

STAGE 2 CAMSHAFT KIT



P/N 2884573; 2885178

BEFORE YOU BEGIN

Read these instructions and check to be sure all parts and tools are accounted for. Please retain these installation instructions for future reference and parts ordering information.

IMPORTANT

Due to the technical nature of this kit, Indian Motorcycle® insists that this installation be performed by a certified Indian Motorcycle® technician.

NOTICE

Factory approved and certified accessories and calibrations are designed for maximum performance, while protecting the engine over a wide range of operating conditions. Use of aftermarket or unapproved accessories or calibrations will cause abnormal sensor or engine operation, error codes and risks damage to the engine. The Indian Motorcycle® Limited Warranty excludes damages or failures resulting from use of aftermarket or unapproved components, accessories, and calibrations.

APPLICATION

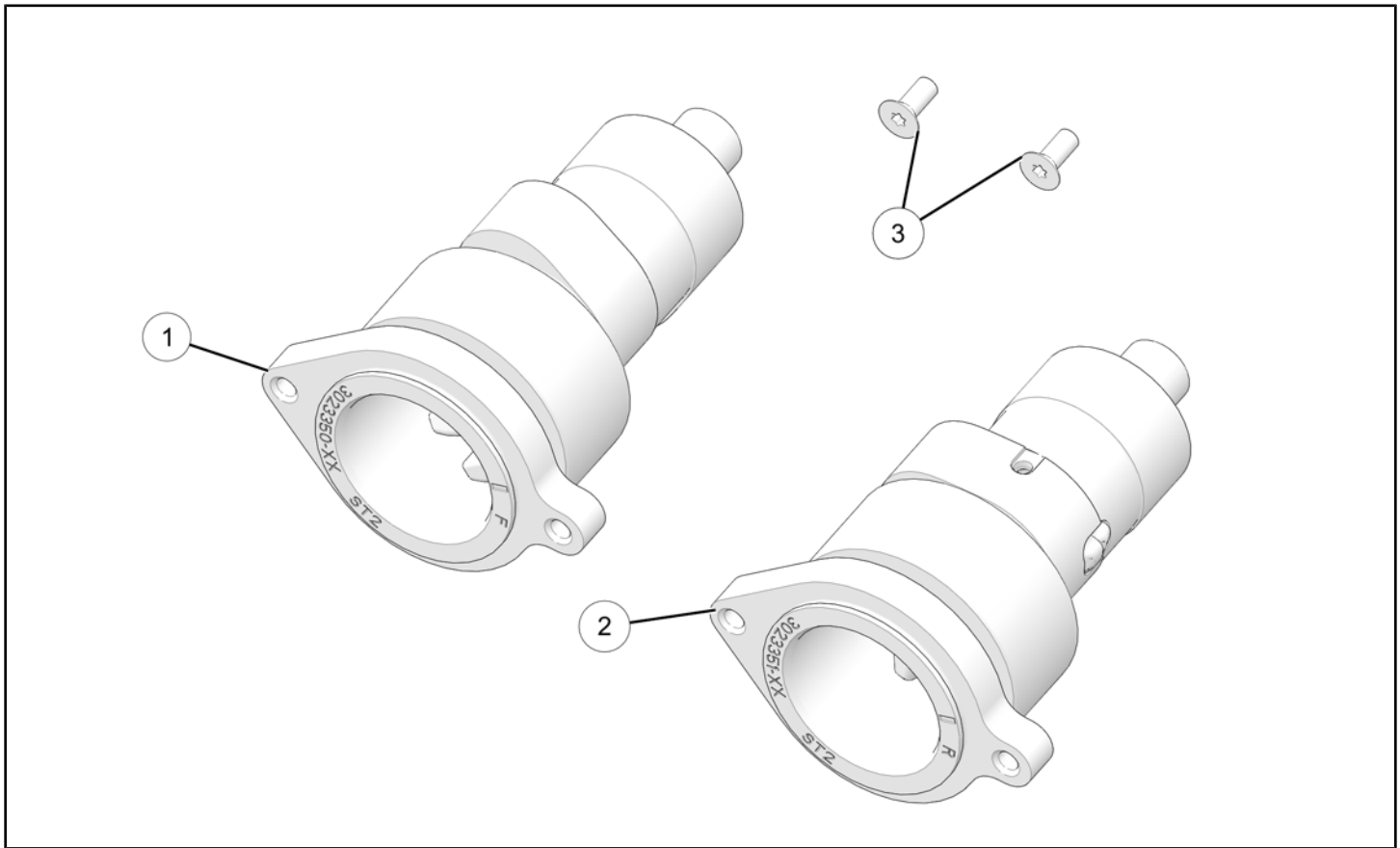
Verify accessory fitment at www.indianmotorcycle.com.

REQUIRED SOLD SEPARATELY

Only parts for installation of the Indian Motorcycle® Stage 2 Camshaft Kit are included. For complete installation, the following additional kits are required (sold separately):

- *Power Plus Stage 1 Air Intake*: 2884491-XXX (California Only), or 2883737-XXX (49 State)
- *Stage 1 Slip-On Muffler Kit*: PN 2879529-XXX, 2879724-XXX, 2879768-XXX, 2879769-XXX, or 2884187-XXX

KIT CONTENTS



REF	QTY	PART DESCRIPTION	P/N AVAILABLE SEPARATELY
1	1	Assembly, Camshaft, Stage 2, Front	3023350
2	1	Assembly, Camshaft, Stage 2, Rear	3023351
3	2	Thrust Plate Screw, Flat Countersunk Head, M5 X 0.8 X 12 mm	7517255
4	1	Calibration Card, 50-State (Not Shown)	4014490
5	1	Decal, CARB (Not Shown)	7300414
6	1	VCM 1, Gen2, V3 (Not Shown) (Kit P/N 2885178 only)	n/a

TOOLS REQUIRED

- Safety Glasses
- Digital Wrench®
- Drain Pan
- Pick and Hook Set
- Platform Jack, Motorcycle
- Socket Set, Hex Bit, Metric
- Socket Set, Metric
- Socket Set, Torx® Bit
- Torque Wrench
- Wrench Set, Metric
- **Special Service Tool:**
 - Camshaft Service Tool, P/N PF-52939
 - Crankshaft Locking Pin, P/N PF-52135
- Service Manual

CONSUMABLES REQUIRED

- Motor Oil, 15W-60, Full Synthetic, 5 qts. (4.7 l.)

IMPORTANT

Your Indian Motorcycle® Stage 2 Camshaft Kit is exclusively designed for your vehicle. Please read the installation instructions thoroughly before beginning. Installation is easier if the vehicle is clean and free of debris. For your safety, and to ensure a satisfactory installation, perform all installation steps correctly in the sequence shown.

INSTALLATION INSTRUCTIONS

VEHICLE PREPARATION

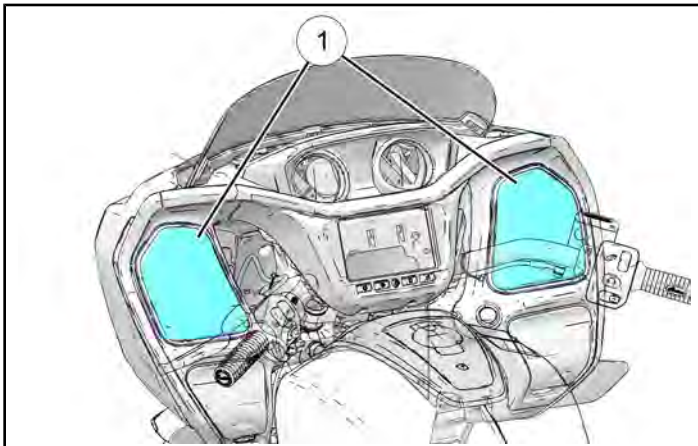
GENERAL

1. Position motorcycle on a lift table and clamp front tire securely in a wheel vise.
2. Turn key or ignition switch to OFF position and remove key. If equipped with keyless fob, remove fob from proximity of vehicle.
3. Drain engine oil
4. Remove and set aside side covers, saddlebags, and seat. Removal procedures can be found in service manual.
5. Disconnect battery. Procedure can be found in service manual.

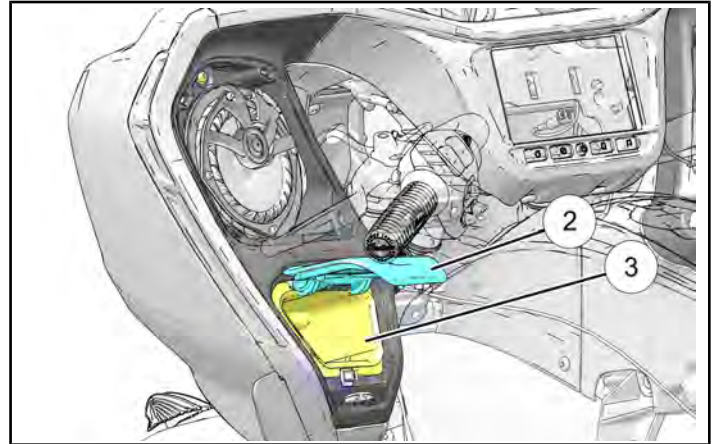
ACCESSORY INSTALLATION

REMOVE STOCK CAMSHAFTS

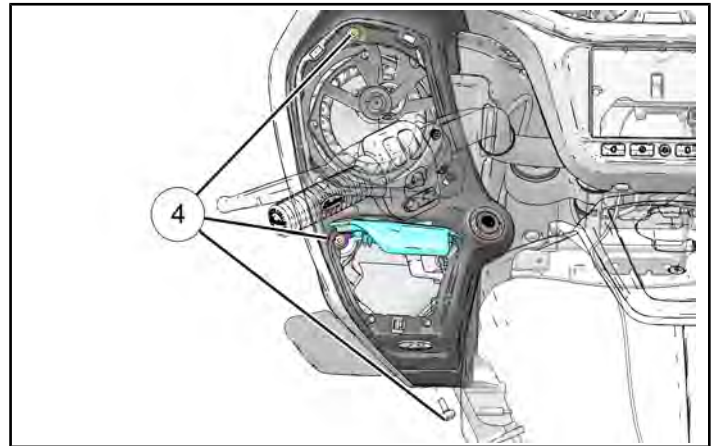
1. Remove outer fairing.
 - a. Carefully pry off speaker bezels ① with Body Panel Tool Kit **PV-49955**.



- b. Open storage door ② and remove storage liner ③.

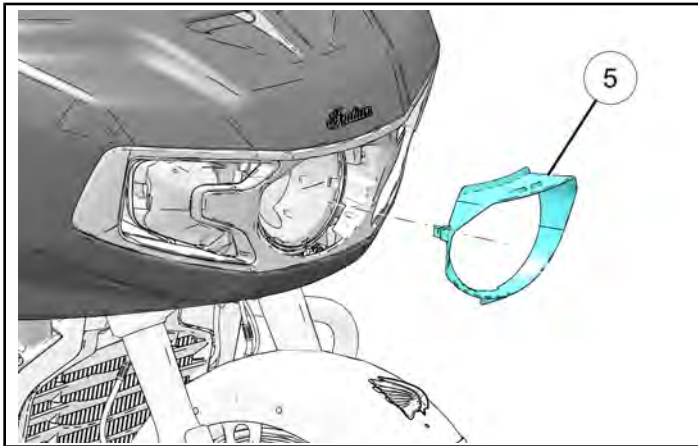


- c. Remove outer fairing fasteners ④.

