



Accessory Fitting Instructions

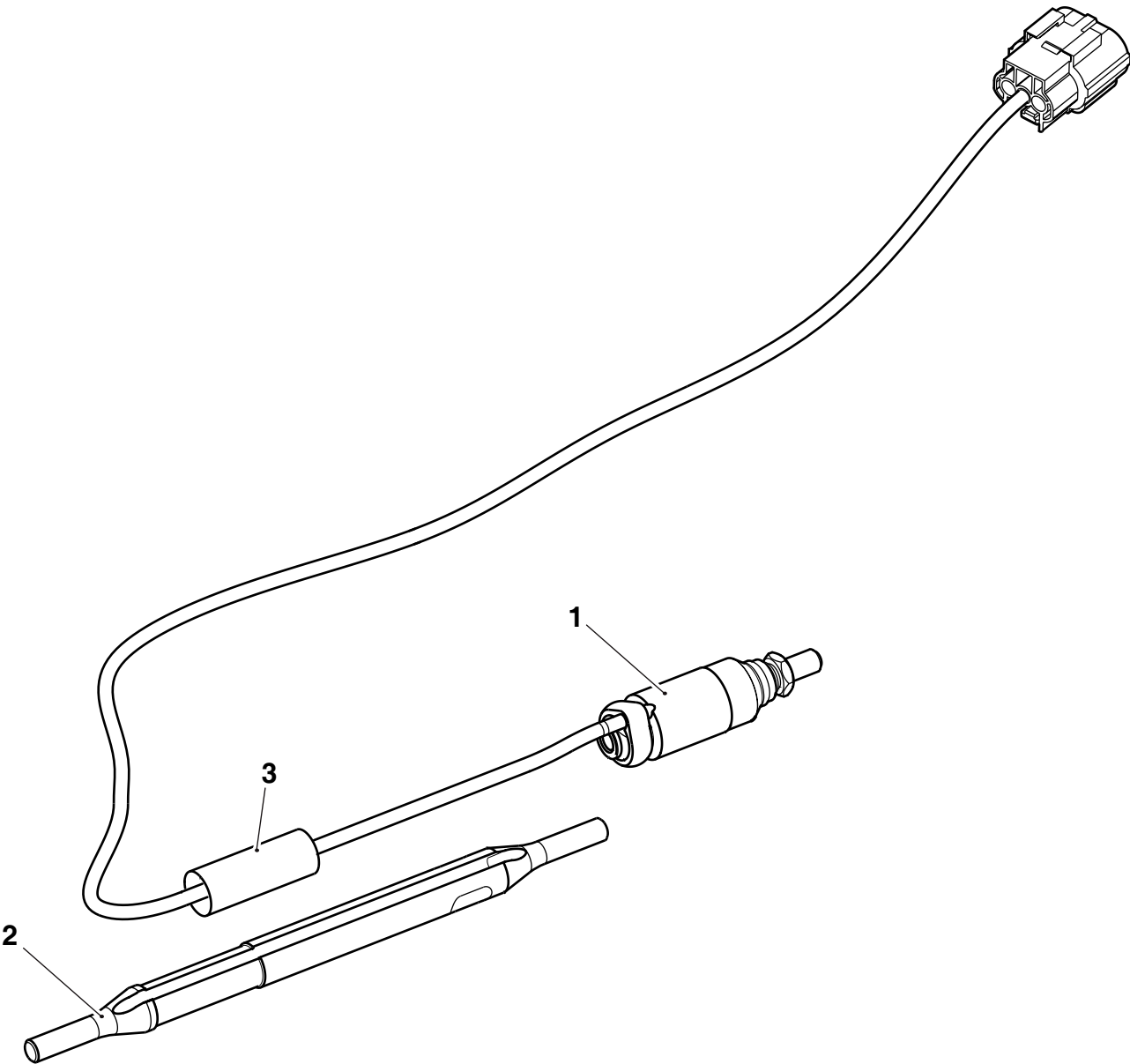
Triumph Shift Assist (TSA) Kit	
Kit Number	Models Affected
A9938783	Street Triple S 660cc from VIN 967907

Thank you for choosing this Triumph genuine accessory kit. This accessory kit is the product of Triumph's use of proven engineering, exhaustive testing, and continuous striving for superior reliability, safety and performance.

