

INSTRUCTIONS

Meccano Transformer Type T20A

Output: 35 VA at 20/3.5 Volts

This Transformer provides an economical and perfectly safe means of running a Meccano 20-volt Motor or a Hornby 20-volt Electric Train. It transforms the high voltage of the electric light supply to the requisite low voltage. The Transformer can be used in connection with any apparatus requiring an Alternating Current supply up to 1 ampere at 20 volts. It will run for 28 hours on one unit.

Transformers work only on Alternating Current (A.C.) A Transformer must not be connected to direct or continuous current (D.C.)

The three-core flex provided with this Transformer is intended to be used with a three-pin plug and socket. If your plug is of this type, connect the two free ends of the flex to the terminals of the two smaller pins, which are the supply terminals; and the end tied back and labelled "Earth" to the terminal of the remaining larger pin, which is the earthing terminal. On no account must the earth lead be connected to either of the supply terminals.

If you have a two-pin plug, connect the free ends of the flex to the terminals of these pins, leaving the earth lead disconnected. As an extra safety precaution the earth lead may be connected to earth. This should certainly be done where the Transformer is to be used on a stone or concrete floor. If in doubt, consult your electrical supplier.

Fig. A is a diagram of three pairs of plug sockets on one side of the Transformer. The first pair, numbered 1, gives current at 20 volts under control of the 5-stud speed regulator fitted to the Transformer as shown in Fig. B. The current from this pair is intended for driving a 20-volt Hornby Train.

RUNNING A TRAIN

To start a train, move the regulator handle over to the stud at the extreme right, without pausing on the intermediate studs. Then, by moving the handle toward the left, the speed is gradually increased until the maximum is reached when the handle is in contact with the stud next to the "off" stud which is at the extreme left. Fig. C shows the Transformer connected to the track or driving a 20-volt Hornby Train. The connection

between the Transformer and the rails is made by means of the flexible leads supplied with the Transformer. The plug ends of the leads are inserted in the upper and lower sockets of the pair marked 1, the socket fittings of these leads being connected to the plug fitting on the Terminal Connecting Plate.

The lead connected to the lower socket must always be connected to the outer rails of the track, that is to the plug connected to the locking lever on the Terminal Connecting Plate. The second pair of sockets 2, also gives current at 20 volts, but this current is not controlled by the speed regulator. It is intended for driving a Meccano 20-volt Motor, as shown in Fig. B. The first and second pair of sockets must not be used at the same time. That is to say, either a train or a motor can be run, but not both together.

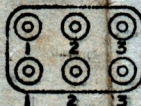


Fig. A

CURRENT CONSUMPTION

The maximum permissible current that can be taken from the sockets marked 1 and 2 is 1 amp., and from the socket marked 3 is 4.5 amps. These values should not be exceeded, as continuous overloading causes damage to the windings. Overload is indicated by heating or by a loud buzzing noise, but it may occur though these symptoms are absent. As a guide to determining the load on the Transformer the following current consumptions are given: 20-volt Locomotive, .75 ampere; 20-volt Headlamp on Locomotive, .15 ampere; 3½-volt Flashlamp, as used in the Hornby Accessories fitted for lighting, .3 ampere; 20-volt Meccano Motor 1 ampere.

PROTECTING THE TRANSFORMER

The 20-volt train circuit is protected by the fuse in the Terminal Connecting Plate attached to the rails. The correct Fuse Wire to use with the Terminal Connecting Plate to suit this Transformer is No. 32 S.W.G. Lead. In the event of a short circuit the wire melts and disconnects the power supply to the

