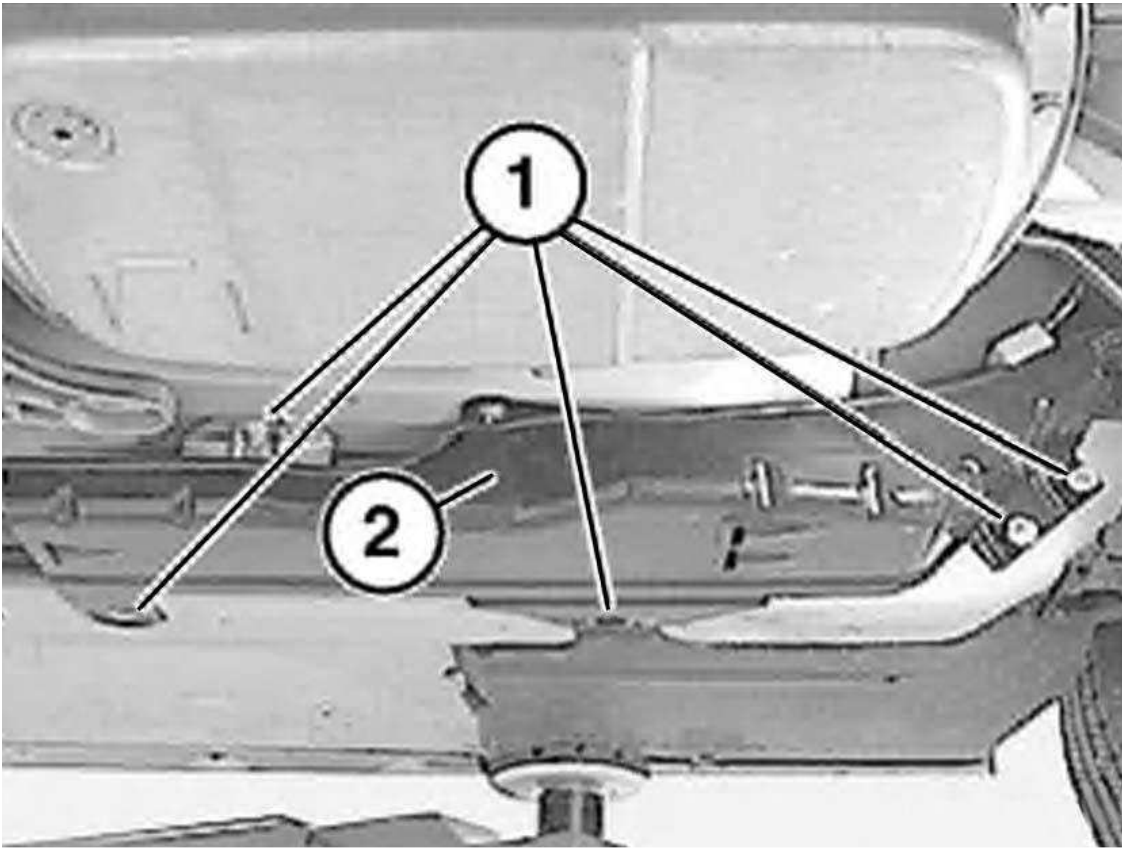


## STARTER

**NOTE:** Numbers in text apply to numbers in figures. For clarity, some figures are shown on a removed engine.

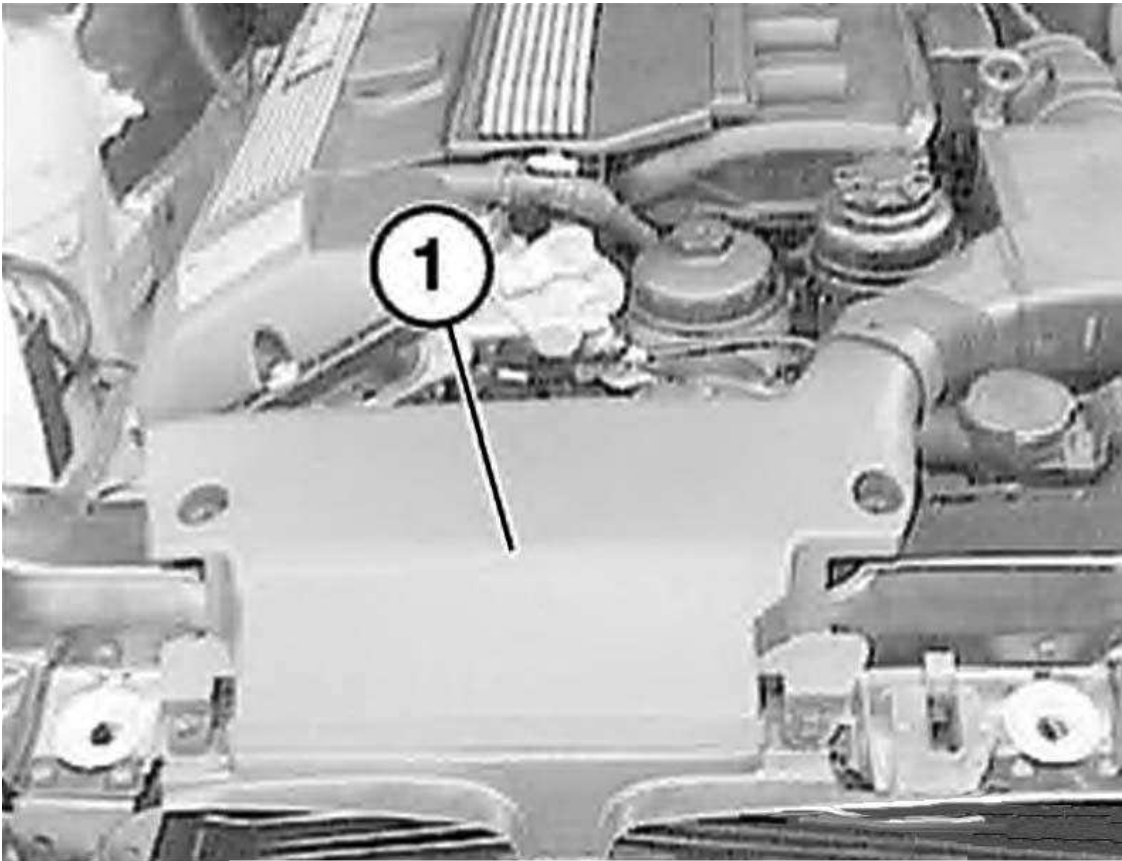
### Removal

1. Switch off ignition. Disconnect and cover battery negative terminal. See **BATTERY DISCONNECT PROCEDURE** under TROUBLE SHOOTING.
2. Remove screws (1) and remove cover (2). See **Fig. 13** .
3. Remove intake hood (1). See **Fig. 14** . Remove underbody protection.
4. Remove exhaust system. See **EXHAUST SYSTEM** .
5. Remove heat shield. Remove shift lever and cable. Detach rear drive shaft from transmission and tie back to one side. DO NOT let drive shaft fall into joints. Joints and rubber sleeve can be damaged.
6. Remove front drive shaft. See **DRIVE AXLE SHAFTS & SEAL (FRONT, ALL WHEEL DRIVE)** under REMOVAL & INSTALLATION in AXLE SHAFTS article.
7. Support transmission with Special Tool (00 2 030, 24 5 301 and 24 5 305). Remove screws and remove cross-member (1). See **Fig. 15** . Lower transmission about 2 inches (5 cm).
8. If fitted, detach vacuum hoses (1 and 3) from vacuum tank (2) for exhaust flap fitted underneath starter motor. See **Fig. 16** . Remove vacuum tank.
9. Unclip fuel line (1) from holders (2). See **Fig. 17** .
10. Unlock plug (1) of crankshaft pulse generator and disconnect. See **Fig. 18** .
11. Remove nut (1) and disconnect battery positive leads from starter motor. See **Fig. 19** .
12. Remove nuts (1). See **Fig. 20** . Remove electric leads (2) from starter motor.
13. Remove both starter motor-to-transmission mounting bolts (1). See **Fig. 21** . Remove starter mounting bolts from transmission output end with a long extension and a universal joint. Withdraw starter motor from transmission flange and remove towards bottom.