Completely read all of these instructions before commencing the installation of the accessory kit in order to become thoroughly familiar with the kit's features and the installation process.

These instructions should be considered a permanent part of your accessory kit, and should remain with it even if your accessory equipped motorcycle is subsequently sold.

Parts Supplied



1. TSA sensor	1 off	3. Rubber sleeve	1 off
2. Gear selector rod	1 off		



Warning

Fit only genuine Triumph accessories to those models approved by Triumph as listed in the associated Triumph fitting instructions. The accessory kits covered in this instruction are designed for use on specific models of Triumph motorcycle. The accessory kits and the models applicable are listed at the start of the instruction. They should never be fitted to any other Triumph model or to any other manufacturer's motorcycle. Fitting an accessory kit to a Triumph model not listed, or to any other manufacturer's motorcycle will affect the performance, stability and handling of the motorcycle. This may affect the rider's ability to control the motorcycle and could result in an accident causing severe injuries or death.



Warning

Always have Triumph approved parts, accessories and conversions fitted by a trained technician of an authorised Triumph dealer. The fitment of parts, accessories and conversions by a technician who is not of an authorised Triumph dealer may affect the handling, stability or other aspects of the motorcycle's operation which may result in loss of motorcycle control and an accident.



Warning

Throughout this operation, ensure that the motorcycle is stabilised and adequately supported to prevent risk of injury from the motorcycle falling.



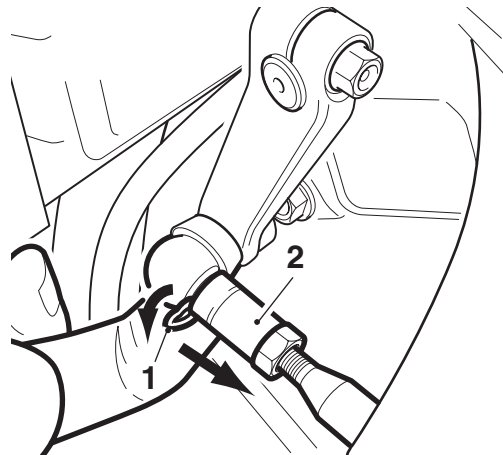
Warning

A torque wrench of known accurate calibration must be used when fitting this accessory kit. Failure to tighten any of the fasteners to the correct torque specification may affect motorcycle performance, handling and stability. This may result in loss of motorcycle control and an accident.

Note:

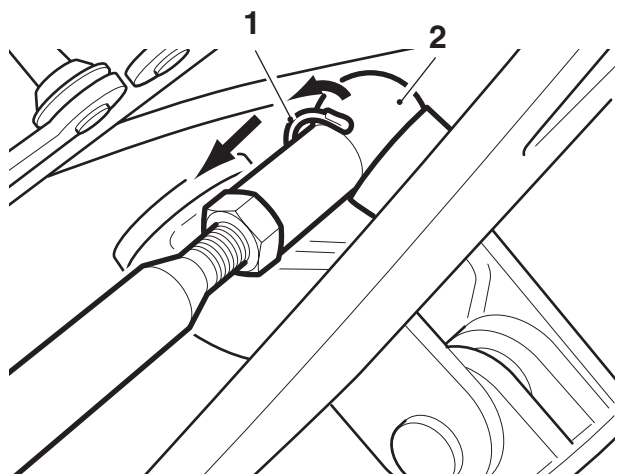
- Triumph offers a broad range of approved genuine accessories for your motorcycle. We cannot therefore cover all possible equipment variations in these instructions. For removal and installation of Triumph Genuine Accessories, always refer to the instructions supplied with the respective accessory kit. To obtain additional copies of any Triumph accessory instructions, visit www.triumphinstructions.com or contact your authorised Triumph dealer.

1. Remove the seat.
2. Disconnect the battery as described in the Service Manual.
3. Remove the fuel tank as described in the Service Manual.
4. Remove the wire clips retaining the original gear selector rod front and rear ball joints, as shown. Retain the wire clips for re-use.



