

# IMPULSE BLADES

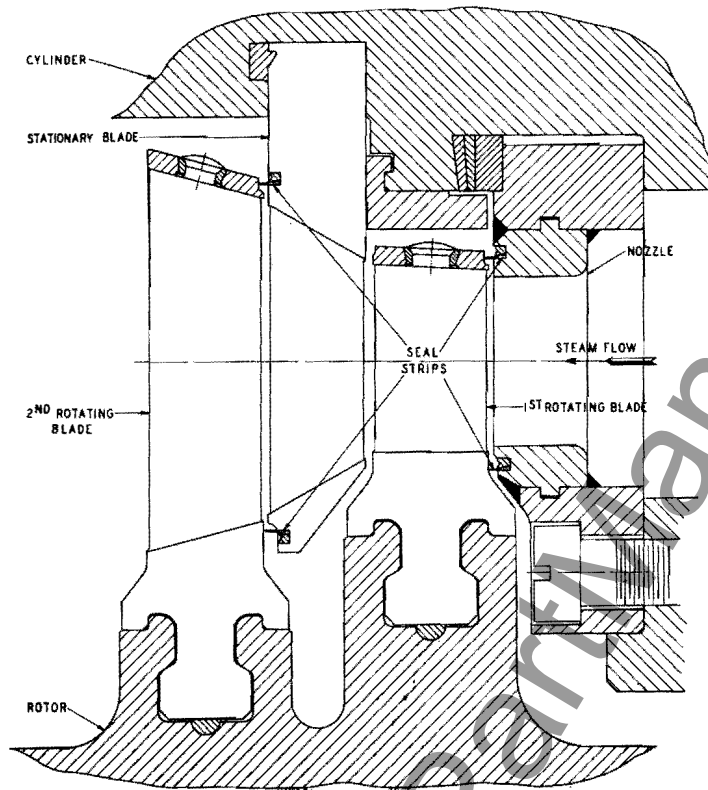


Fig. 1

Figure 1 shows the arrangement of an impulse element consisting of two rows of rotating blades attached to the rotor, and one row of stationary blades attached to the cylinder.

The rotating blades are secured to the rotor by the "Straddle Root" type of fastening. This consists of a T-root with lugs machined on the blade shank which straddle and hold in the sides of the rotor groove, thus resisting the tendency of the blade pull to spread the sides of the groove. The blades are held against the top of the groove by half-round steel sections caulked in place at the bottom. The shanks are machined accurately to fit closely to one another and to give the correct spacing for the steam passage area. Each row is shrouded with a strip which is fitted over tenons on the ends of the blades and secured by riveting the tenons over tapered ferrules which are fitted between the tenons and the shroud strip. The shroud serves to prevent spilling of steam and to reduce vibrational stresses.

The stationary blades are secured in straight sided grooves by a series of short keys which fit in auxiliary grooves cut in the blade shank and in the side of the main groove. These blades are shaped so as to form their own shroud, thus forming a closed passage for the steam flow.

In order to decrease to a minimum the leakage of steam around the blades, special seal strips are used as shown in the Figure. These seals consist of thin flat strips and are held in place by soft steel caulking strips which are rolled into grooves. The seal strips and caulking strips must be fitted after the blades are installed. Since the strips are very thin, slight rubs between them and adjacent parts are negligible. Hence, they can be set with a close running clearance. On those strips having the close clearance in an axial direction, it is usually obtained by grinding the edges by actual rubbing contact with the machine in operation.