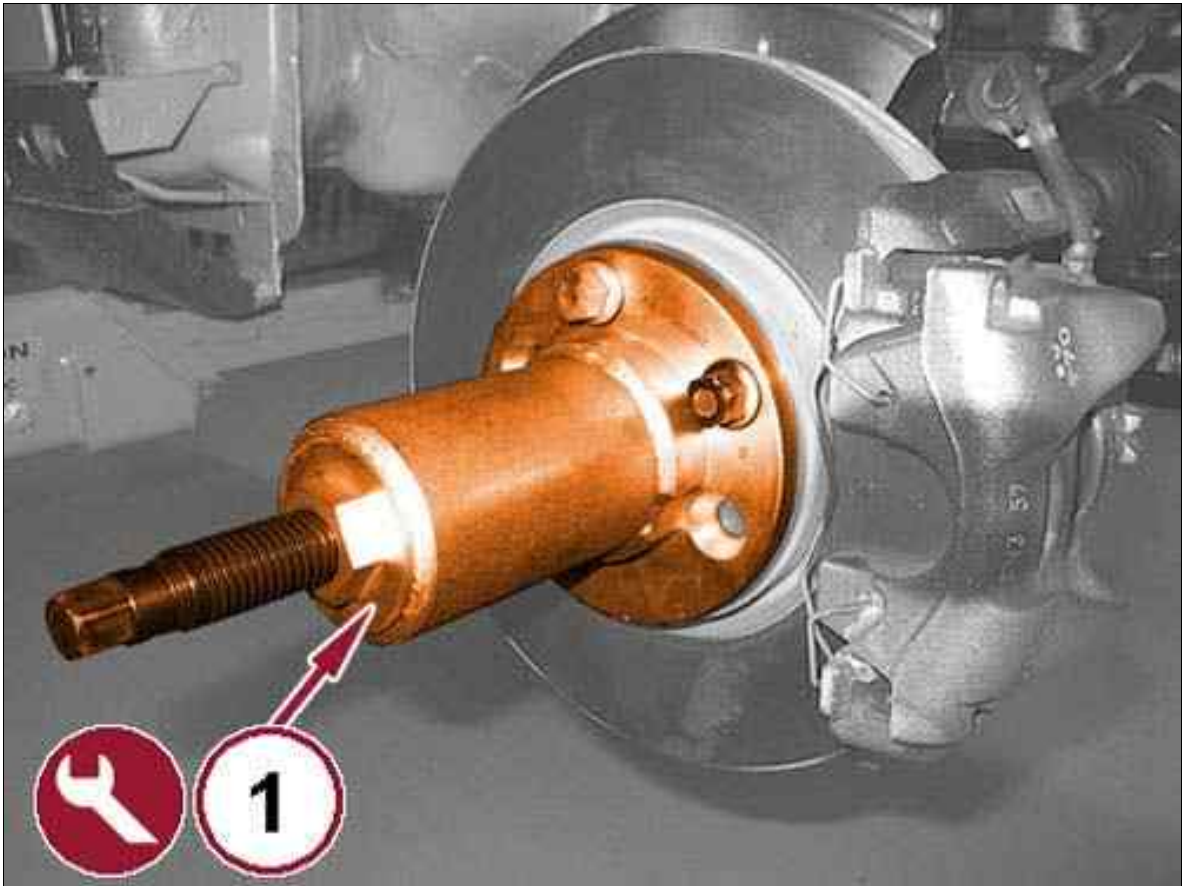
Fig 6: Brake Rotor Retaining Pin



Courtesy of CHRYSLER GROUP, LLC

11. Remove the disc brake rotor retaining pin (1).

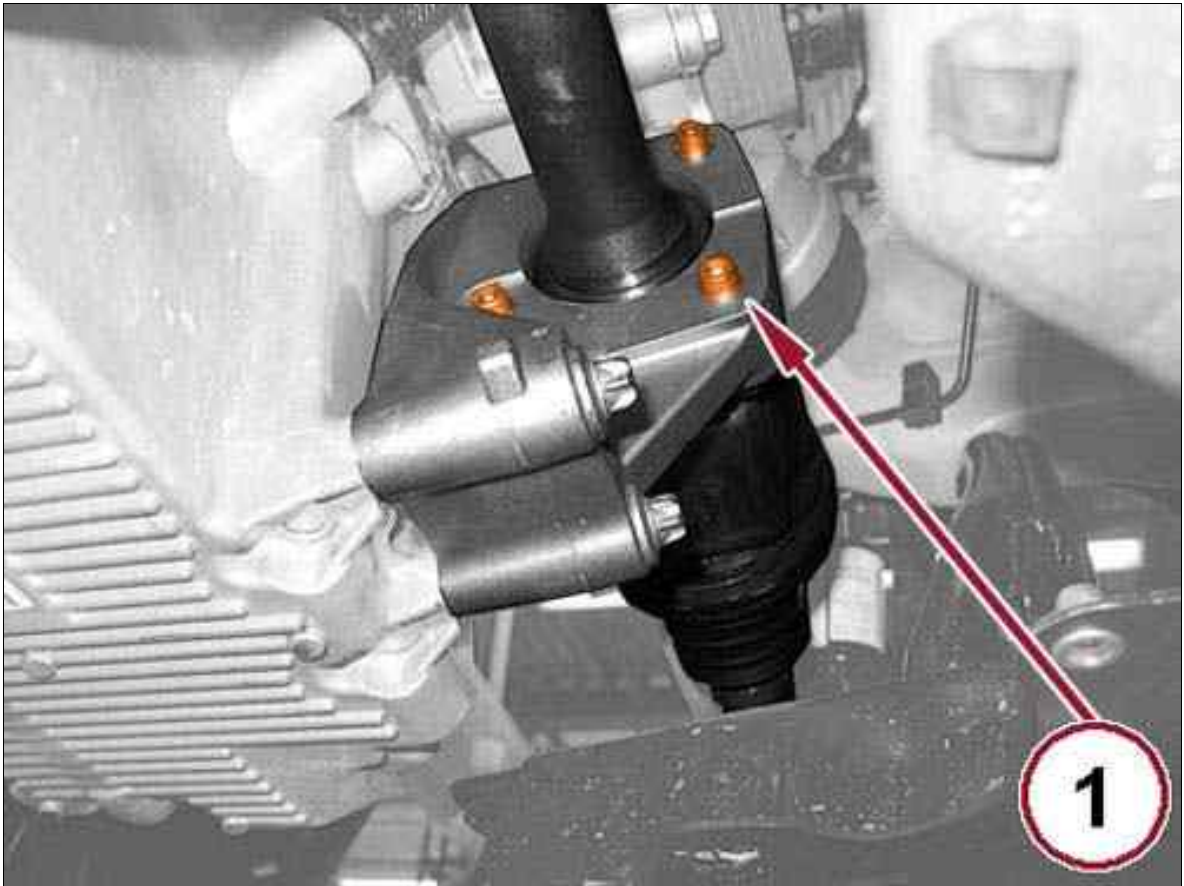
Fig 7: Disengaging Halfshaft



Courtesy of CHRYSLER GROUP, LLC

12. Disengage the halfshaft from the wheel hub using tool 2000001600 (1), position the knuckle and rotor assembly aside.
13. Remove the tool, install the disc brake rotor retaining pin and tighten to the proper specification. Refer to TORQUE SPECIFICATIONS .

