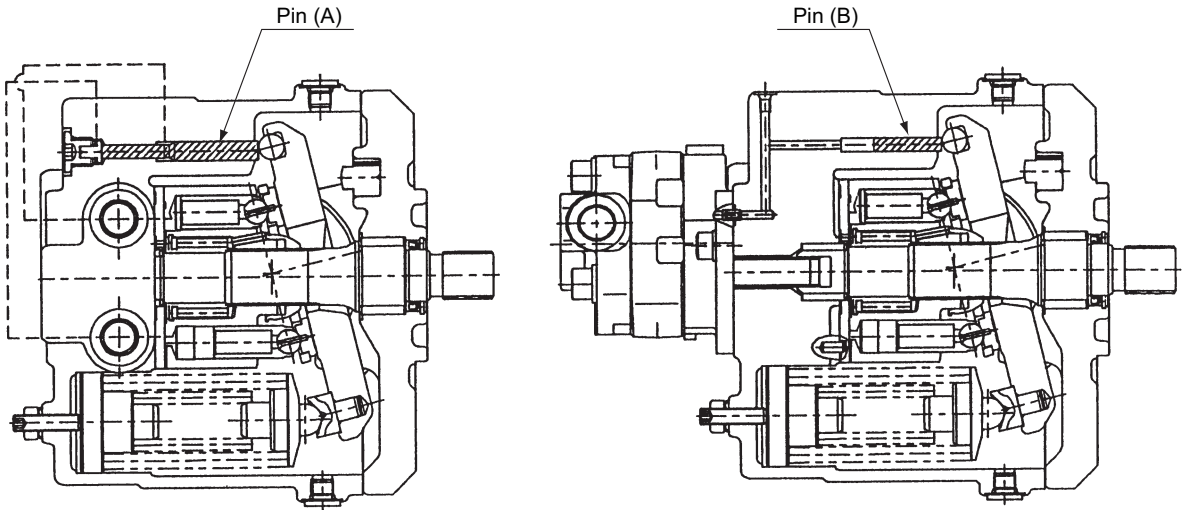
2) Horsepower Control

Control the discharge volume of the piston pumps so that the amount of load in the piston pumps P1 and P2, the trochoid pump and the gear pump does not exceed the set torque.

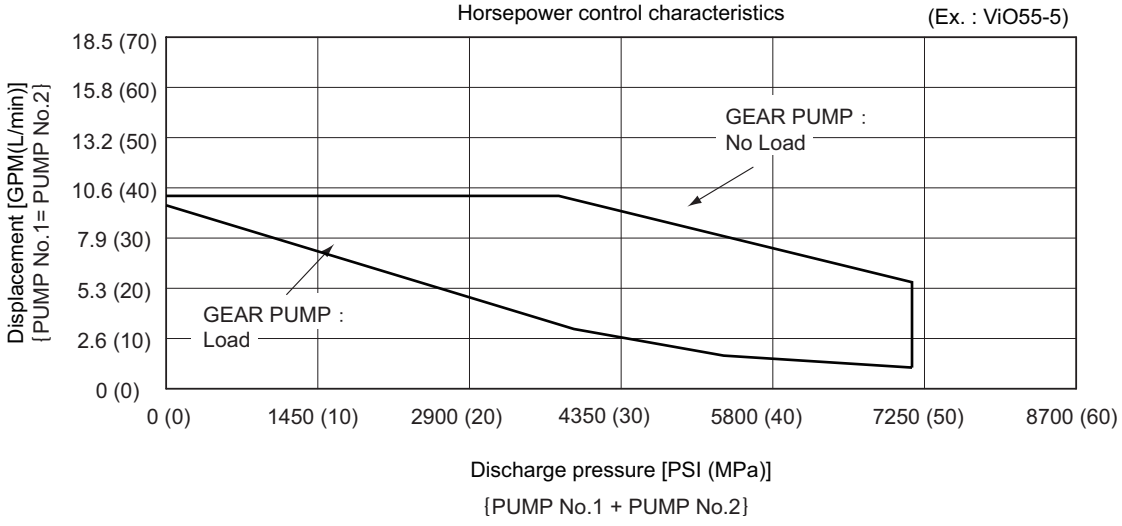
The oil pressure from the piston pumps P1 and P2 flows to the control pin (A) through the oil passage inside the port block. The discharge pressure of the gear pump flows to the control pin (B) through the inner passage of the piston pump body.

The oil pressure discharged from the piston pumps P1 and P2 and the gear pump rises and presses the respective control pins, causing the inclination angle of the swash plate to decrease and the discharge volume of the pumps to reduce.

The one side of the swash plate is held with springs. The spring force is adjusted according to the discharge pressure of each pump. The amount of horsepower (torque) of the pumps is controlled by the springs not to exceed the set torque.



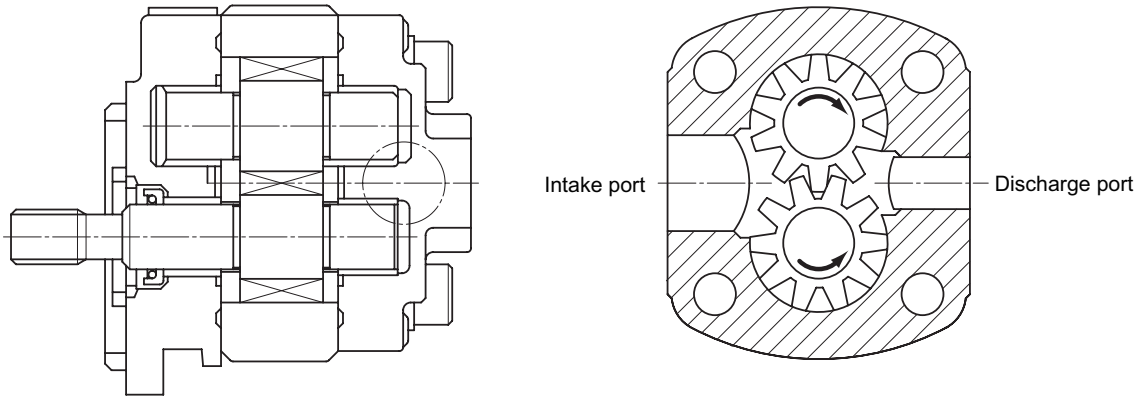
Horsepower control explanation drawing



Horsepower control characteristics explanation diagram

3) Gear Pump

The gear pump is used as the pump for the swing motor and blade.



Structural drawing of gear pump

Two gears in the housing rotate engaging with each other to work as a pump by transferring the oil between the gear tooth and the inner surface of the housing.

The special loading system, which adjusts the clearance between the side surface of the gear tooth and the inner surface of the housing to the appropriate value reflecting the discharge pressure, is adopted to the gear pump so that the high efficiency is maintained for a long time.