FRONT

1. Wire clip
2. Ball joint



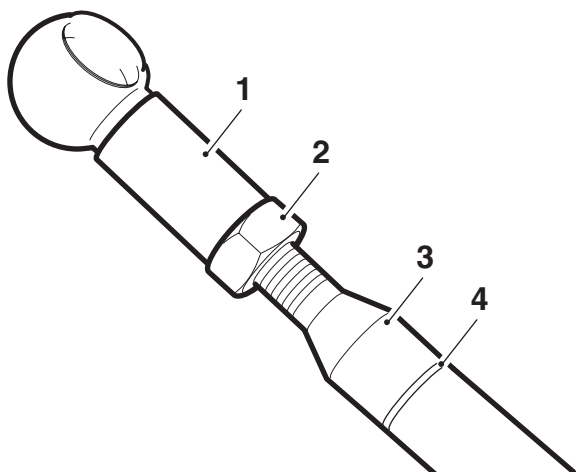
REAR

1. Wire clip
2. Ball joint

5. Remove the original gear selector rod from the motorcycle.

Note:

- **The ball joint and lock nut on the transmission linkage have a left hand thread. This is identified by a machined ring on the gear selector rod.**



1. Front ball joint
2. Lock nut
3. Gear selector rod
4. Machined ring, left hand thread identification

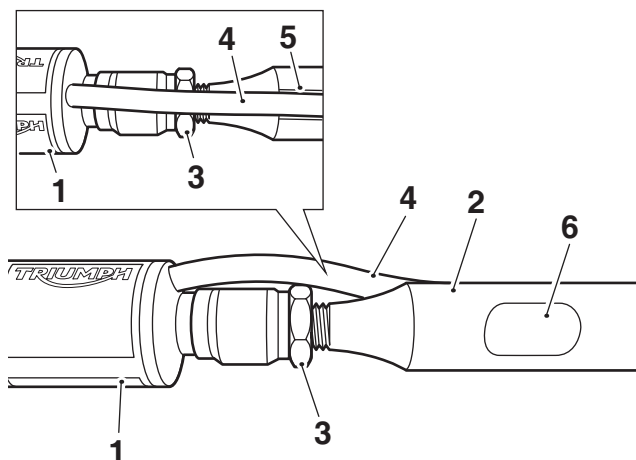


Caution

It may be difficult to remove the ball joints from the original gear selector rod. Do not use excessive force. If necessary, apply a releasing oil to the ball joints to aid removal.

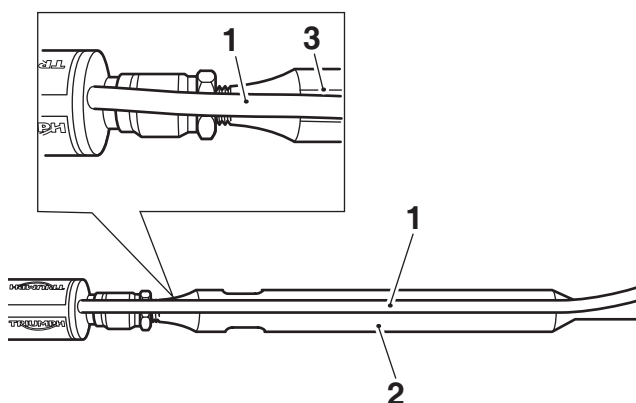
6. Remove the front and rear ball joints and lock nuts from the original gear selector rod. Retain the lock nuts and ball joints for re-use. Retain the gear selector rod if the motorcycle is to be returned to its original condition.
7. Remove the plastic end caps from the new gear selector rod.
8. Screw the lock nuts fully on to the new gear selector rod.

9. Fit the TSA sensor on to the gear selector rod, at the end of the rod which has the flat areas. Wind the TSA sensor fully on to the gear selector rod. Unwind the TSA sensor just enough to align the sensor cable with the slot in the gear selector rod.