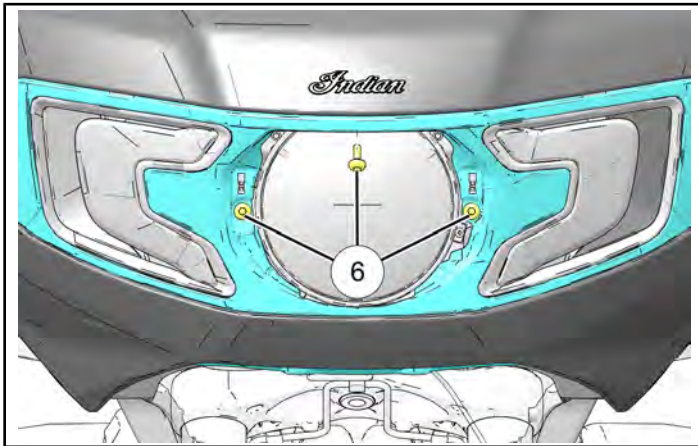


- d. Repeat steps 2–3 for the remaining side.

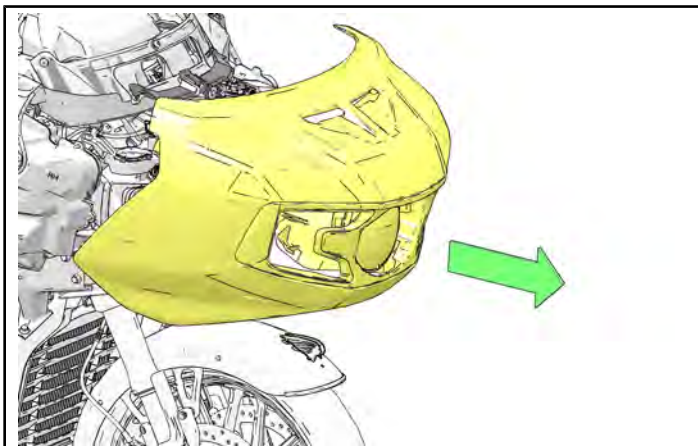
- e. Using Body Panel Tool kit **PV-49955**, remove headlight bezel ⑤ by prying down at the top center to release the snap and then pull forward to release the side body clips.



- f. Remove outer fairing fasteners ⑥.

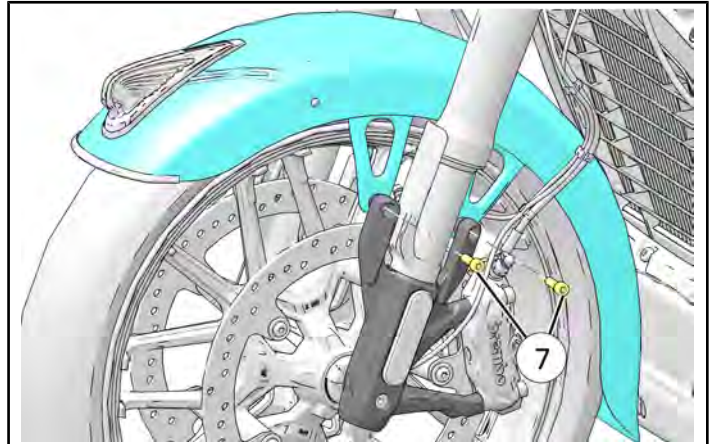


- g. Carefully move the outer fairing forward and unplug the headlight and turn signal electrical connection.



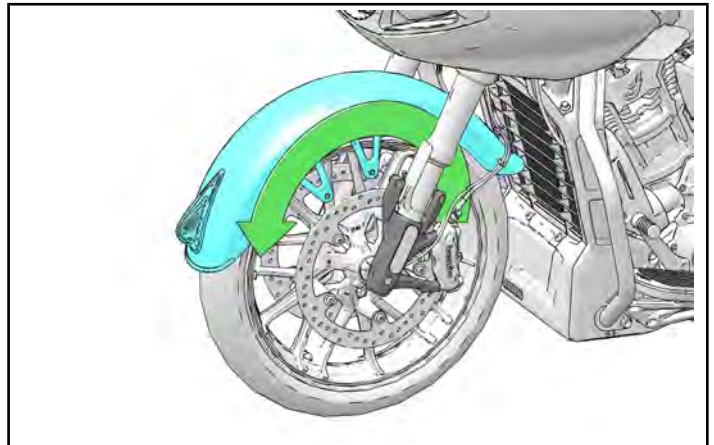
2. Remove front fender.

- a. Remove fasteners ⑦ from each side of the motorcycle securing the fender.



- b. Follow the fender light harness up into the fairing, locate the connector and disconnect.

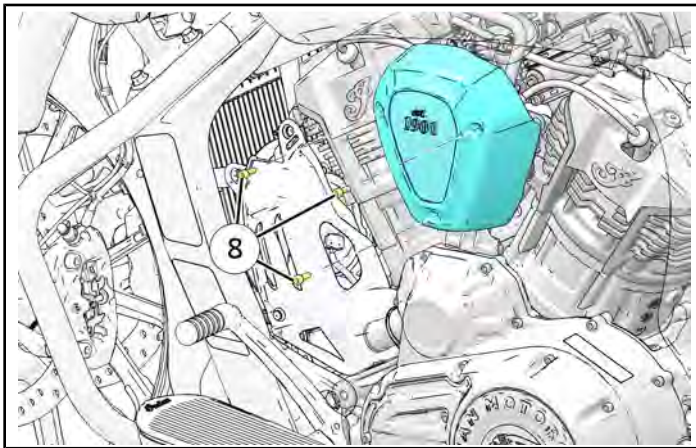
- c. Rotate the fender forward and remove.



3. Remove gas tank.

- a. Depressurize fuel system. See **page** .
- b. Remove seat. See **page** .
- c. Disconnect vent line from carbon canister. Reference **page** .

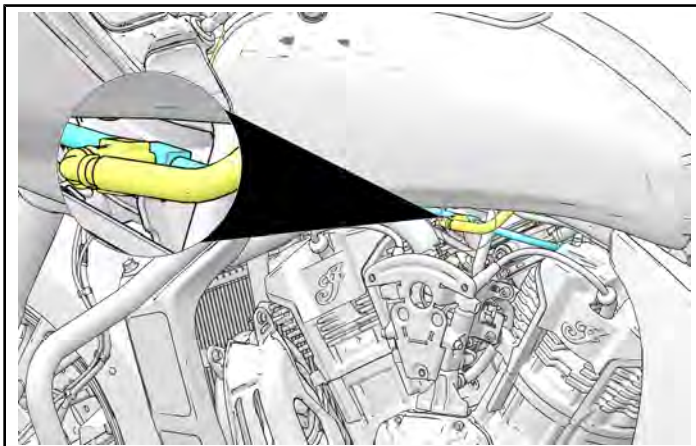
d. Remove left side v-cover by removing its fasteners ⑧.



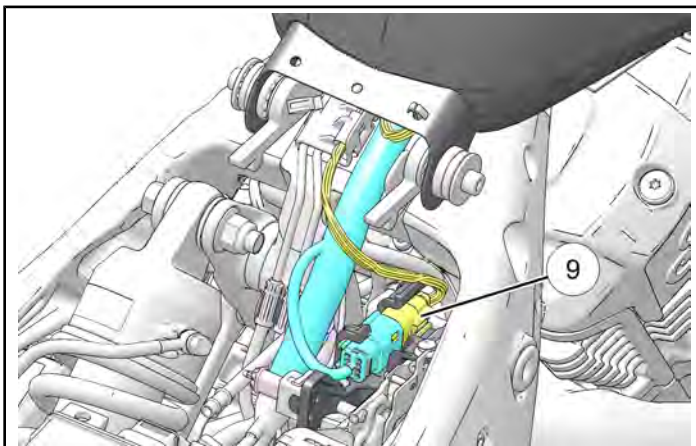
e. Disconnect the fuel feed line from the fuel rail.

⚠ CAUTION

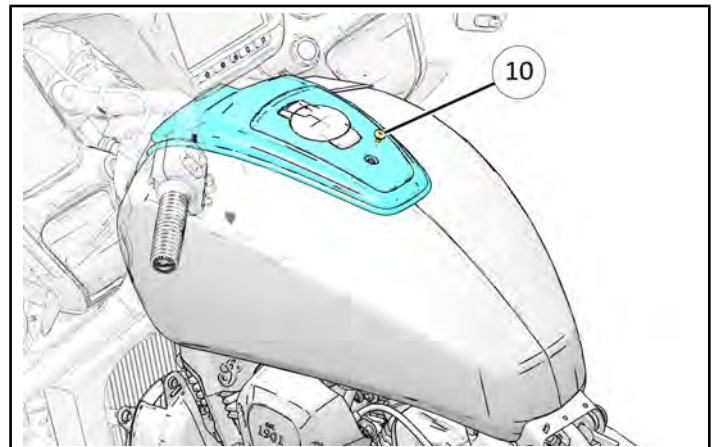
Do not use anything other than fingers to remove the quick connection. The use of tools can damage the connection.



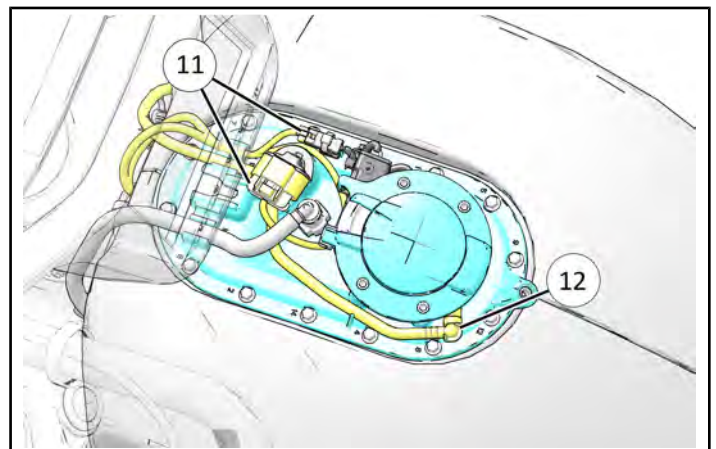
f. **2020 models only:** Disconnect the fuel pump electrical connector ⑨.



g. **2021 models only:** Remove fuel tank console by removing its fastener ⑩.

