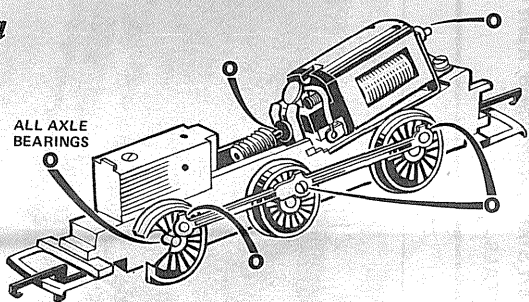
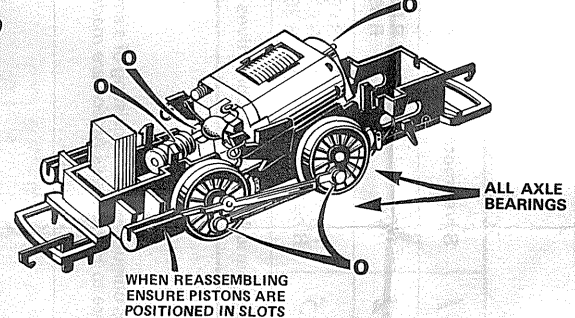
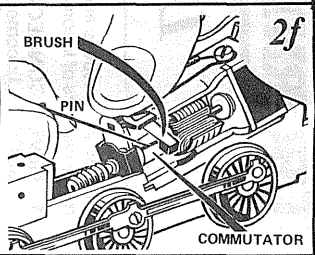
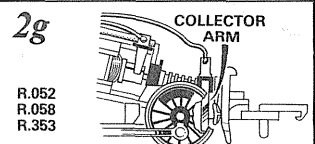
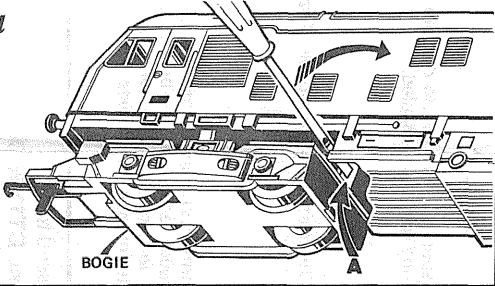
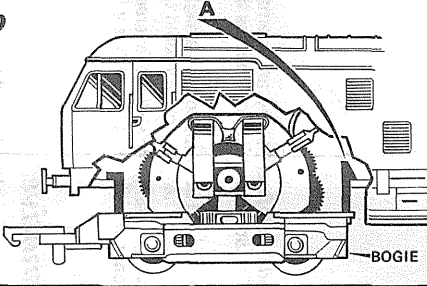


## Locomotive Lubrication and Maintenance Chart

Class 1		Before lubricating read the instructions on page 4. Use a drop of light machine oil on each point marked O.		If ordering replacement motor specify colour of worm gear on motor shaft.	
Model No.	To remove body	Lubricate	Special instructions		
R.041	Undo screw on left side of body.	Motor bearings, axle bearings and coupling rod fixings (Diag. 1a).  As above (Diag. 1b).	Check that collector arms are bearing lightly on inside of wheels and are not touching metal chassis (Diag. 1c).		
R.156, R.165	Insert blade into slot in front buffer beam and lever body off.				
R.077, R.099	Insert blade at front underside between body and chassis and lever body off.				

Class 2		Before lubricating read the instructions on page 4. Use a drop of light machine oil on each point marked O.		If ordering replacement motor specify colour of worm gear on motor shaft.	
Model No.	To remove body	Lubricate	Brush replacement	Special instructions	
R.041	Undo screw on left side of body.	On all models: Motor bearings, axle bearings and coupling rod fixings (Diag. 2b).  As above, plus valve gear rivets and bogie axle bearings (Diag. 2c).	Do not remove motor from chassis. Diagram 2d is to clarify motor parts referred to. Release spring pressure from brush arm and withdraw brush with tweezers. Replacement brush part No. X.67, two required (Diag. 2e). Ensure insulating sleeve on brush spring is positioned correctly (Diag. 2d).	Do not remove motor from chassis. It is necessary from time to time to clean the slots between the segments of the commutator, use a pin as illustrated (Diags. 2d & 2f). Ensure insulating sleeve on brush spring is positioned correctly (Diag. 2d). Check that collector arms are making good contacts with inside faces of wheels (See diagram 1c above or 2g).	
R.156, R.165	Insert blade into slot in front buffer beam and lever body off.				
R.052, R.058, R.353	Insert blade at front underside between body and chassis and lever body off (Diag. 2a).				
R.761, R.852, R.866	Undo screw at cab end.				
R.845	Undo screw below cab.				

Class 5		Before lubricating read the instructions on page 4. Use a drop of light machine oil on each point marked O.		When mechanism is exposed do not unclip wires but take note of wire positions in case of accidental disconnection.					
Model No.	Special Instructions	To expose mechanism	Lubricate	Brush replacement					
4-Wheel Bogie R.068, R.069, R.072, R.074, R.080, R.084, R.768	Note... R.074, R.768, R.317 and R.318 have the release clip A at the outer end of the bogie frame (opposite to that illustrated).  The bogie with the mechanism can be identified by its two tyred wheels. 4-wheel and 6-wheel bogies have common features.  To negotiate tight radius curves the centre wheels are loosely mounted. When placing on track ensure that all wheels are correctly positioned.  Good electrical contact must be maintained through loco/tender connection (Diag. 5e). Keep clean and free from oil: (i) Screw B and drawbar C. (ii) Clip D and tender contact pin E.	Use a screwdriver blade to release clip A at the end of bogie frame (Diags. 5a, 5b and 5c or 5d). Ease complete bogie out of chassis. Do not disconnect wires.  Insert blade between body and chassis and twist open (Diags. 5f and 5g). Do not disconnect wire.	Oil gear shafts on mechanism (Diag. 5h). Axle bearings (Diag. 5j). Axle bearings on non-powered bogie.	Taking great care not to let the springs jump out lift the two spring retaining arms F with a screwdriver blade (Diag. 5m). Withdraw springs, S.8382 (Diag. 5n). Should the carbon brushes, S.8319, not come out turn mechanism over and tap lightly. If the non-tapered ends are less than 1/16" (1.6mm) long, brushes should be renewed.  Use the point of a sharpened matchstick to replace springs. Bend retaining arms back into their original position (Diag. 5p) ensuring that points G (Diag. 5q) fit into the centre of springs ends.					
6-Wheel Bogie R.073, R.317, R.318, R.352, R.751									
Tender for: R.063, R.065, R.066, R.078, R.350, R.357, R.842									
