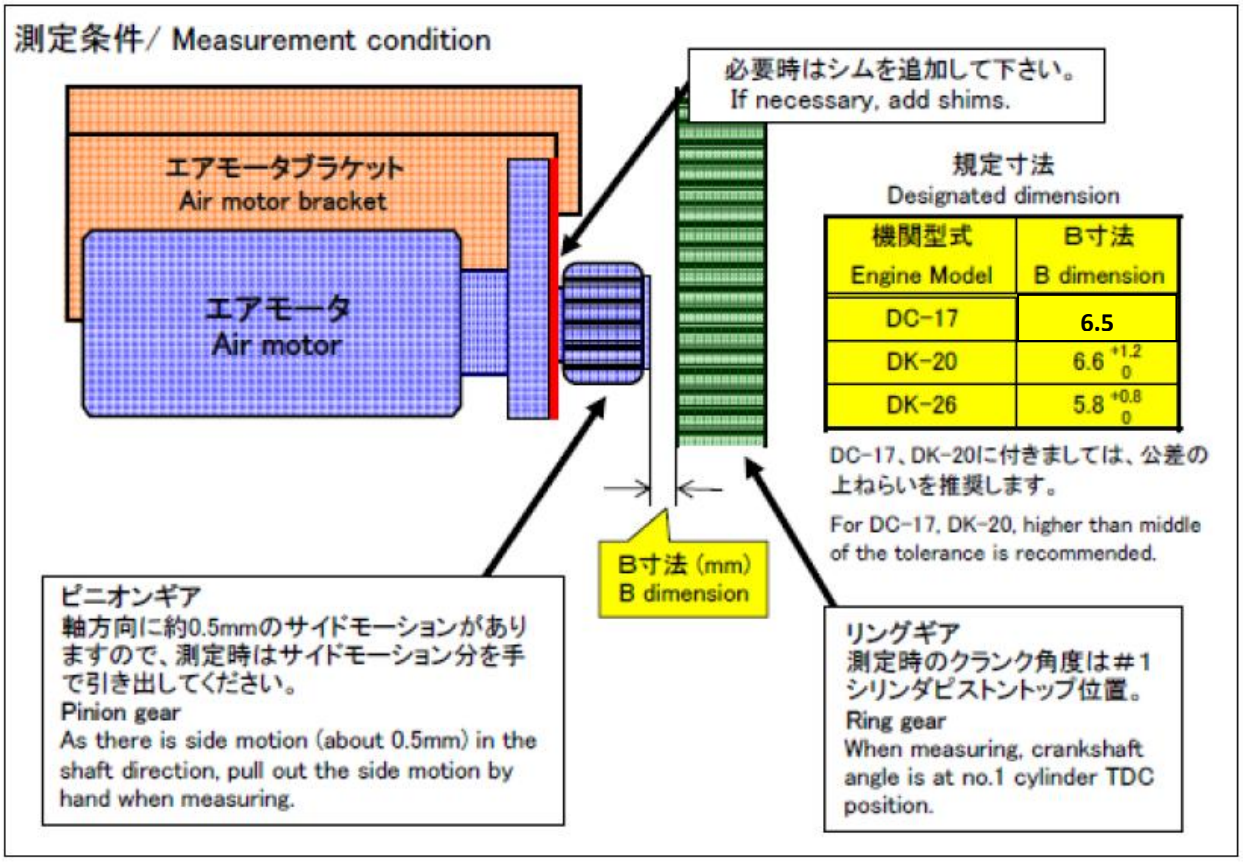
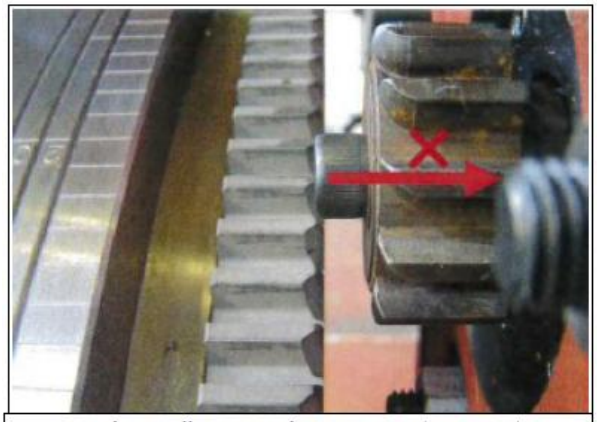
REPLACEMENT OF RING GEAR

- Record fuel pump timing **(before .)(As reference)**
- Engine crankshaft deflection to be recorded **(before & after.)**
- Crankshaft thrust clearance t be recorded **(before)**
- Check distance between pinion gear & ring gear if within the designated dimension