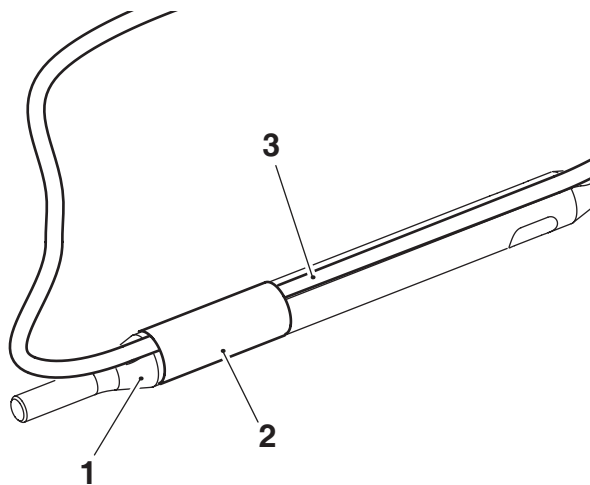
1. TSA sensor
2. Gear selector rod
3. Lock nut
4. TSA Sensor cable
5. Slot, gear selector rod
6. Flat area, gear selector rod

10. Tighten the gear selector rod lock nut back against the TSA sensor to **6 Nm**.
11. Carefully feed the TSA sensor cable in to the slot in the gear selector rod. Ensure the cable is located correctly along the full length of the gear selector rod, as shown.



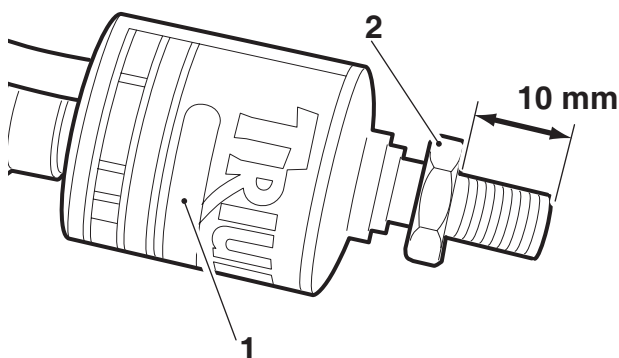
1. TSA sensor cable
2. Gear selector rod
3. Slot

12. Lubricate the rod with soapy water and fit the rubber sleeve over the sensor harness connector using a sleeve expansion tool. Slide the sleeve into the recess in the selector rod by hand to retain the sensor cable to the selector rod. Wipe away any excess fluid.



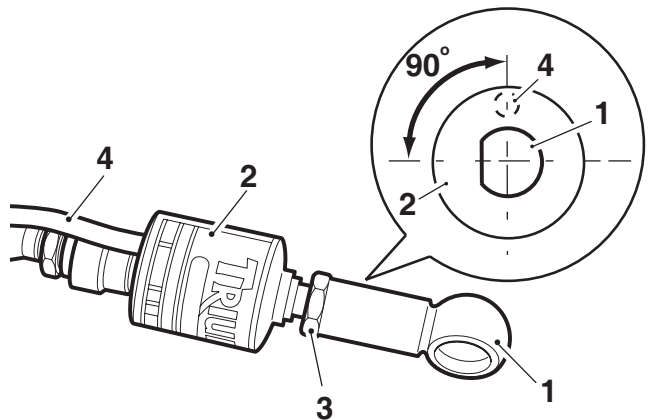
- 1. Gear selector rod
- 2. Rubber sleeve
- 3. TSA sensor cable

13. Remove the plastic end cap from the TSA sensor.
14. Screw the lock nut on to the rear of the TSA sensor (right hand thread) leaving 10 mm of thread exposed.



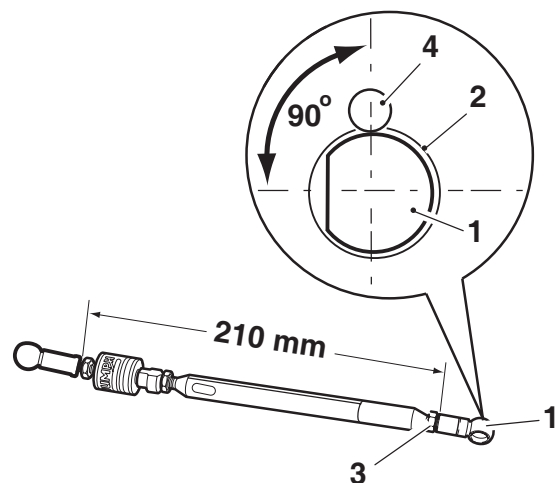
- 1. TSA assembly
- 2. Lock nut

15. Screw the rear ball joint (right hand thread) on to the rear of the TSA sensor until it contacts the lock nut. Unscrew the ball joint, only enough to achieve the correct orientation in relation to the TSA cable, as shown below. Finger tighten the lock nut at this stage.



