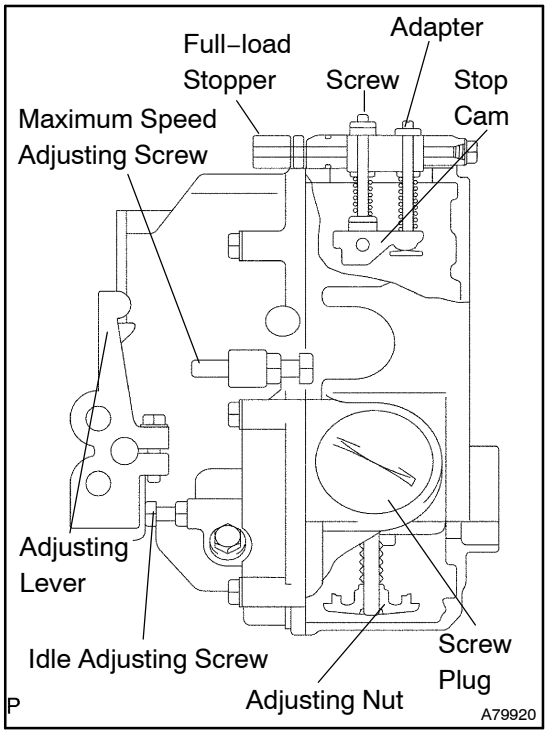
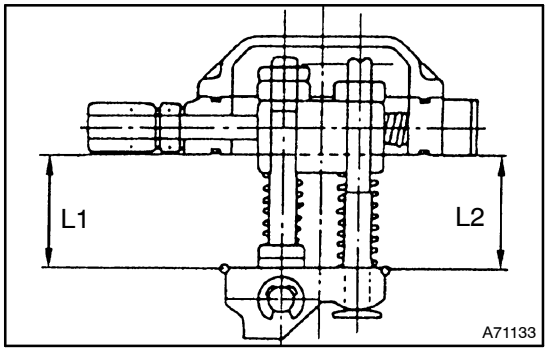
110JN–03

ADJUSTMENT



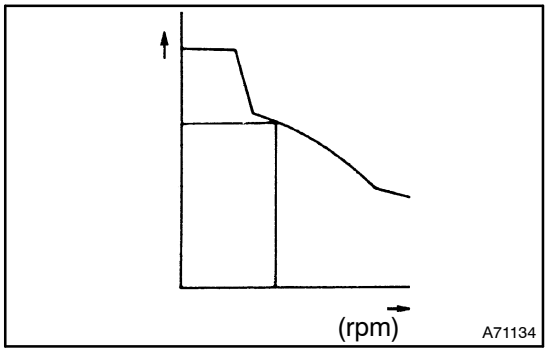
1. PREPARATION

(a) Connect the rack measuring device to the control rack and set to '0'.
(b) Connect the fuel line.
(c) Refill the camshaft chamber with engine oil.
(d) Install the angle gauge on the adjusting lever.
(e) Remove the full–load stopper housing cover.



2. STEPS IN GOVERNOR ADJUSTMENT

(a) Preliminary adjustment of stop cam.
L1 = L2 = 25.5 mm (1.00 in.)



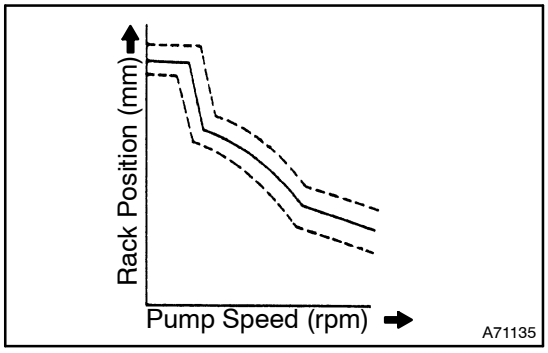
(b) Adjustment of idling speed control.

NOTICE:

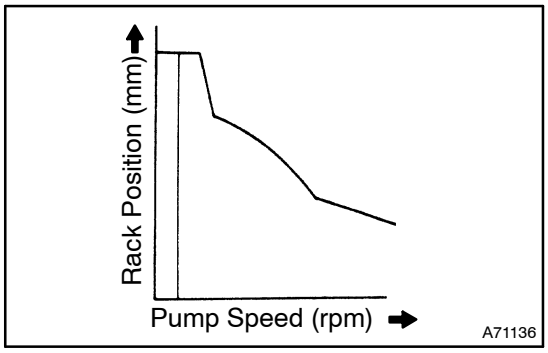
The adjusting lever should always be in the 'IDLING' position during adjustment of the idling speed control.