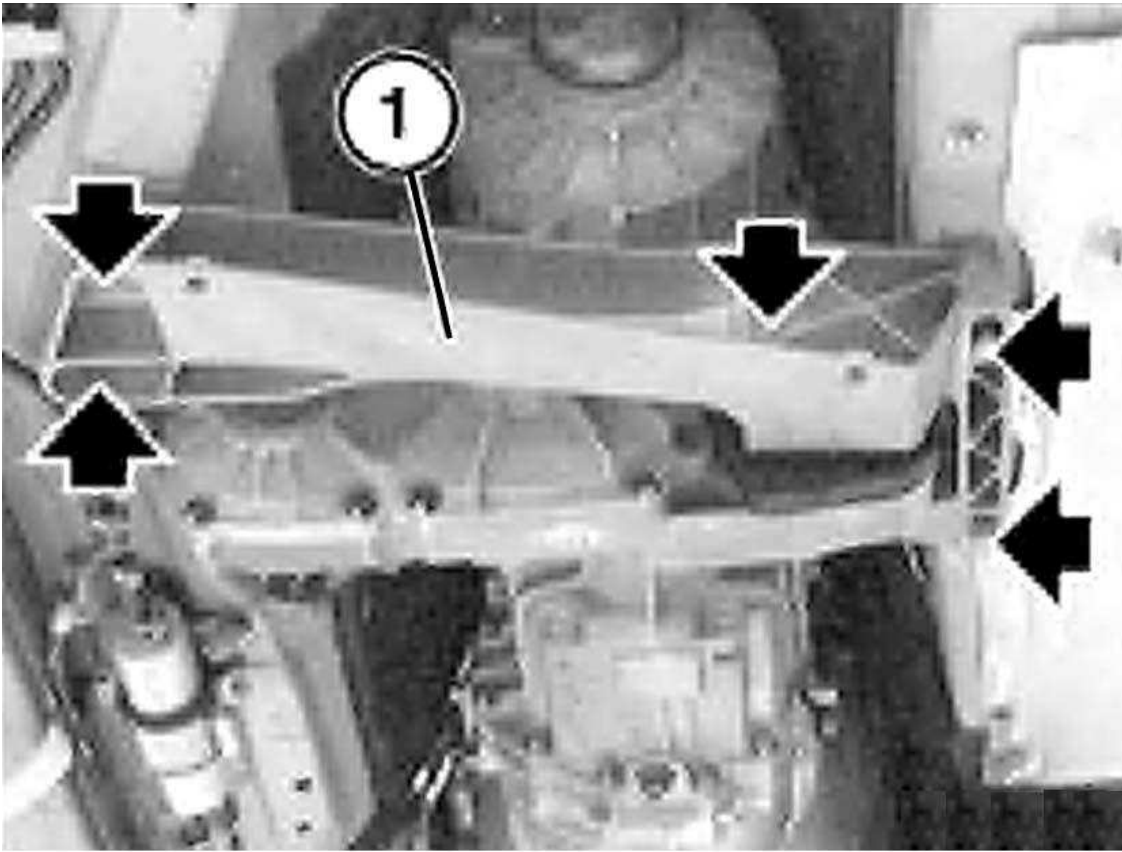
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**Fig. 13: Removing Cover**  
Courtesy of BMW OF NORTH AMERICA, INC.