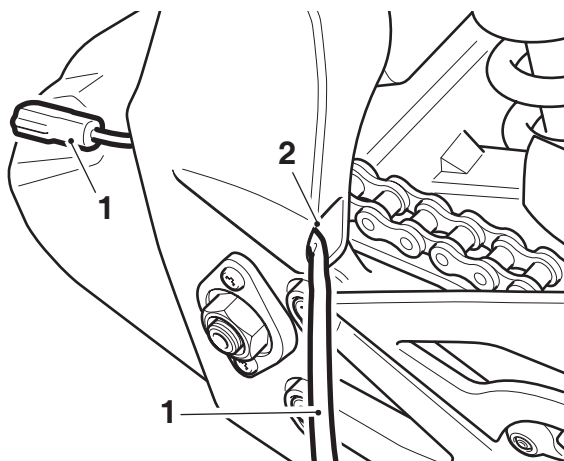
- 1. Ball joint
- 2. TSA assembly
- 3. Lock nut
- 4. TSA cable

16. Fit the lock nut and front ball joint (left hand thread) to the opposite end of the gear selector rod.
17. Screw the lock nut and ball joint on to the gear selector rod to achieve a dimension between the ball joint ends of 210 mm. Ensure that the ball joint is in the correct orientation to the TSA cable, as shown. Finger tighten the lock nut at this stage.



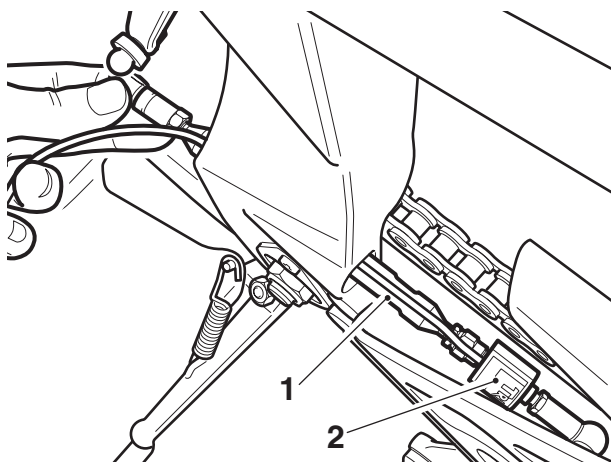
- 1. Ball joint
- 2. TSA assembly
- 3. Lock nut
- 4. TSA cable

18. Route the TSA cable through the gear selector rod aperture in the frame, as shown.



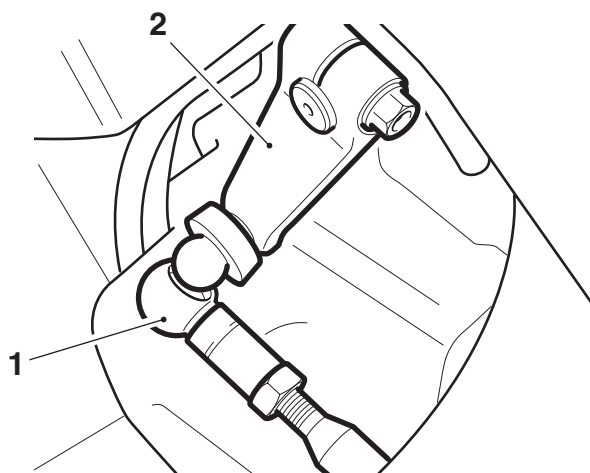
1. TSA cable
2. Gear selector rod aperture