(1) At a pump speed of Na rpm, measure the control rack position Ra mm.

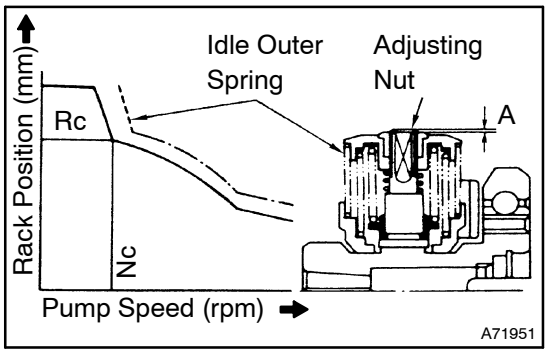
If not within specification, adjust with the idle adjusting screw.



NOTICE:
The idle adjusting screw will change the governor charcteristics as shown on the left.



(2) At a pump speed of Nb rpm, measure the control rack position Rb mm.

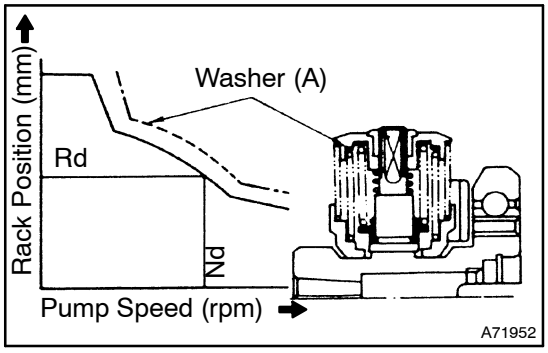


(3) At a pump speed Nc rpm, measure the control rack position Rc mm.

If not within specification, replace the idle outer spring.

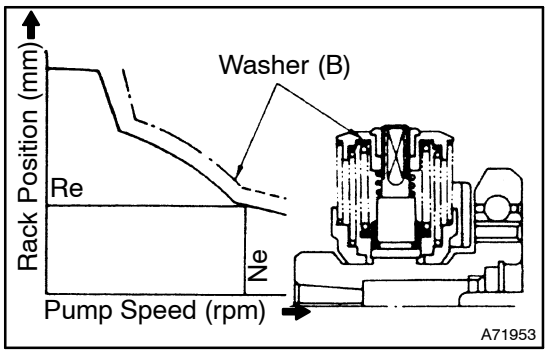
NOTICE:
Protrusion of the adjusting nut should be within –0.4 mm (–0.016 in.) to 0.2 mm (0.008 in.).

(4) At a pump speed of Nd rpm, measure the control rack position Rd mm.

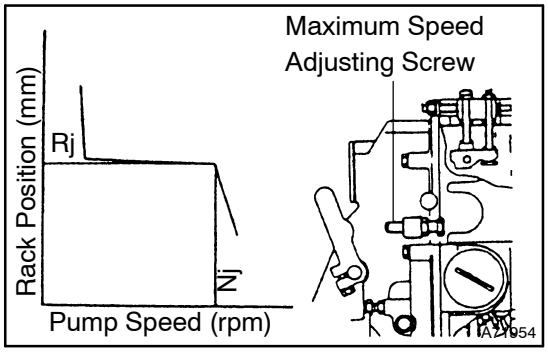


If not within specification, replace the washer (A).

(5) At a pump speed of Ne rpm, measure the control rack position Re mm.

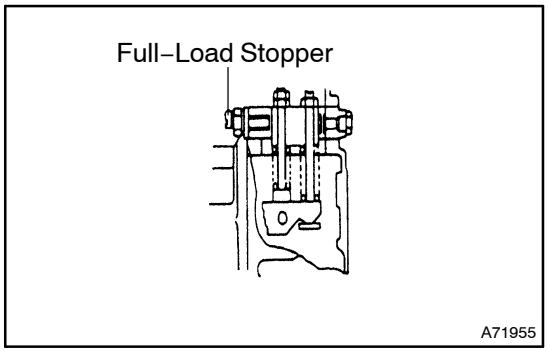


If not within specification, replace the washer (B).