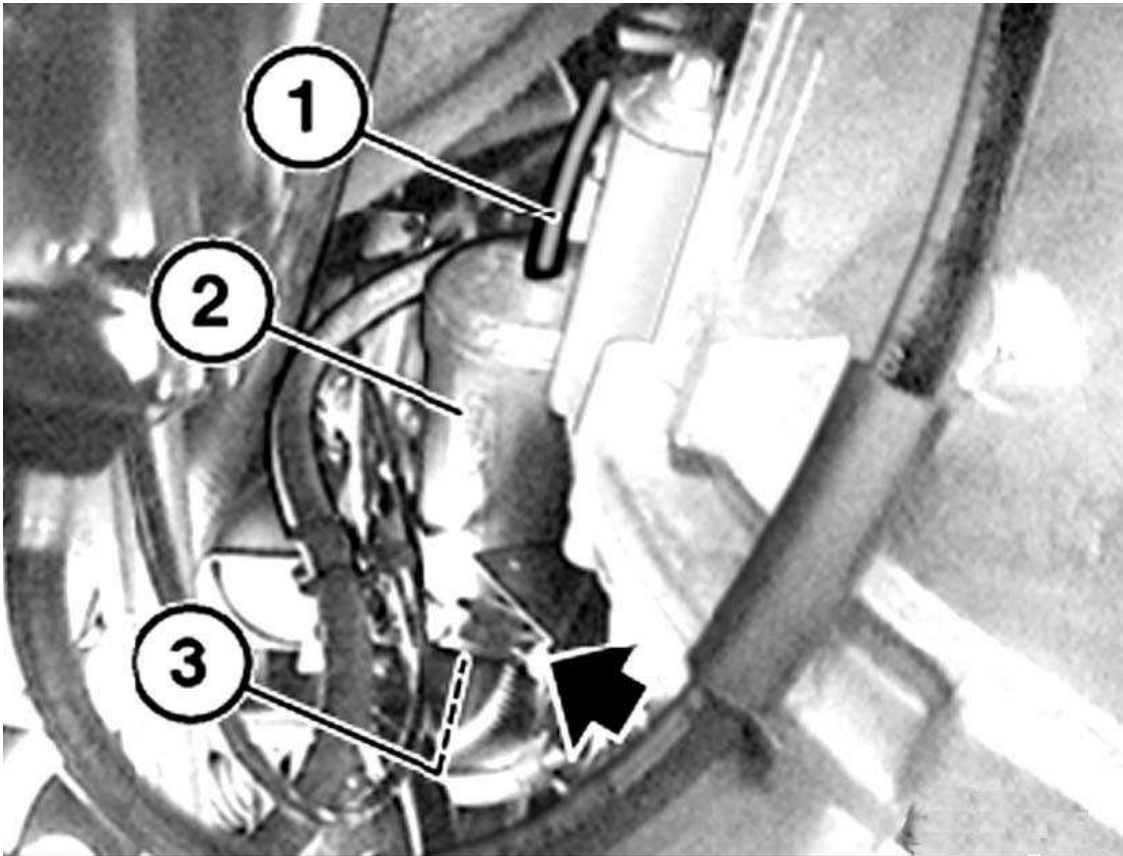
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**Fig. 14: Removing Intake Hood**  
Courtesy of BMW OF NORTH AMERICA, INC.



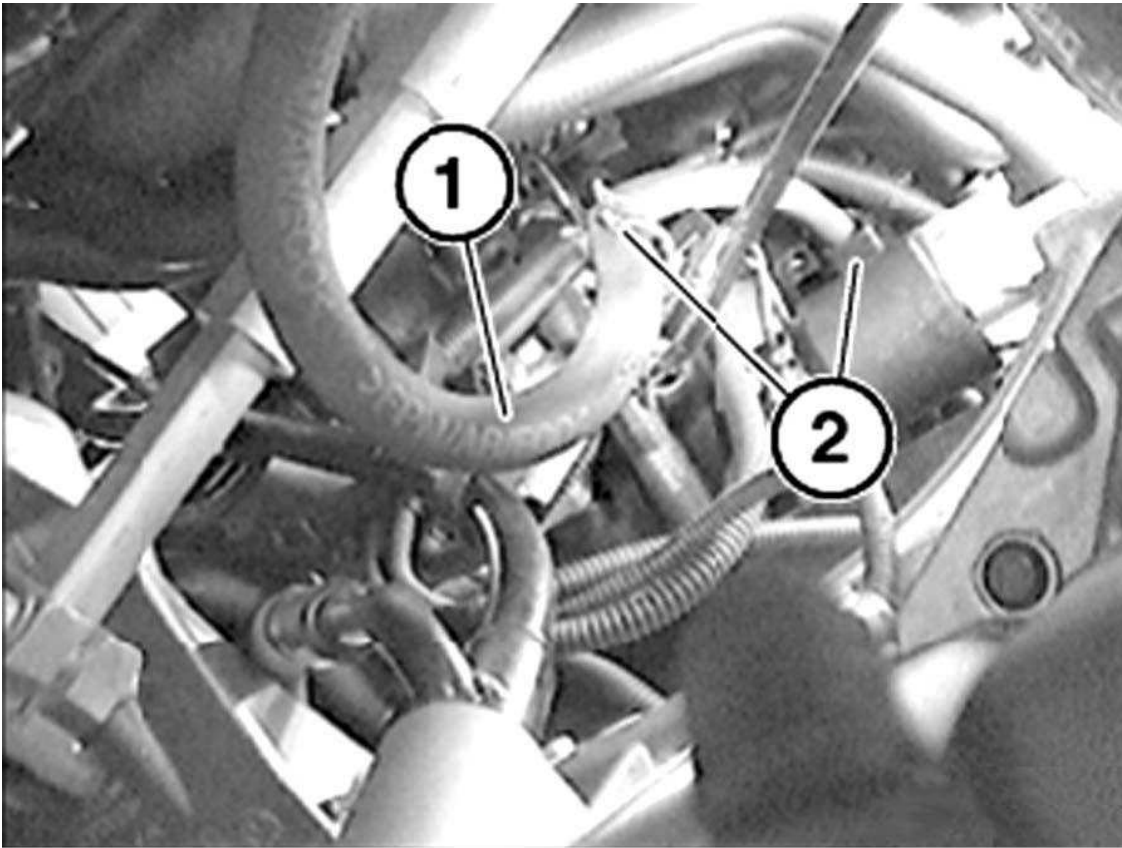
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**Fig. 15: Removing Cross-Member**  
Courtesy of BMW OF NORTH AMERICA, INC.



