VARIABLE GEOMETRY INLET GUIDE VANE

ABSTRACT OF THE DISCLOSURE

An inlet guide vane provides improved, smooth airflow and avoids separation of flow even at high incidence angles. The inlet guide vane includes a strut having opposite side surfaces that are continuously curved to provide a controlled velocity distribution at the trailing edge of the strut. The inlet guide vane further includes a flap having a leading edge aligned behind the trailing edge of the strut. Generally, the strut and the flap are designed together so that low momentum air in the gap between the strut and the flap will be energized and entrained in the boundary layer of the flap. The airflow from the gap will remain attached to the flap to improve the flow from the flap.

Figure 1