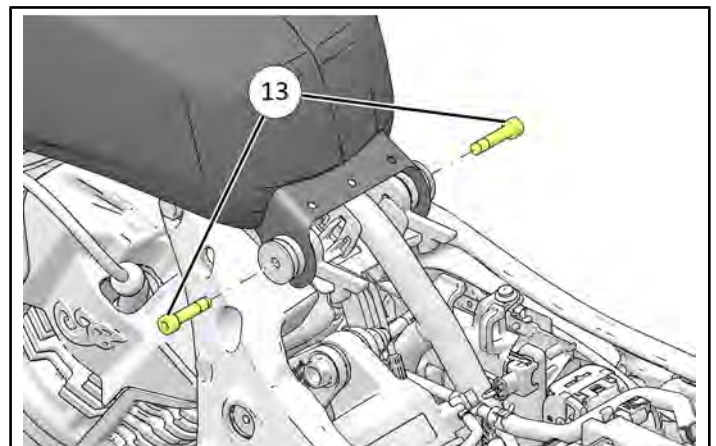


h. **2021 models only:** Disconnect fuel tank electrical connectors ⑪.



i. **If equipped,** Disconnect fuel vent line ⑫.

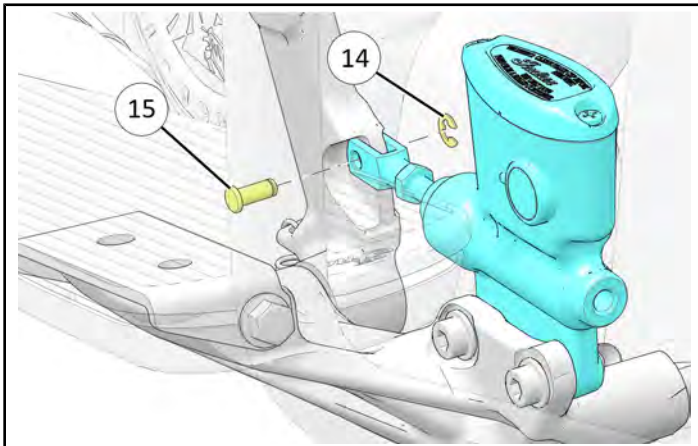
j. Remove fuel tank fasteners ⑬.



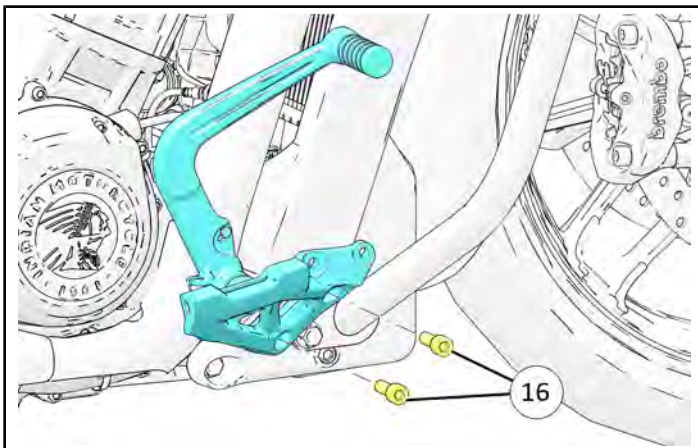
k. Lift rear of tank upward and pull rearward to remove.

4. Remove right floorboard.

- a. Remove rear master cylinder cotter pin ⑭ and pivot pin ⑮.

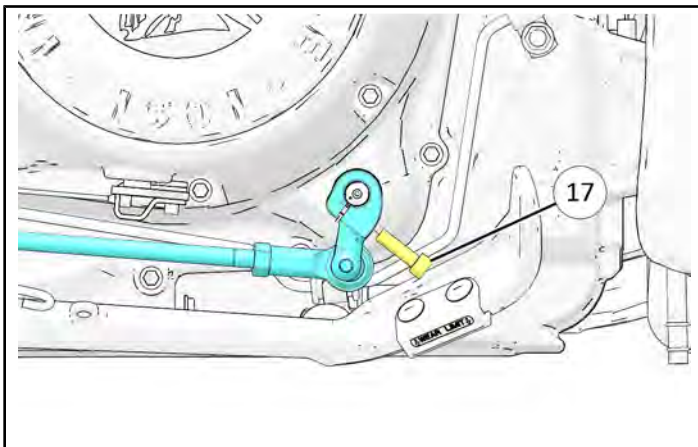


- b. Remove the fasteners ⑯ securing the floorboard bracket.

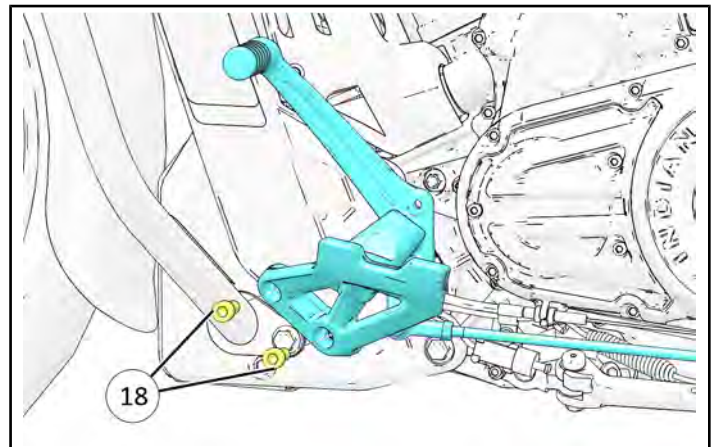


5. Remove left floorboard.

- a. Remove fastener ⑰ securing shift lever.

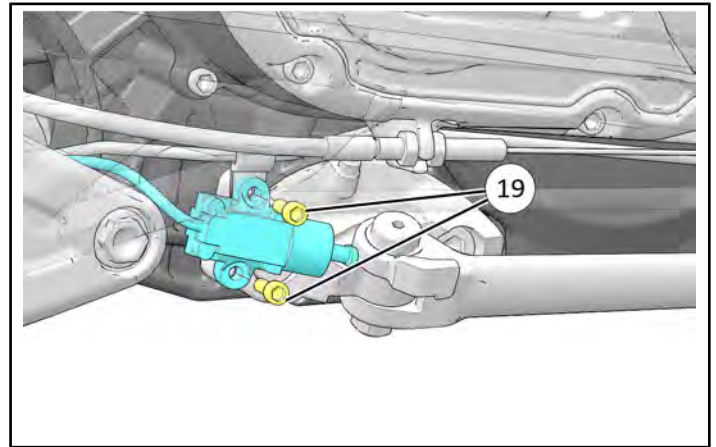


- b. Remove the fasteners ⑱ securing the floorboard bracket.

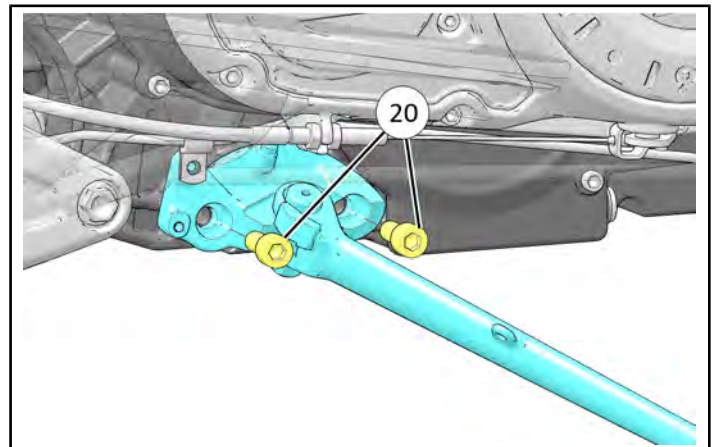


6. Remove the side stand and switch.

- a. Carefully remove the sidestand spring.
b. Remove the two fasteners ⑲ securing the sidestand switch.

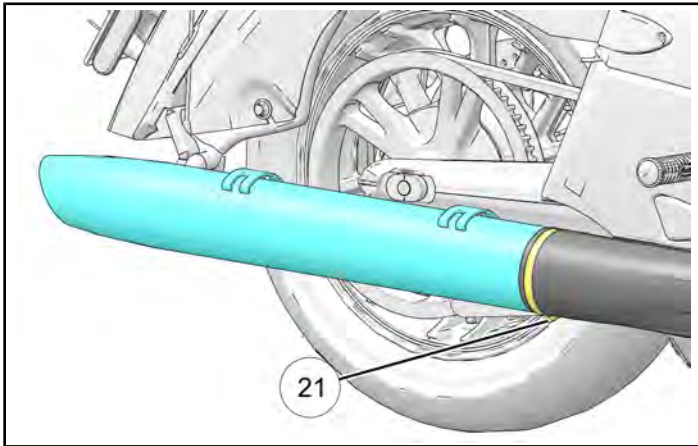


- c. Place the sidestand in the down position and remove sidestand mount fasteners ⑳.

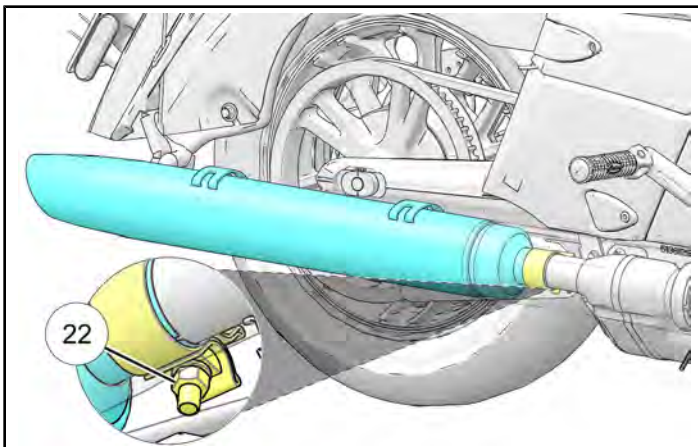


7. Remove exhaust.

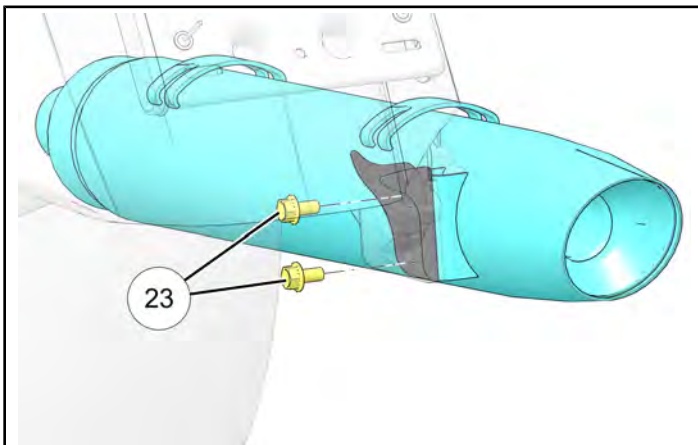
a. Loosen heatshield clamp ⑳.



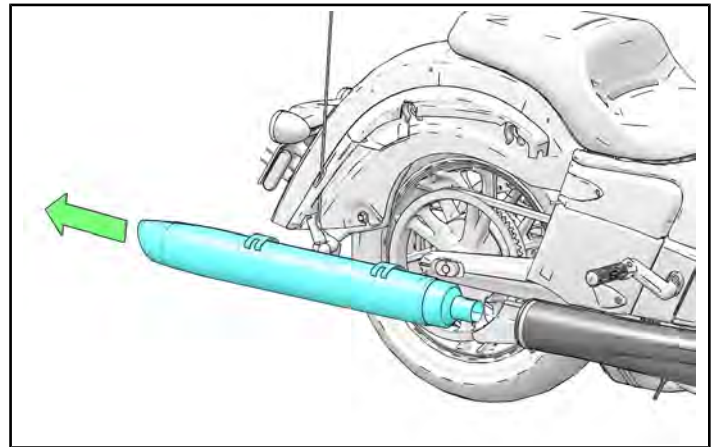
b. Loosen muffler clamp ㉑.



