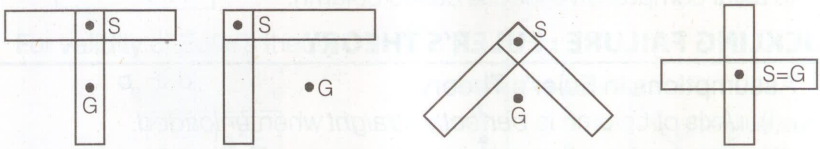
8. SHEAR CENTRE

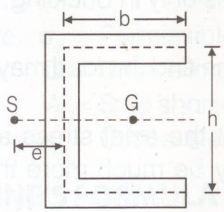
- Shear centre is a point from which a concentrated load passes then there will be only bending and no twisting. It is also called centre of flexure. It is that point through which the resultant of shear passes.
- Shear centre always lies on the axis of symmetry if exists.



S = shear centre, G = Centre of gravity

DISTANCE OF SHEAR CENTRE FOR IMPORTANT SECTIONS

1. Channel Section

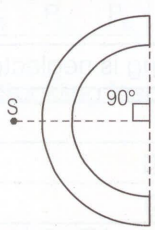


$$e = \frac{b^2h^2t}{4I}$$

t = thickness

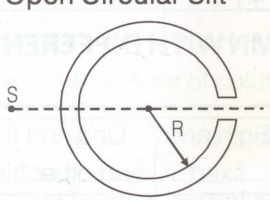
Where, I is MOI about symmetrical axis.

2. Semicircular Section



$$e = \frac{2R}{\pi/2} = \frac{4R}{\pi} \quad (> R)$$

3. Open Circular Slit



$$e = 2R \quad (> R)$$

NOTE *If slit is closed then shear centre will coincide will C.G.*

■■■