5. Track Cleaning

In normal operation, model railway layouts may accumulate dirt on the running surfaces of the rails, some of which will be transferred to the locomotive's pick-up wheels. This will have two adverse effects:

(a) loss of locomotive traction and, if allowed to build up,
(b) reduction or total loss of power to the locomotive motor.

It is therefore essential that the track **and** wheels, are kept absolutely clean. This can usually be done by wiping the surfaces with a clean, non-fluffy cloth.
More stubborn deposits can be removed by using a small piece of "Scotch" washing-up pad which can be obtained from the "Household" section of most supermarkets.
A more convenient and realistic method of keeping rails clean is to use R296 Track Cleaning Coach which should be **pushed** around the track by the locomotive.

6. Locomotive Bodywork

Hornby Railways locomotive and tender bodies are spray painted overall. The rest of the decoration is applied by a printing process and not transfers. Please do not use any solvent-type agents to clean bodies. If necessary, use a dry, soft, non-fluffy cloth to keep the body clean.

7. Television Suppression

Hornby locomotives incorporate radio and television interference suppressors. Should interference occur despite these precautions, it may be due to the close proximity of the layout to receivers, or aerials and their "downlines". In this case, please move the layout further away from aerials and receivers. **It is most important that track, and pick-up wheels are kept absolutely clean.**

Spare Parts and Service
Spare parts packs containing motors, light bulbs, screws etc., can be obtained from Hornby Railways Service Dealers who also offer a repair service. Sets of Service Sheets are also available and these illustrate currently produced locomotives in exploded views. If you are unable to obtain such services locally, you may send your locomotive for attention, or your spare parts order, to Hornby Hobbies Limited, at the address below.

Safety Notes

- This locomotive is not suitable for children under 3 years of age because of small parts which can present a choking hazard. Some components have functional sharp edges – handle with care.
- This locomotive is intended for indoor use only.
- The transformer is not a toy. It is a "Transformer for Toys". Before use, check that the transformer is the correct voltage for your mains electricity supply. This locomotive is only to be used with the recommended transformer. The transformer should be examined regularly for damage to the casing, plug pins and cables.

In the event of such damage, the set should not be used until the transformer is replaced with a new Hornby recommended unit. Never attempt to open the transformer yourself.

- This locomotive must not be connected to more than the recommended number of power supplies. The output terminals of the transformer must not be connected directly, or indirectly, to the output of any other AC circuit derived from a transformer or mains power supply.
- Before cleaning any part, disconnect the transformer from the mains electricity supply.
  Do not use liquid for cleaning.
- Please retain these details for future reference.

Hornby Hobbies Limited, Westwood, Margate, Kent CT9 4JX
4/836B 0404
Printed in China

HORNBY®

In any correspondence
please quote Ref. No:

PLEASE READ THROUGH THESE NOTES CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE

12V ⎓ CE

LOCOMOTIVE OPERATION AND MAINTENANCE

0-4-0 LOCOMOTIVES – HP MOTOR

1. Introduction

Hornby locomotives are precision built and, if treated with reasonable care, will give many years of good service. Whilst there are many different types of locomotives, there are common aspects in their use and handling so **please read through the following notes carefully as most, or all, of them may apply to your locomotive:**

1.1 **Warning** – On certain locomotive models, electrical connectors and handrail fittings have functional sharp edges and points. **Please handle with care.**

1.2 **Important** – The electric motors of Hornby locomotives are designed to be operated from a variable 12 volts, DC, power supply. This is obtained from the domestic mains electricity supply by using a Hornby Transformer and a Train Controller. NEVER CONNECT A LOCOMOTIVE DIRECTLY TO THE MAINS ELECTRICITY SUPPLY.
Please Note – 0-4-0 locomotives supplied in some Hornby battery operated train sets can be operated from dry batteries. Please refer to the special instructions supplied in those sets.

1.3 The 12 volt DC supply is picked up from the track through the wheels on one side of the locomotive and returned by the wheels on the other side. It is therefore essential that the running surface of the rails, and the metal tyres of the pick-up wheels, are kept absolutely clean (see notes on track cleaning on page 4).

1.4 The current drawn by locomotives varies between .2 amp and .6 amp depending on type of locomotive, load and track gradient. There will be a current surge on starting locomotives.

1.5 The H.P. motor fitted to your locomotive, has a running life of approximately 150 hours after which the non-replaceable carbon brushes may be worn out. Complete motor assemblies are available as spare parts and details of how the motor can be replaced are given on pages 2 and 3.

1.6 Motor and chassis mechanisms may pick up fluff, carpet fibres and pet hairs which can get entangled in the gears and around axles. It is important to check periodically and remove any such debris with tweezers.

2. Running Hints

If a locomotive does not respond normally to the power controller, or runs badly, check the following points:

2.1 All electrical connections made correctly and the power socket is switched "ON".

2.2 Power connecting clip is correctly inserted into a suitable section of track.

2.3 All track sections correctly fitted together and all fishplates (rail-joiners) fit tightly onto adjoining metal rails.