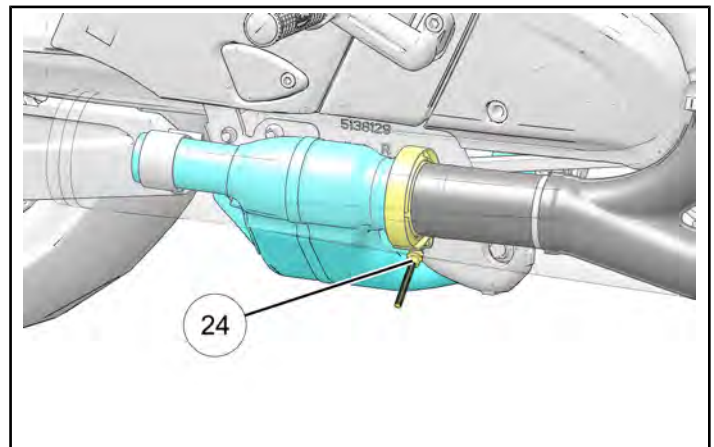
c. Remove muffler fasteners ㉒.



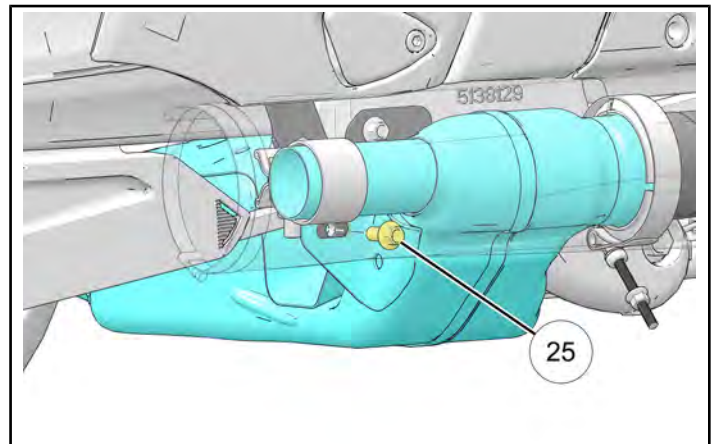
d. Remove muffler.



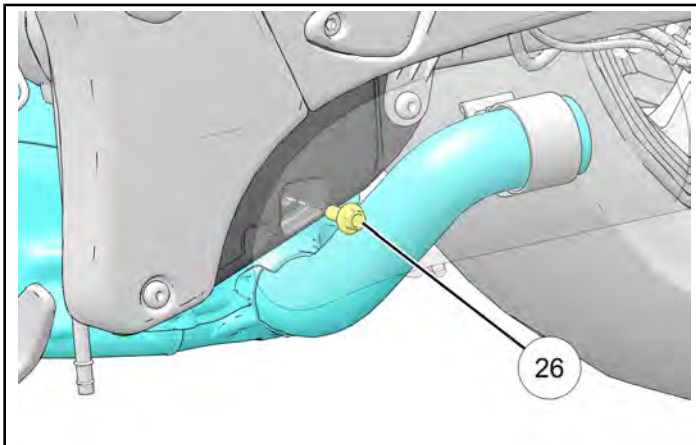
e. From underneath the right heatshield, loosen the exhaust clamp ㉔. Note orientation of clamp for reassembly.



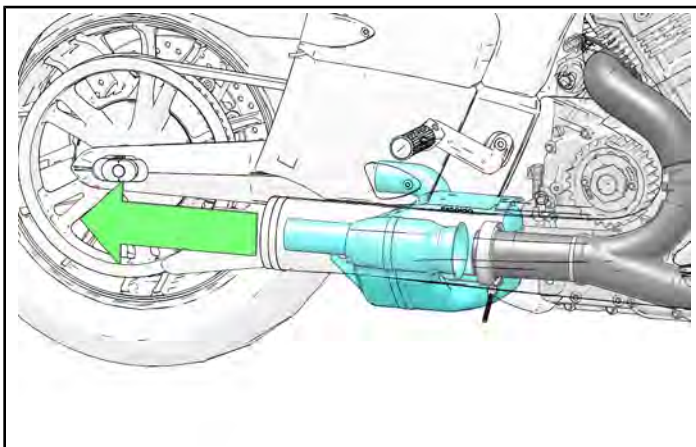
f. From the right side, remove the resonator mount fastener ㉕.



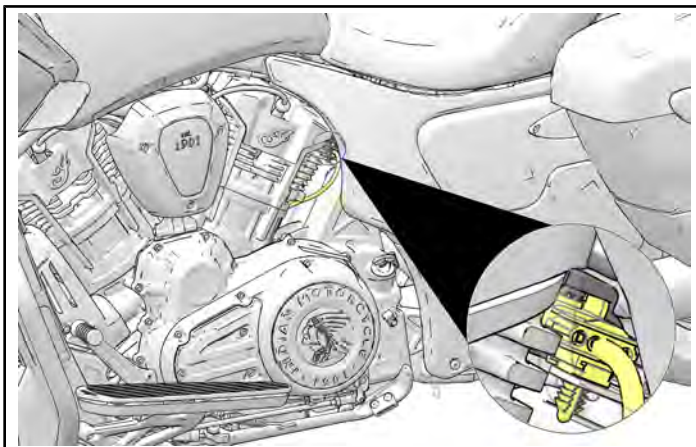
- g. From the left side, remove the remaining resonator mount fastener ⑳.



- h. Move the resonator rearward and remove.



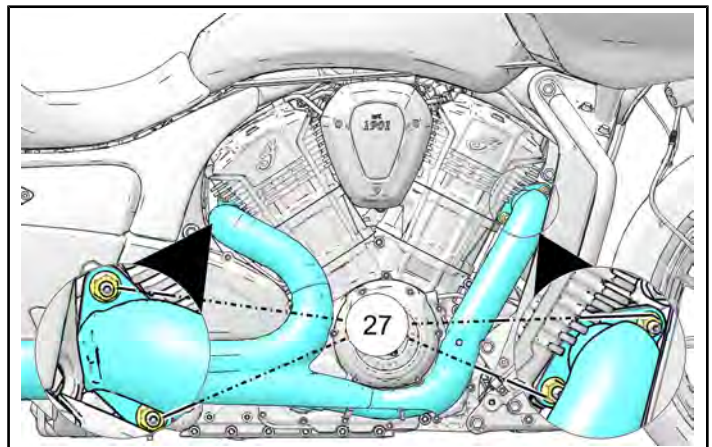
- i. From the left side of the unit, disconnect the rear cylinder oxygen sensor electrical connector.



NOTICE

The front cylinder oxygen sensor electrical connector can be disconnected while removing the headpipe.

- j. Remove headpipe nuts ㉑.

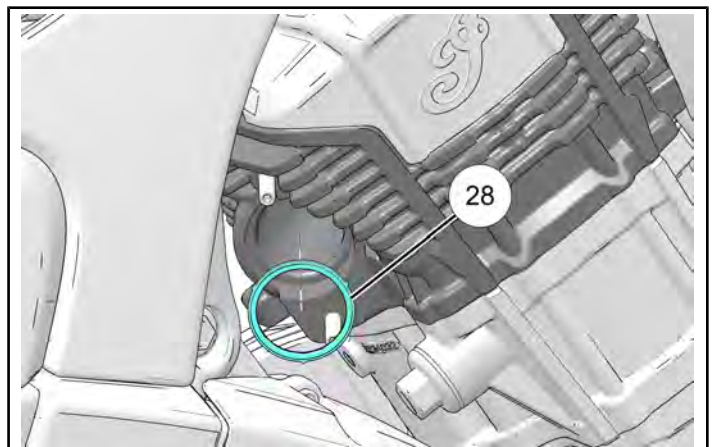


- k. Carefully remove headpipe.

IMPORTANT

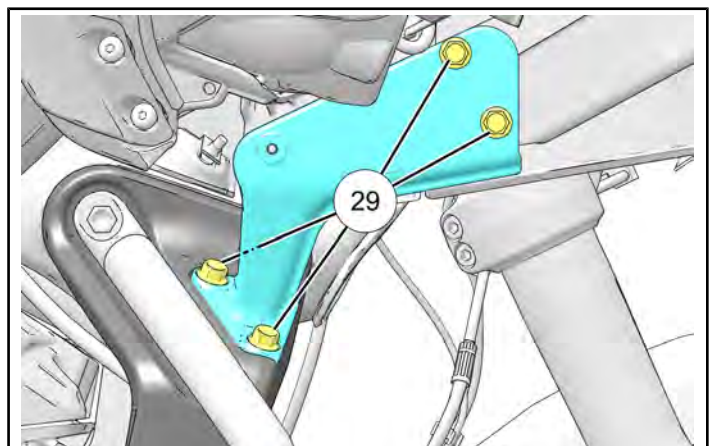
Be sure to disconnect the remaining oxygen sensor electrical connector during removal.

- l. Remove and inspect the headpipe gasket ㉒ for damage and replace if necessary.

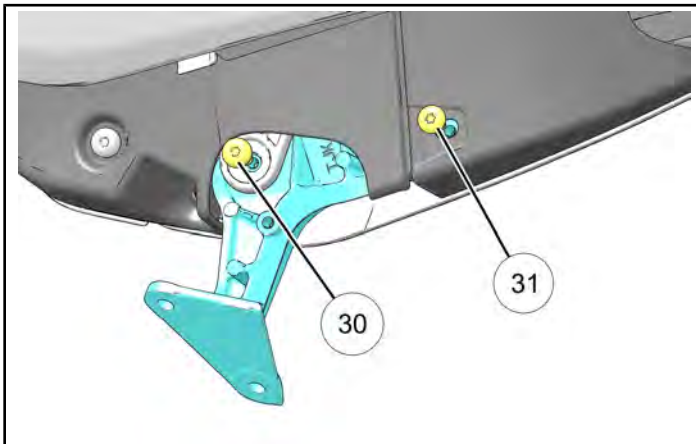


8. Loosen radiator and remove both down casts.

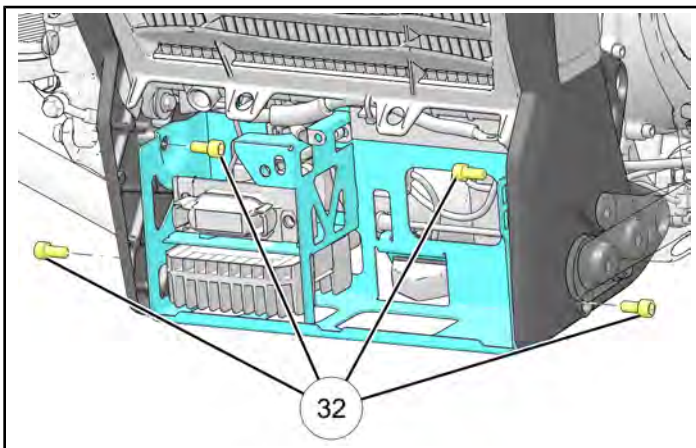
- a. Remove lower fairing bracket fasteners ㉓. Repeat step for opposite side.