Fig 8: Intermediate Shaft Bearing Bolts



Courtesy of CHRYSLER GROUP, LLC

14. Remove bolts (1) mounting the intermediate shaft bearing to the bearing support.

Fig 9: Halfshaft With Intermediate Shaft



Courtesy of CHRYSLER GROUP, LLC

15. Remove the halfshaft with the intermediate shaft (1) from the vehicle.

**REMOVAL AND INSTALLATION > 1.6L TURBO DIESEL WITH INTERMEDIATE SHAFT
> INSTALLATION**

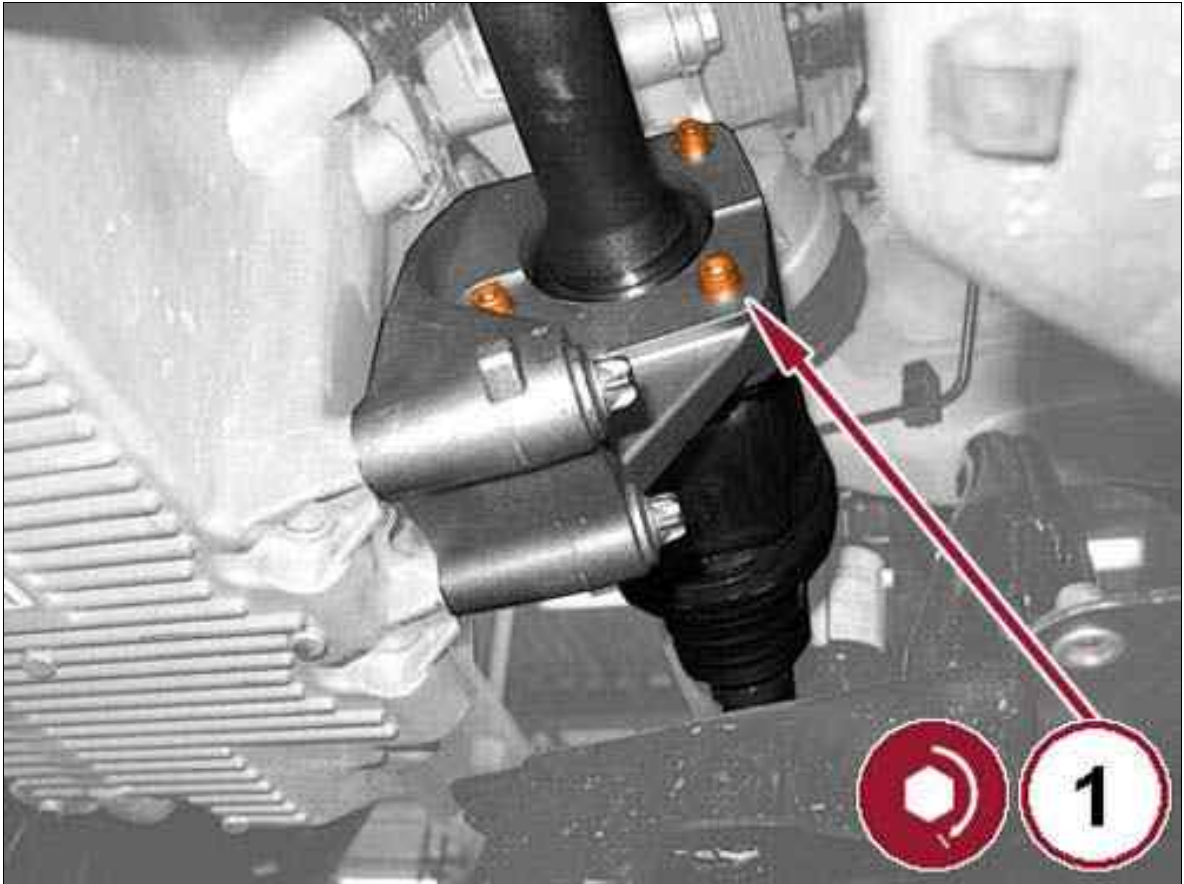


NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Position the halfshaft and intermediate shaft assembly into the differential and wheel hub.

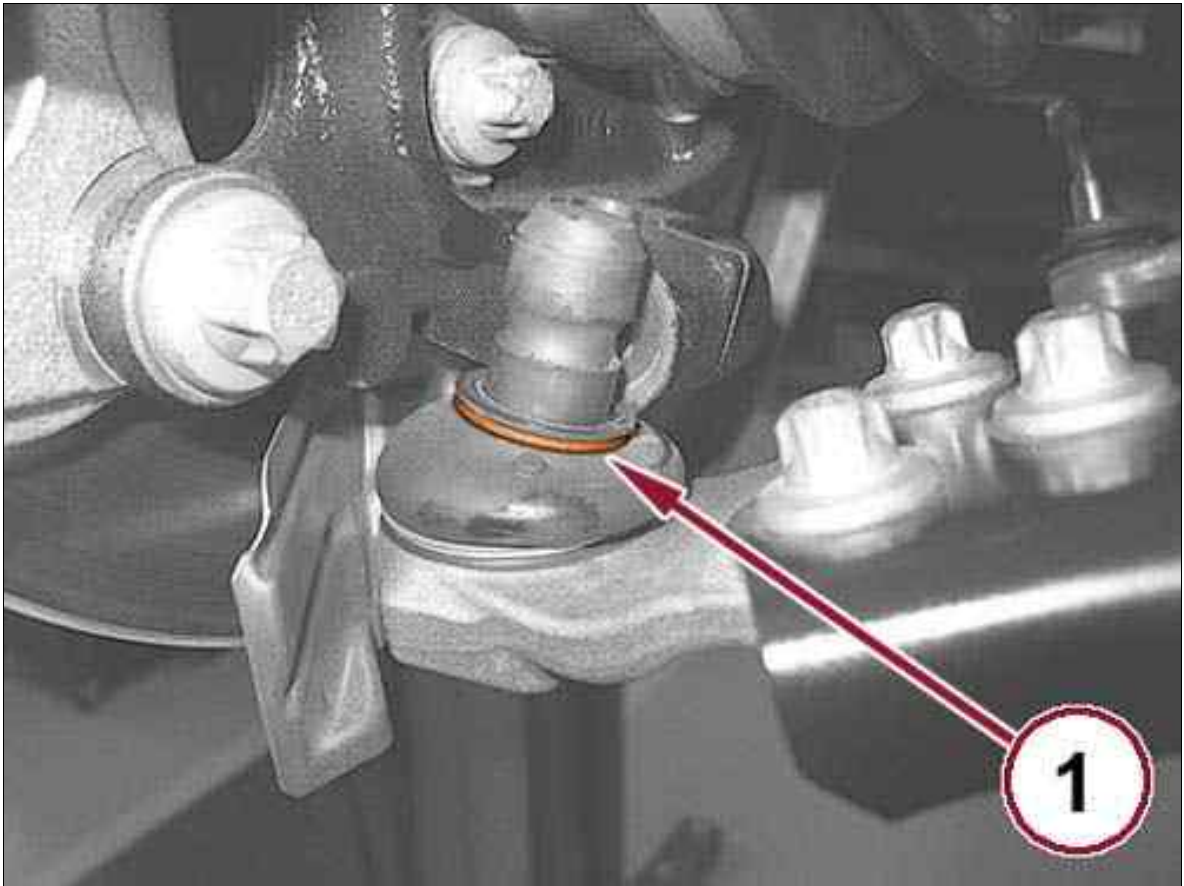
Fig 1: Intermediate Shaft Bearing Bolts



Courtesy of CHRYSLER GROUP, LLC

2. Install the intermediate shaft bearing to bearing support bolts (1) and tighten to the proper specification. Refer to SPECIFICATIONS .