2.4 All locomotive wheels positioned correctly on track.

2.5 Direction control switch on the train controller is set to operate in one direction or the other, and not in the central "OFF" position.

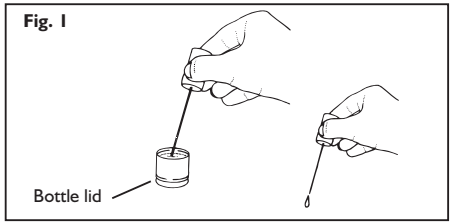
3. Lubrication

3.1 Although locomotives are lubricated before despatch from the factory, the lubricant can dry out during storage. Lubrication should be carried out at approximately 6-monthly intervals, or every 100 hours of running time. DO NOT OIL THE MOTOR.

3.2 A light machine oil such as "3 in 1" can be used. PLEASE USE CAUTION, as mineral oils of this type can cause deterioration to the polystyrene plastic from which Hornby locomotive bodies are manufactured. Immediately wipe off, with a cotton rag, any oil which gets onto a locomotive body.

3.3 Refer to the lubrication notes given on page 3. An oil dropper can be made by straightening a paper clip and sticking one end into a cork (Fig. 1). Fill a small container with oil so that the smallest possible drop can be "picked up" by the dropper and carefully applied to the correct place. Immediately wipe off any excess oil.
IMPORTANT – Apply oil only to moving parts. Keep oil away from wheel rims and track.

Fig. 1



4. Routine Maintenance

Important – After approximately 150 hours of running time, the non-replaceable motor brushes may be worn out, resulting in the locomotive's speed being reduced or it not responding well to the train controller. If this happens, it will be necessary for the motor to be replaced and details of the procedures are given on pages 2 and 3. The instructions relate to fairly straight forward processes for owners used to working carefully with small tools. **Please read right through the instructions before attempting any of the processes. If you do not feel absolutely confident in undertaking them yourself, please obtain the services of an Official Hornby Service Dealer.**

4.1 To gain access to the motor

Important: The various styles of 0-4-0 locomotives have slightly different body fixing arrangements. Please refer carefully to diagrams in Figs. 2 to 5 to find out how the body of your locomotive can be removed.

(a) The body of the locomotive style in Fig. 2 is removed by unscrewing screw "A", next to the front coupling, and lowering that end of the chassis until the rear body clip "B" disengages.

To replace body, first insert chassis clip "B" into position in rear of body, ease up front of chassis and secure in position with screw "A".

Make sure that front weight "C" is correctly positioned, as illustrated, and that the ends of the wire motor retainer "D" locate in the correct positions in the body.

Fig.2

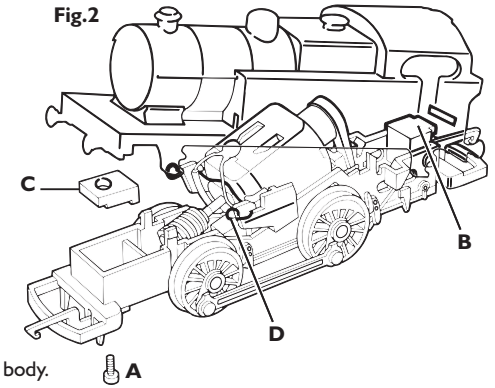
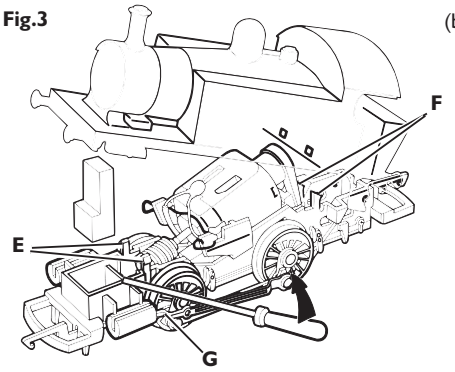


Fig.3



(b) The bodies of the locomotive styles in Figs. 3 and 4 are completely clipped into place. The front clips should first be released by inserting a small flat-bladed screwdriver at the position indicated, and gently levering upwards. (Figs. 3, 4 & 4a).

Once the front clips "E" are released, the front of the chassis can be lowered until the rear clips "F" disengage allowing the chassis to be removed from the body. When removing body in Fig 4, **make sure** the ends of the motor retainer "D" do not catch in the metal footplate apertures.

To replace these types of body, locate body accurately over chassis and firmly press the two parts together until all clips engage. **Make sure** that, when crossheads "G" are fitted, they are in position **before** body is refitted.

