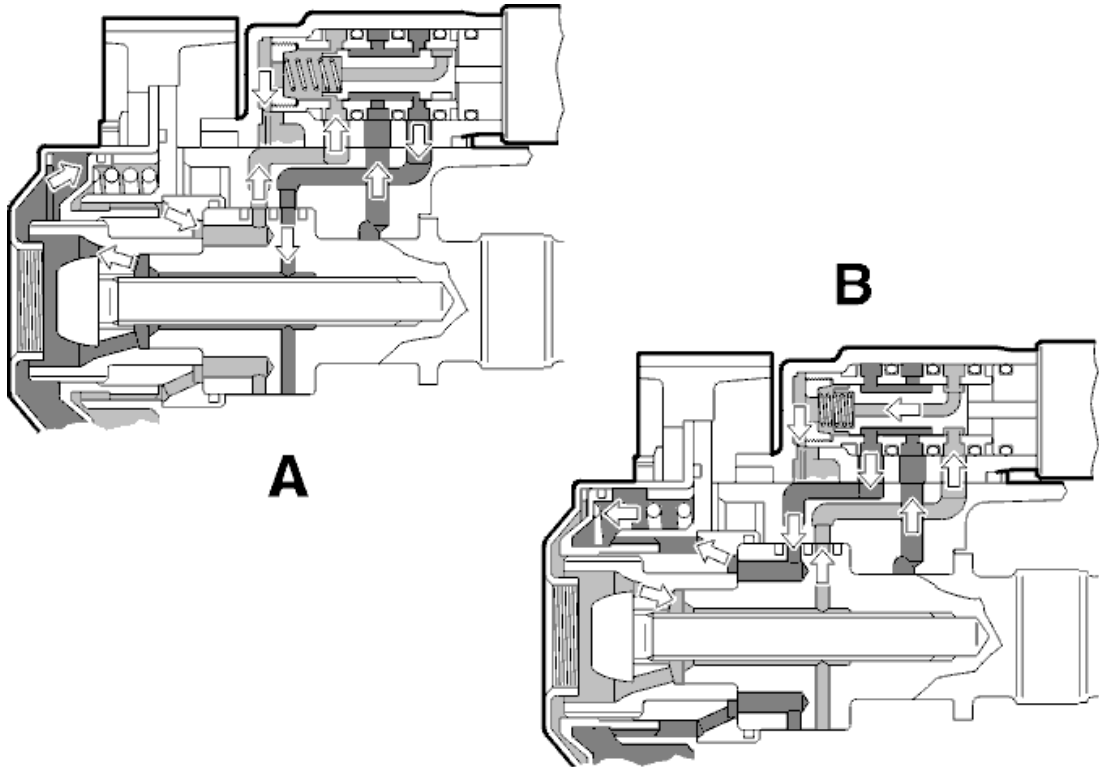


## Continuous Variable Valve Timing (CVVT), function



P2X

2101182e ©VOLVO

In the unemployed position the Continuous Variable Valve Timing valve is in the rear most position (**A**) because of the valve spring. In this position the piston connects the piston housing center and rear grooves with each other. At the same time the piston has exposed the front piston housing groove so that it is connected to the valve return terminal. Then the oil pressure is guided from the Continuous Variable Valve Timing valve center terminal to the valves rear terminal. From there the pressure is led through the camshaft bearing into the camshaft rear oilway, via the camshaft center channel to the Continuous Variable Valve Timing unit hub. The hub is connected to the Continuous Variable Valve Timing unit front chamber. The pressure in the Continuous Variable Valve Timing unit hub thereby presses onto the Continuous Variable Valve Timing unit piston and presses it backwards.

The piston is rotationally borne, via angle cut splines between the unit hub and cover. The camshaft toothed pulley wheel is installed on the cover and the camshaft is located in the hub. When the piston presses backwards the splines in the unit cover and hub rotate in

relation to each other. The arrangement gives a gear ratio giving the piston the possibility of affecting the camshaft a lot with a small movement.

The oil at the rear of the piston is pressed out through the outer hub channels into the camshaft and out through the camshaft upper front oilway. The oil is led further through the camshaft bearing, via the front Continuous Variable Valve Timing valve piston housing machining and back to the valve return terminal.

When the Continuous Variable Valve Timing valve receives the signal to move to the other outer position **(B)** the pressure is led from the piston housing center terminal to the front terminal. The return oil is then sent through the rear piston housing machining to the center of the piston, via the piston rear machining and the piston center channel to the Continuous Variable Valve Timing valve return terminal.

When the desired setting in the chamber is achieved the Continuous Variable Valve Timing valve moves to a central position where none of the terminals are connected with each other. When another camshaft setting is required the Continuous Variable Valve Timing valve makes a short move in the necessary direction. In this way the Continuous Variable Valve Timing unit can continuously adjust the camshaft.