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Clutch (08.00)

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Clutch (08.00)

Clutch Assembly (08.01)

Description

The clutch assembly consists of a balanced flywheel, a clutch driven plate and a clutch cover.

The clutch is a single plate, diaphragm spring type assembly.

A concentric clutch slave cylinder is mounted around the first motion shaft in the torque tube bell housing.

The clutch master cylinder is mounted on the engine bulkhead and is operated directly by the clutch pedal.

A hydraulic connection from the master cylinder feeds pressurised fluid to the slave cylinder. The slave cylinder has an extension tube and bleed nipple extending from the left side of the bell housing for bleeding the system after any major work.

Specifications

Clutch Fluid

Castrol/Girling Universal Brake and Clutch fluid.

Clutch Assembly

Clutch and flywheel are separately balanced.

Clutch Plate

Single 267mm driven plate.

Torque Figures

Description	Nm	lb/ft
Flywheel Bolts	100 - 120	74- 88.5
Tighten the bolts in sequence. Loosen the bolts and then torque, in even stages, in the same sequence.		
Clutch Bolts	65-75	48-55
Tighten x6 equally-spaced bolts, in-turn, to pull-down the clutch evenly. Then torque all bolts in sequence.		
Starter Motor Bolts	42.5- 57.5	31.5- 42.5

Maintenance

Clutch and Flywheel Assembly-Renew

Repair Operation Time (ROT)	
Item	Code
Clutch and Flywheel Assembly-Renew	08.00.AA

Removal

1. Disconnect vehicle battery.
2. Raise vehicle on ramp.
3. Remove torque tube assembly (see Workshop Manual procedure 05.01.CA Torque Tube Remove for Access and Refit).
4. Remove bolts (x2) from inspection cover to lower crankcase and remove cover.

5. Install special tool SKAM14546 OT to restrain flywheel and install and tighten bolts (x2) (see Fig. 1).



Fig. 1

6. Remove bolts (x6) from clutch cover to flywheel (see Fig. 2).



Fig. 2

Warning

The clutch assembly is heavy. Ensure the clutch assembly is supported before removing final bolts.

7. Release clutch cover from dowels, remove cover and collect drive plate.

8. Remove bolts (x8) from flywheel to crankshaft and discard bolts (see Fig. 3).

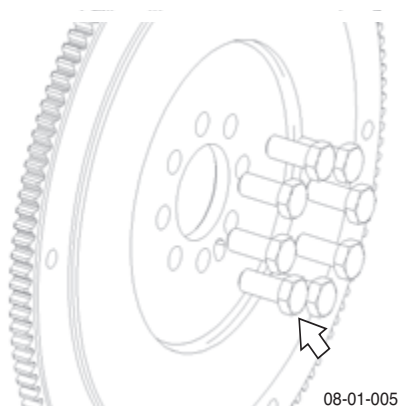


Fig. 3

9. Remove bolts (x2) and collect special tool SKAM14546 OTC.

Warning
The flywheel is heavy. Ensure the flywheel is supported before removing.

10. Release flywheel from dowels and remove flywheel.

Installation

1. Clean flywheel and mating face on crankshaft flange.
2. Inspect pilot bearing for wear.

Warning
The flywheel is heavy. Ensure the flywheel is supported when installing.

3. Position flywheel and align to dowel(s) on crankshaft flange.
4. Install bolts (x8) and install special tool SKAM14546 OTC to restrain flywheel.
5. Tighten flywheel bolts in the correct sequence.
6. Clean clutch cover and drive plate.

Warning
The clutch assembly is heavy. Ensure the clutch assembly is supported when installing.

Caution
The flywheel and pressure are a balanced assembly. Ensure alignment marks are aligned.

7. Install clutch assembly on flywheel and align to dowels.
8. Install bolts (x8), insert clutch alignment tool and evenly tighten bolts to the correct torque.
9. Remove clutch alignment tool.
10. Remove bolts (x2) and collect tool.
11. Install inspection cover to crankcase and tighten bolts (x2).
12. Install torque tube assembly (see Workshop Manual procedure 05.01.CA Torque Tube Remove for Access and Refit).
13. Lower vehicle on ramp.
14. Connect vehicle battery.

Slave Clutch Cylinder-Renew

Repair Operation Time (ROT)	
Item	Code
Slave Clutch Cylinder-Renew	08.00.AC

Removal

1. Disconnect vehicle battery.

Warning
Always disconnect the battery earth (- ve) terminal first.

