

GB8/15 TWO STAGE 50:1 REDUCTION GEARBOX

with precision cut helical gears
and steel worm with grubscrew

For 1.5mm shaft diameter Canon motors

IMPORTANT - Please read these instructions before starting assembly

This gearbox has been especially designed for use with Canon motors having 10mm fixing hole centres.

All folds should be made with the half-etched line to the inside.

ASSEMBLY INSTRUCTIONS

1. Carefully open out both the axle and layshaft holes in the gearbox etch until the bearings are a close fit, taking care to avoid making the holes too big. This is best done using a five-sided broach which will help to ensure that the bearing holes stay on centre. Note the eventual position of the slim bearing - make sure you match this hole to the diameter of the slim bearing, not any of the thick ones.
2. The motor fixing screw slots should be etched to the correct size - if not, carefully open them out to suit. The same applies to the motor front bearing hole. File back any swarf from the motor mounting surface.
3. Solder the layshaft and axle bearings in place with the flanges against what will become the inside of the gearbox. The left-hand layshaft bearing should be spaced out from the fret using the supplied etched washer. Once fitted, you may wish to file the bearings flush with the outer gearbox sides if space inside the frames is restricted.
4. Bend the gearbox to shape as per the sketch and reinforce the joints with solder. Take care that the gearbox sides are at 90° to the back, perhaps using 1/8" axles or rods for alignment.
5. The assembly can now be washed in hot soapy water to remove any remaining soldering flux.
6. Fit the worm on the end of the motor shaft leaving a small space between the end of the worm and the front bearing to allow some end float. Screw the motor in place.
7. The 38:1 worm gear (the smaller of the two gears) and its layshaft can now be test fitted in place. File a flat on the layshaft for the grubscrew to bed on, and remember to orient the gear so you can get to the screw. The gear boss points towards the right of the gearbox, and it is not important to fit the gear with the teeth exactly centred below the worm - there should be very little sideplay anyway. Apply a small amount of lubrication and carefully test run the motor in both directions. If the mesh is unsatisfactory, remove the layshaft and gear, and shift the motor up or down in its slots as required. Once satisfied with the mesh, fix the screws in place with a small amount of adhesive such as nail varnish (red for LMS locos, blue for LNER, etc.).

8.

The gearbox can now be fitted into the chassis and the axle and 50:1 gear wheel fitted. Again, remember to file a flat on the axle for the grub screw. You may wish to test fit the gear and axle and give the complete gearbox a run-in before fitting it to the chassis.