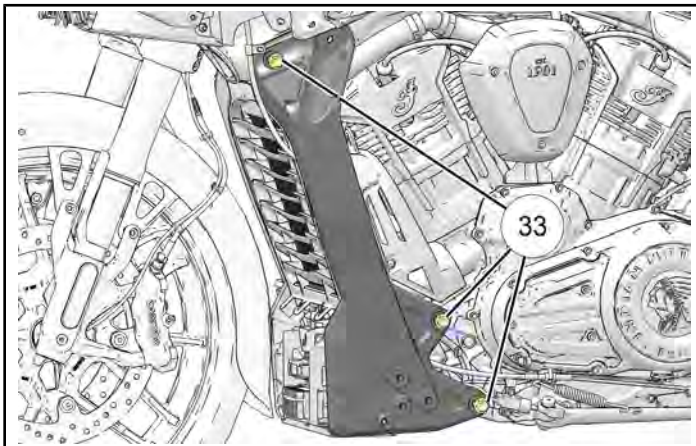
b. On the inside of the fairing bracket, remove the speaker assembly fastener ③①, and the dash closeout fastener ③①. Remove the bracket.



c. Remove battery box fasteners ③②.



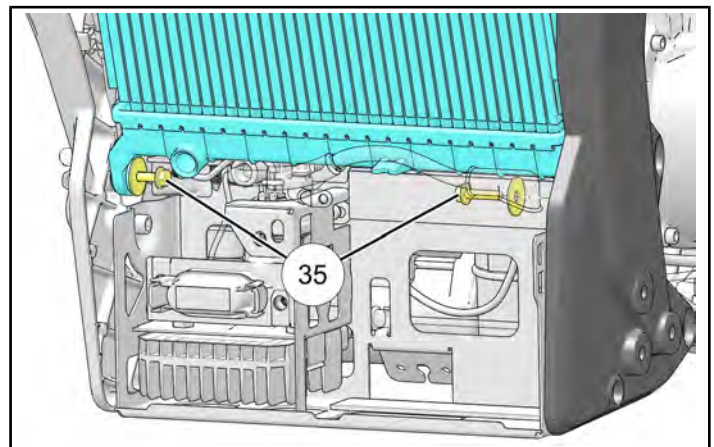
d. Remove downcast fasteners ③③.



e. Remove fairing louver by removing its fasteners ③④.

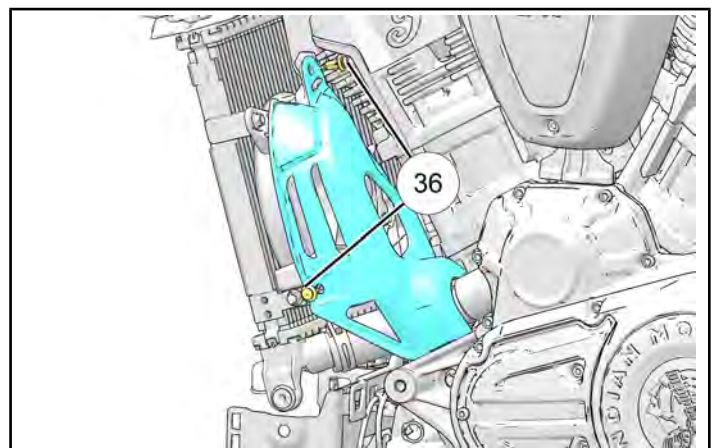


f. Remove radiator fasteners ③⑤.

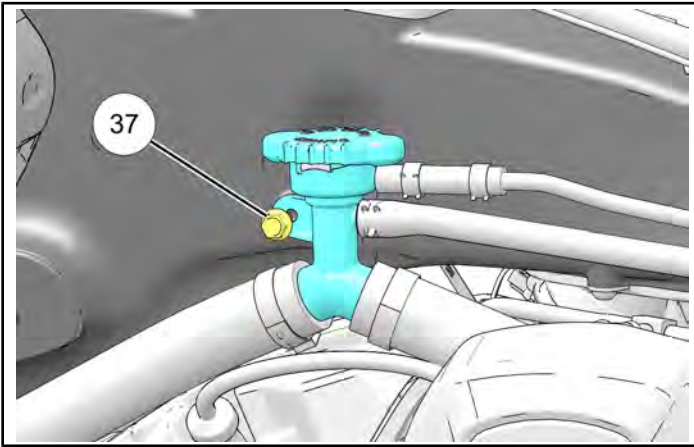


g. Remove both frame downcasts.

h. Remove fan shroud by removing two push pins ③⑥.

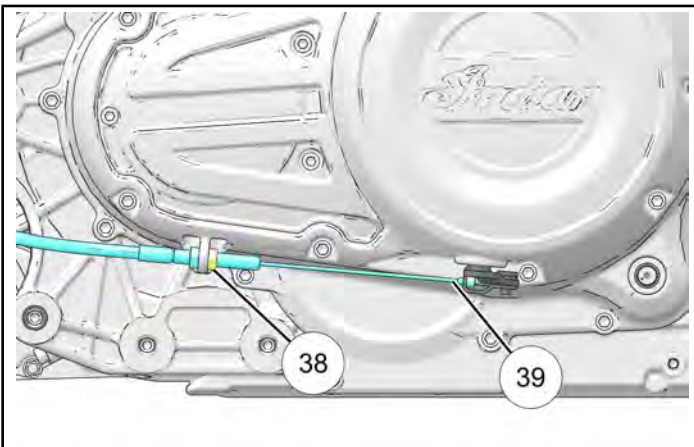


9. Remove radiator filler neck from chassis by removing its fastener ③⑦.



10. Disconnect clutch cable.

a. Loosen the clutch cable jam nut



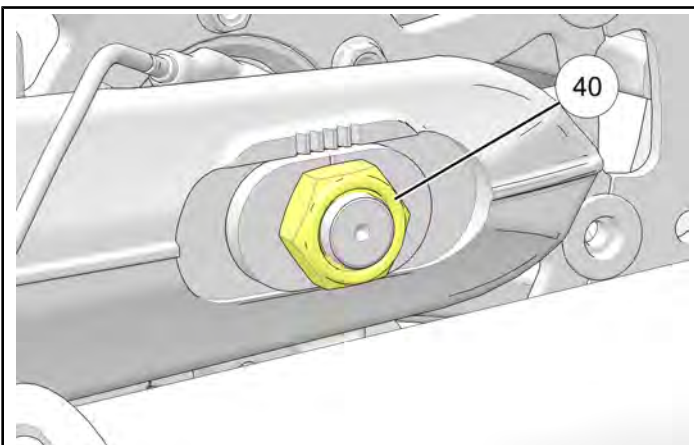
b. Disconnect the clutch cable ③⑨ from the clutch pinion.

c. Remove clutch cable from primary cover.

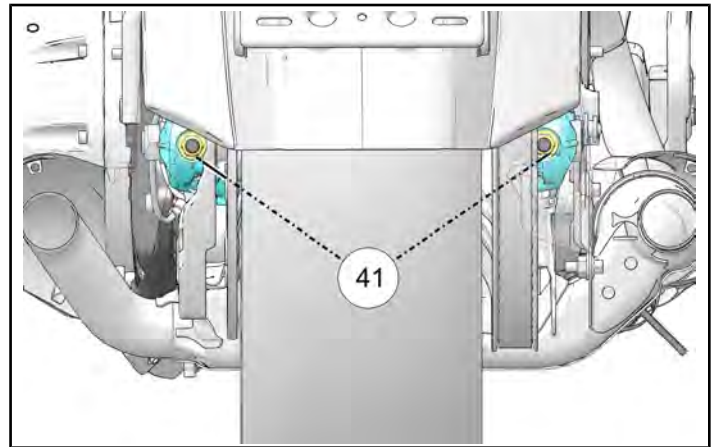
11. Loosen axle nut and belt tensioner.

a. Make note of adjuster locations.

b. Loosen axle nut ④⑩ then tighten to **15 ft-lbs (20 Nm)**.

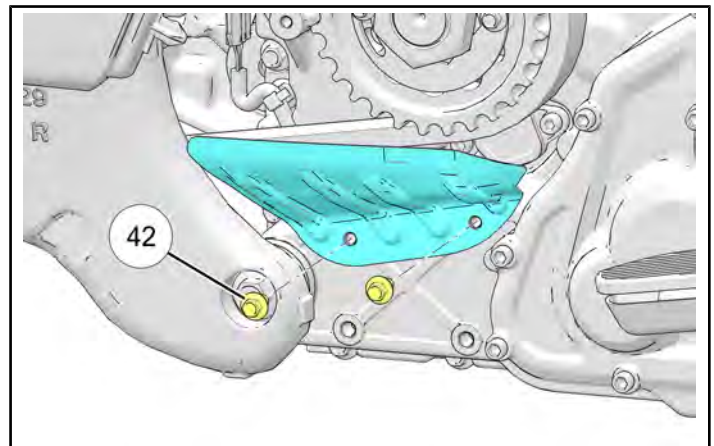


c. Loosen right and left axle adjusters ④①.

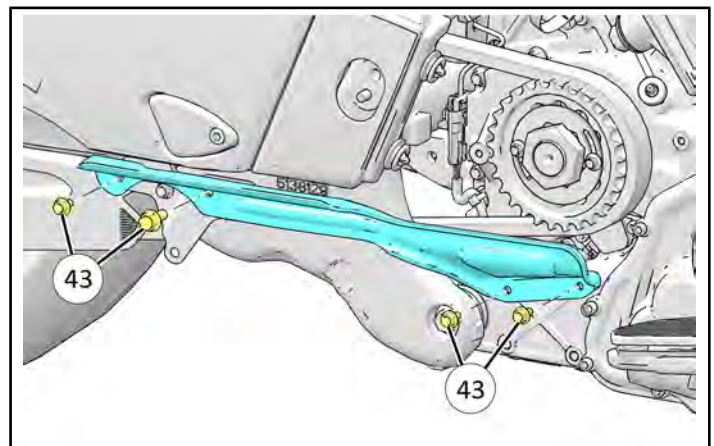


12. Remove drive belt cover and lower belt guard, then remove the belt from the sprocket.

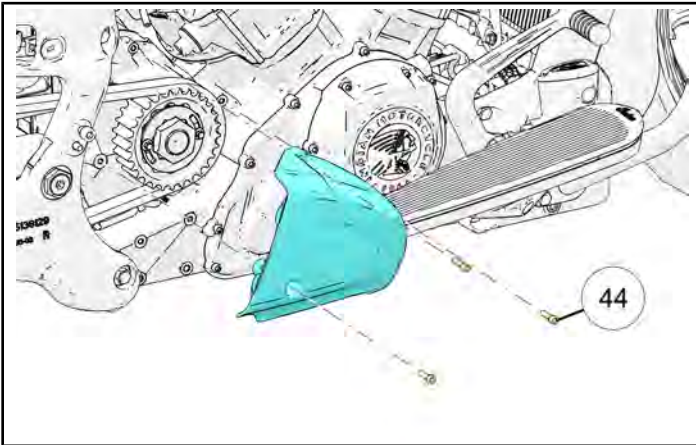
a. 2020 Models: Remove the belt shield by removing its fasteners ④②.