2. Raise vehicle on ramp.

Warning
When raising the vehicle on a 'two post' ramp, ensure that the rear end of the vehicle is securely strapped to the ramp. Failure to strap the rear of the vehicle down may lead to the vehicle falling off the ramp.

3. Remove torque tube (see Workshop Manual procedure 05.01.CA Torque Tube Remove for Access and Refit).

Caution
Always plug pipe ends to prevent ingress of dirt or moisture into the system.

4. Release clips and remove bleed and supply pipes from slave cylinder.
5. Install clips in union
6. Loosen and remove pipe adaptors (x2) from slave cylinder (see Fig. 1).

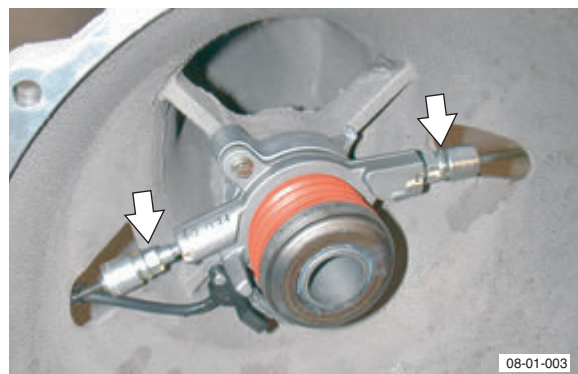


Fig. 1

7. **Sportshift Only** - Remove bolts (x2) securing clutch position sensor to slave cylinder.



8. Remove bolts (x2) that secure slave cylinder to torque tube (see Fig. 2).



Fig. 2

9. Remove slave cylinder and collect spacer.

Installation

1. Clean slave cylinder, spacer and pipe adaptors.
2. Install spacer and slave cylinder and tighten bolts (x2).
3. **Sportshift Only** - Install clutch position sensor to slave cylinder and secure with bolts.
4. Install pipe adaptors (x2) in slave cylinder.
5. Install bleed and supply pipes onto slave cylinder adaptors (x2) and secure with clips.
6. Install torque tube (see Workshop Manual procedure 05.01.CA Torque Tube Remove for Access and Refit).
7. Bleed clutch (see Workshop Manual procedure 08.00.AF Clutch Hydraulic System - Bleed).
8. Lower vehicle on ramp.
9. Connect vehicle battery.

Warning
Always connect the battery earth (+ve) terminal first.

Clutch Bleed Hose Assembly-Renew

Repair Operation Time (ROT)	
Item	Code
Clutch Bleed Hose Assembly-Renew	08.00.AD

Removal

1. Raise vehicle on ramp.
2. **Coupe Only** - Remove deflector - front floor heatshield (see Workshop Manual procedure 09.04.AA Heatshield - Front Floor - Renew).

Before proceeding with the next step, position a piece of cloth in the torque tube aperture to collect the spring clip if dropped.

Caution
Always plug pipe ends to prevent ingress of dirt or moisture into the system.

3. **Roadster Only** - Remove exhaust system (see Workshop Manual procedure 09.00.NB Exhaust System - Excluding manifold/down pipes - Renew).

4. **Roadster Only** - Remove grommet sealing clutch bleed pipe to torque tube.
5. **Roadster Only** - Position a piece of cloth in torque tube aperture to collect spring clip (if dropped) and fluid loss.
6. Release clip and disconnect bleed hose from slave cylinder adaptor.
7. Plug slave cylinder to prevent fluid loss.
8. Release and remove bleed pipe assembly from support bracket.

Installation

1. Clean bleed hose assembly.
2. Remove plug from slave cylinder adaptor.
3. Install bleed hose and secure with clip.
4. Install bleed hose in support bracket.
5. **Roadster Only** - Install grommet sealing clutch bleed pipe to torque tube.
6. Bleed clutch (see Workshop Manual procedure 08.00.AF Clutch Hydraulic System - Bleed).
7. **Roadster Only** - Install exhaust system (see Workshop Manual procedure 09.00.NB Exhaust System - Excluding manifold/down pipes - Renew).
8. **Coupe Only** - Install deflector - front floor heatshield (see Workshop Manual procedure 09.04.AA Heatshield - Front Floor - Renew).
9. Lower vehicle on ramp.