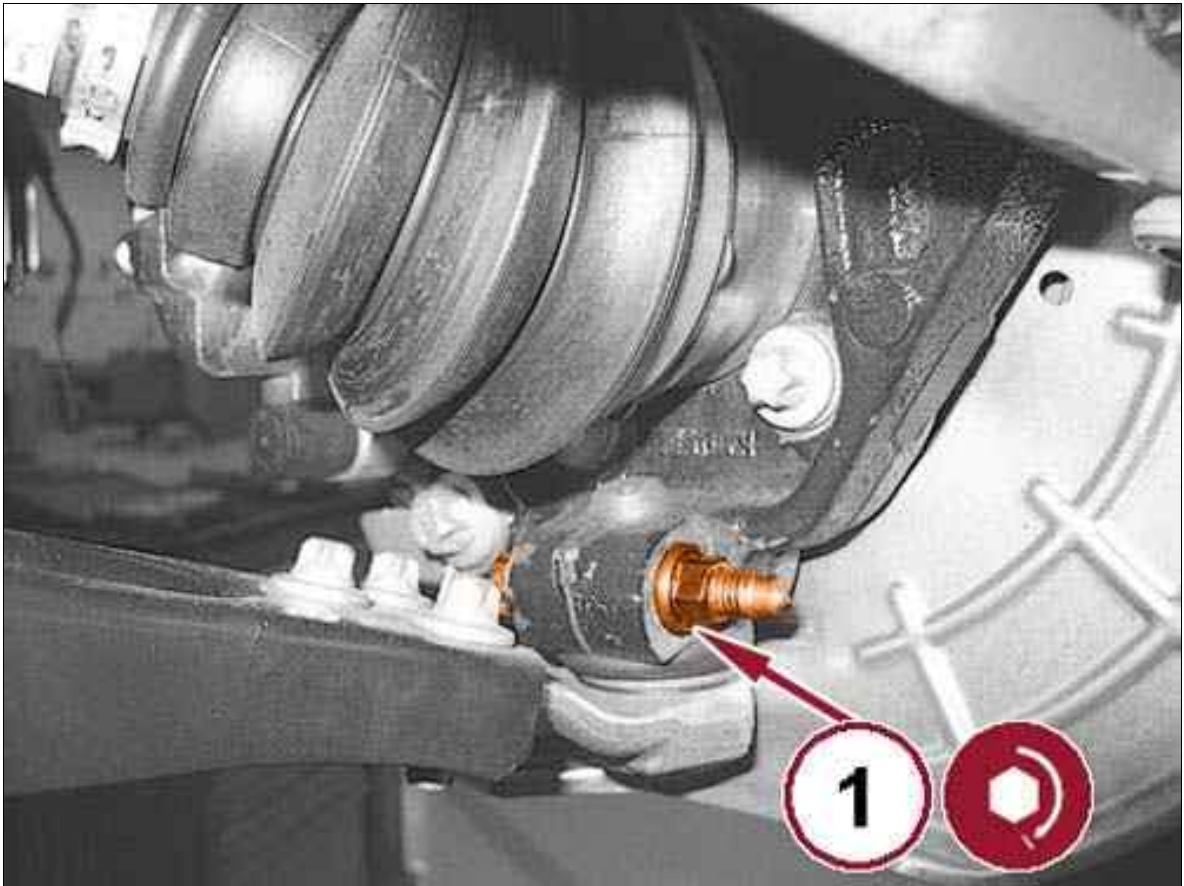
Fig 2: Tension Ring



Courtesy of CHRYSLER GROUP, LLC

3. Inspect the ball joint boot and the boot tension ring (1) for damage.

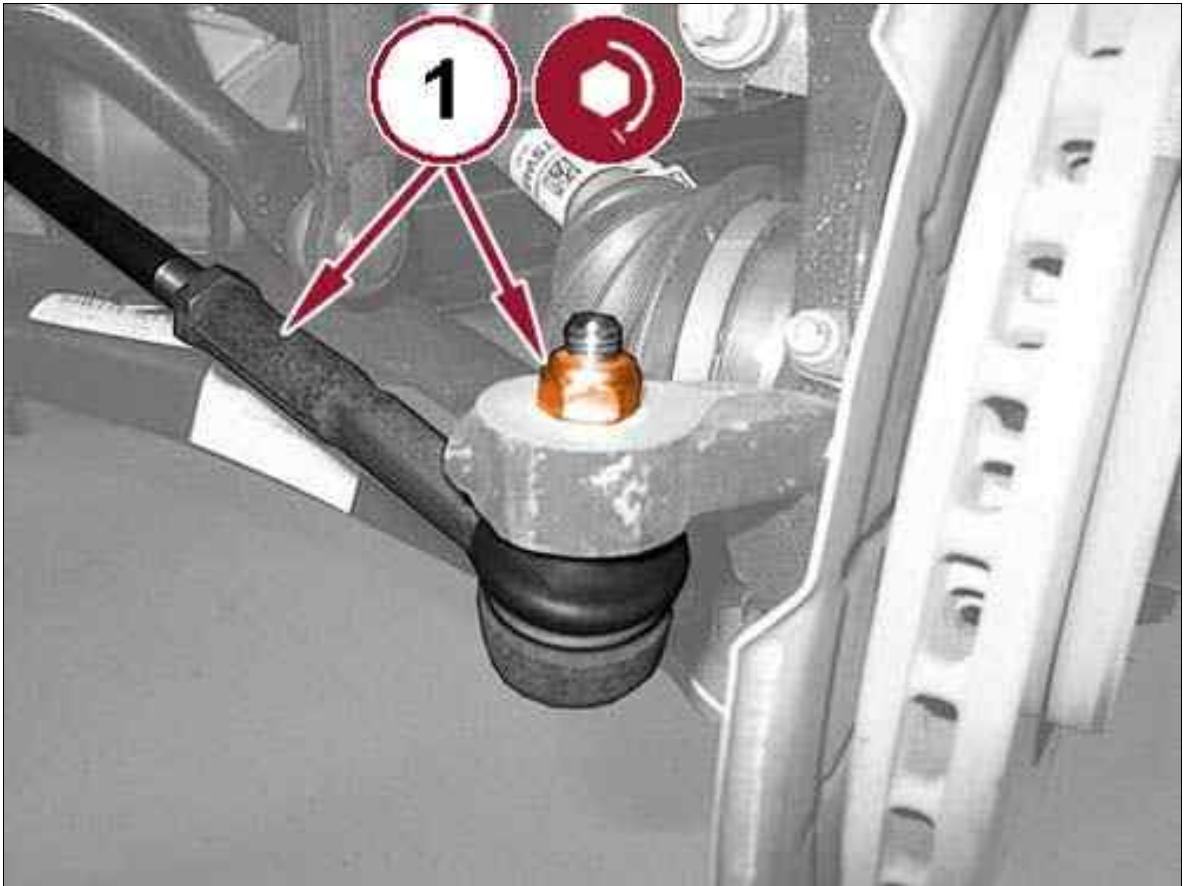
Fig 3: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

4. Position the ball joint stud into the steering knuckle tighten the **NEW** pinch bolt (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

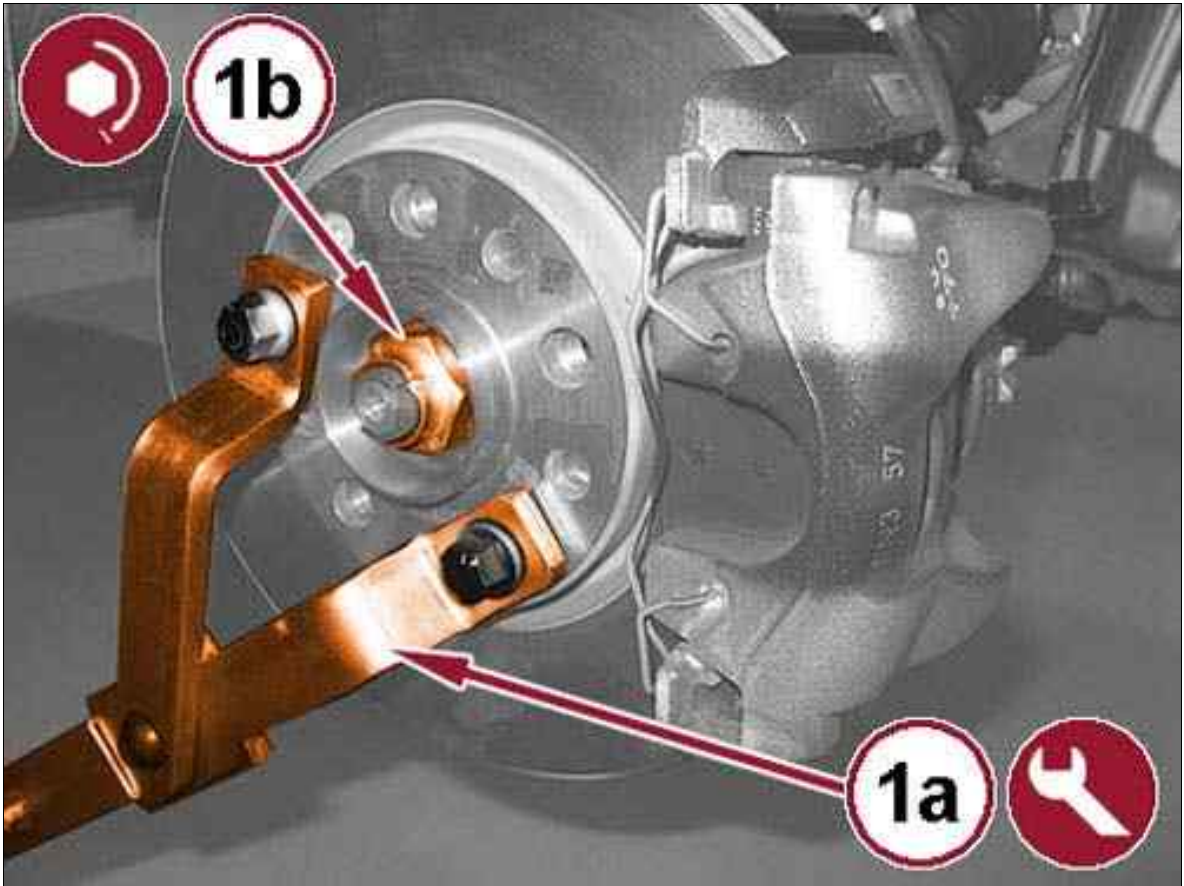
Fig 4: Tie Rod End & Nut



Courtesy of CHRYSLER GROUP, LLC

5. Connect the tie rod end to the steering knuckle and tighten the **NEW** nut (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