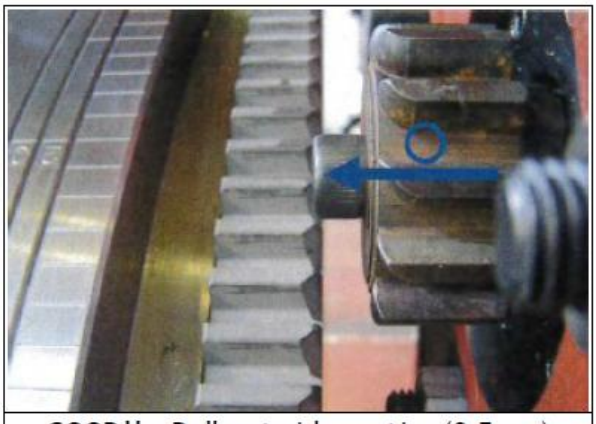
1. Set Cyl#1 Top position
2. Pull out Air motor pinion gear side motion to flywheel side before every 4point measurement
3. Measure distance 4points by metal ruler or metal tapper ruler

- Service Information No.GS09-07
- **Note:** If the distance between pinion gear & ring gear is shorter than the designated length, it will be a big cause of miss- engagement, In that case, adjust the length by addition of adjustment shims.

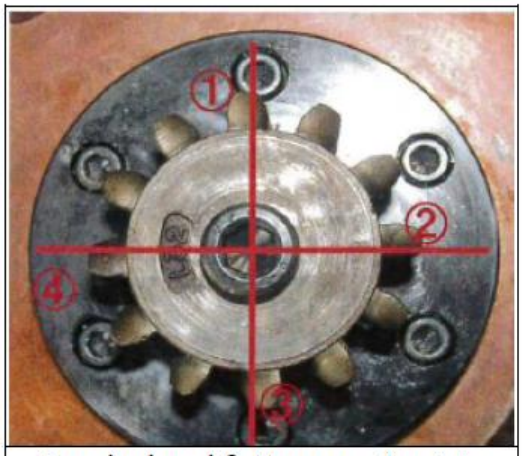




Bad - Pull out side motion(0.5mm)



GOOD!! - Pull out side motion(0.5mm)



Turn by hand & Measure 4 points

Measure by metal ruler

- Marked, remove & secure flywheel cover & flywheel split pin.
- Secure flywheel and **alternator shaft** by the lifting equipment.
- Alternator shaft must be secured by chain block to prevent drop down
- Removal of flywheel reamer bolts & nuts & **shift reamer to alternator side**

No need to remove whole reamer bolts

- Jack up alternator & shims to be secured.
- Prepare lifting equipment for alternator.
- Alternator to be shifted from the flywheel as required.
- Fly wheel to be lift up and de couple flywheel from crankshaft.(do marking as a reference point.
- Gradually jack out ring gear from flywheel.
- Clean , check & polish up flywheel mating surface by oil stone, ensure no dirt & high spot.
- Heat up new ring gear @ **80~90 °C** and assemble to the flywheel in good order.
- **Note:** Non sparkling hammer to be used for installation of ring gear, ensure ring gear seats in properly position and cool off flywheel about 45 mins.

- Check air motor starting air:
- Check the drain water condensation from starting air line.
- Check the air filter condition whether impurity incorporation or not.
- Check the inside of air pipe whether occur of rust or nut.

- Check of relay valve:
- Inspection of upper piston seat condition.
- Inspection of end plug seat condition.
- Inspection of magnetic valve.

- Flywheel with ring gear shift to engine and gradually couple up to the crankshaft.
- Refit & tighten flywheel reamer bolts. (please note: apply molykote 1000 to the thread & oil to the reamer bolt)
- Tighten reamer bolts & Secure with split pin accordingly.
- Refit alternator to original position, Reassemble back shims & tighten bolts base in original marking.
- Check & record engine crankshaft deflection after ring gear replacement.
- Re assemble air starting motor & relay valve to original.
- Check distance between pinion gear & ring gear.
- Check backlash between ring gear and pinion gear
- Standard is 0.5-1.1mm
- **Preparation for initial starting:**
- Checked graduation on the rack movement, governor & indicator at '0' position.
- Check crankshaft rotating condition **(through turning bar.)**
- Lubricating oil filter to be inspected.
- Prepare for initial starting.

- Make sure that local panel source is “ON”.
- Check sufficient air before start up the engine.
- **Check Air pressure is below 0.6MPa during Air motor is running**
- If air pressure is higher than 0.6MPa, adjust by regulator
- Open all indicator cocks & air run engine .
- Run up the engine.