(c) Preliminary adjusting of maximum speed control.
At a pump speed of Nj rpm, measure the control rack position Rj mm.

If not within specification, adjust with the maximum speed adjusting screw.



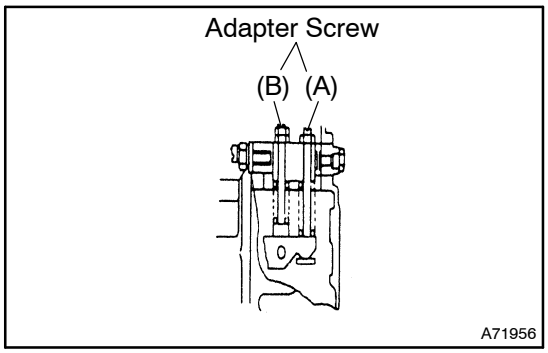
(d) Adjustment of medium speed control.

NOTICE:

The adjusting lever should always be in the 'FULL–LOAD' position during adjustment of the medium speed control.

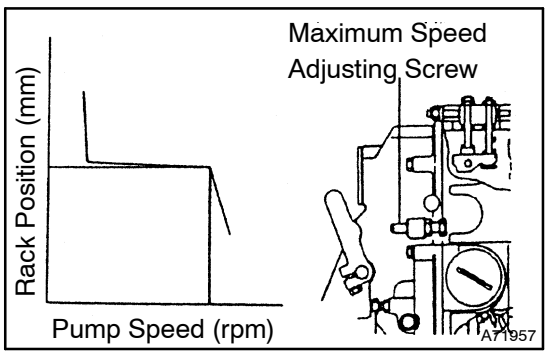
(1) At a pump speed of Nf rpm, measure the control rack position Rf mm.

If not within specification, adjust by turning the full–load stopper.



(2) At a pump speed of Ng, Nh and Ni rpm measure the control rack position Rg, Rh and Ri. Each speed and rack position.

If not within specification, adjust with the adapter screw (A) and (B).



(e) Adjustment of maximum speed control.

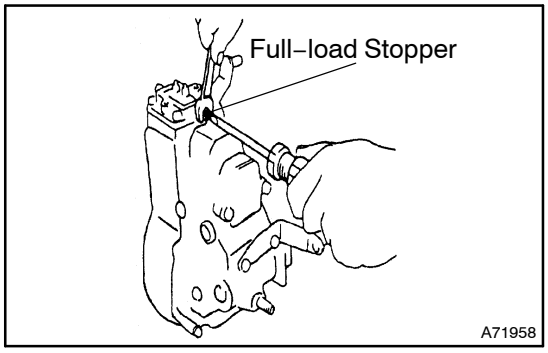
NOTICE:

Adjusting lever should be in the 'FULL–LOAD' osition.

(1) At a pump speed of Nj rpm, measure the controlrack position Rj mm.

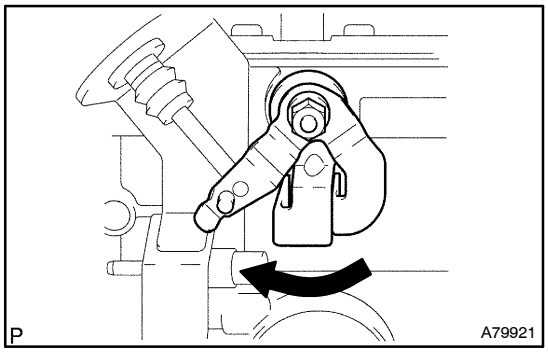
If not within specification, adjust with the maximum speed adjusting screw.

(2) Confirm the rack position Rm and Rn mm, pump speed of Nm and Nn rpm. Each speed and rack position.



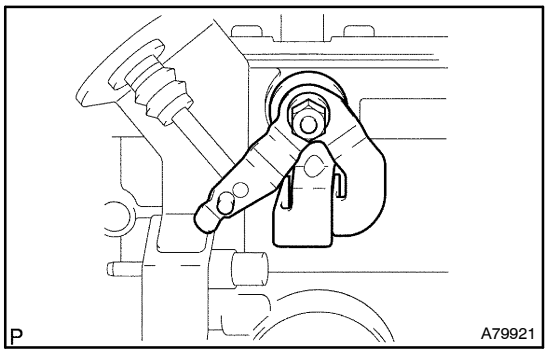
(f) Adjusting of fuel injection volume under 'FULL–LOAD'. Measure the injection volume in the 'FULL–LOAD' position.