Clutch Hydraulic System-Bleed-Sportshift Only

Repair Operation Time (ROT)	
Item	Code
Clutch Hydraulic System-Bleed	08.00.AE

1. Raise vehicle on ramp.
2. Install Diagnostic tool and navigate to appropriate screen.
3. Position cloth around fluid reservoir to collect any spillage.

Warning
Observe all oil/fluid manufacturers safety instructions when handling components that have been in contact with transaxle oil.

4. Remove fluid reservoir cap, ensure fluid level is correct in reservoir.
5. Clean area around clutch bleed nipple.
6. Remove cap from bleed nipple.
7. Position bleed container containing clean hydraulic fluid, connect hose to bleed nipple.
8. Initiate bleed procedure on Diagnostic tool.
9. Loosen bleed nipple, allow air/fluid to escape and tighten bleed nipple.
10. Repeat procedure until air free fluid emerges.
11. Disconnect bleed hose, remove container, install dust cap to bleed nipple.
12. Top-up fluid reservoir.

13. Remove Diagnostic tool.
14. Lower vehicle on ramp.

Clutch Hydraulic System-Bleed

Repair Operation Time (ROT)	
Item	Code
Clutch Hydraulic System-Bleed	08.00.AF

1. Raise vehicle on ramp.

Warning
Avoid skin / eye contact or ingestion of clutch fluid. If skin or eyes are splashed with clutch fluid, rinse the affected area immediately with plenty of water and obtain medical attention. If clutch fluid is ingested, obtain immediate medical attention.

Caution
Clutch fluid must not be allowed to contact vehicle paint work. Remove spilt clutch fluid from the paint work by rinsing away with running water.

Warning
Brake / Clutch fluid is hygroscopic. If kept in opened containers it will absorb water vapour. Use only brake fluid from freshly opened containers when topping-up the brake fluid reservoir.

Before proceeding to the next step, position cloth around fluid reservoir to collect any spillage.

2. Remove fluid reservoir cap and ensure fluid level is correct.
3. Clean area around clutch bleed nipple.
4. Remove cap from bleed nipple.
5. Position bleed container containing clean hydraulic fluid and connect hose to bleed nipple.
6. Depress clutch pedal to floor 3 times and hold pedal down on third application.
7. Loosen bleed nipple allowing any air/fluid to escape.
8. Tighten bleed nipple.
9. Repeat procedure until air-free fluid emerges.
10. Disconnect bleed hose, remove container and install dust cap to bleed nipple.
11. Top-up fluid reservoir.
12. Lower vehicle on ramp.

Master Cylinder to Slave Cylinder Tube Assembly-Renew-Sportshift Only

Repair Operation Time (ROT)	
Item	Code
Master Cylinder to Slave Cylinder Tube Assembly-Renew	08.00.AJ

Removal

1. Disconnect vehicle battery.

Warning
Always disconnect the battery earth (- ve) terminal first.

2. Raise vehicle on ramp.

Warning
When raising the vehicle on a 'two post' ramp, ensure that the rear end of the vehicle is securely strapped to the ramp. Failure to strap the rear of the vehicle down may lead to the vehicle falling off the ramp.

3. Remove torque tube (see Workshop Manual procedure 05.01.CA Torque Tube - Remove for Access & Refit).
4. Remove grommet sealing clutch pipe to torque tube.

Warning
Observe all oil/fluid manufacturers safety instructions when handling components that have been in contact with transaxle oil.

5. Remove clip, disconnect clutch pipe from slave cylinder adaptor.
6. Release clip securing transmission harness to clutch pipe mounting bracket.
7. Release clips (x4) securing clutch pipe to transmission harness.
8. Remove clutch pipe from torque tube.

Installation

1. Install clutch pipe to torque tube.
2. Secure clutch pipe to transmission harness using clips.
3. Secure transmission harness to clutch pipe mounting bracket using clip.
4. Install clip and refit clutch pipe to slave cylinder adaptor.
5. Install grommet sealing clutch pipe to torque tube.
6. Install torque tube (see Workshop Manual procedure 05.01.CA Torque Tube - Remove for Access & Refit).
7. Bleed clutch hydraulics (see Workshop Manual procedure 08.00.AE Clutch Hydraulic System - Sportshift - Bleed).
8. Lower vehicle on ramp.
9. Connect vehicle battery.

Warning
Always connect the battery earth (+ve) terminal first.