

# FOUR RATIO GEARBOX (Changeable)

## CONTENTS:

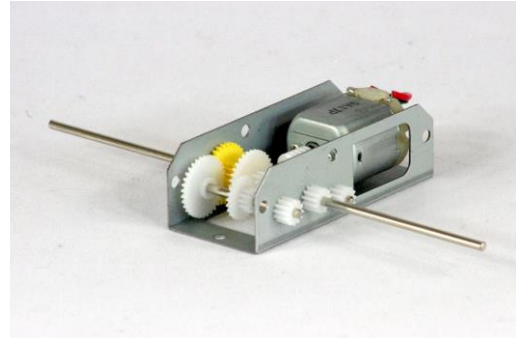
Section 1: General Information

Section 2: Gearbox Ratios

## DESCRIPTION

This pre-assembled Gearbox / Motor is available in 4 ratios. Its advantage is that later on any of the other ratios can be obtained by moving some of the gears. The axle shaft width is 150mm

NOTE: Specify ratio required.



## SECTION 1: GENERAL INFORMATION

This gearbox is available in **4 different reduction ratios**, providing a choice of 4 different speeds at the output shaft. If a different reduction ratio is required later, any one of the other ratios can be obtained by relocating some of the gears. This adjustment can only be carried out a limited number of times.

**WARNING:** *If the gears have been lubricated, a later change of ratios may lead to gears slipping.*

## SECTION 2: GEARBOX RATIOS

### 2.1 SPEED OF THE OUTPUT SHAFT

Reduction ratio:	Ratio 1:12	1:32	1:84	1:236
1.5 volts	700 rpm	100 rpm	34 rpm	20 rpm
3.0 volts	1200 rpm	360 rpm	74 rpm	42 rpm
4.5 volts	1800 rpm	500 rpm	120 rpm	60 rpm

**NOTE:** These figures provide an approximate indication of the speeds that can be expected at the output shaft - when the gear box is under load.



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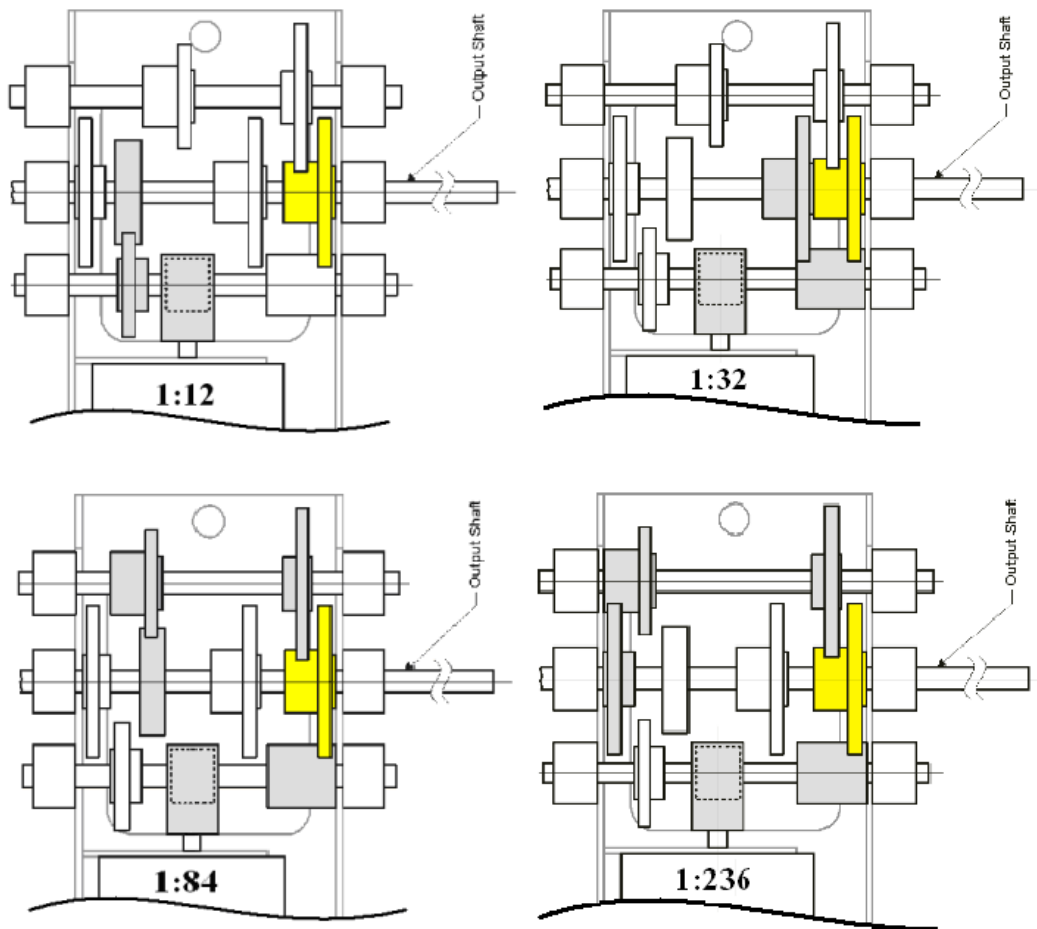
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The pictures (below) show the positions of the various gears for each ratio.



## 2.2 BEFORE CONNECTING POWER

- Check to ensure that all the shafts have some end play, max. 0.5 mm (ie the amount that the shafts are able to move sideways). If they do not have that amount of end play, you should use a fine blade to move any of the outer pinions. Too much end play must be avoided, to ensure proper meshing of the gears.
- To reduce friction and significantly reduce the motor's power consumption (by approximately 1/3), it is suggested to spray the gears with a dry non-oily lubricant (such as Selseys "Ezy glide").