If the average injection volume is not at standard value, adjust with the 'FULL–LOAD' stopper.



(g) Inspection of stop lever operation.
Adjusting lever at 'IDLING' position and pump speed at '0' rpm, the control rack position should be less than Rq mm.

3. INSTALL FULL–ROAD STOPPER HOUSING COVER AND FULL–ROAD STOPEER CAP

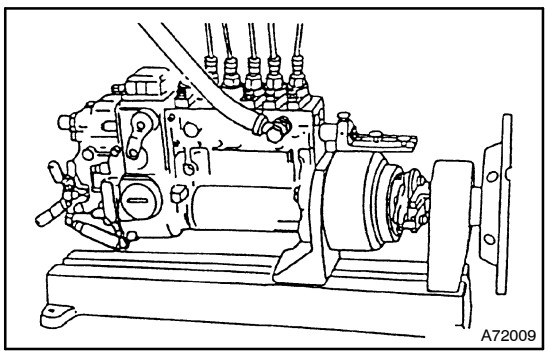


4. GOVERNOR EXERNAL LEAD SEALS AND CRIMP CAPS

NOTICE:

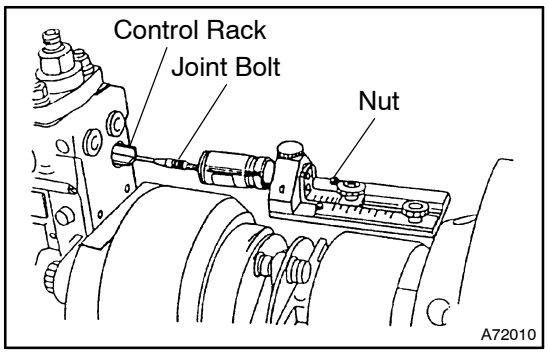
All adjusting devices on the fuel injection pump governor, exceptthe low idleadjustment screw, are wired and lead sealed and crimp capped as a protection for the customer. This is to prevent unauthorized readjustment which may cause engine malfunction and/or engine failure.

Preiodically check o insure that these sealsare not broken as his will void he warranty.



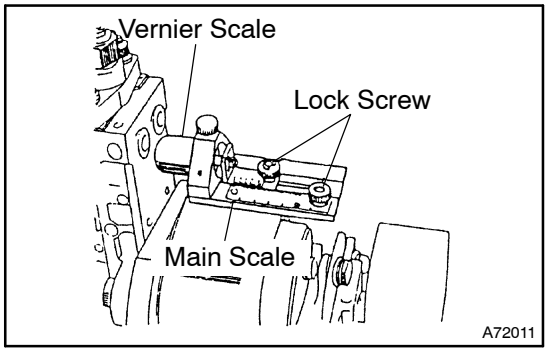
5. PREPARATION

(a) Mount the injection pump correctly on the pump tester.

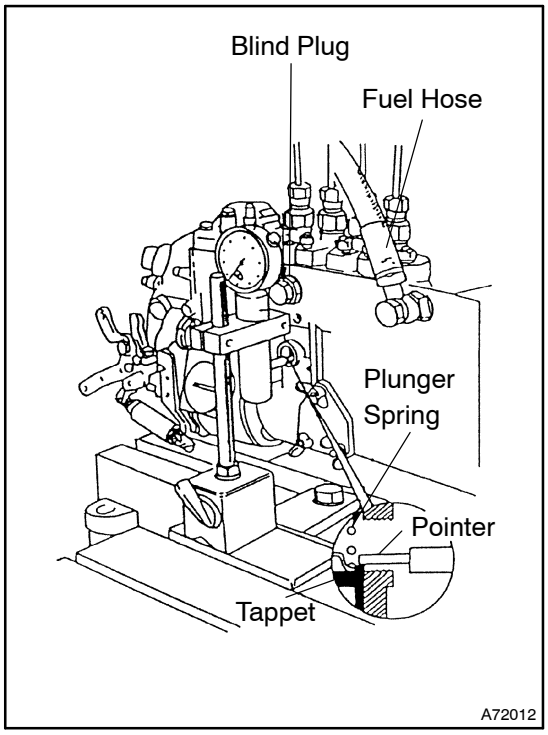


(b) Attach a rack measuring device to the control rack and set to 0.
Part No. 95091–00170 for equiped with R901 governor

(c) Install calibration nozzles and lines.