Fig 5: Special Tool & Hub Nut



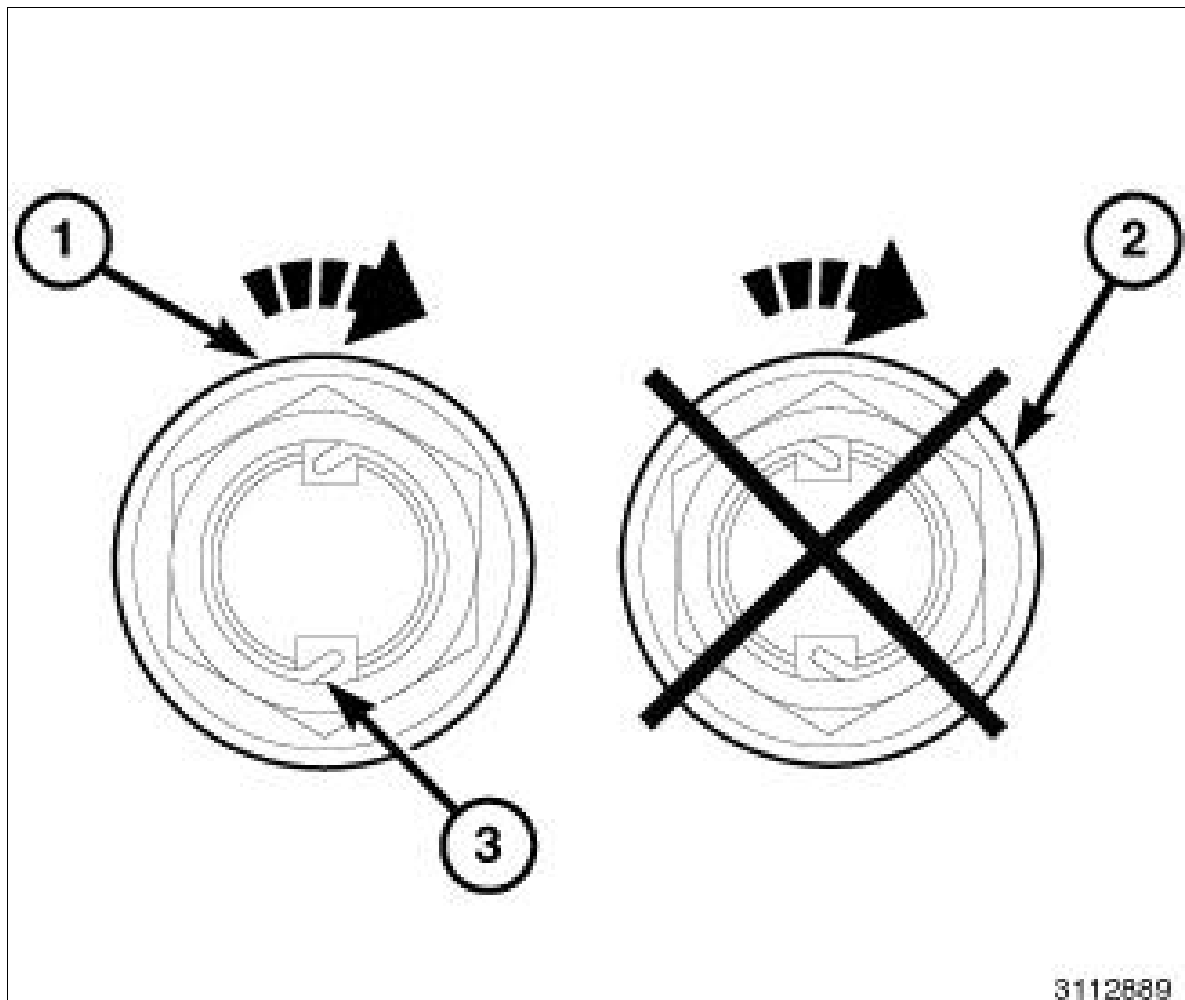
Courtesy of CHRYSLER GROUP, LLC

 NOTE:

*Always install a **NEW** hub nut. The original hub nut is one time use only and must be discarded when removed.*

6. Fit the tool 1870815000 (1a) and install a **NEW** hub nut (1b), tighten the nut using the following procedure:
 1. tighten the nut to 70 N.m (52 Ft Lbs)
 2. tighten the nut an additional 60°

Fig 6: Correct Hub Nut Staking



Courtesy of CHRYSLER GROUP, LLC

 **NOTE:**

Do not use air tools while staking hub nut.

 **NOTE:**

The hub nut must be staked so that it looks similar to Fig 6. Both edges must be split and bent into the shape shown (3) in illustration. The staking must be in the opposite direction from the forward rotation of the wheel.

7. Stake the hub nut as shown in illustration.
8. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
9. Install the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .

10. Check and correct the transmission fluid level. Refer to the appropriate Service Information .

REMOVAL AND INSTALLATION > 2.4L MULTIAIR WITH INTERMEDIATE SHAFT > REMOVAL

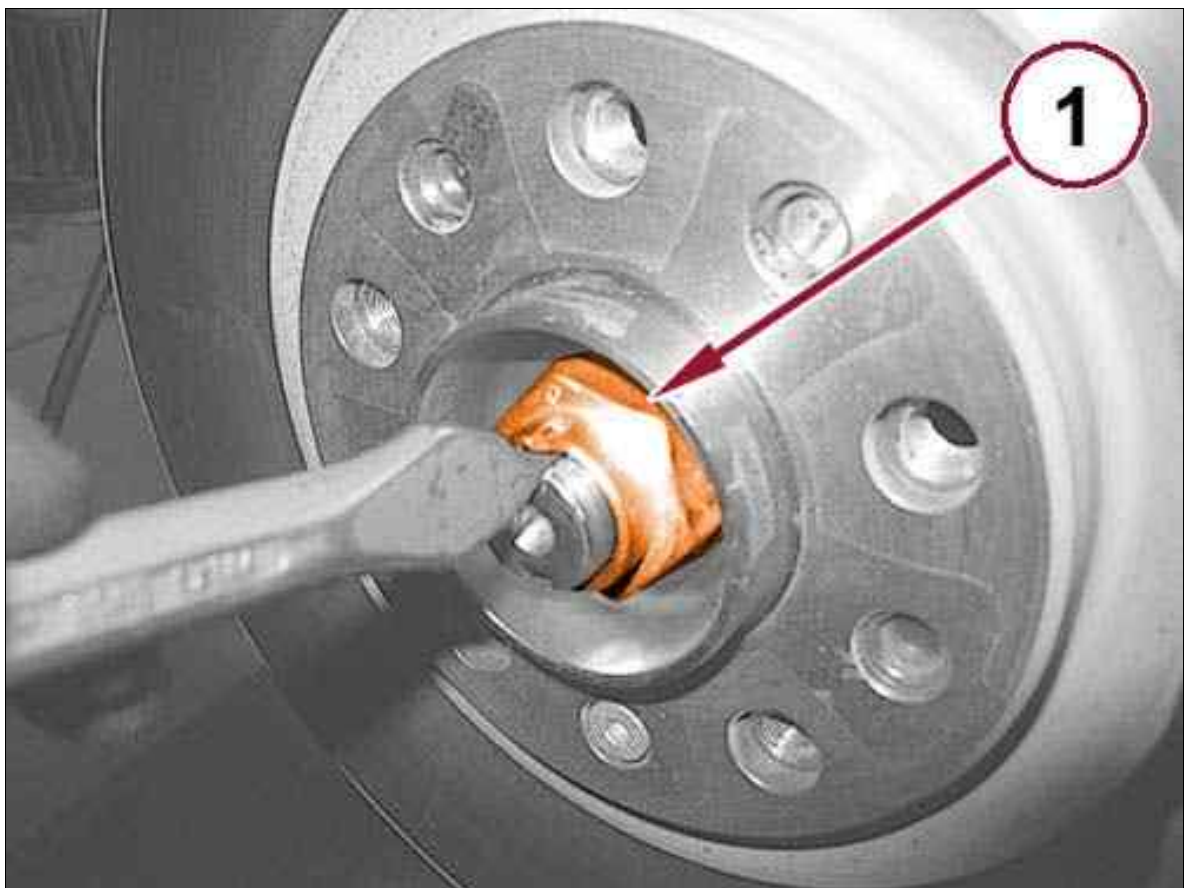


NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
2. Remove the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
3. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