Fig.4a

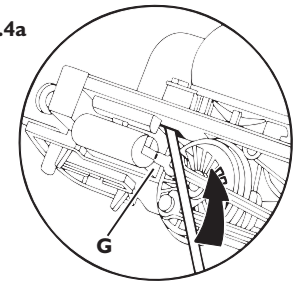


Fig.4

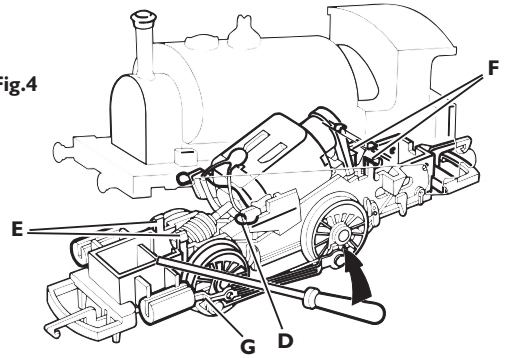
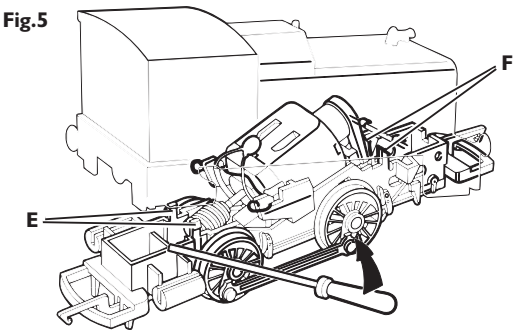


Fig.5



(c) The Diesel Shunter body can be removed in the same way, but it has its body fitted onto the chassis the opposite way round, so the body clips "E", to be released first, are beneath the cab. Otherwise the same processes apply for removal and replacement as in paragraph (b) above. (Fig. 5)

4.2 To remove motor

(a) Bend TV suppressor "H" clear of motor retainer.

(b) Unhook from the chassis, one end of the motor retainer so that it can then be completely removed (Fig. 6). This is best done using a pair of small, slim-nosed pliers.

(c) Lift motor clear. **Note that** rear bearing of motor is located in a plastic motor adaptor "J" which is, in turn, positioned in metal motor mounting "K". (Refer to Fig. 7)

Fig.6

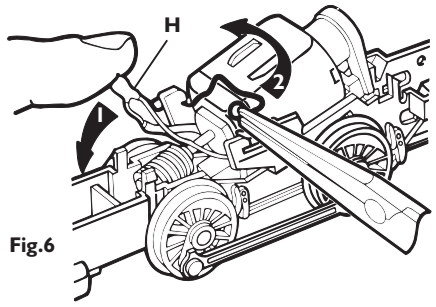
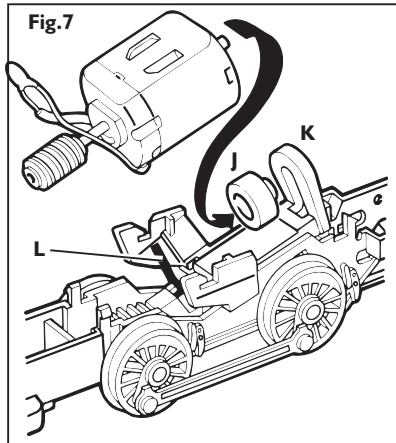


Fig.7



4.3 To fit new motor

(a) Fit rear of motor into motor adaptor "J" and position motor adaptor into motor mounting "K". Carefully lower other end of motor into position so that the two gears engage (Fig. 7).

Important – The motor must be fitted with its two solder contacts underneath and in **firm contact** with the two copper-coloured collector strips "L", fitted in the chassis (see Fig. 7a). If the locomotive does not run, it is probable that one or both of these collector strips are not making contact with the corresponding motor contacts. In this case, carefully bend the strips inwards to make better contact.

(b) Refit motor retainer "D" (Fig. 8), making sure that middle of the clip bears on the correct part of the motor as indicated in Fig. 8a.

(c) Bend suppressor "H" (Fig. 8) over top of motor.

Note – The motor assembly is available as a spare part from Hornby Service Dealers, under reference X2258.

Fig.7a

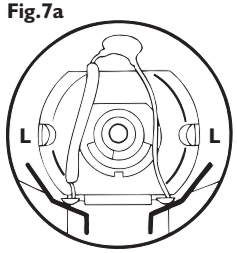


Fig.8a

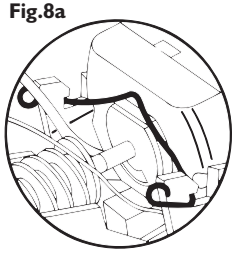
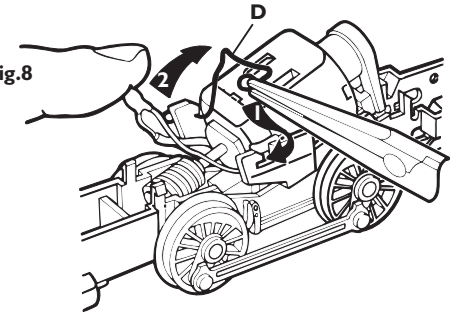


Fig.8



4.4 Lubrication

(a) **Important –** The HP motor fitted to your locomotive requires no maintenance – **do not oil the motor.**

(b) Apply two or three drops of oil to the worm wheel "M".

(c) Lubricate locomotive axle bearings and connecting rods with just one drop of oil in each of the places indicated in Fig.9.

Fig.9