2021 Models: Remove the transmission shield by removing its fasteners ④③.

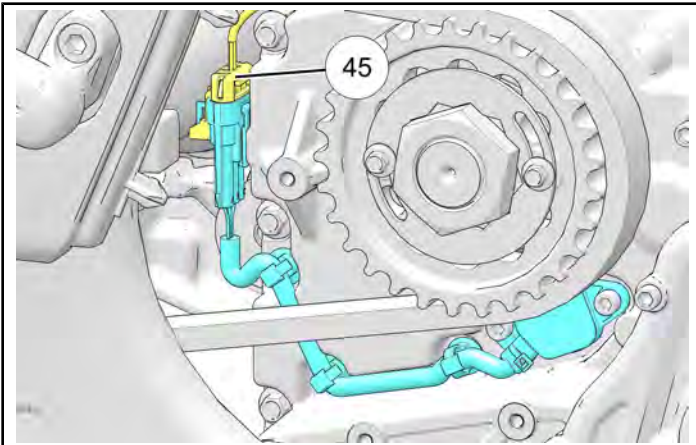


b. Remove fasteners ④④ securing the cover to the engine.



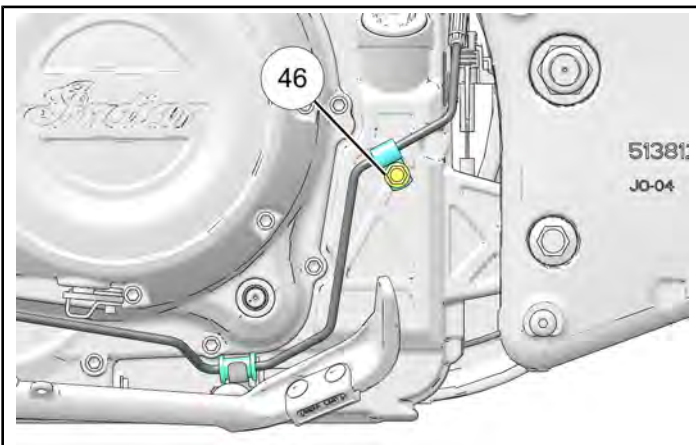
c. Remove belt from the drive sprocket. Belt does not need to be removed from the driven sprocket.

13. Disconnect gear position switch electrical connection ④⑤ .

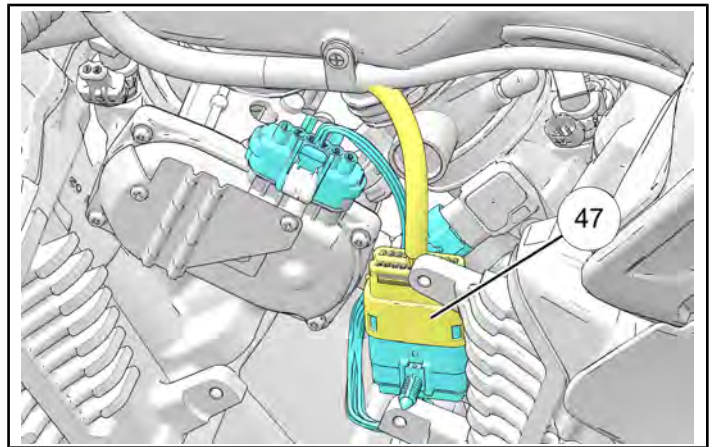


14. Slide Belt off of drive sprocket.

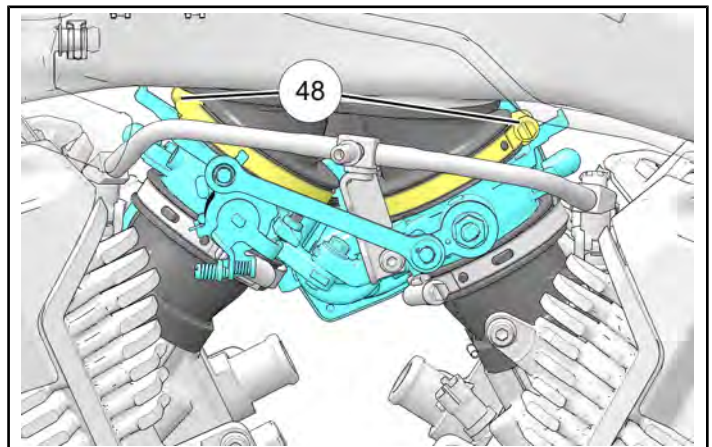
15. Remove brake line fastener ④⑥ .



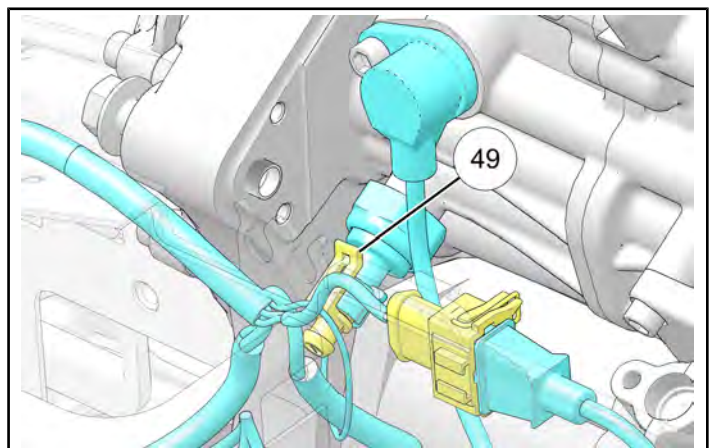
16. Disconnect chassis connector ④⑦.



17. Loosen throttle body clamps ④⑧.

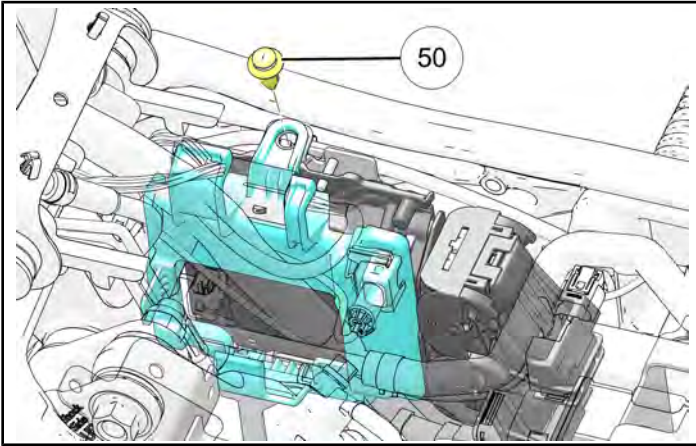


18. Near the battery box, disconnect the oil pressure switch ④⑨.

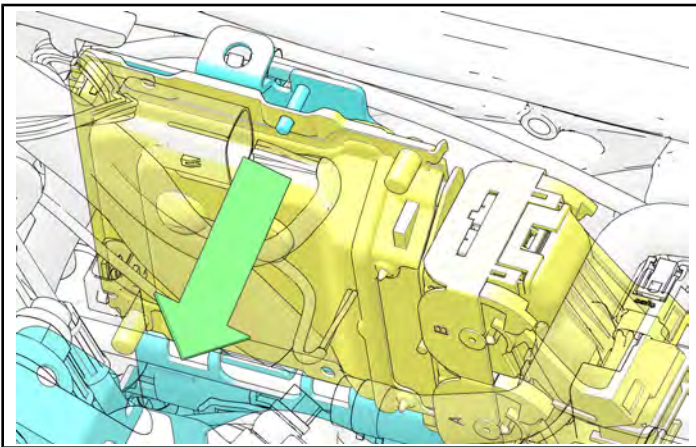


19. Remove the ECM.

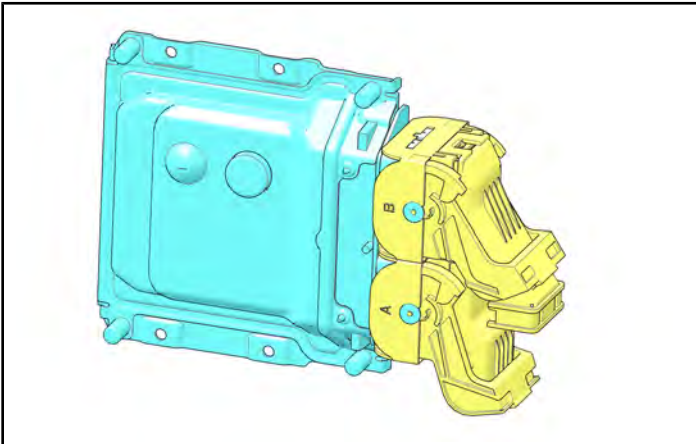
- a. Remove pushdart ⑤① retaining under-seat retention bracket and remove.



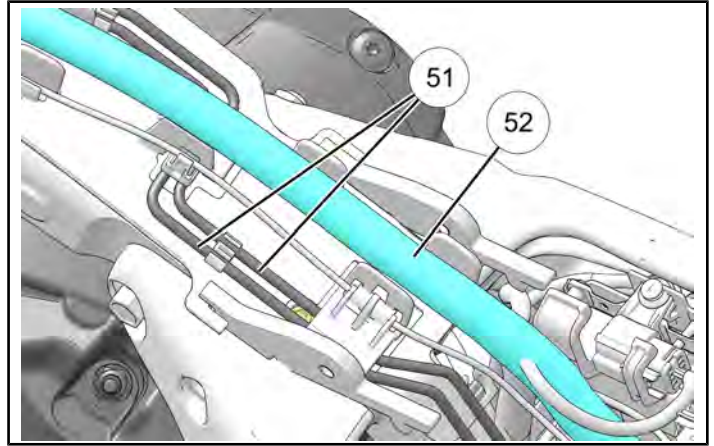
- b. Slide the ECM off of its pin.



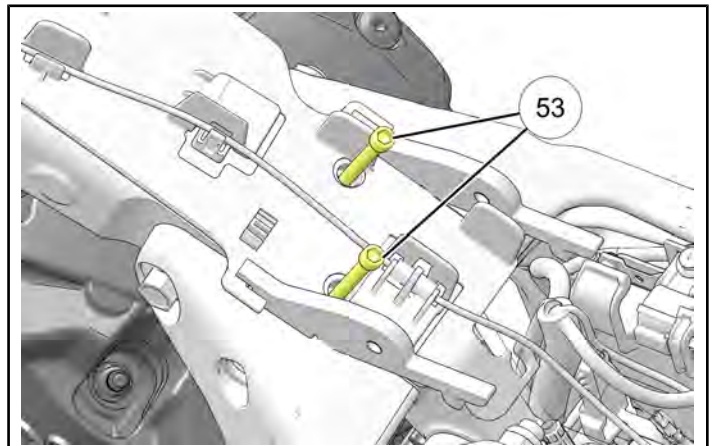
- c. Lift the ECM up and disconnect its electrical connections.