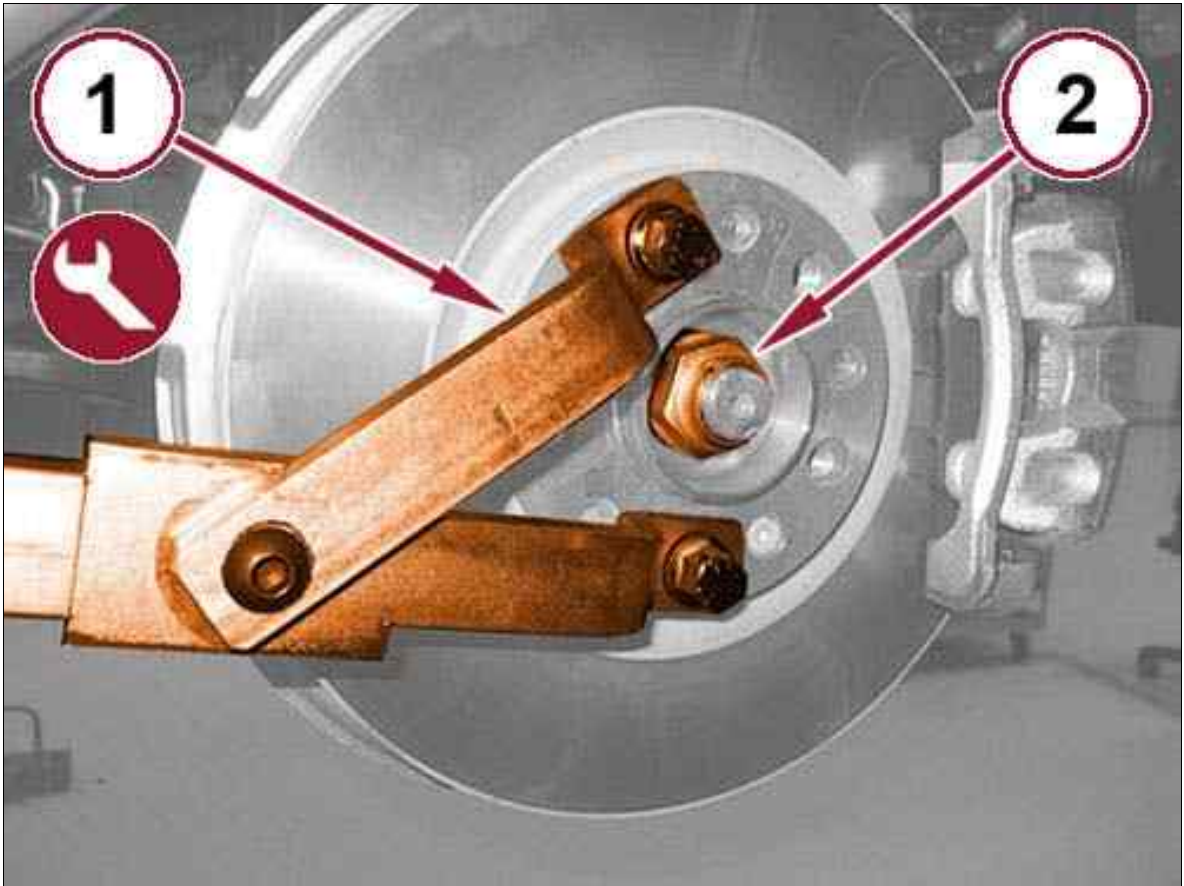
Fig 1: Lifting Staked Area



Courtesy of CHRYSLER GROUP, LLC

4. Using a suitable punch, lift the two staked areas in the hub nut (1) to avoid damaging the halfshaft.

Fig 2: Special Tool & Hub Nut



Courtesy of CHRYSLER GROUP, LLC

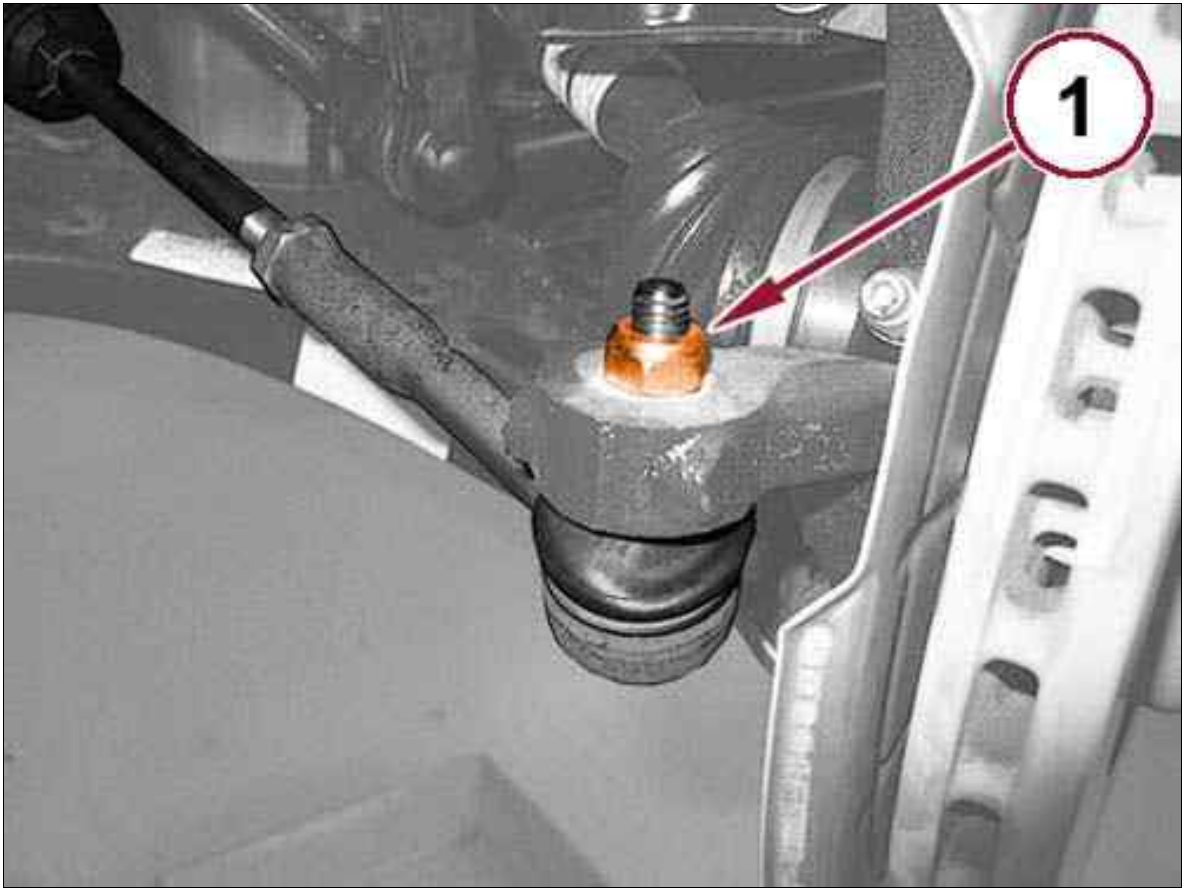
5. Fit the tool 1870815000 (1) to the brake disc.

 **NOTE:**

The used hub nut is not reusable.

