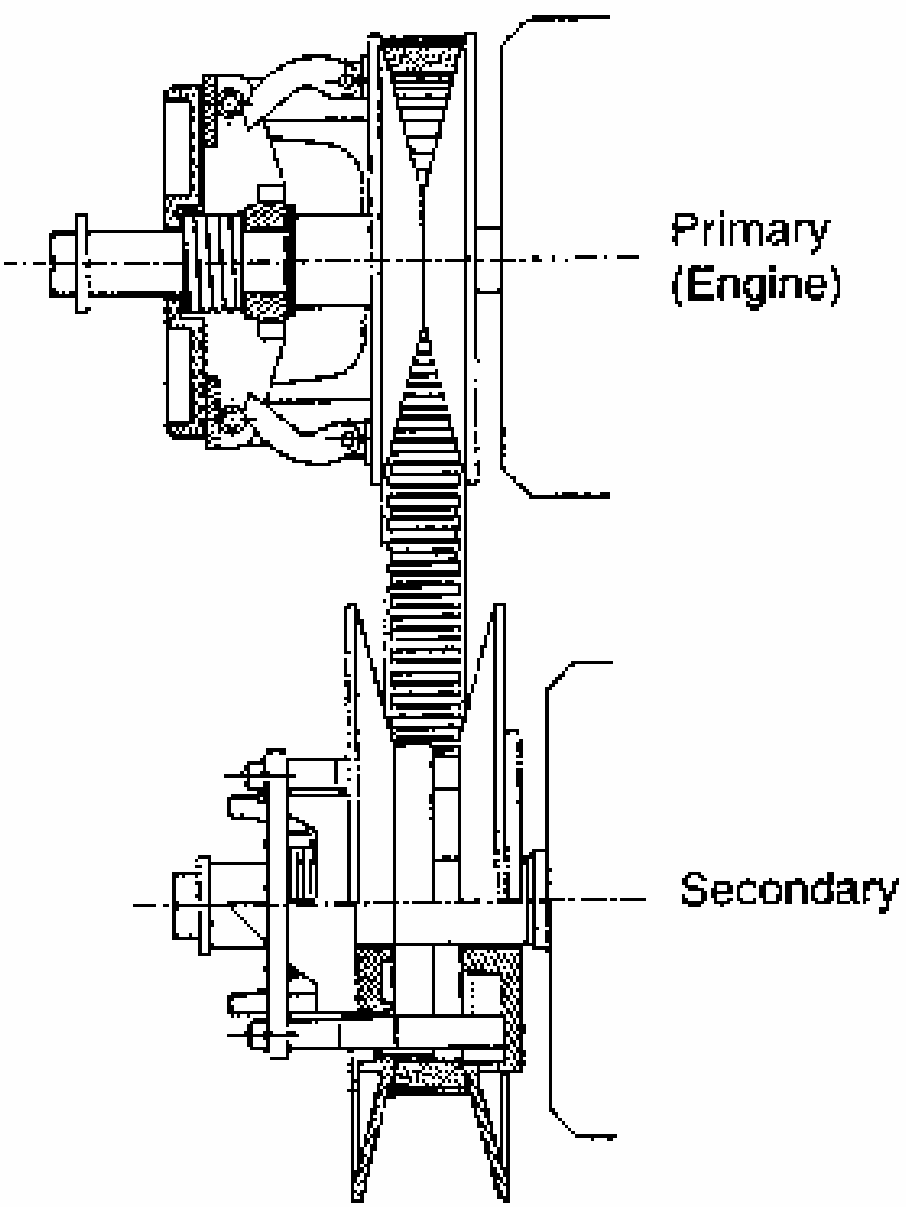
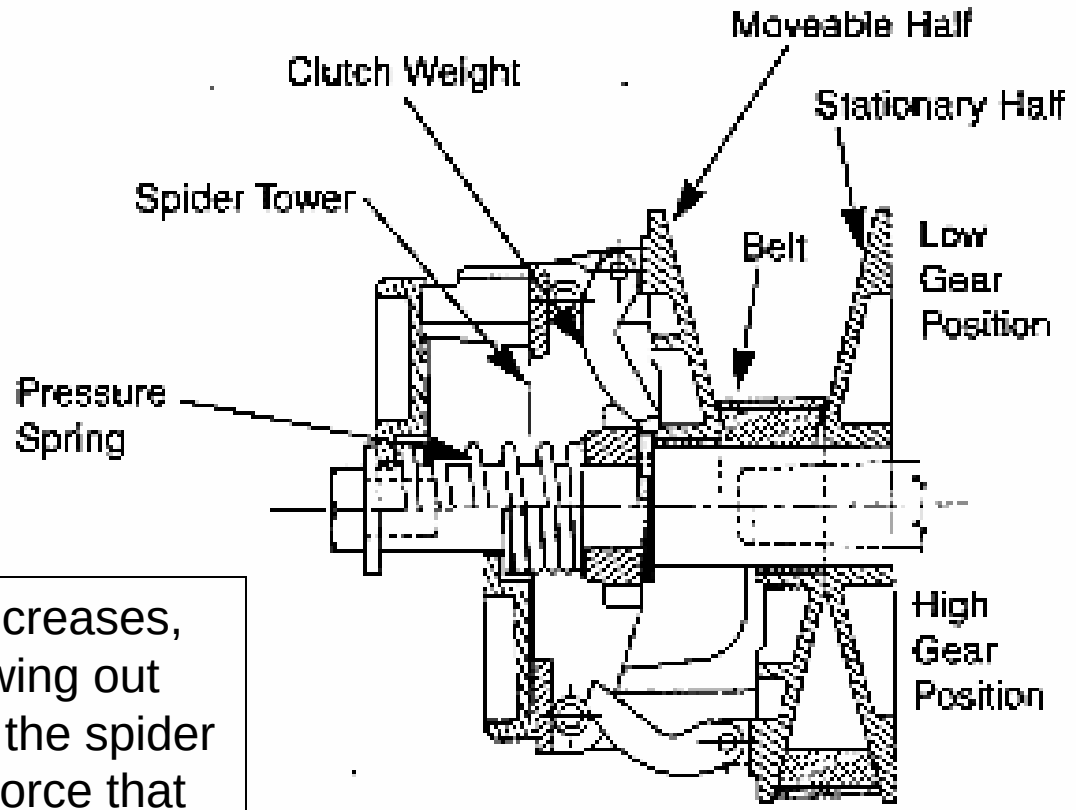
Variable Speed V-Belt Drive –