20. At the rear of the mainframe, move brake lines ⑤① and electrical harness ⑤② to expose fasteners beneath.

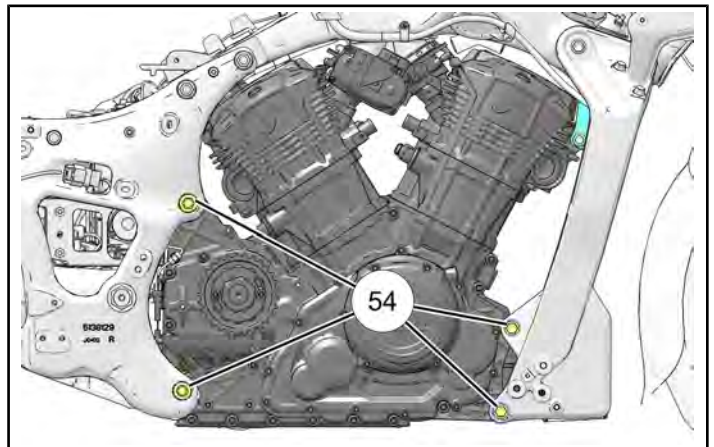


21. Remove fasteners ⑤③ securing mainframe to breather.

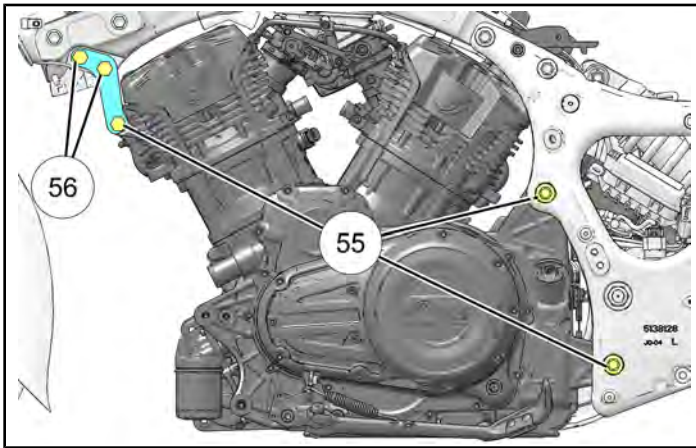


22. Remove engine mounts.

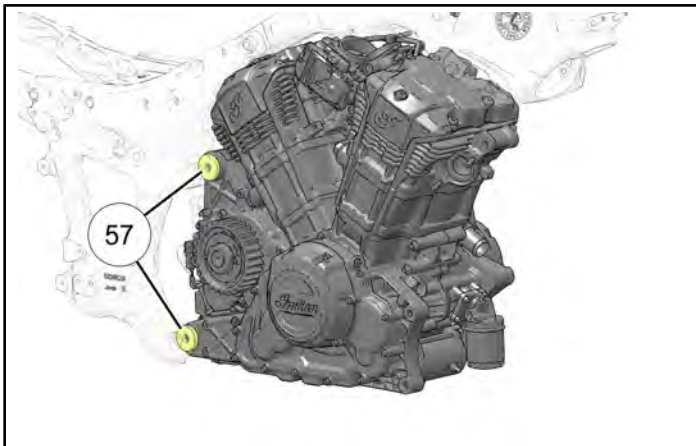
- a. Remove the right side engine fasteners ⑤④.



- b. Remove the engine mount remaining fasteners 55 on the left side.



- c. Remove upper cylinder head bracket by removing its fasteners 56.
- d. During removal, ensure to retrieve frame / engine spacers 57.



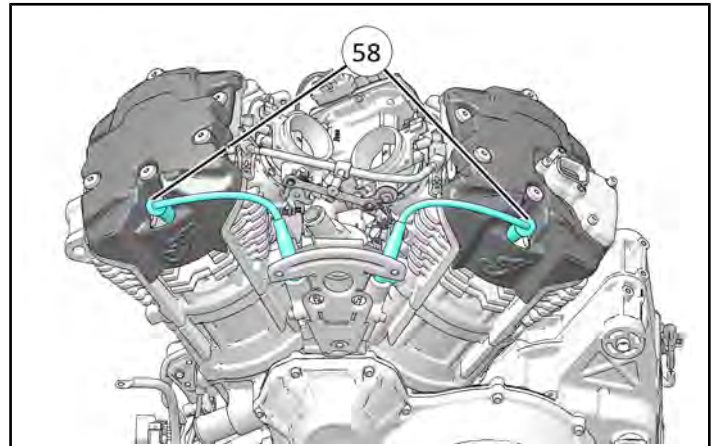
23. Lower the engine using the scissor jack and balance the engine on the jack. DO NOT completely separate the engine from the motorcycle.

IMPORTANT

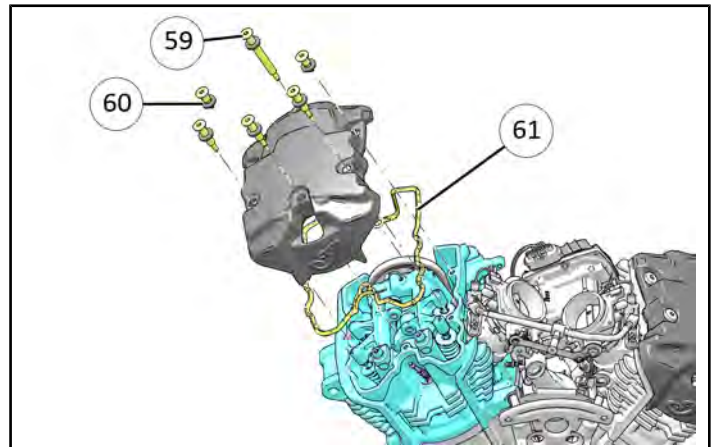
Radiator hoses and crankshaft sensor are still attached but there is enough slack to lower the engine to allow access to remove valve covers.

24. Remove valve covers.

- a. Unplug spark plug boots 58 from spark plugs.



- b. Remove valve cover fastener 59 and isolators 60.
- c. Remove valve cover gasket 61.



NOTICE

Inspect gasket for damage. Replace as needed.

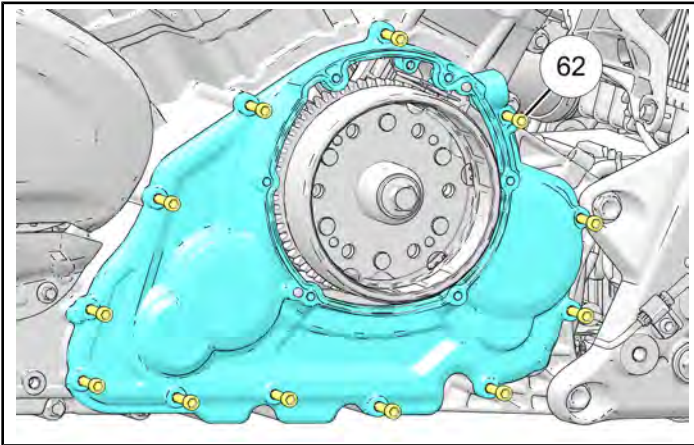
25. Lock the crankshaft for service.

- a. Remove the spark plugs.

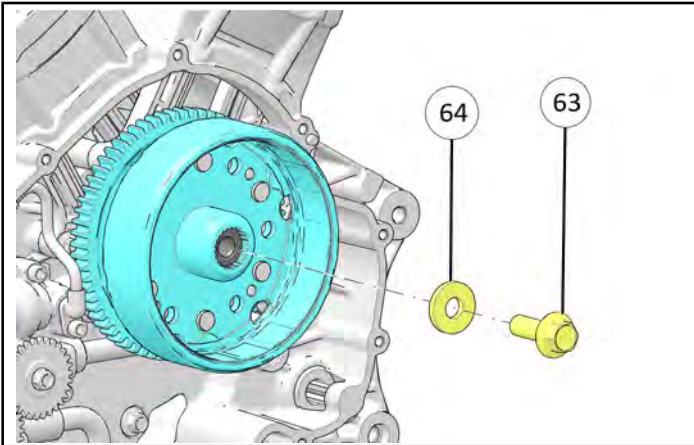
- b. Remove ACG cover by removing its fasteners ⑥2.

NOTICE

Inspect gasket for damage. Replace as needed.

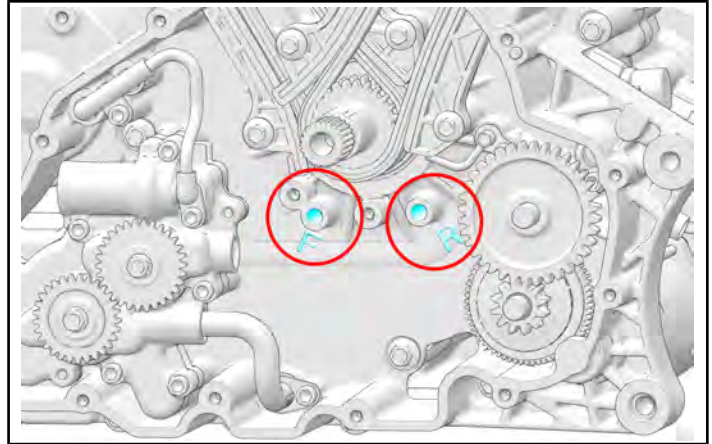


- c. Remove Flywheel by removing the flywheel bolt ⑥3 and washer ⑥4.



- d. Install flywheel bolt back into crankshaft.

- e. Lock the crankshaft by inserting crankshaft locking pin PF-52135 or a 5/16" pin punch (or equivalent) into the locking hole.



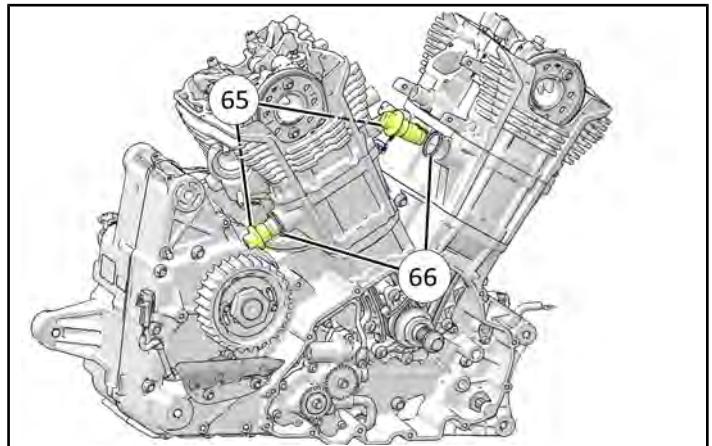
NOTICE

It may be necessary to rotate the crankshaft slight forward or back to properly align holes by turning the flywheel bolt.

26. Remove tensioners ⑥5 and sealing washers ⑥6.

NOTICE

Inspect sealing washer for damage. Replace as needed.