6. Remove the hub nut (2) from the halfshaft and **DISCARD** .

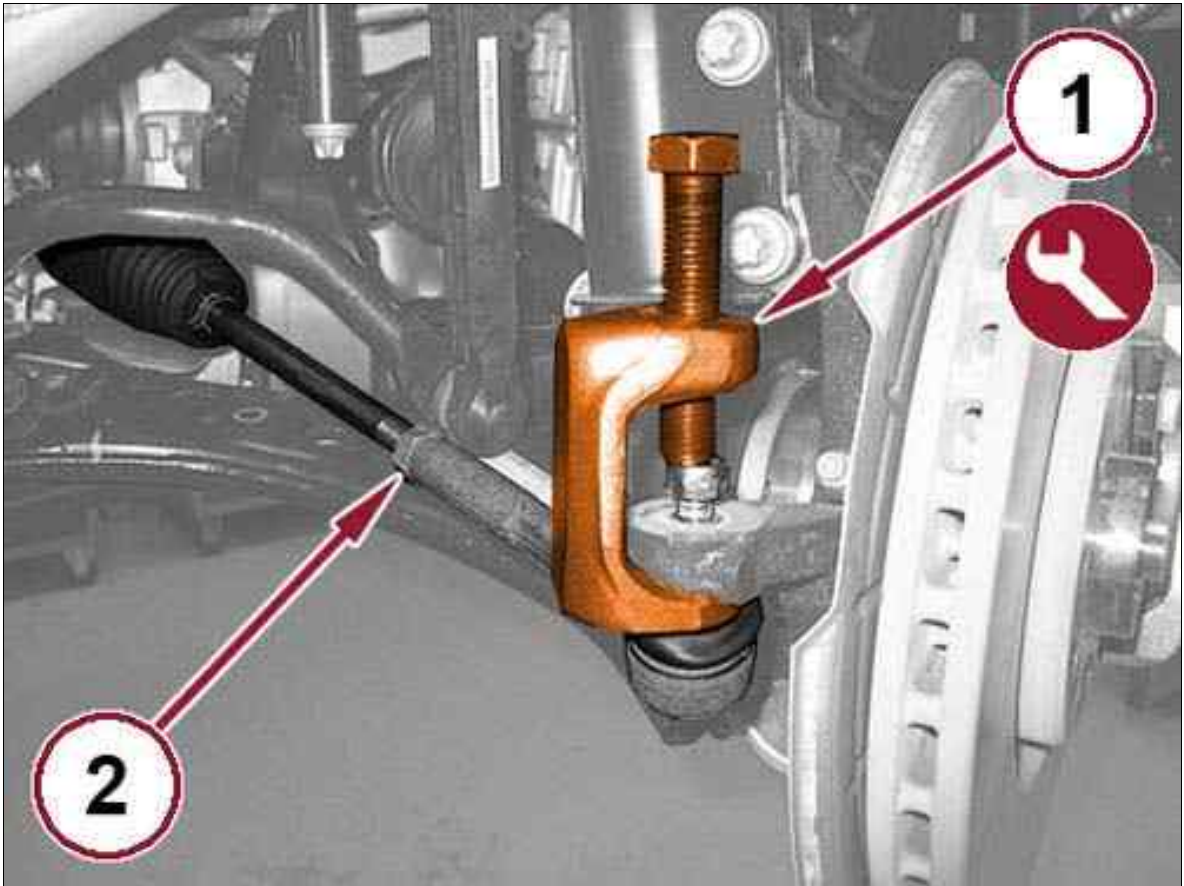
Fig 3: Tie Rod End Nut



Courtesy of CHRYSLER GROUP, LLC

7. Unscrew and **DISCARD** the nut (1) securing the tie rod end to the steering knuckle.

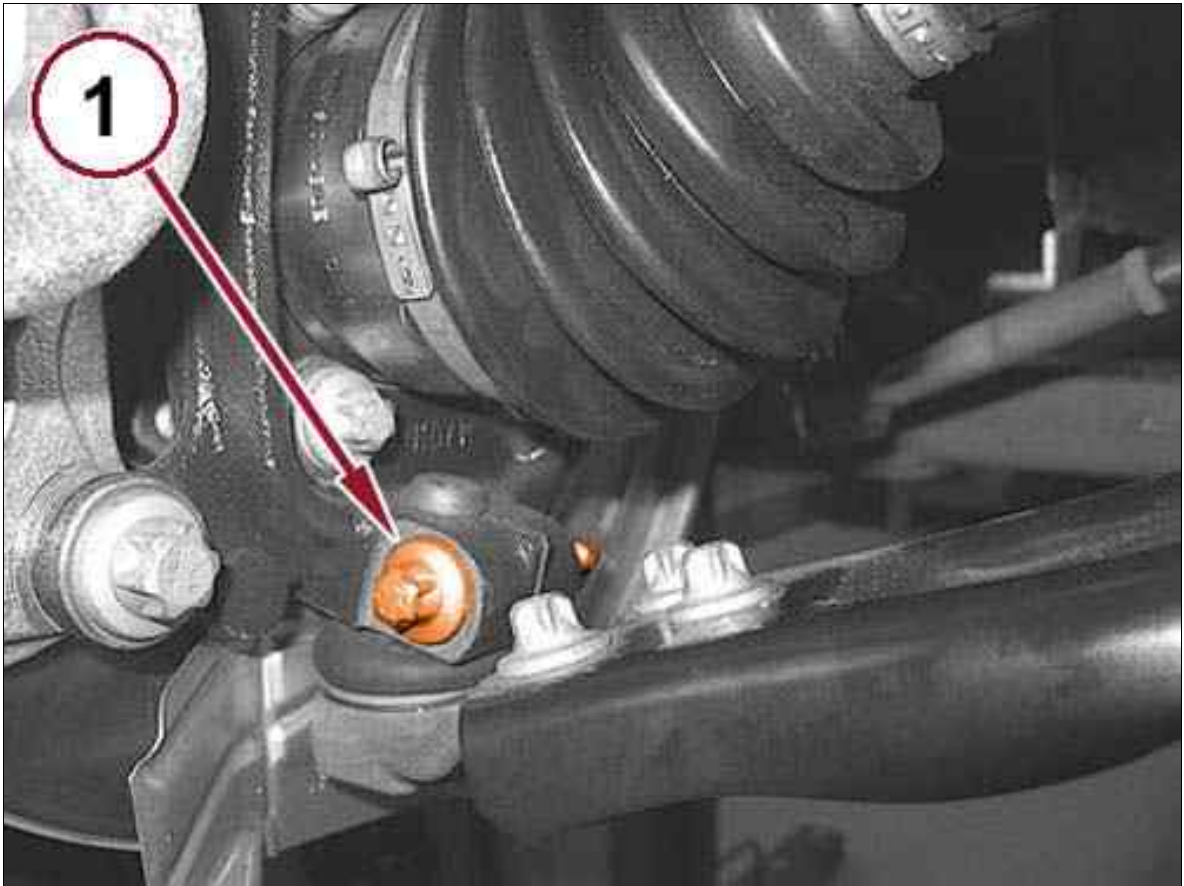
Fig 4: Disconnecting Tie Rod



Courtesy of CHRYSLER GROUP, LLC

8. Fit the tool 1871000700 (EMEA) or (special tool #C-4150A, Press, Ball Joint) (NAFTA) (1) and disconnect the tie rod (2) from the steering knuckle.

Fig 5: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

9. Remove the ball joint pinch bolt (1).

 NOTE:

Use care when separating the ball joint stud from the knuckle so the ball joint boot does not get cut.