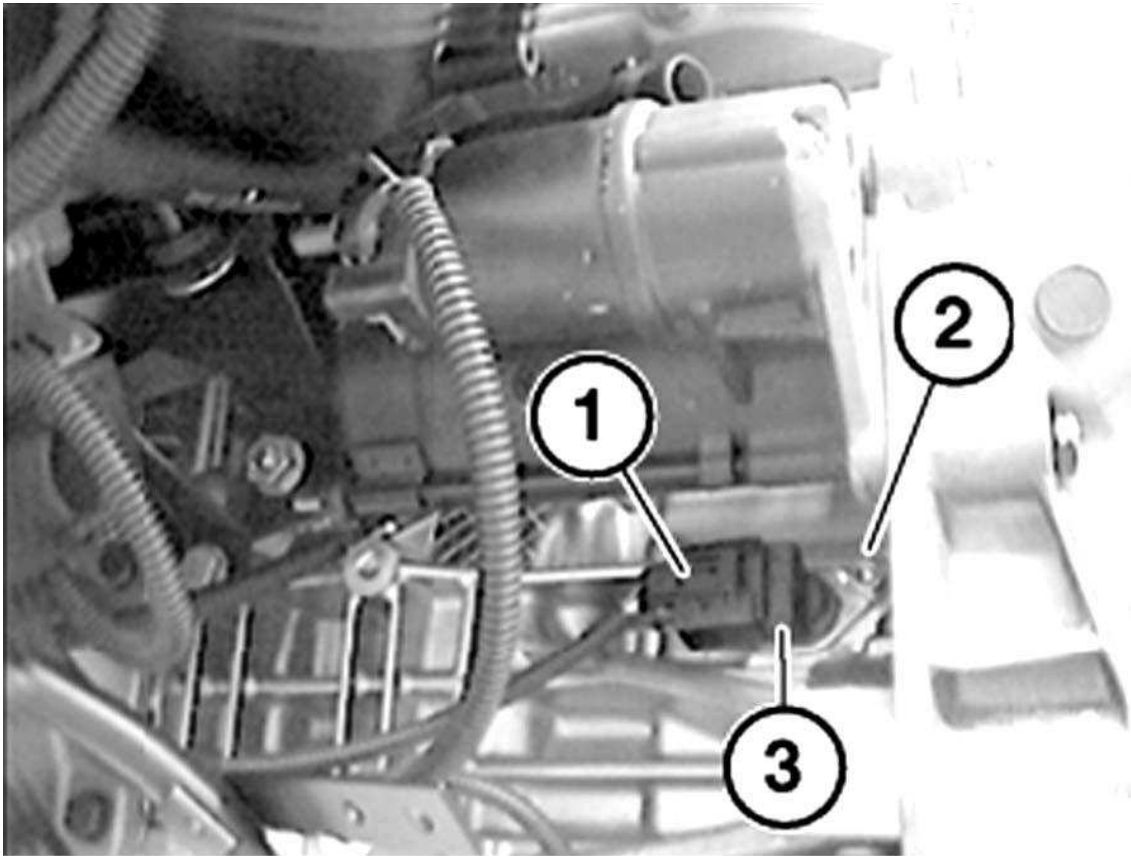
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**Fig. 16: Removing Vacuum Tank For Exhaust Flap**  
Courtesy of BMW OF NORTH AMERICA, INC.