(d) Fill the pump camshaft chamshft chamber with engine oil.



6. ADJUST INJECTION TIMING

(a) Preparation of the pre–stroke

(1) Remove the screw plug from the pre–stroke measuring hole of the first cylinder.

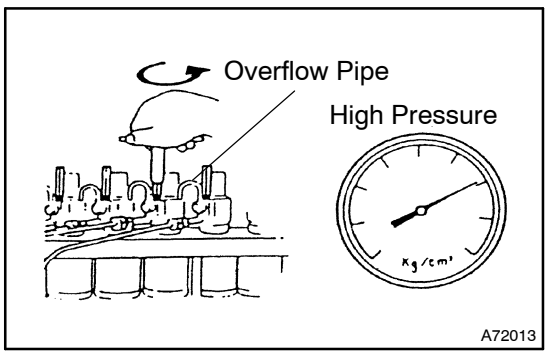
(2) Remove the overflow valve, attach the inlet adaptor and connect the fuel hose of the pump tester. Close the fuel port of the injecion pump with a blind plug.

(3) Insall a pre–stroke measuring instrument. Bring the tappet of the first cylinder to its bottom dead center, and set the pointer tip on the tappet.

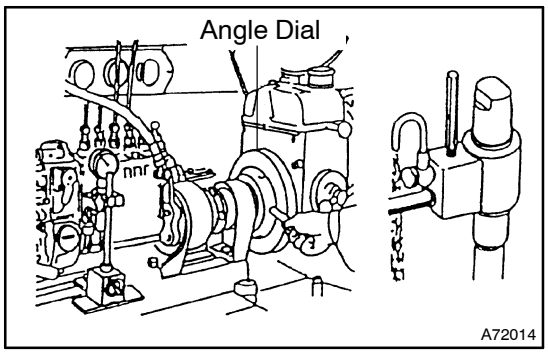
(b) Measure the pre–stroke (No. 1 plunger)

(1) Set the control rack at full–load position.

(2) Loosen the overflow screw of each nozzle holder.



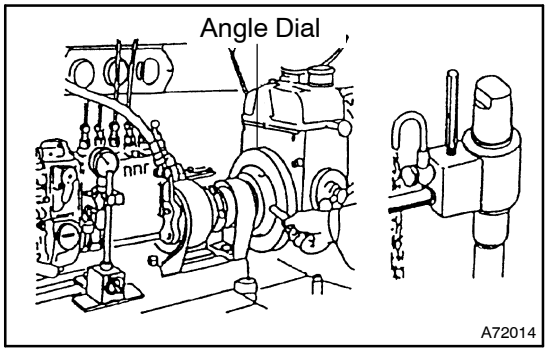
(3) Operate the high–pressure pump of the pump tester and let fuel run out of the overflow line.



(4) Move the angle dial to set the first cylinder of the pump to bottom dead center and adjust the pre–stroke gauge to zero.

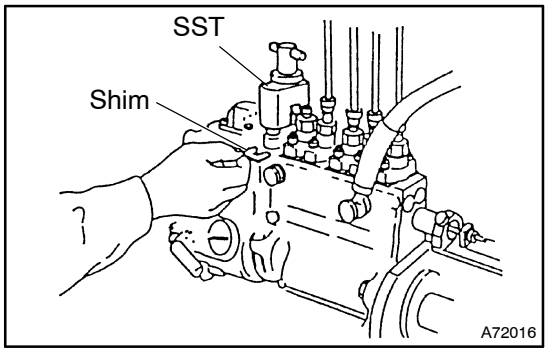
NOTICE:

Bottom dead center is the point at which the pointer of the dial gauge does not move even when the angle dial is rotated while fuel is flowing from the overflow line.



(5) Turn the camshaft clockwise the angle dial and read the dial gauge when the fuel stops running out of the overflow line. This reading is the pre–stroke value of the pump.

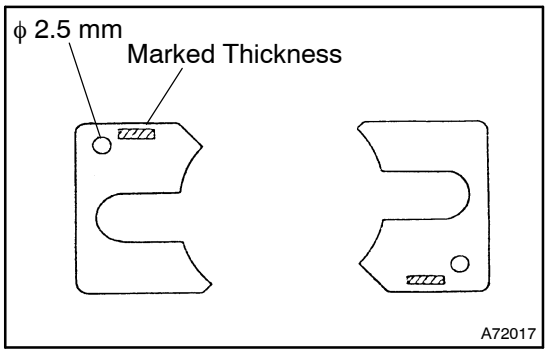
If the pre–stroke value is not within specification, change the shims between the cylinder flange and the pump housing.