Snowmobile Application



http://www.gates.com/brochure.cfm?brochure=1033&location_id=542

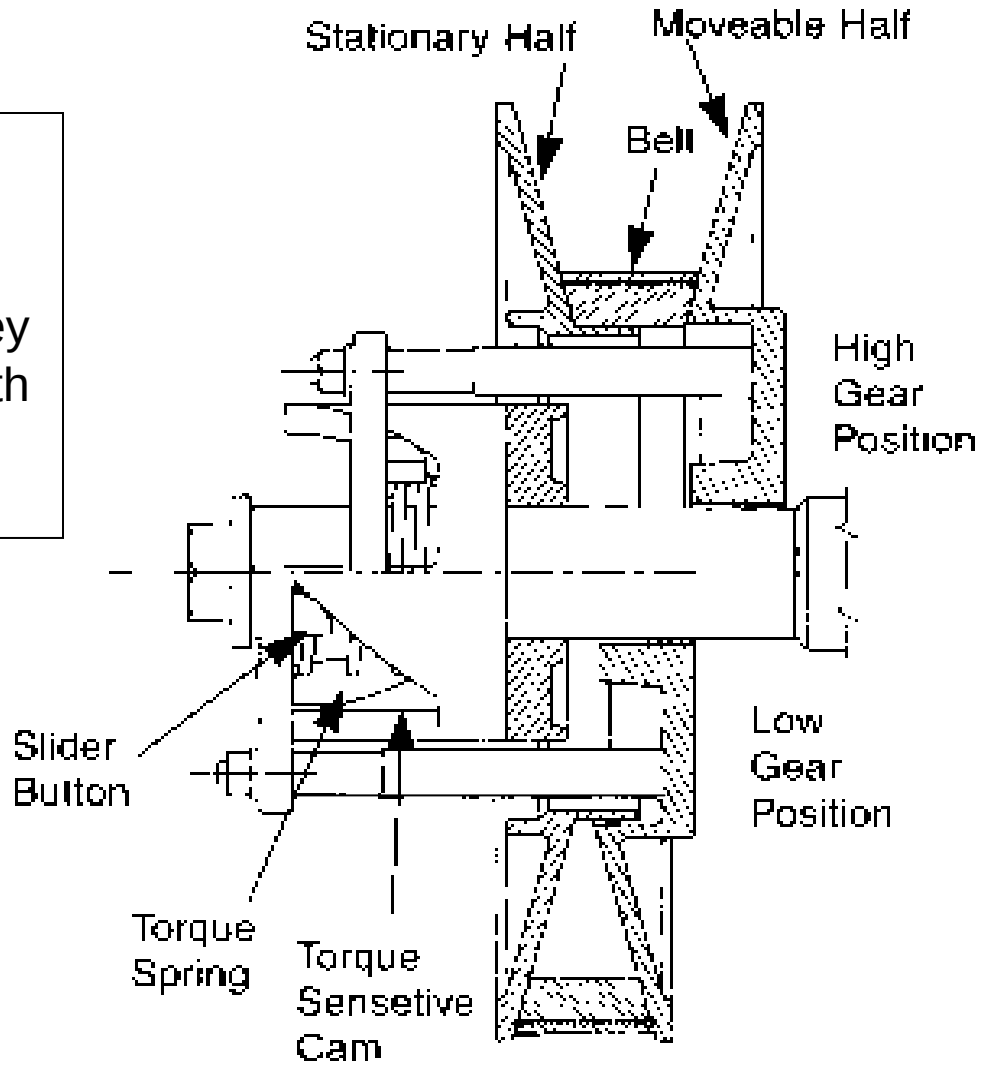
Primary Pulley Section (shown in both de-clutched/low gear & high positions)