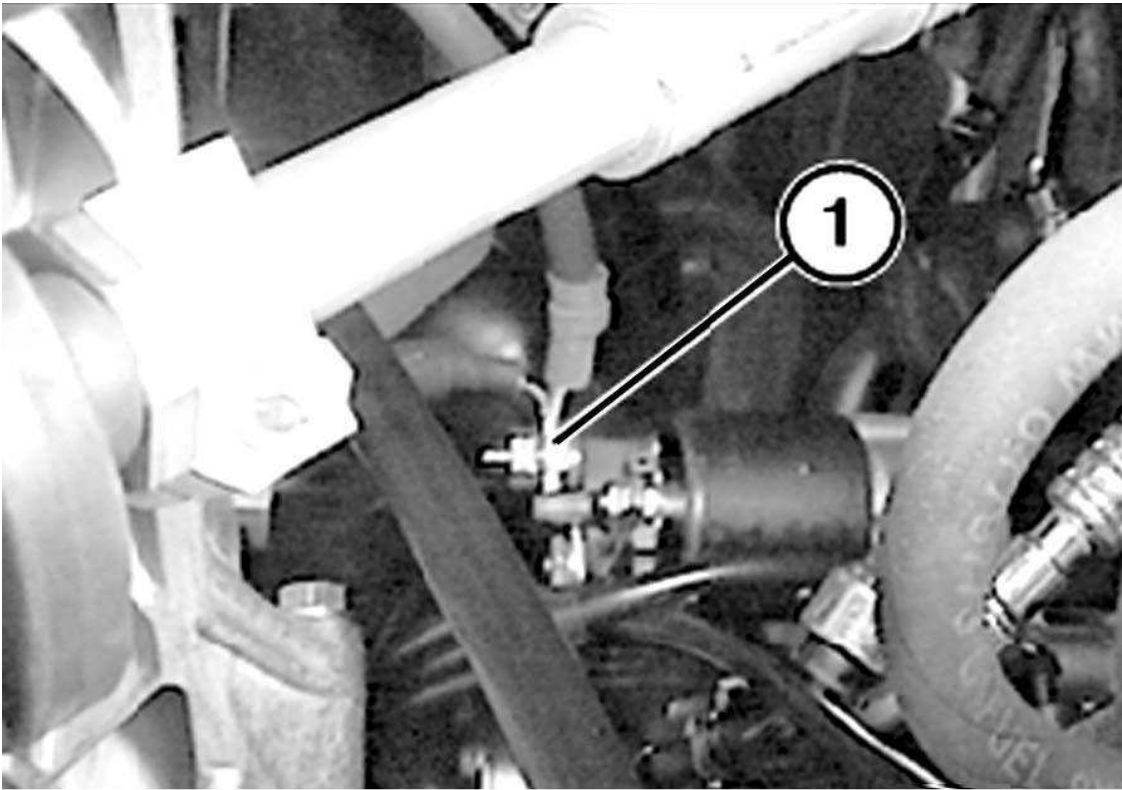
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**Fig. 17: Unclipping Fuel Line From Holders**  
Courtesy of BMW OF NORTH AMERICA, INC.