(c) Adjust the pre–stroke.

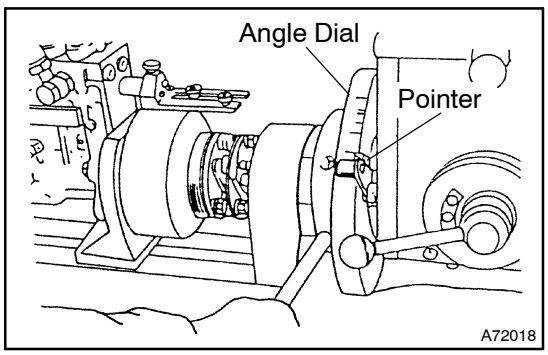
(1) Use SST to lift the cylinder and install the proper shim.

SST S0951–21920



NOTICE:

- **Insert a pair of shims of same hickness to the cylinder (If different thickness shims are used the rack will not move smoothly and hunting and other problems will result).**
- **Use only on e shim on each side.**
- **Always install the shims with the thickness marking facing up.**



(d) Adjust the injection interval.

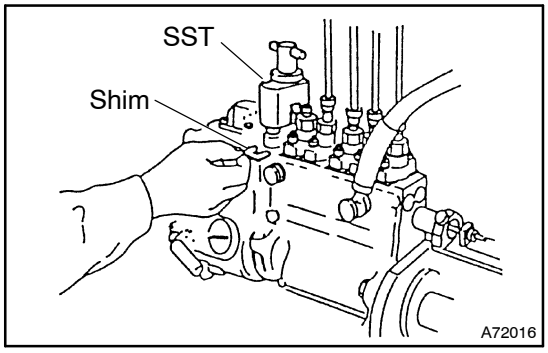
(1) Using the No. 1 cylinder injection starting point as a base, inspect and adjust the injection interval in the order of injection.

Injection interval: 89° 45' – 90° 15'

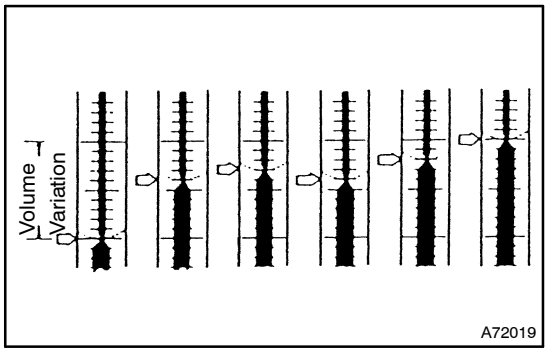
Injection order: 1 – 3 – 4 – 2

(2) If the injection intervals are not within specification, adjust by using the same procedure as for pre–sroke adjustment.

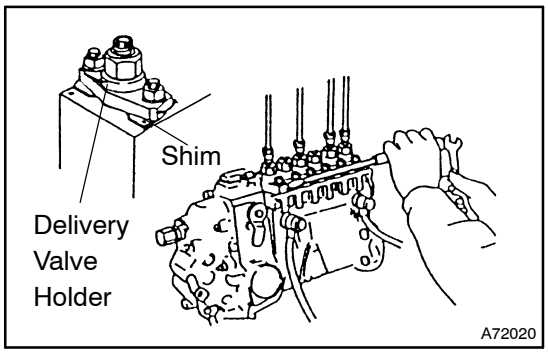
(3) After adjustment, make sure the injection timing is correct.



(e) Measuring and adjusting the injection volume
(1) Connect the fuel line and the overflow valve in their correct positions.



(f) Measure the injection volume for each control rack position and pump revolution.
(1) To adjust the injectiojn volume, loosen the delivery valve holder tightening nut and rotate the delivery valve holder.



(2) After adjustment has been completed tighten the nuts altenately to torque.

Torque:
19.1 N·m (195 kgf·cm, 14 ft·lbf)

7. INSPECT TIMER ADVANCE

(a) Set a stroboscope on a pump tester.
(b) Check the timer advance.

If the angle in not within specification, adjust with an appropriate shim.