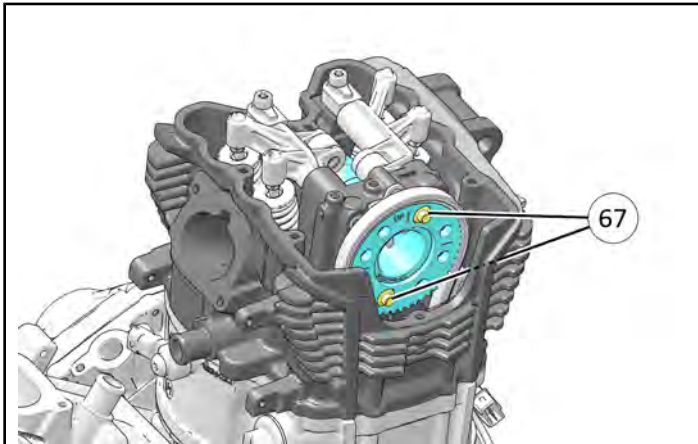


27. Remove the camshafts. To watch a video of this procedure, scan the QR code or click [HERE](#).

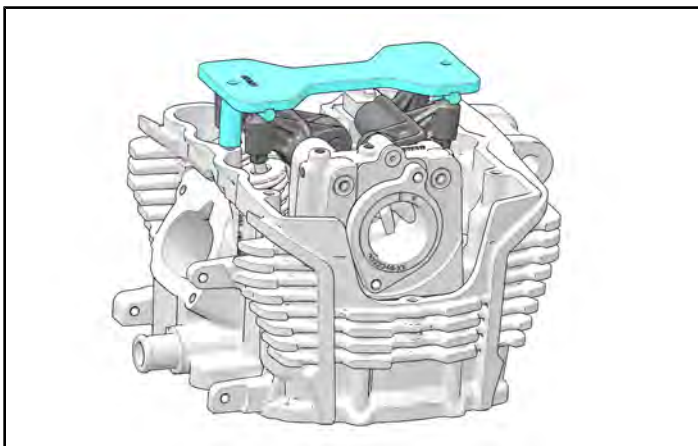


<https://vimeo.com/356900864/24d2b3c15a>

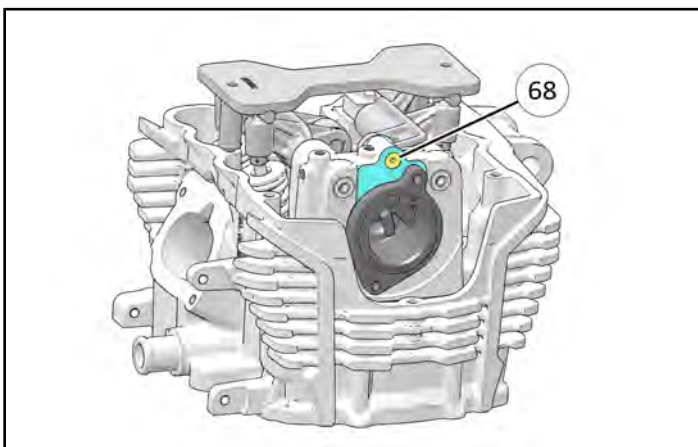
- a. Remove camshaft sprocket fasteners (67) and remove camshaft sprocket.



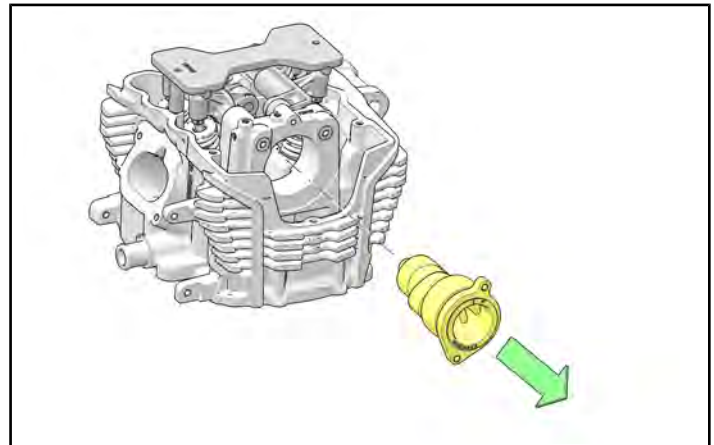
- b. Install the special tool PF-52939 onto the cylinder head as shown.



- c. Tighten the fasteners to compress the rocker arm assemblies.
- d. Remove the camshaft thrust plate by removing its fastener (68).



- e. Remove the camshaft.



INSTALL NEW CAMSHAFTS

- 1. Reverse procedure for installation.

IMPORTANT

Replace thrust plate screws with new screws during reassembly.

TORQUE

Camshaft Thrust Plate Fastener:
62 in-lbs (7 N·m)

TORQUE

Camshaft Sprocket Fastener
159 in-lbs (18 N·m)

TORQUE

Cam Chain Tensioner:
15 ft-lbs (20 N·m)

TORQUE

Flywheel fastener:
112 ft-lbs (152 N·m)

TORQUE

ACG Cover Fastener:
84 in-lbs (10 N·m)

TORQUE

Valve Cover Fastener:
84 in-lbs (10 N·m)

TORQUE

Engine Mount Fastener
45 ft-lbs (61 N·m)

TORQUE

Cylinder Head Mount Fastener
75 ft-lbs (102 N·m)

TORQUE

Breather Fastener:
84 in-lbs (10 N·m)

TORQUE

Throttle Body Clamp:
26 in-lbs (3 N·m)

TORQUE

Drive Sprocket Cover Fastener:
84 in-lbs (10 N·m)

TORQUE

Belt Shield Fastener (2020):
88 in-lbs (10 N·m)

TORQUE

Transmission Shield Fastener (2021):
88 in-lbs (10 N·m)

TORQUE

Rear Axle Nut:
65 ft-lbs (84 N·m)

TORQUE

Radiator Fill Nut Neck Fastener:
84 in-lbs (10 N·m)

TORQUE

Radiator Fastener:
84 in-lbs (10 N·m)

TORQUE

Fairing Louver Fastener:
36 in-lbs (4 N·m)

TORQUE

Downcast Fastener:
45 ft-lbs (61 N·m)

TORQUE

Battery Box Fastener:
18 ft-lbs (24 N·m)

TORQUE

Fairing Bracket Fastener:
18 ft-lbs (24 N·m)

TORQUE

Lower Fairing Bracket Fastener:
18 ft-lbs (24 N·m)

TORQUE

Dash Closeout Fastener:
36 in-lbs (4 N·m)

TORQUE

- Headpipe Nuts (2020):
- Torque front header nuts (starting with lower) to 7 ft-lbs (9 N·m)
 - Torque rear header nuts (starting with lower) to 7 ft-lbs (9 N·m)
 - Torque front header nuts (starting with lower) to 15 ft-lbs (20 N·m)
 - Torque rear header nuts (starting with lower) to 15 ft-lbs (20 N·m)

TORQUE

- Headpipe Nuts (2021+):
- Torque front header lower nut to 7 ft-lbs (9 N·m)
 - Loosen front header lower nut 720 degrees
 - Torque front header upper nut to 7 ft-lbs (9 N·m)
 - Torque rear header bottom nut to 7 ft-lbs (9 N·m)
 - Loosen front header lower nut 720 degrees
 - Torque rear header top nut to 7 ft-lbs (9 N·m)
 - Torque front header nuts (starting with lower) to 15 ft-lbs (20 N·m)
 - Torque rear header nuts (starting with lower) to 15 ft-lbs (20 N·m)

TORQUE

Resonator Mount Fastener:
18 ft-lbs (24 N·m)

TORQUE

Muffler Fastener:
18 ft-lbs (24 N·m)

TORQUE

Muffler Clamp:
40 ft-lbs (54 N·m)

TORQUE

Heatshield Clamp:
31 in-lbs (3 N·m)

TORQUE

Sidestand Fastener:

TORQUE

Sidestand Switch Fastener:

TORQUE

Floorboard Bracket Fastener:
35 ft-lbs (47 N·m)

TORQUE

Shift Lever Fastener:
84 in-lbs (10 N·m)

TORQUE

Fuel Tank Fastener:
18 ft-lbs (24 N·m)

TORQUE

Fuel Tank Console Fastener:
84 in-lbs (10 N·m)

TORQUE

V-Cover Fastener:
84 in-lbs (10 N·m)

TORQUE

Front Fender Fastener:
18 ft-lbs (24 N·m)

TORQUE

Outer Fairing Fastener:
36 in-lbs (4 N·m)

REPLACE VCM (KIT P/N 2885178 ONLY)

MODEL YEAR 2020 ONLY. IF MODEL YEAR 2021 OR NEWER, GO TO PAGE 17..

1. Remove VCM 1. Procedure can be located in service manual.

2. Install new VCM 1.

VEHICLE REASSEMBLY**GENERAL**

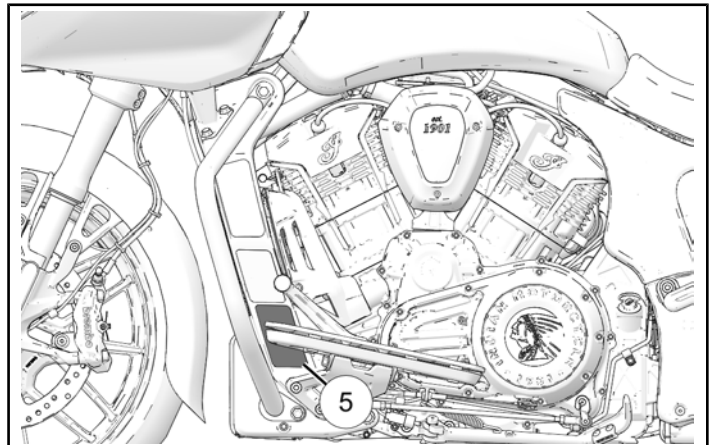
1. Fill and check oil level. Procedure can be found in owner's manual.
2. Reconnect battery. Procedure can be found in owner's manual.
3. Reinstall saddlebags, seat, and side covers. Procedure can be found in owner's manual.

APPLY LABEL AND UPDATE CONTROL MODULES**APPLY LABEL**

1. Install aftermarket exemption label ⑤ required by California Air Resource Board (CARB). To determine if motorcycle is a 50-State model, look for a California EVAP label on left hand down-tube frame. If label is on frame, apply new CARB exemption label ⑤ on left hand down-tube frame underneath EVAP label as shown.

IMPORTANT

Product information label is required to aid in passing California Smog Check Program

**MODEL YEAR 2020 REFLASH**

Model Year 2020 only, model year 2021 and newer skip to next section.

1. Connect the bike to Digital Wrench.
2. Perform the ECU Reprogramming / Reconfiguration Procedure using the included calibration card.

MODEL YEAR 2021 AND NEWER REFLASH

1. Connect the bike to Digital Wrench.
2. Perform Engine Controller Reprogramming using the included calibration card.

INSTRUCTION FEEDBACK FORM

A feedback form has been created for the installer to provide any comments, questions or concerns about the installation instructions. The form is viewable on mobile devices by scanning the QR code or by clicking [HERE](#) if viewing on a PC.