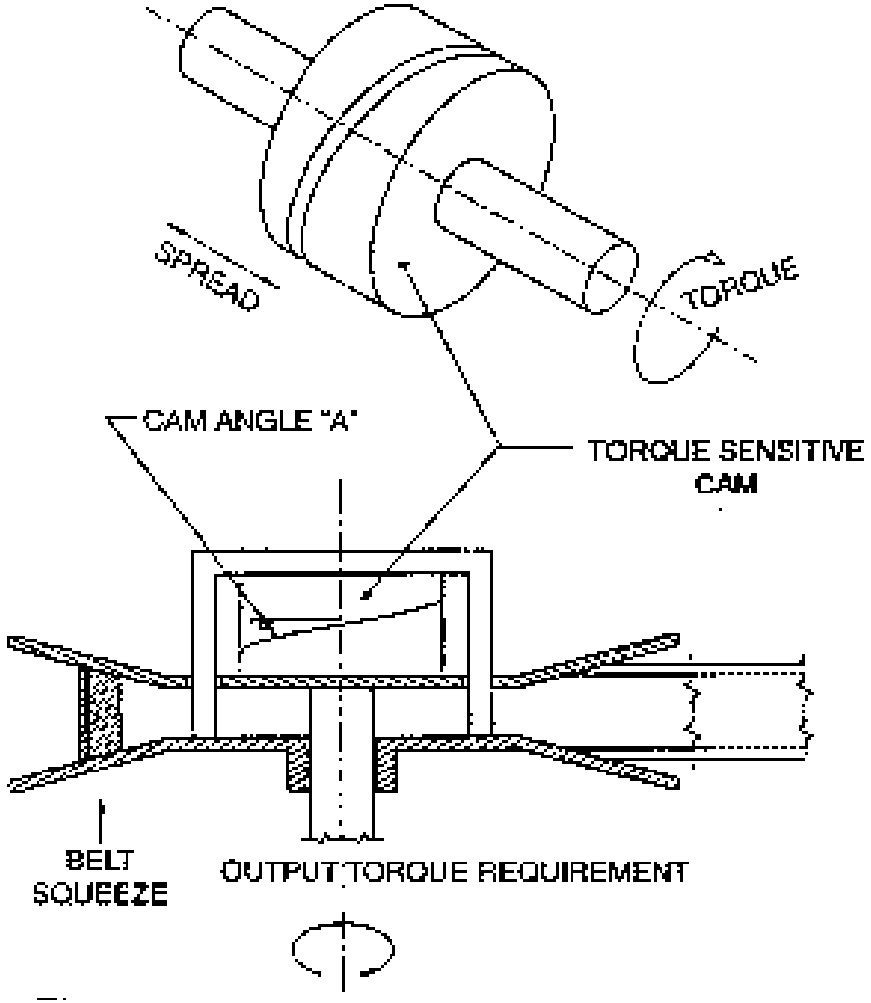
As the engine rpm increases, the clutch weights swing out against the rollers in the spider tower, generating a force that overcomes the spring pretension.