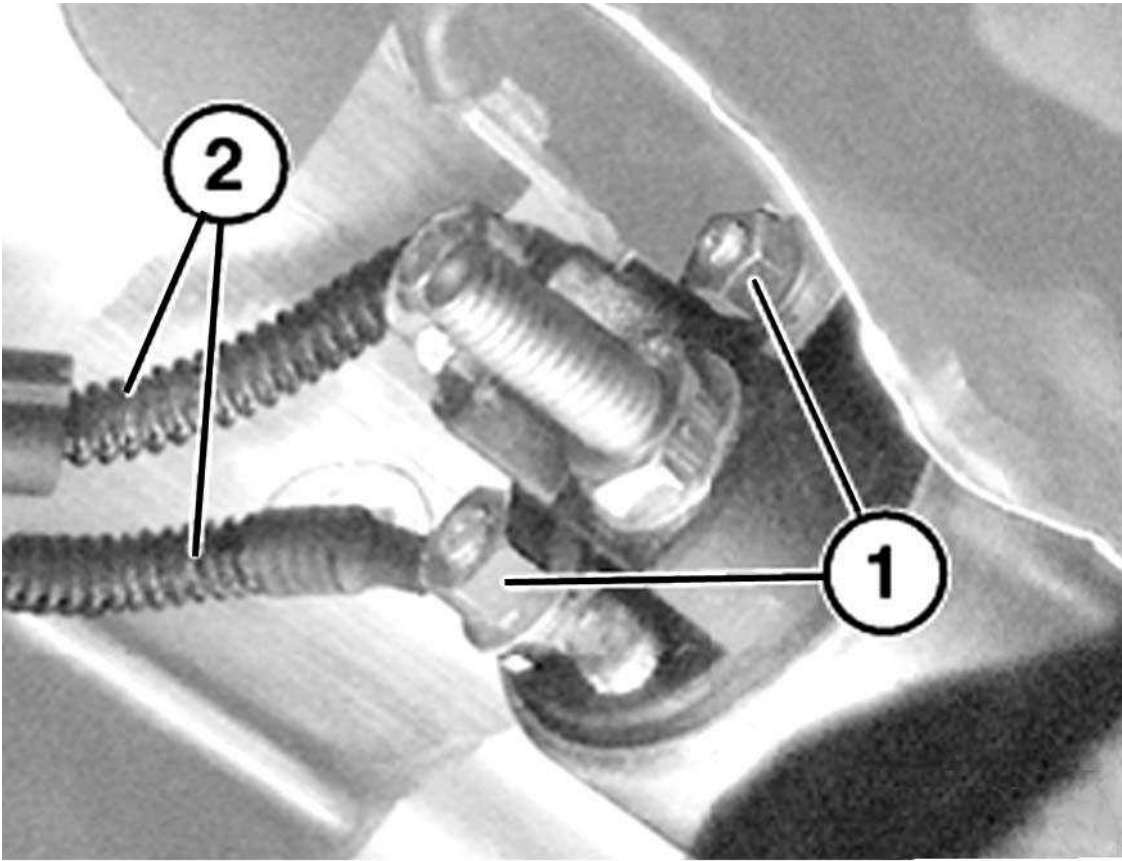
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**[Fig. 18: Unlocking Plug Of Crankshaft Pulse Generator](#)**  
Courtesy of BMW OF NORTH AMERICA, INC.



