Make sure the marks made before disassembly are aligned.

13. Install and tighten the four M12 x 1.75 x 25 socket head cap screws (13).

14. Examine the end play on the input shaft. There must be no end play. To remove any end play, add shims equal to the amount of end play.

15. **NOTE:** *Note the units of measurement used for the rolling torque.*

Record the rolling torque.

16. Install the snap ring (1) in the cover (2). Install the shim (3) and bearing cup (4) into the cover.

Make sure the bearing cup and shim is against the snap rings.

17. Apply clean oil to the bearing cup.

18. Press the bearing cone (5) onto the output shaft (6).

19. Press the key (7) and crown gear (8) onto the output shaft.

20. Install the shim (9) onto the output shaft.

21. Press the outer bearing cone (10) onto the output shaft.

Make sure the shims and bearing cones are against the shaft shoulder or the crown gear.

22. Apply clean oil to the bearing cones.

23. Install the output shaft into the cover.

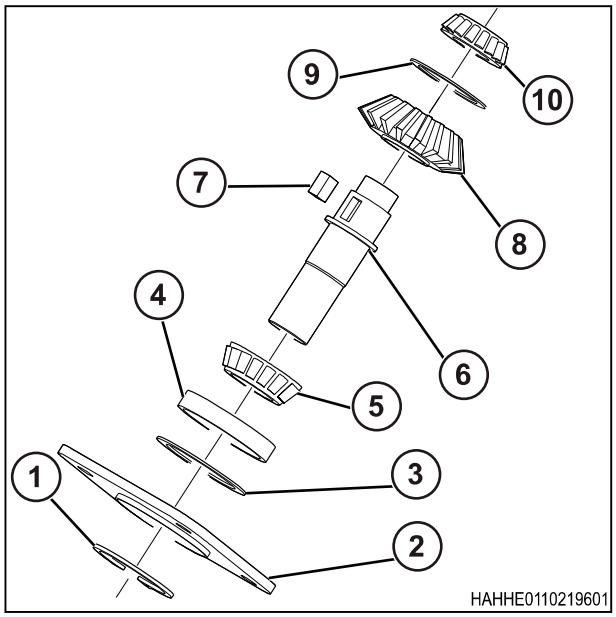

Fig. 51

24. Install the bearing cup (1) into the housing (2).

Make sure the bearing cup and shim is against the housing.

25. Apply clean oil to the bearing cup.

26. Apply silicone sealant to the cover (3).

27. Install the output shaft assembly (4). Install the four capscrews (5).

28. Examine the end play on the output shaft. There must be no end play. To remove end play, add shims equal to the quantity of end play.

29. Examine the rolling torque on the output shaft. The rolling torque for both shafts together must be 1 to 4 kg cm (13.9 to 55.5 ozf inch) greater than just the input shaft. If necessary, adjust the shim thickness and examine the rolling torque.

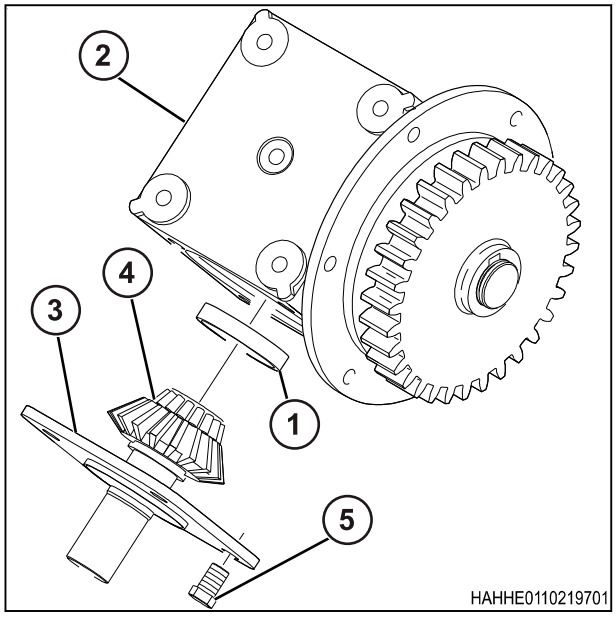

Fig. 52

Take note of the units of measurement used for the rolling torque.

30. Install the lever on the input shaft to examine the backlash.

31. Install the dial indicator. The dial indicator must be put at a distance (A) of 58 mm (2.283 in) from the center of the input shaft.

32. Measure the backlash. The backlash must be 0.17 to 0.46 mm (0.007 to 0.0181 in). To change the backlash, adjust the shim thickness behind the crown gear on the output shaft.

- To increase the backlash, remove shims from the output end. Add an equal thickness of shims to the tooth side of the gear.
- To decrease the backlash, remove shims from the tooth side of the crown gear. Add an equal thickness of shims to the output end.

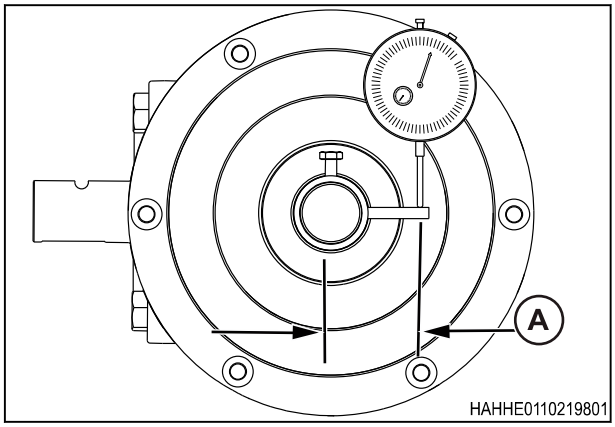

Fig. 53

33. To test for the contact pattern of the bevel gear teeth, paint some (four) pinion and crown gear teeth with white lead paint.

34. Rotate the input shaft several revolutions while putting resistance on the output shaft to start a contact pattern.

- (1) Best Contact - OK
- (2) High Contact - NO
- (3) Low Contact - NO

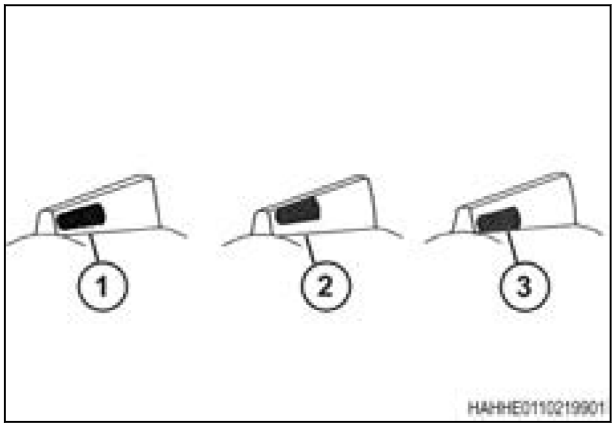

Fig. 54

35. Move the bevel gears to get the necessary contact pattern and backlash, refer to the table below.

LITTLE BACKLASH		MUCH BACKLASH	
Pinion	Crown Gear	Pinion	Crown Gear
Low Contact Move the pinion forward into the crown gear.	High Contact Move the crown gear rearward away from the pinion.	Low Contact Move the pinion forward into the crown gear.	High Contact If moving the pinion is not sufficient, move the crown gear forward into the pinion.
High Contact Move the pinion rearward away from the crown gear.	Low Contact If moving the pinion is not sufficient, move the crown gear rearward away from the pinion.	High Contact Move the pinion rearward away from the crown gear.	Low Contact Move the crown gear forward into the pinion.

The contact area changes by moving the pinion. The backlash changes by moving the crown gear.