19. Locate the TSA assembly in position, through the frame with the sensor at the rear and the cable at the top.



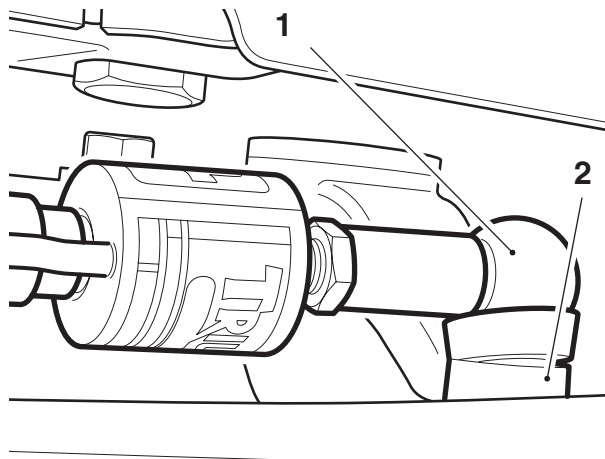
1. TSA assembly
2. Sensor

20. Attach the front ball joint to the transmission linkage.



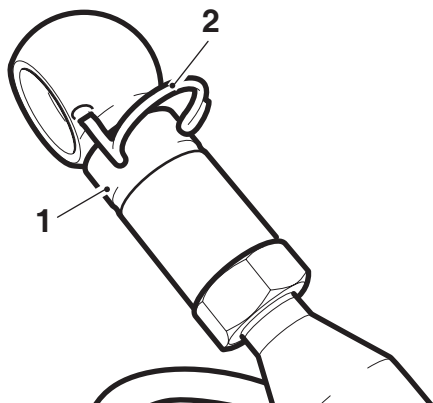
1. Ball joint
2. Transmission linkage

21. Attach the rear ball joint to the foot control.



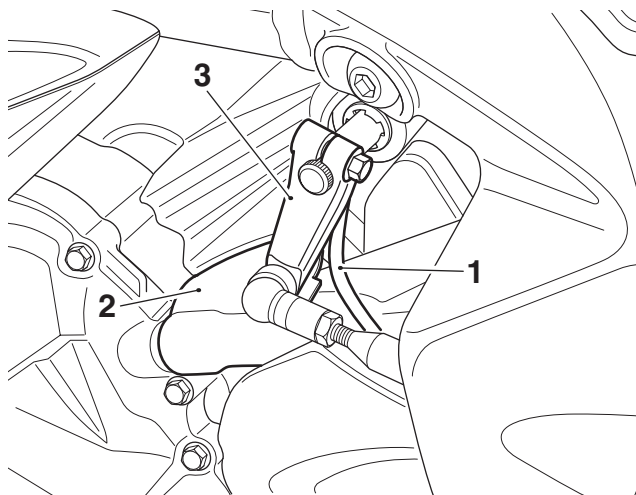
1. Ball joint
2. Foot control

22. Refit the wire clips to retain the ball joints. Ensure the wire clips locate correctly in the ball joints, before rotating the clips to lock in place.



1. Ball joint
2. Wire clip

23. Tighten both lock nuts on the TSA assembly to 6 Nm.
24. Route the cable past the finisher, behind the transmission linkage, up into the breather cover area below the seat.

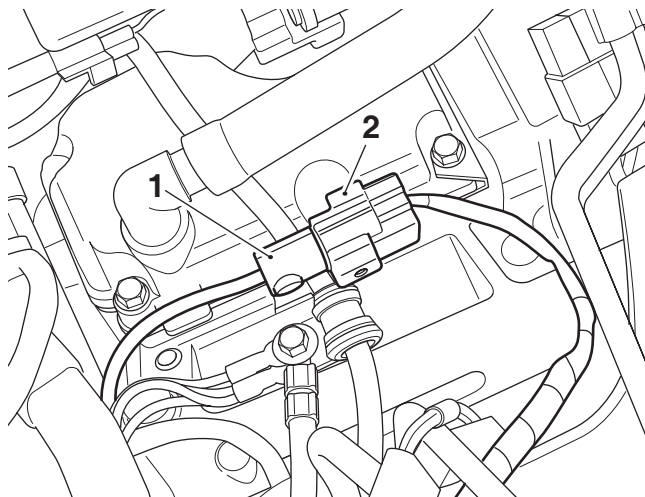


1. TSA cable
2. Finisher
3. Transmission linkage

Note:

- The main harness connector for the TSA is located next to the breather cover.

