COMPRESSORS

CENTRIFUGAL COMPRESSOR:

The centrifugal compressor comprises a rotating impeller and a fixed set of diffuser. The impeller is a rotating disc with radially set of diffuser. The impeller is flange disposed vanes .Air entering the eye of impeller is flange outwards by the vanes which impart kinetic energy to it. This energy is then converted to pressure as the airflow through the fixed diffusers ,which also turn of airflow from a radial to an axial direction.

COSTRUCTION:

The impeller may be either single or double sided.

Double sided impeller :have

1. Smaller diameter for given air flow.
2. Greater intake losses.
3. More air flow instability.
4. Higher stresses by two sets of blades.
5. Low rotational speed.

Modern impeller are machined from solid forging of titanium alloy and polished .They are attached to the shaft flanged fittings and balanced statically and dimension and tested to (5%) over speed.

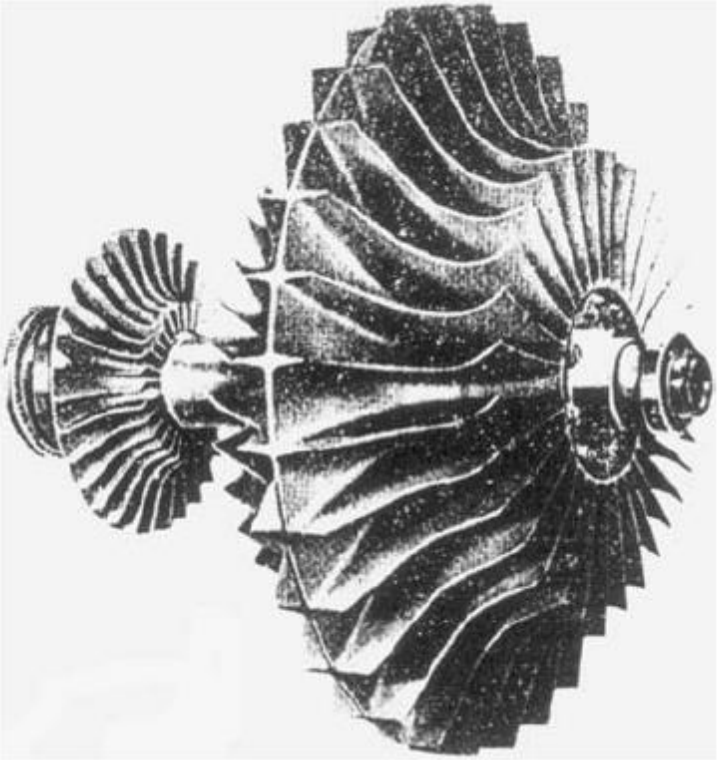

Figure (2) Double-entry main stage compressor with side-entry compressor for cooling air. (Courtesy of Rolls-Royce, Ltd.)