10. Disengage the ball joint from the steering knuckle.
11. Disengage the halfshaft from the wheel hub.

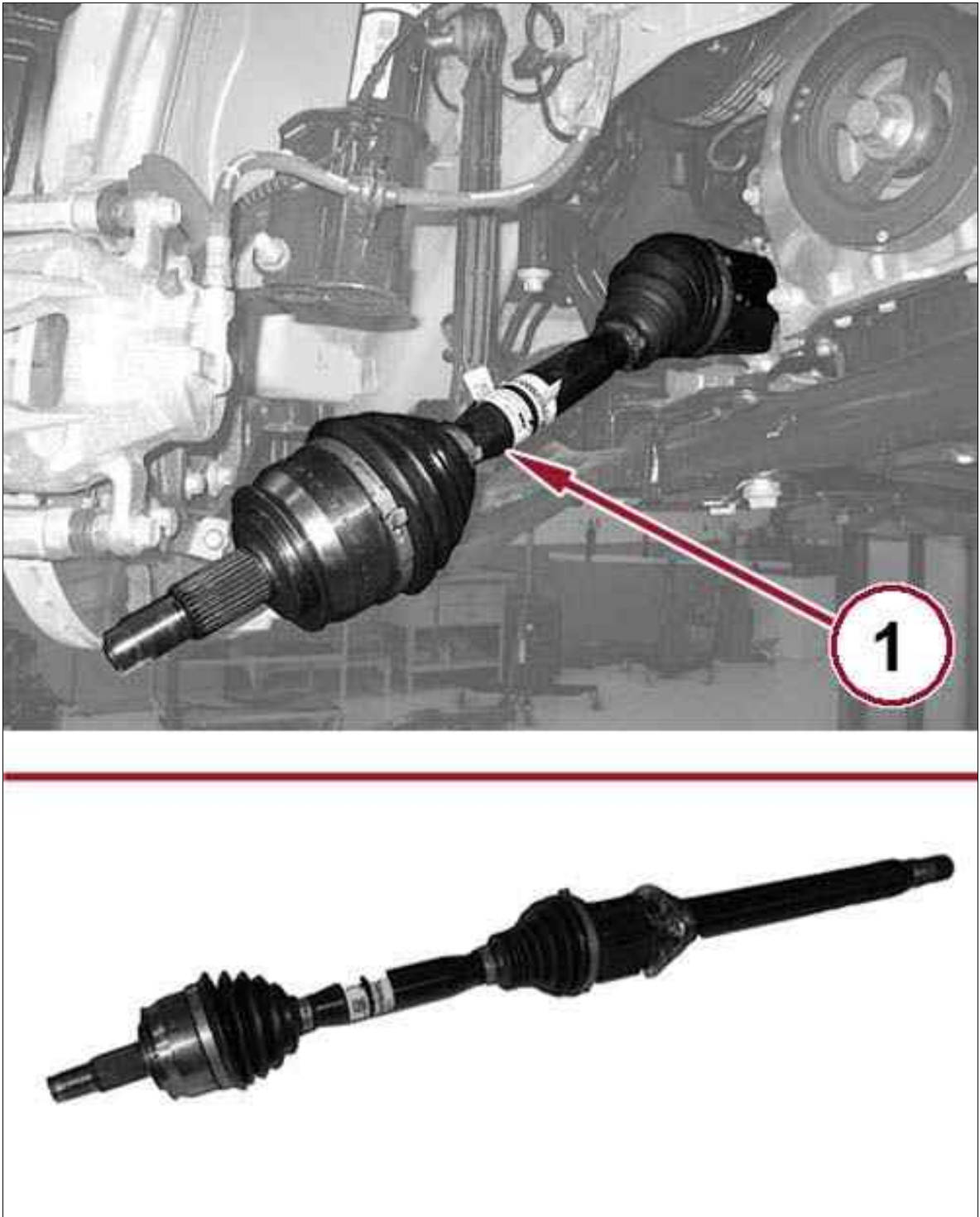
Fig 6: Intermediate Shaft Bearing Bolts



Courtesy of CHRYSLER GROUP, LLC

12. Remove bolts (1) mounting the intermediate shaft bearing to the bearing support.

Fig 7: Halfshaft With Intermediate Shaft



Courtesy of CHRYSLER GROUP, LLC

13. Remove the halfshaft with the intermediate shaft from the vehicle.

REMOVAL AND INSTALLATION > 2.4L MULTIAIR WITH INTERMEDIATE SHAFT > INSTALLATION

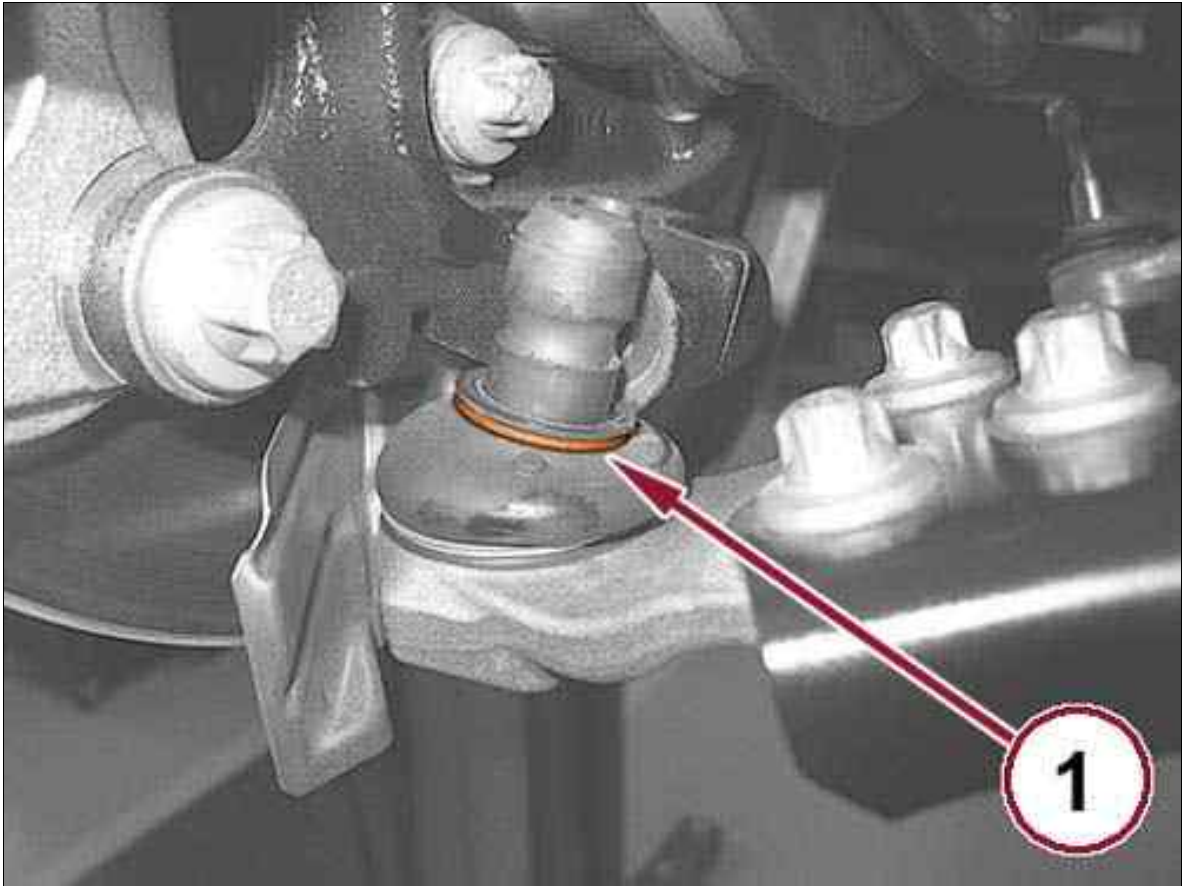


NOTE:

Never handle the halfshaft assembly by the inner or outer boots. This can cause damage to the boot, which will allow contaminants to enter the Constant Velocity (CV) joint.

1. Position the halfshaft and intermediate shaft assembly into the differential and wheel hub.
2. Install the intermediate shaft bearing to bearing support bolts and tighten to the proper specification. Refer to SPECIFICATIONS .

