



**Phone-- 03 54721442**

**Email-- info@caenterprises.com.au**

## Fitting Instructions for G/R-03 Starters

### Parts List

Holden Starters:            1 x Starter Motor  
                                     2 x 3/8" UNC x 4" bolts with flat & spring washers

Holden starters are designed to be used standard flywheels or equivalent.

For all other applications, please refer to individual instructions (if provided) for specific fitting instructions. The following fitting instructions apply to **ALL** Hi-Torque Gear Reduction Starter Motors

### Pinion & Ring gear clearance (Outer Mesh)

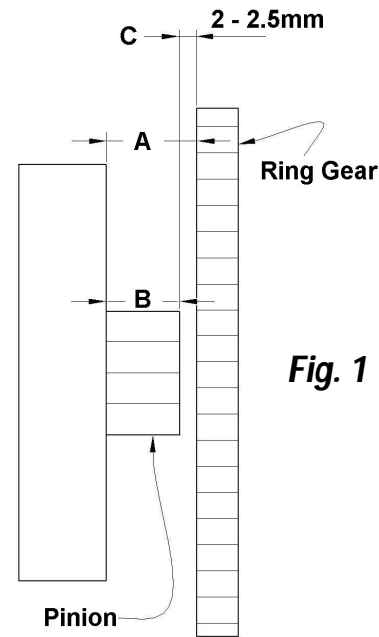
Correct pinion & ring gear clearance is needed before starting the engine. If this is not correct, damage will occur. With the starter motor disengaged and mounted correctly, the pinion to ring gear clearance(Outer mesh) should be 2 to 2.5mm See figure 1

Outer mesh is measured from the Contact Edge of Drive Plates Ring Gear to the Front Edge of the Starter Pinion in stationary Position. See Fig. 1

Before fitting the Starter measure the distance from the Starter mounting face to the front side of the ring gear. **A** Then measure the Starter mounting face to the end of the pinion. **B** The difference between measurement **A** and **B** is the Pinion Ring Gear clearance **C**

**A** ..... - **B**..... = **C**

If this is less than 2mm then the shim spacers will be needed. Shims are available on request.

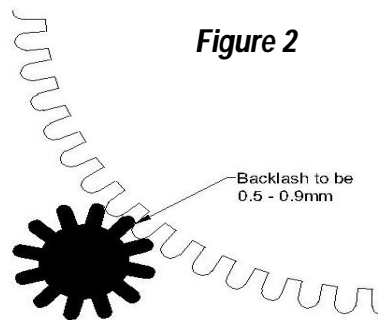


**Fig. 1**



## **Backlash**

To check backlash, simply pull the pinion out with your hand as if the starter was engaged. You should have between .5mm and .9mm clearance between the ring gear and pinion teeth (see figure 2).



If clearance is too tight or too loose, add the appropriate amount of shims (on Chev starters only) or contact us for further information.

A good way to check if the starter is meshing correctly is to coat the pinion teeth in white marker pen or engineering blue, then crank the engine over a few times. Remove the starter and check the marks left by the ring gear on the pinion teeth. This will clearly show if the starter is meshing in too deep (bottoming out) or too shallow (riding high on the ring gear).

## **Rotating Starter Motor**

Most starters in the Hi-Torque range have a rotatable end housing to achieve the correct positioning of the starter. The starter motor is supplied in the most common position, however due to the variation in oil pans, exhausts, chassis rails ect. You may have to adjust this position. This is done by simply taking out the two hex head screws, rotating the starter to the best position and securing using the hex head screws. We highly recommend using a thread locking compound on these screws as they are exposed to high amounts of vibration.

**NOTE:** For Chev, Holden and Ford V8's, Starter motors are supplied with 11 Tooth x 29mm O.D Pinion.

**This is a Direct Replacement for the original 9Tooth x 25mm Pinion.**

All Chev V8 starter motor are supplied at 21mm from the centres of the mounting holes to the face of the Pinion. This gives the pinion 2mm clearance to the ring gear. This clearance must be checked thoroughly as the flywheel position does change, especially on engines which originally had a staggered-mount bolt pattern starter. If this clearance is not correct, please contact us immediately. **DO NOT** modify the starter motor before contacting us, as this will void the product warranty.

**This starter is designed for 12v only\*. Using on 24v systems will damage the starter and void warranty.\*Using on 16v systems is OK.**

**A starter motor relay may have to be fitted due to voltage drop in the wiring system.**

## Warranty

The manufacturer's warranty on all Hi-Torque gear reduction starter motors is for a period of (1) Year, covering the Starter Motor ONLY. The Warranty is subject to the following conditions.

### Warranty Conditions

- All claims must be made in the warranty period of 12 Months.
- Any starter motor found to have faulty workmanship will be replaced free of charge.
- This warranty does not apply to items that have been subject to neglect, misuse, abuse, accidental or intentional damage, unauthorized repairs, modifications, incorrect application or installation.  
\*Please check description below.
- The warranty does not cover the cost of freight, installation or removal of items.
- The warranty of 12 months only applies to items being used for normal road use.
- C.A.E. Performance Products recommend that this product be fitted by qualified personnel.

\*Starter motors that have been misused or abused include the following: Water damage, Over heated, Pinion engaged while driving or hi revving and Extreme dust or corrosive conditions.

It's up to the purchaser/ installer to ensure the starter motor is sealed or protected if used for Off Road or Marine applications.

#### **ORDERING**

Orders can be placed by phone, fax or e-mail. We prefer official purchase orders from account customers. Please quote the part number, quantity and any special requirements when ordering.

#### **SHIPPING**

All orders are dispatched upon payment (except account customers). We ship Australia-wide every day. If you wish to use your own courier, please advise us of your courier name & account details & we can organize pick-up. Transport insurance can be arranged at the request of the purchaser.

#### **RETURN OF GOODS**

All part returned will incur a 20% re-stocking fee. Returns must be made within 30 Days. Freight is to be paid by customer unless the goods are being returned due to manufacturing defect or shipping error, in which case they are to be shipped using our Australia Post Reply Paid account. C.O.D. post will NOT be accepted under any circumstances. Goods specifically made to customer requests cannot be returned for credit. All goods remain the property C.A.E. Performance Products Pty Ltd until paid for in full.

#### **DAMAGE**

All goods are shipped in good condition & are packed accordingly. We can only handle damage claims for prepaid freight.

#### **PAYMENT**

Payment can be made by credit card, direct deposit, cheque/money order or cash over the counter. Please note that cheques & money orders must include the full amount of the order & freight costs. Personal cheques are subject to bank clearance (5 business days).