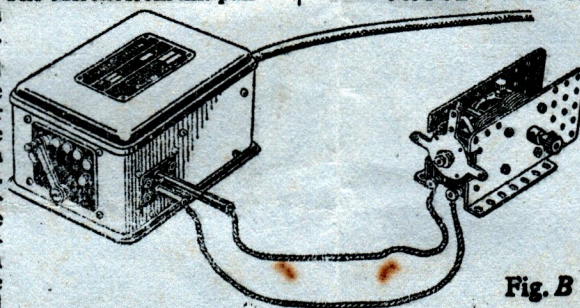


Fig. B

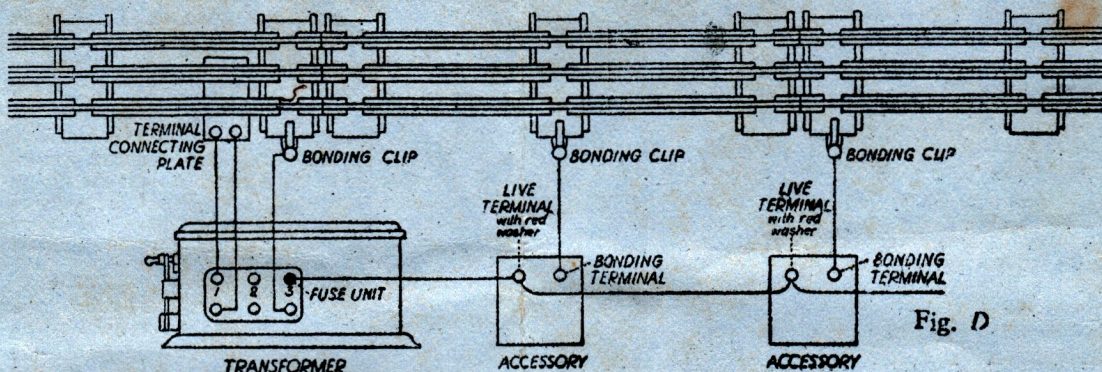
track. When this happens the current must be switched off, the fault cleared and the fuse wire then renewed.

The Hornby 20-volt Circuit Breaker avoids the necessity for renewing fuses in the event of a short circuit. Such a fault causes the red button on the Circuit Breaker to rise. If this should occur, switch off the current; restore conditions on the track to normal, and re-set the Circuit Breaker by pressing down the red button. Full instructions are included with each Circuit Breaker. Ask your dealer to show you one. The Circuit Breaker cannot be used with Meccano Motors.

LIGHTING ACCESSORIES

The third pair of sockets 3, gives current at $3\frac{1}{2}$ volts and this current is intended for lighting Hornby Accessories. Any number of $3\frac{1}{2}$ -volt flashlamp bulbs up to 14 can be lighted at the same time. Care must be taken that such $3\frac{1}{2}$ -volt lamps are not connected to either the first or the second pairs of sockets, as this would cause the lamps to burn out.

The method of connection is shown in Fig. D. With this Transformer are packed two plugs, a Bonding Clip, a Coil of Wire and a Fuse Unit. A piece of wire is cut from the coil, of a sufficient length to reach from the Transformer to the track.



One end of this wire is attached to the Bonding Clip, which is then clipped to one of the sleepers of the track, as shown in Fig. D. The other end of the wire is inserted in one of the Plugs and secured by the set screw. This plug is then inserted in the lower socket of the right-hand pair. The Fuse Unit is now plugged into the upper socket.

A second piece of wire is now cut, of a sufficient length to reach from the Transformer to the first

Accessory that is to be lighted. One end of this wire is inserted in the remaining Plug, and this is plugged into the Fuse Unit in the upper socket of the third pair of the Transformer. The other end of this wire is taken to the terminal of the Accessory that has a red washer, and is screwed up tightly. With each Accessory is packed a Bonding Clip, and the final step is to cut a third piece of wire to connect the other terminal of the Accessory to a sleeper of the track by means of this Clip. If the connections have been made correctly the lamp of the Accessory will now light up.

THE FUSE UNIT

The Fuse Unit consists of a holder fitted with a piece of soft wire that melts at a low

temperature and thus prevents damage to the Transformer resulting from a short circuit. It is supplied fitted with a piece of No. 24 S.W.G. Lead Fuse Wire, which is the correct wire for protecting the $3\frac{1}{2}$ -volt circuit. If a short circuit should occur the wire in the Fuse Unit will melt. To replace this a piece of Fuse Wire $1\frac{1}{2}$ in. long is passed through the holes in the holder under the washers and secured by the screws.

The Fuse Unit can be used also to protect the

20-volt circuit of the second pair of sockets, when running a Meccano 20-volt Motor. For this purpose, however the Fuse Wire supplied with the Unit must be replaced by a piece of No. 32 S.W.G. Lead. Fuse Wire of the correct size can be purchased from any Meccano dealer.

If any difficulty should occur, send us a postcard telling us about it, and we will put you right immediately. Address your postcard to Meccano Ltd., Binns Road, Liverpool 13.