

Figure 12-340. *Droop circuit.*

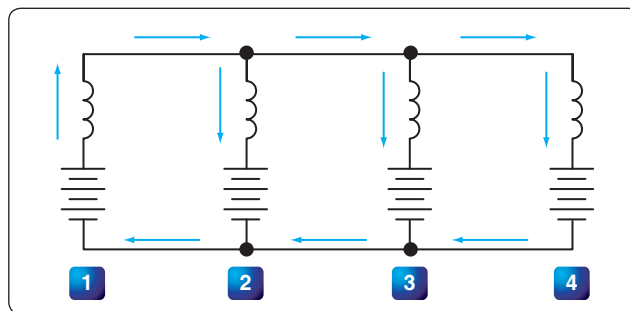


Figure 12-341. *Relative direction of current in droop coil circuit with unequal loads.*

output shaft of the drive, flyweights, two coil springs, and a nonrotating valve stem. Centrifugal force, acting on the governor flyweights, causes them to move outward, lifting the valve stem against the opposition of a coil spring.

The valve stem position controls the directing of oil to the two oil outlines. If the output speed tends to exceed 6,000 rpm, the flyweights lift the valve stem to direct more oil to the side of the control piston, causing the piston to move in a direction to reduce the pump wobble plate angle. If the speed drops below 6,000 rpm, oil is directed to the control piston so that it moves to increase the wobble plate angle.

Overspeed protection is installed in the governor. The drive starts in the underdrive position. The governor coil springs are fully extended and the valve stem is held at the limit of its downward travel. In this condition, pressure is directed to the side of the control piston giving minimum wobble

plate angle. The maximum angle side of the control piston is open to the hollow stem. As the input speed increases, the flyweights start to move outward to overcome the spring bias. This action lifts the valve stem and starts directing oil to the maximum side of the control piston, while the minimum side is opened to the hollow stem.

At about 6,000 rpm, the stem is positioned to stop drainage of either side, and the two pressures seek a balance point as the flyweight force is balanced against the spring bias. Thus, a mechanical failure in the governor causes an underdrive condition. The flyweight's force is always tending to move the valve stem to the decrease speed position so that, if the coil spring breaks and the stem moves to the extreme position in that direction, output speed is reduced. If the input to the governor fails, the spring forces the stem all the way to the start position to obtain minimum output speed.

An adjustment screw on the end of the governor regulates the output speed of the constant speed drive. This adjustment increases or decreases the compression of a coil spring, opposing the action of the flyweights. The adjustment screws turn in an indented collar, which provides a means of making speed adjustments in known increments. Each "click" provides a small change in generator frequency.

The constant speed drive (CSD) can be an independent unit or mounted within the alternator housing. When the CSD and the alternator are contained within one unit, the assembly is known as an integrated drive generator (IDG).