25. Remove the blanking plug from the main harness connector and plug in the TSA connector.



1. TSA connector
2. Main harness connector

26. Any excess cable is to be tucked into the space between the main frame and the crankcase.
27. Refit the fuel tank as described in the Service Manual.
28. Re-connect the battery as described in the Service Manual.
29. Refit the seat.
30. Enable the TSA using the Triumph Diagnostic Tool, as described in the Service Manual.
31. Start the engine and allow it to idle for several seconds to allow adoption of the shift force sensor.
32. Ride the motorcycle for 10 seconds in each gear to enable the gear position sensor to adapt. The adaption status can be checked using the Triumph Diagnostic Tool.

Adjusting the Gear Pedal Angle



Caution

When adjusting the gear pedal angle do not remove the TSA ball joints from either the transmission linkage or foot control. If the ball joints are removed from either the transmission linkage or foot control when adjusting the gear pedal angle the adjustment setting of the TSA assembly could be compromised which may result in a TSA malfunction.

Note:

- **If it is necessary to adjust the gear pedal angle at any point after fitting the TSA, follow the steps below.**
33. Remove the seat.
 34. Disconnect the battery as described in the Service Manual.
 35. Remove the fuel tank as described in the Service Manual.
 36. Unplug the TSA connector from the main harness connector and release the cable.
 37. Loosen both ball joint lock nuts on the TSA assembly.
 38. Turn the TSA assembly to achieve the desired pedal angle. Note, the TSA assembly must be turned in complete revolutions to ensure the TSA cable is positioned at the top.
 39. Continue from step 23.

Operational instructions:



Caution

In the event of a TSA system fault when riding, the TSA system will be disabled.

Use the clutch to change gears in the normal way otherwise damage to the engine or gear box may occur.

Contact a Triumph dealer as soon as possible to have the fault checked and rectified.



Caution

Changing gears must be completed with a quick and forceful pedal movement, making sure that the pedal moves through its full range of travel.

Always take care when changing gears. After a gear change, the pedal must be fully released before another gear change can be made.

Incorrect gear changes can cause damage to the engine and transmission.

Triumph Shift Assist (TSA) adjusts the engine torque to allow gears to engage, without closure of the throttle twist grip or operation of the clutch.

TSA is not an automatic system for changing gears. Gears must be selected and changed in the normal way using the gear pedal as described in the Changing Gears section in the owner's handbook.

TSA works for both up shifts and down shifts of gear. The clutch must be used for stopping and pulling away. The clutch must be used when selecting any gear from neutral, and also when selecting neutral from any other gear.

Triumph Shift Assist will not operate if:

- The clutch is applied.
- An up shift is attempted by mistake when in 6th gear.
- A down shift is attempted by mistake when in 1st gear.
- An up shift is attempted at very low engine speeds.
- A down shift is attempted at very high engine speeds.
- An up shift is attempted during overrun.
- The vehicle speed limiter is active.
- Cruise control is active.
- Traction control is operating.
- If the previous gear has not fully engaged.
- The throttle is changed during a shift.

If TSA does not operate, the clutch can be used to change gears in the normal way.

For more information on enabling and disabling the Triumph Shift Assist functionality, see the Triumph Shift Assist section in the Instrument chapter of the owner's handbook.



Warning

If, after fitting this accessory kit, you have any doubt about the performance of any aspect of the motorcycle, contact an authorised Triumph dealer and do not ride the motorcycle until the authorised dealer has declared it fit for use. Riding a motorcycle when there is any doubt as to any aspect of the performance of the motorcycle may result in loss of motorcycle control and an accident.



Warning

Never ride an accessory-equipped motorcycle at speeds above 80 mph (130 km/h).

The presence of accessories will cause changes in the stability and handling of the motorcycle. Failure to allow for changes in motorcycle stability may result in loss of motorcycle control and an accident.

Remember that the 80 mph (130 km/h) limit will be reduced by the fitting of non-approved accessories, incorrect loading, worn tyres, overall motorcycle condition and poor road or weather conditions.



Warning

The motorcycle must not be operated above the legal road speed limit except in closed-course conditions.



Warning

Only operate this Triumph motorcycle at high speed in closed-course, on-road competition or on closed-course racetracks. High-speed operation should only be attempted by riders who have been instructed in the techniques necessary for high speed riding and are familiar with the motorcycle's characteristics in all conditions.

High-speed operation in any other circumstances is dangerous and may result in loss of motorcycle control and an accident.