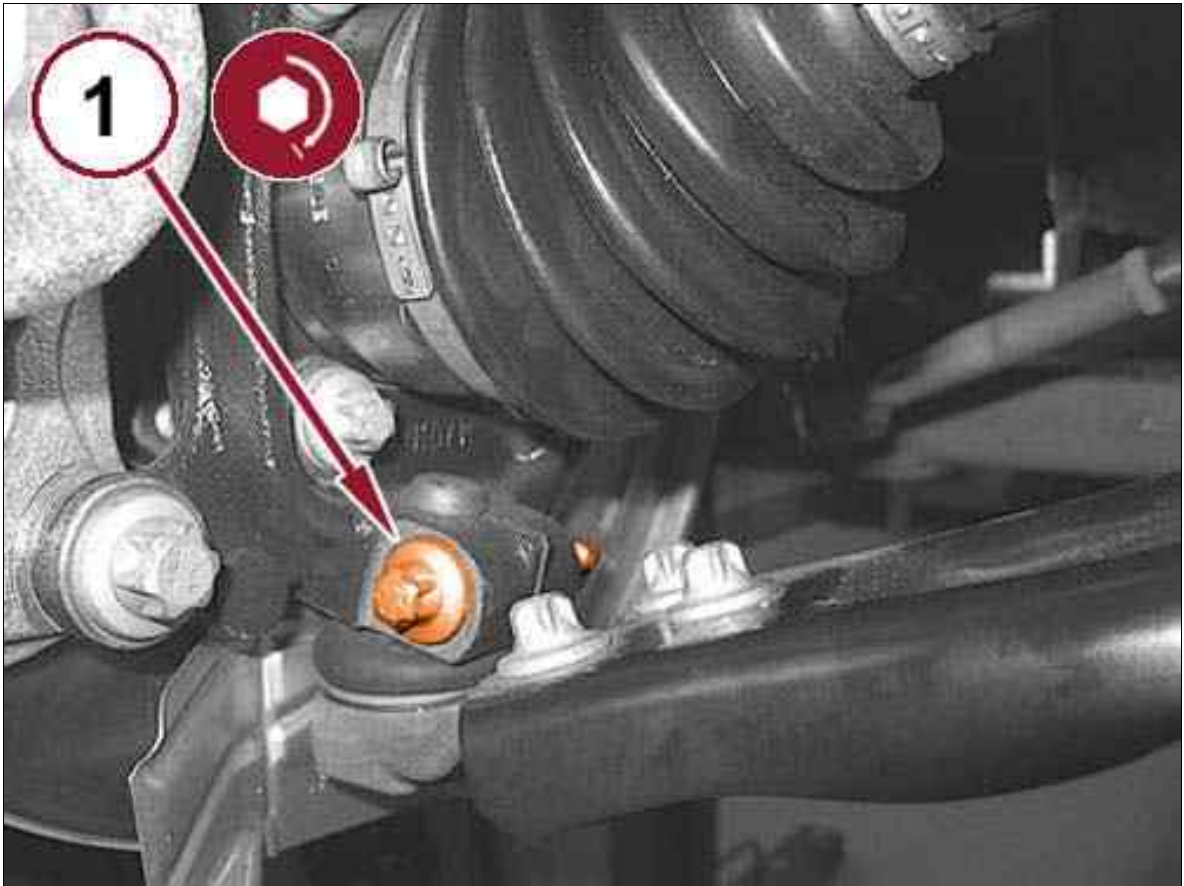
Fig 1: Tension Ring



Courtesy of CHRYSLER GROUP, LLC

3. Inspect the ball joint boot and the boot tension ring (1) for damage.

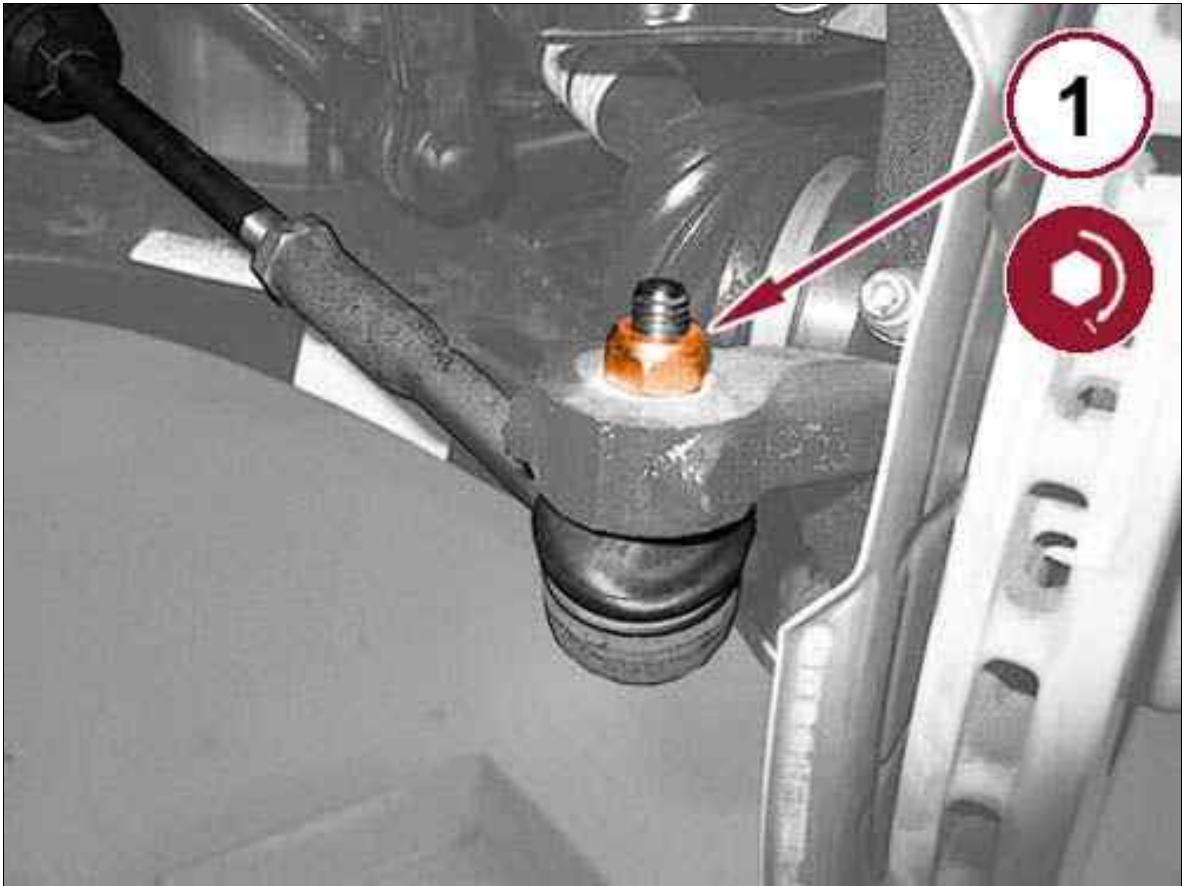
Fig 2: Ball Joint Pinch Bolt



Courtesy of CHRYSLER GROUP, LLC

4. Position the ball joint stud into the steering knuckle tighten the pinch bolt (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

Fig 3: Tie Rod End Nut



Courtesy of CHRYSLER GROUP, LLC

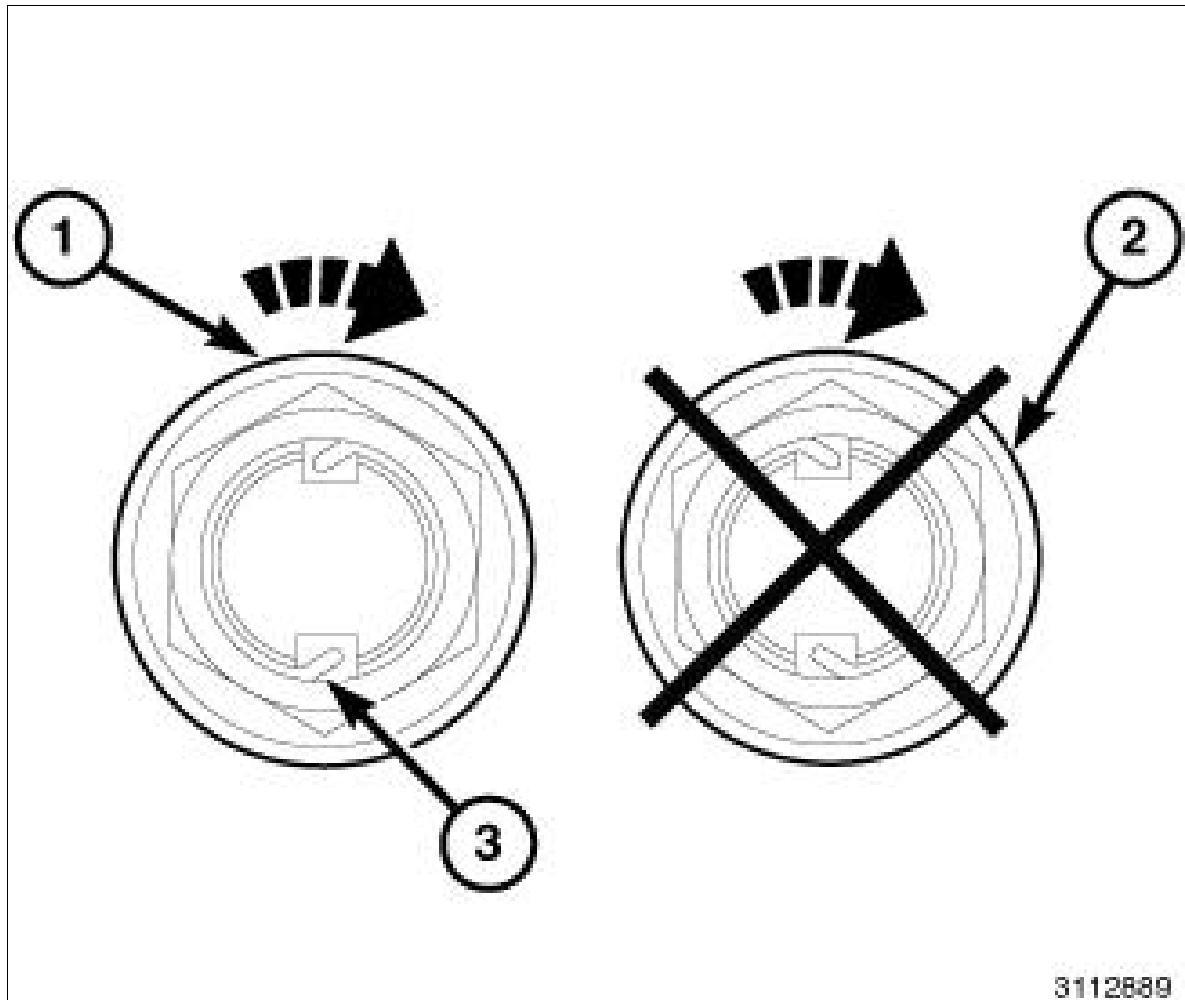
5. Connect the tie rod end to the steering knuckle and tighten the **NEW** nut (1) to the proper specification. Refer to FRONT, SPECIFICATIONS .

 NOTE:

*Always install a **NEW** hub nut. The original hub nut is one time use only and must be discarded when removed.*

6. Fit the tool 1870815000 and install a **NEW** hub nut, tighten the nut using the following procedure:
 1. tighten the nut to 70 N.m (52 Ft Lbs)
 2. tighten the nut an additional 60°

Fig 4: Correct Hub Nut Staking



Courtesy of CHRYSLER GROUP, LLC

 **NOTE:**

Do not use air tools while staking hub nut.

 **NOTE:**

The hub nut must be staked so that it looks similar to Fig 4. Both edges must be split and bent into the shape shown (3) in illustration. The staking must be in the opposite direction from the forward rotation of the wheel.

7. Stake the hub nut as shown in illustration.
8. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
9. Install the tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .

10. Check and correct the transmission fluid level. Refer to the appropriate Service Information .