

## GB3/15 TWO STAGE 38:1 REDUCTION GEARBOX

with precision cut helical gears  
and steel worm with grubscrew

For 1.5mm shaft diameter motors

### **IMPORTANT** - Please read these instructions **before starting assembly**

This gearbox has been especially designed for use with the most popular motors having either 8mm or 10mm fixing hole centres. Provision is made for an 'outrigger' motor shaft bearing (not supplied) for motors such as the DS10.

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

### **ASSEMBLY INSTRUCTIONS**

- Carefully open out both 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.
- Open out the motor front bearing hole in the gearbox etch to suit the motor you are using. Also drill out the motor fixing screw holes to suit - pilot holes are etched at 10mm centres for 16mm can motors but alternate centres at 8mm are half-etched. File back any swarf from the motor mounting surface.
- Solder the layshaft and axle bearings in place with the flanges to the inside. You may wish to file the bearings flush with the outer gearbox sides if space inside the frames is restricted.
- 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.
- Fit the end plate to the gearbox and solder in position as per the sketch. The assembly can now be washed to remove any remaining soldering flux.
- Fit the worm on the end of the shaft of your chosen motor leaving a small space between the end of the worm and the front bearing to allow some end float. Screw the motor in place. Access to the fixing screws is afforded through the holes in the end plate.
- The 46:1 worm gear (the larger of the two gears), layshaft and washers can now be fitted in place. It is not important to fit the gear with the teeth exactly centred below the worm. Note that the motor is slightly offset to the left (when viewed from the front) to allow for the offset of the boss on the gear. Fit the gear with the boss on the right and the spacing washer/s on the other side. The bearings and gears can now be lubricated and test run before final assembly.
- The gearbox can now be fitted into the chassis and the axle and 38T gear wheel fitted. Remember to file a flat on the axle for the grub screw to bed on.

