BRANCHLINES

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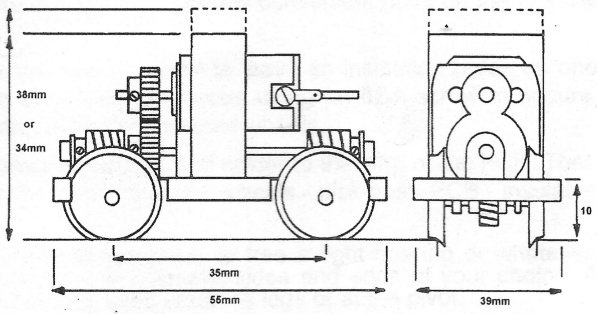
MB35

Motor Bogie Kit

Now with Nickel Silver Wheels and grub-screws for all gears



WHEELS	12mm	14mm	disc	spoked
PROFILE	OO uni'	OO fine	EM	18.83

KIT CONTENTS

1. Etched nickel silver fret of main components.
2. Etched nickel silver mounting bracket.
3. Mashima 14/20 'can' motor (12V. DC).
4. Two axles with wheels.
5. Two steel worms with grub screws
6. Two brass worm-wheels with grub screws
7. 20 tooth and 30 tooth brass spur gears with grub screws
8. Six 2mm bore brass bearings.
9. 2mm steel shaft.
10. Two 8BA screws nuts and washers.
11. Printed circuit board (PCB)(1)
12. Phosphor bronze spring wire for pick-ups
13. Insulated wire (1)

INTRODUCTION

The MB35 kit was introduced in 1991 to meet the need for a robust and powerful motor bogie that is suitable for many 4mm scale multiple units and some locomotives. It incorporates a 'can' motor for smooth running and good power at low rev's as well as double-reduction gearing for a moderate top speed and high efficiency. The addition of cosmetic sides and ends will adapt the bogie to a particular model. Whilst the design has remained substantially unchanged, we have introduced minor improvements as a result of customer feedback. This latest version is now even easier to build, and is freer running with less pick-ups and better quality wheels. Hundreds of MB35's are in regular use on private and exhibition layouts all over the World.

ASSEMBLY INSTRUCTIONS

If the MB35 is assembled carefully, following the following sequence, a free running bogie should result. Careless handling may bend the basic chassis and cause misalignment of bearings and tightness.

1. Take the main chassis frame and, whilst keeping it flat, carefully ream out the 4 wheel bearing and 2 layshaft bearing holes until the brass bearings just fit. Preferably use a tapered reamer (1/8") for this or, if not available, a rat-tail file. Smooth with a file all edges, especially by the openings where gears protrude through.
2. With the writing *underneath*, fit the 4 wheel bearings from *above*, then *turn over* the chassis and fit the layshaft bearings from *above*.
3. Turn down (towards the fold line) the wheel bearings and use the steel layshaft to check the alignment of each pair. Reheating of the solder holding the bearings allows them to "fall into alignment" with the shaft. If necessary, lightly ream the bearings to ensure free running. A strip of scrap etch soldered over each bearing with confer rigidity to the unit.
4. Repeat this process with the layshaft bearings which are folded up to be on *top* of the chassis. Ream if necessary.
5. Fold down the chassis sides and ends, but do *NOT* fold the end sections of the ends round yet.
6. Fit and tighten an 8BA screw & nut to centre hole (nut above) and solder nut to chassis. Remove screw.
7. Fold motor mounting frame to shape (fold lines inside) and solder to chassis top, engaging the front tabs in the slots provided.
8. Fold pivot bracket to shape and solder to chassis in slots provided. *Note* that 2 heights are possible by using it as it is or by snapping of the end sections. Solder an 8BA screw in the hole so it may be used as a pivot.
9. File the points off the ends of the axles so these will not foul your dummy side frames.
10. Remove the insulated wheel from each axle and fit axles through bearing from one side, then introduce brass worm-wheel and pass axle on through bearing on opposite side. Refit other wheels and adjust to correct back-to-back, centralise axle in chassis and then tighten grub screw of worm-wheel.
11. Cut the layshaft to 53mm long then pass it through one bearing and one worm (grub screw outermost). Hold 30 tooth spur gear in its position and carefully pass layshaft through it. Then fit 2nd worm (grub screw outermost) and push layshaft on into other bearing. Centralise shaft in chassis and tighten grub-screws in worms so there is only a trace of end-float. Then tighten grub screw on spur gear. If stretching a MB35 to a longer wheelbase by cutting and patching, use a longer layshaft.
12. Fit motor to its mount, leaving screws loose. Slide 20 tooth spur into motor shaft, boss outwards, and adjust motor position to give a trace of back-lash, then tighten fixing screws. Apply power from your controller to the motor and check for free running.