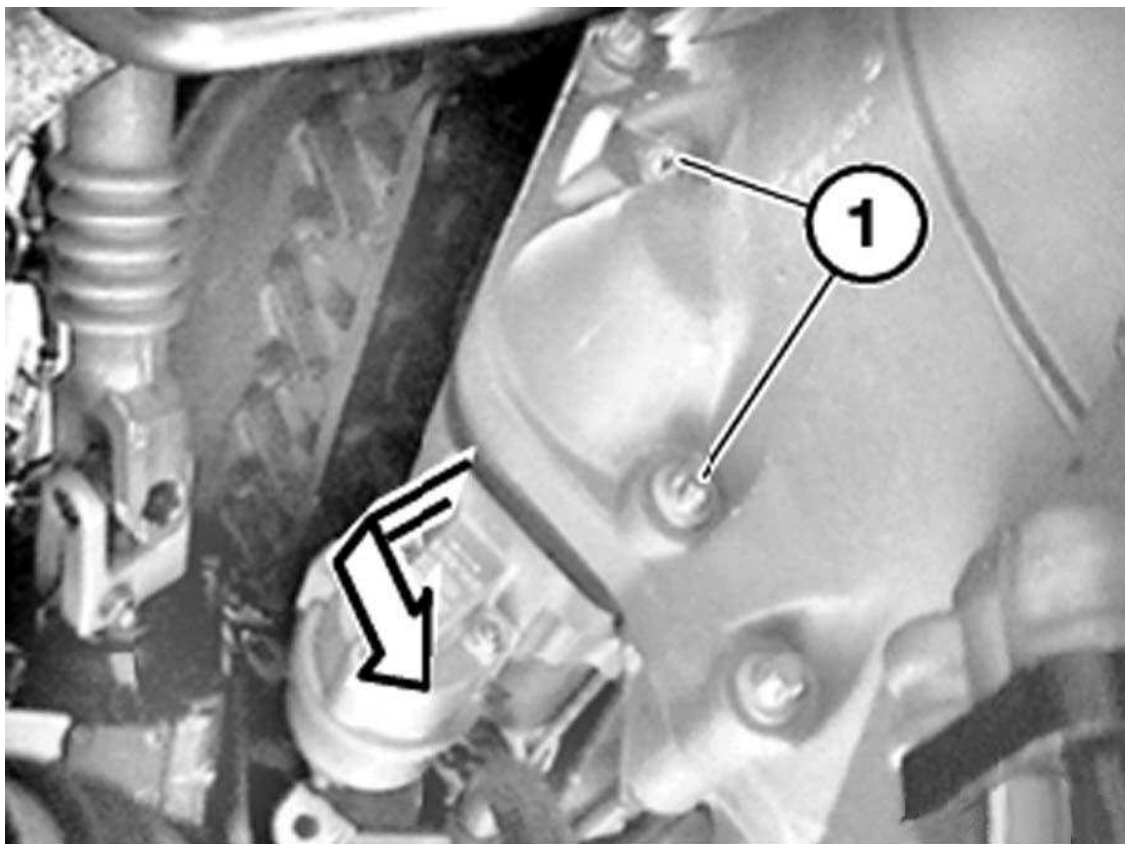
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**Fig. 19: Disconnecting Battery Positive Leads From Starter Motor**  
Courtesy of BMW OF NORTH AMERICA, INC.



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**Fig. 20: Removing Lines From Starter Motor**  
Courtesy of BMW OF NORTH AMERICA, INC.



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**Fig. 21: Removing Starter Mounting Bolts**  
 Courtesy of BMW OF NORTH AMERICA, INC.

**Installation**

1. To install, reverse removal procedure. Inspect starter motor pinion and ring gear for damage. If starter motor pinion or ring gear are damaged, replace as necessary. Tighten fasteners to specification. See **TORQUE SPECIFICATIONS** .
2. Raise transmission into place and install cross-member. Tighten screws to specification. See **TORQUE SPECIFICATIONS** .
3. Install drive shafts and tighten fasteners to specification. See **TORQUE SPECIFICATIONS** .

**STARTER SPECIFICATIONS**

**STARTER SPECIFICATIONS**

Application	Specification
1.4 KW Rated Power <sup>(1)</sup>	
Hold-In Winding	10.5 AMP

many waters gallery

**2005 BMW 325xi**

2001-05 STARTING &amp; CHARGING SYSTEMS Starters - 325xi &amp; 330xi

Pull-In Winding	54.5 AMP
1.8 KW Rated Power <sup>(1)</sup>	
Hold-In Winding	12 AMP
Pull-In Winding	50 AMP
(1) Current consumption at terminal 50 with rated voltage.	

**TORQUE SPECIFICATIONS****Torque Specifications**

<b>Application</b>	<b>Ft. Lbs. (N.m)</b>
Drive Shaft-To-Drive Flange	52 (70)
Reinforcement Plate-To-Front Axle Support/Engine Carrier	<sup>(1)</sup> 37 (50)
Starter-To-Transmission Bell Housing	33 (45)
Transmission Cross-Member-To-Body	32 (43)
	<b>INCH Lbs. (N.m)</b>
Battery Leads	35-53 (4-6)
Electrical Leads-To-Starter	
5 mm	44 (5)
6 mm	62 (7)
8 mm	115 (13)
(1) Torque fastener to specification, then an additional 90 degrees.	