Secondary Pulley Section (shown in both low & high gear positions)

As the primary pulley squeezes together and increases the diameter of the belt path, the secondary pulley must “open” to let the belt path diameter decrease (because the belt length is constant!)

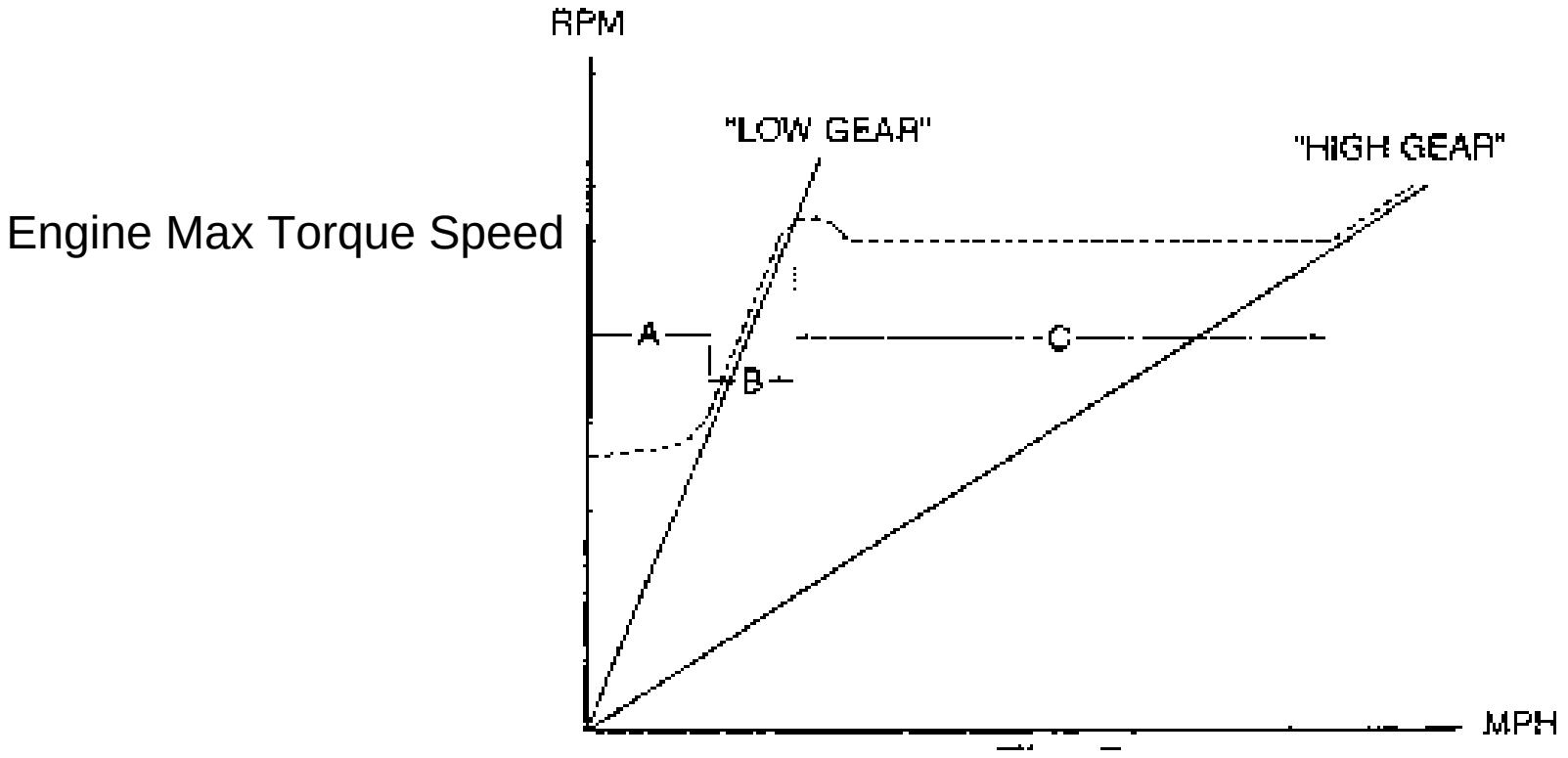


Torque Sensitive Cam Function



As the transmitted power increases, the wedges slide and rotate against each other, creating the squeezing force on the belt.

Speed vs RPM



A properly designed variable speed system lets the engine run near its maximum torque-producing speed, permitting highest acceleration.